

Skills to shape the future: Employability in Belize

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Education Division
Social Sector

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Skills to shape the future: Employability in Belize

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January 13, 2020

Abstract

This study yields new insights on the changing landscape of Belize's economy and the challenges of equipping students and workers with the skills they need to thrive in an evolving labor market. Using census and labor force data, we show that Belize's economy is transitioning toward services and away from agriculture, manufacturing, and construction. We find that the country has potential for workforce development in a range of soft and digital skills that are in high demand in various sectors. We also show that women constitute an untapped resource for economic growth, especially given Belize's growing need for an educated workforce and women's higher education attainment. Using a survey of employers and training institutions, we document a skills mismatch between employers' needs and workers' skills. Finally, we propose five principles that could guide education and employment policies to help close the skills gap.

Keywords: skills, employability, education and labor market, skills mismatch, STEM
JEL Codes: J20, J21, J23, J24, J30, J31, J60, J62, J70, J71, O54

Foreword

With Belize's employability rate hovering around 60 percent, why do employers claim they cannot find workers? To address this question, the authors use labor-market data to show how the economic structure and labor market of Belize has transformed over recent decades, noting specifically how the agricultural and manufacturing sectors are declining in favor of an expanding service sector.

In addition, based on a survey of employers in Belize's major industries, as well as the country's secondary education and training institutions, the study reveals a mismatch between the skills needed by the labor market and the skills imparted to students and graduates of the educational system. Specifically, employers have trouble finding workers who can collaborate effectively, think critically, and perform in a digital environment. In addition to the gap between the skills the labor market needs and the skills of the labor force, the study underscores troubling patterns of inequality of access to skill development opportunities. Low-skilled workers are overrepresented in some geographic areas and among certain ethnic groups. These imbalances both limit economic growth and perpetuate poverty. Paradoxically, the study suggests that economic growth is further hampered by the underutilization of highly skilled women who are struggling to find employment.

Based on experiences from across the world, the authors explore the causes and consequences of the transformation of Belize's economy. They then suggest how the country might narrow the gap between supply and demand for skills, notably by tapping into underutilized segments of the female workforce and by training, reskilling, and upskilling both current and future Belizean workers.

Cassandra T. Rogers

IDB Country Representative in Belize

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Acronyms and abbreviations

CET	Centre for Employment Training
GDP	gross domestic product
ICT	information and communications technology
IT	information technology
ITVET	Institute for Technical and Vocational Education and Training
LAC	Latin America and the Caribbean
LFS	Labor Force Survey (Statistical Institute of Belize)
NCTVET	National Council for Technical and Vocational Education and Training
OECD	Organisation for Economic Co-operation and Development
STEAM	science, technology, engineering, arts and math
STEM	science, technology, engineering and math
TVET	technical and vocational education and training

Introduction

Across Latin America and the Caribbean (LAC), millions of people—unemployed, underemployed, or employed in the informal economy—are desperately looking for work.¹ Others have left their country or dropped out of the workforce. Yet employers complain that they cannot fill vacancies with candidates who have the skills they need (Bassi et al., 2012; Busso et al., 2017; Manpower, 2018; OECD, 2018). How can this be? Although there is no one answer, part of the explanation is a mismatch between the skills employers need and those possessed by the workforce.

The mismatch, or skills gap, threatens the sustainability of businesses, the livelihood of workers, and the growth of the region's economies.² For businesses, a persistent skills gap is an obstacle to meeting their customers' needs and performing at their full potential. For the economy, when industries do not operate at their full potential, the skills gap translates into lower aggregate productivity and less innovation. At the individual level, for those looking for a job, the skills gap is associated with longer spells of unemployment, and, for the mismatched workers who have the "wrong" field of study, are overqualified, or are overskilled, it means lower job satisfaction and lower wages than they otherwise might command.

Among world regions, LAC exhibits one of the widest skills gaps, even compared with other emerging regions. According to the perceptions of formal employers recorded in the World Bank Enterprise Survey, firms in the region are three times more likely than South Asian companies and 13 times more likely than Pacific-Asian firms to report serious operational problems owing to a shortage of human capital (World Bank, 2010; OECD, 2018).³ In small economies, the migration of the most-skilled job candidates to countries with better job opportunities reinforces the problem (Docquier and Schiff, 2008), with about half of the most-skilled workers in Belize leaving the country (Docquier and Marfouk, 2004). In the context of the region's sluggish productivity growth, addressing the skills mismatch is an urgent step toward achieving inclusive growth and avoiding the so-called middle-income trap.⁴

¹ The unemployment rate in LAC is hovering around 8 percent and close to 20 percent for the youth. Informal employment reaches 54 percent of total employment and 62 percent for young workers (ILO, 2018)

² In this note we use the terms "skills mismatch" and "skills gap" interchangeably to refer to any imbalance between the skills possessed by the workforce and those needed by employers. However, in the literature, the term skills mismatch is more general than skills gap. Skills gap is typically used to describe situations in which the employer believes that prospective workers do not possess the competencies needed to successfully discharge their role (skills shortage is another term used in this context), while skills mismatch also describes situations in which employees lack the quantity or type of skills or education required for their current job, including horizontal mismatches (field of study) or vertical mismatches, which usually denotes over- or undereducation or over- or underskilling) (McGuinness et al., 2017).

³ The World Bank Enterprise Survey includes formal firms with a minimum of five employees, mainly in the manufacturing and s. Government-owned firms are excluded from the survey.

⁴ The middle-income trap is a theoretical situation wherein GDP growth slows once an intermediate level of development has been reached. The evolution of LAC's income per capita relative to the U.S. level fits this description. According to some studies, this fact can be largely explained by differences in total factor productivity, i.e., in how efficiently the economy is using its human (or physical) capital (Araujo et al., 2017).

Although there are no silver bullets to redress this situation, education and labor-market policymakers have an important role to play in closing the skills gap. Fulfilling the promise of supplying skills in demand by employers requires an effective education and training system that offers high-quality services, promotes the right skills, and supports successful learning trajectories across individuals' lifetimes (Amaral et al., 2017). However, LAC's education and training systems show clear signs of deficiencies and inefficiencies, many of which are related to the lack of a fluent interaction with employers and the labor market (Bassi et al., 2012; Busso et al., 2017; Amaral et al., 2017).

In this note we turn to Belize, one of the smallest countries in LAC, to discover whether these regional trends are present and to analyze the skills needed to shape Belize's future. First, we present the trends in the labor market and the skill profile of the workforce over the past 10 years. Second, to characterize the country's skills gaps, we analyze the skill needs of employers and compare them with the skills provided by the education and training system. Finally, we discuss possible avenues to address skills gaps in the medium and long terms.

We conclude that employers are not merely complaining: the skills gap in Belize is real. Over the past several decades, the Belizean economy has witnessed a steady decline in jobs in the agricultural sector—where jobs are generally routine and manual in nature—and an increase in jobs in the service sectors, which require interpersonal and digital skills. While the economy has changed and continues to change, the education and training system is not keeping up with the demand for a more skilled workforce.⁵ Our analysis suggests that there is no shortage of workers with the skills associated with a primary education. However, Belize's growth industries need workers with higher levels of education.

Based on a survey of employers, we also find that Belize's employers are interested in workers with digital transformation skills, such as basic and advanced IT skills, critical thinking skills, and socioemotional skills. However, it is difficult for education and training institutions to respond to these needs, since communication between these institutions and employers is limited and unsystematic. We find that, while internships are widespread, most are unstructured, and that many education and training institutions miss the opportunity to improve their programs based on feedback from employers following internships.

Furthermore, we show that Belize is not using its human capital to its maximum potential. Even though women have higher levels of education than men, their labor-market participation, employment levels, and wages are lower than those of men. The unemployment rate for women with higher education is almost three times that of men with the same level of education. Given Belize's high and growing need for an educated workforce, excluding women from the labor market hinders economic development. Our findings also show great disparities in education level by ethnicity. As Belize continues to

⁵ About half of the most-skilled workers (workers with at least a secondary education) in Belize leave the country and migrate to places with more job opportunities (Docquier and Marfouk, 2004), worsening the skills gap.

develop and transition toward a service economy, the country will have to eliminate these differences in access to education and labor market opportunities so as to ensure that everyone is included in the labor market.

Finally, we propose five principles that could guide education and labor-market policy to help close the skills gap in Belize. These principles are considered hallmarks of high-performing education and training ecosystems around the world (Amaral, et al., 2017; Amaral, et al., 2018). First, a strategic vision for skills development and an effective governance structure are needed to guide policymaking and to coordinate the parties involved in the skills system. Second, a rigorous skills information system could help to systematically identify present and future skills needs. Third, the Belize education and training system would benefit by establishing spaces where employers can participate actively and formally in bridging the skills gap. Fourth, quality assurance mechanisms to monitor, maintain, enhance, and ensure the quality of the services provided by education and training institutions is a vital part of the effort to align skills with the needs of the country. Fifth, Belize needs to remove barriers to women's participation in the labor force.

The remainder of this study is organized as follows. The next section describes recent changes in Belize's economy and their impact on the demand for workers. Section 3 characterizes the skills profile of Belize's population, with a focus on differences by gender, ethnicity, and location. Section 4 describes labor-market outcomes, with special attention to differences by gender and age. We also discuss the results in terms of wages and industry of employment, with a focus on observed differences by field of study. Section 5 presents the skills gap analysis, contrasting results from two surveys, one of employers and other of education and training institutions. After analyzing the skills mismatch, we present a description of the current mechanisms through which employers and providers communicate. Section 6 discusses potential policies to narrow the skills mismatch and improve labor-market inclusion in Belize. The closing section proposes new avenues of research.

How is the demand for workers changing?

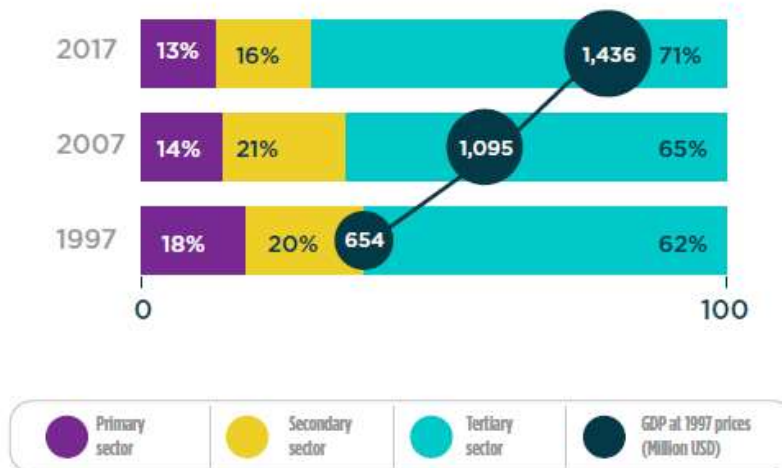
Service industries have become vital for Belize's economy. Belize is a small country with a small economy traditionally based on primary sector activities (Figure 1). This has changed progressively as the contribution of the primary and secondary sectors to GDP decreased from 38 percent in 1997 to 29 percent in 2017 (Figure 1).⁶ Meanwhile, the contribution of services to the economy has grown in the past two decades, increasing from 62 percent in 1997 to 71 percent of GDP in 2017. The rise of the service sector is explained, for the most part, by the growth in exports of services, notably tourism and

⁶ In 2017, its GDP per capita was USD 4,806.5, below both the Central American (USD 5,483.3) and Caribbean averages (USD 5,560.9) (IMF, 2018). The primary sector includes agriculture and related activities, aquaculture, forestry, logging, milling, mining, and quarrying. The secondary sector includes manufacturing, construction, and supply of electricity, gas, and water. The tertiary (service) sector includes wholesale and retail trade, tourism, transportation, storage, communications, financial intermediation, real estate, government services, and community, social, and personal services.

business process outsourcing (Martin, 2015). Although this shift toward services is a worldwide phenomenon associated with economic development,⁷ the value added of services in Belize is slightly higher than in LAC as a whole (68 percent) and even higher than in some high-income countries (World Bank, 2019c).⁸

The service sector has become the major source of employment for Belizean workers. In 1999, 45 percent of Belizean workers were employed in the primary and secondary sectors of the economy, which are dominated by citrus and sugar farming, construction, and manufacturing. Today, that proportion has decreased to 35 percent (Figure 2) with four of the five largest industries in terms of employment belonging to the tertiary sector. What happened? The jobs in agriculture and manufacturing have been replaced by jobs in transportation, communications, finance, real estate, government services, and tourism.

Figure 1: Service industries are becoming more important for Belize’s economy
Trends in GDP share by economic sector, 1997-2017



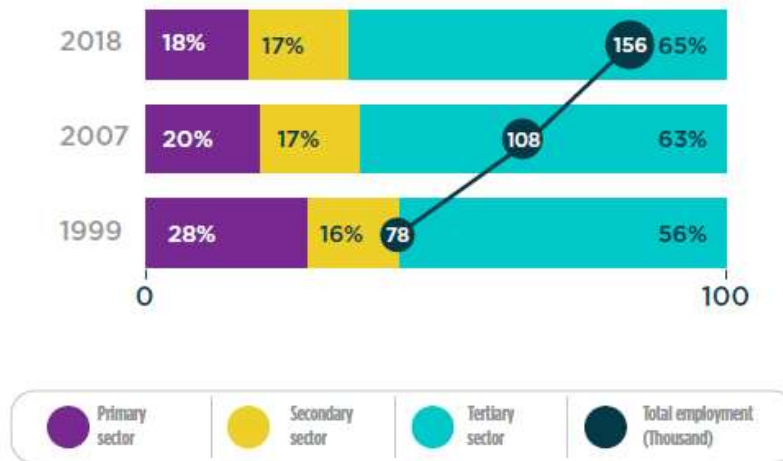
Source: Authors’ calculations based on Statistical Institute of Belize (SIB, 2019).

Note: The Primary sector includes Agriculture and Related Activities, Aquaculture, Forestry, Logging and Sawmilling and Mining and Quarrying. The secondary sector includes Manufacturing, Electricity, Gas and Water Supply and Construction. The tertiary sector includes Wholesale and Retail trade, Tourism, Transportation, Storage and Communications, Financial Intermediation and Real estate, Government Services and Community, Social and Personal Services.

⁷ The reallocation of economic activity across sectors that accompanies the process of economic growth is called “structural transformation.” It is a consequence of economic development (Levy Yeyati and Pienknagura, 2014) often caused by an increase in the demand for services as economies become richer, a larger outsourcing of services that manufacturing firms previously produced in-house (Schettkat and Yocarini, 2003), or the outsourcing of manufacturing work to less-developed countries (Freeman, 1995).

⁸ The services value added was around 61 percent in the European Union in 2017 (World Bank, 2019c).

Figure 2: Employment in services grew by 9 percentage points in two decades
Trends in share of employment by economic sector, 1999-2018



Source: Authors' calculations based on Belize's Labor Force Surveys (LFS) of April 1999, 2007 and 2018 (SIB, 2017a, 2017b and 2018).

Note: The Primary sector includes Agriculture and Related Activities, Aquaculture, Forestry, Logging and Sawmilling and Mining and Quarrying. The secondary sector includes Manufacturing, Electricity, Gas and Water Supply and Construction. The tertiary sector includes Wholesale and Retail trade, Tourism, Transportation, Storage and Communications, Financial Intermediation and Real estate, Government Services and Community, Social and Personal Services.

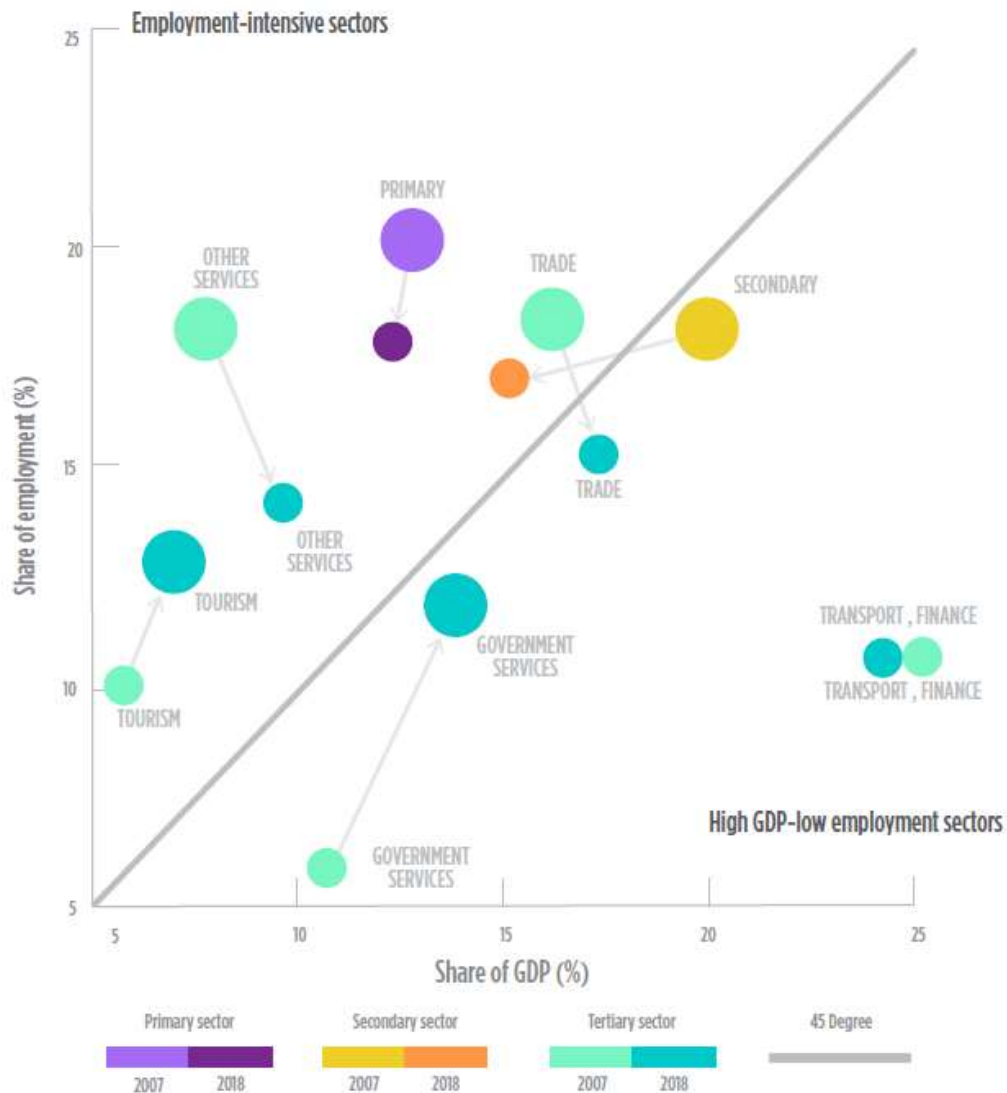
However, not all industries in the service sector increased their share of employment. Figure 3 summarizes the ongoing shift of the economy, highlighting the contraction of the primary and secondary sectors in both their value added and their importance as sources of employment. It provides a visual representation of one decade of changes in Belize's economy (2007–2018) and the impact of those changes on employment creation by sector of activity (the tertiary sector is disaggregated into five industries).

Industries falling above the gray line (45 degrees) are employment-intensive—that is, they account for a larger fraction of employment relative to their contribution to GDP. In these sectors, small changes in the sectoral composition of the economy have large repercussions on employment. Over the past decade, tourism and government services were the most dynamic sectors, increasing their contribution to GDP and to employment. These two industries present a high potential for the Belizean economy. During the same period, “other services,” while remaining employment-intensive, increased their share of GDP but became significantly less important as a source of employment.

Industries below the gray line provide fewer jobs relative to their overall value in the economy. Transport, finance, and real estate make the largest contribution to GDP (close to 25 percent), but their contribution to employment has remained constant for the past decade at around 10 percent. During this decade, trade has increased its importance to the economy, but the share of employment has decreased, moving trade into the category of a high GDP-low employment sector.

Belize’s economic development has affected women’s participation in the labor force. As medium-income economies transition into high-income economies, women tend to increase their labor-force participation (Verick, 2014). In Belize, women’s participation increased by some 15 percentage points over the past two decades, reaching 52 percent in 2018, while male participation rate remained constant at 78 percent (Table 10, Appendix B). While this increase in women’s labor force participation is positive, important challenges remain. As discussed in the next section, women have a significantly higher unemployment rate than men, and they are paid less for the same work.

Figure 3: Tourism and Government Services were the most dynamic sectors in the last decade
Share of GDP and employment by industry, 2007 - 2018



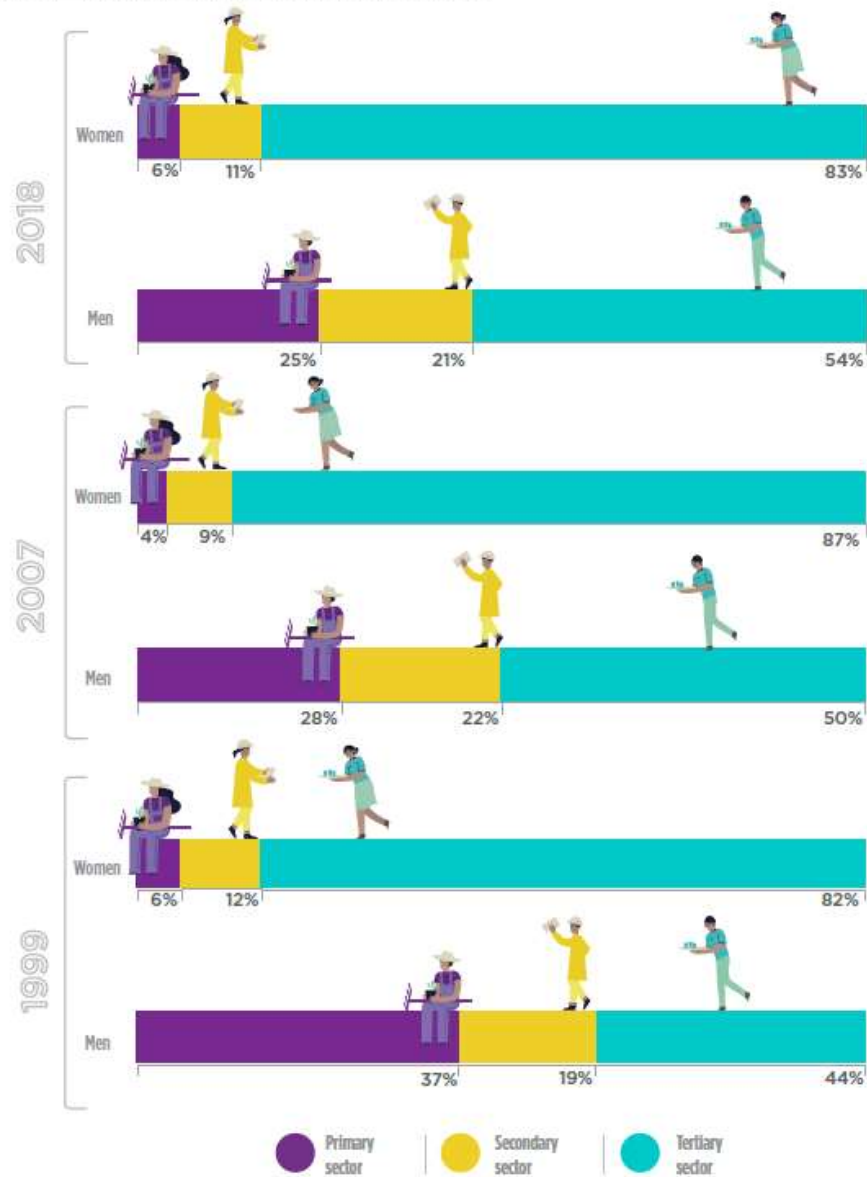
Source: Authors’ calculations based on Belize’s LFS of April 2007 and 2018 and Statistical Institute of Belize (SIB) data (SIB, 2017b, 2018 and 2019).

Note: The Primary sector includes Agriculture and Related Activities, Aquaculture, Forestry, Logging and Sawmilling and Mining and Quarrying. The secondary sector includes Manufacturing, Electricity, Gas and Water Supply and Construction.

Even though most employed Belizean women work in the tertiary sector, **the observed increase in employment in that sector in the last decade was driven mainly by men switching industries.** As shown in Figure 4, there is a clear pattern of gender specialization by industry in Belize. In 1999, 56 percent of employed men worked in the primary and secondary sectors, while over 80 percent of women already worked in the tertiary sector. A decade later 87 percent of women worked in the tertiary sector. However, in the last decade, men, not women, increased their tertiary sector employment share, rising from 50 percent in 2007 to 54 percent in 2018.

The dramatic changes in the composition of the economy and the associated shift in the demands from the labor market have important implications for education and training. It is no longer enough to train for manufacturing and agricultural work. Compared with what was required in the past, the new Belizean economy demands a higher level of education from its workforce. While the primary and secondary sectors of the economy rely heavily on workers without complete secondary education (75 percent), the tertiary sector demands higher qualifications, which is reflected in the lower proportion in that sector of workers without complete secondary education (40 percent).

Figure 4: Men accounted for most of the shift to services over the past decade
Share of employment by economic sector and sex, 1999, 2007 and 2018



Source: Authors' calculations based on Belize's LFS of April 1999, 2007 and 2018 (SIB, 2017a, 2017b and 2018).

Note: The Primary sector includes Agriculture and Related Activities, Aquaculture, Forestry, Logging and Sawmilling and Mining and Quarrying. The secondary sector includes Manufacturing, Electricity, Gas and Water Supply and Construction. The tertiary sector includes Wholesale and Retail trade, Tourism, Transportation, Storage and Communications, Financial Intermediation and Real estate, Government Services and Community, Social and Personal Services.

Who is the Belizean worker?

The average Belizean worker is male, low-skilled, mestizo, employed in the tertiary sector, and earns USD 610 per month. In this section we show how the profile of the typical worker in Belize changes depending on location, ethnicity, and gender. All of these variables affect the level of formal education that a given worker is likely to have.

Educational opportunities are far from being evenly distributed among population groups.⁹ Most workers have a low level of formal education. Close to 60 percent of the population 14 years and older has at best some secondary schooling; only 17 percent have some higher education (SIB, 2018).¹⁰ Belize's education figures are similar to other countries in the LAC region,¹¹ but low compared with the average for countries of the Organisation for Economic Co-operation and Development (OECD). Data from 2017 reveal that only 20.7 percent of the OECD population between 25 and 64 years old has less than a secondary education, less than half the value in Belize for the same age group. Meanwhile, 36.9 percent of the OECD population has some higher education (OECD, 2018), roughly double the rate in Belize.

Female workers have higher levels of education than their male peers. Almost 60 percent of the population with some university education are women.¹² As a result, the share of the female labor force with some higher education is markedly higher (29 percent) than the corresponding share of the male labor force (16 percent).¹³

There are large geographic differences in the skill profiles of the population. The Belize District and Cayo, the country's two most populated districts, have the largest shares of secondary school graduates (56 and 44 percent, respectively, of the districts' population). In the other four districts, about 70 percent of the population has less than a complete secondary education.¹⁴ Belize District concentrates the largest fraction of the population with higher education. A quarter of its population has some higher education, above the national average of 17 percent (Figure 5).

⁹ Of 172,086 Belizean workers, 102,192 (60 percent) are male and 101,593 (60 percent) work in the tertiary sector (Table 11, Appendix B). This description includes only workers who reside in Belize. In 2000, about 50 percent of Belizeans with complete secondary education and some higher education migrated to other countries, with migration of low-skilled workers being significantly lower, at less than 4 percent (Docquier and Marfouk, 2004). Migration of skilled workers is estimated to have reached 65 percent in 2007 (Lozano-Ascencio and Gandini, 2012).

¹⁰ The values are similar for the population between 25 and 64 years old: Close to 62 percent have not yet completed secondary education, and only 19 percent of workers have some higher education.

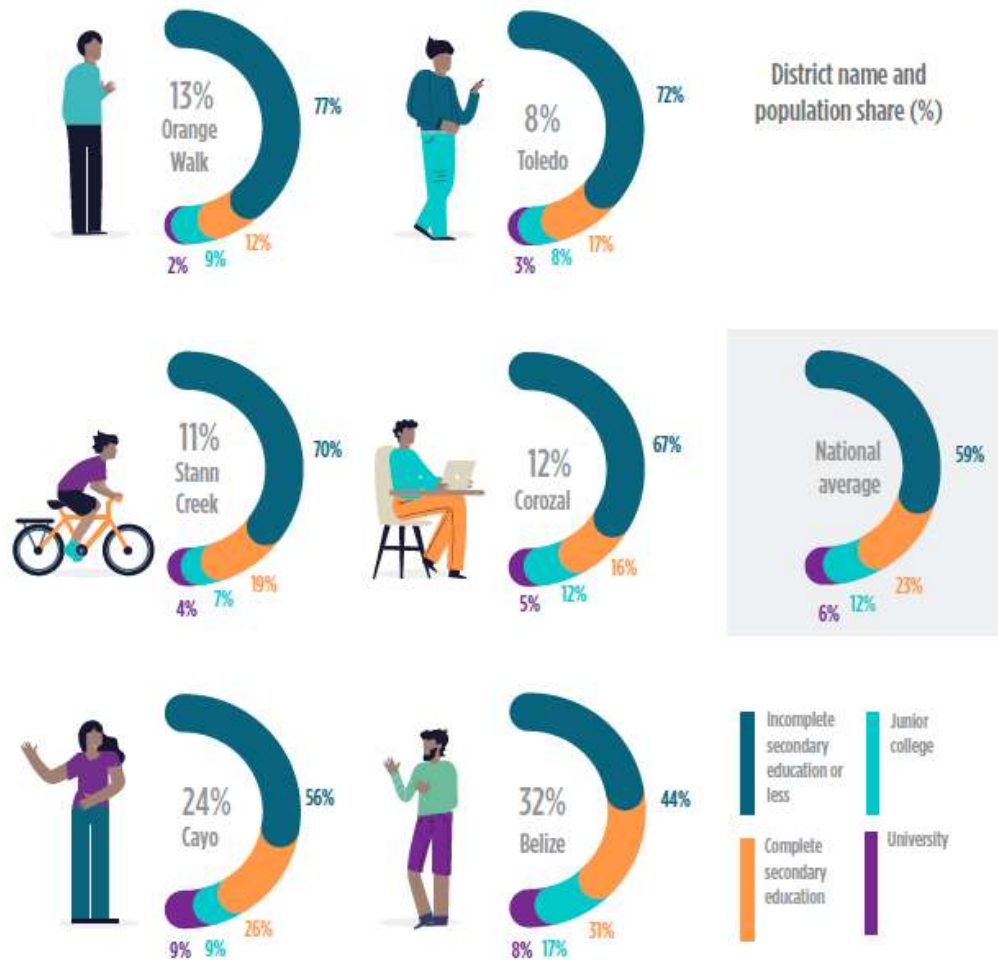
¹¹ In LAC, the average population between the ages of 18 and 20 that has completed secondary school is 49 percent (CIMA, 2019), compared with 53 percent in Belize. Belize's secondary completion rate is significantly higher than in Guatemala (30 percent) and slightly higher than in Costa Rica (48 percent).

¹² This is a global phenomenon. In 80 percent of countries with available data there are more female postsecondary graduates than male (UNESCO, 2018).

¹³ Female labor-market participation in Belize is similar to that of other Latin American countries. Of women between 25 and 54 years of age, 65 percent participate in the labor force. This is equal to the 2012 regional average of 65 percent and higher than the rate in Guatemala, Honduras, and the Dominican Republic (Gasparini and Marchionni, 2015).

¹⁴ As expected, workers in these districts are employed in primary and secondary industries. In fact, nearly 44 percent are employed in the primary sector.

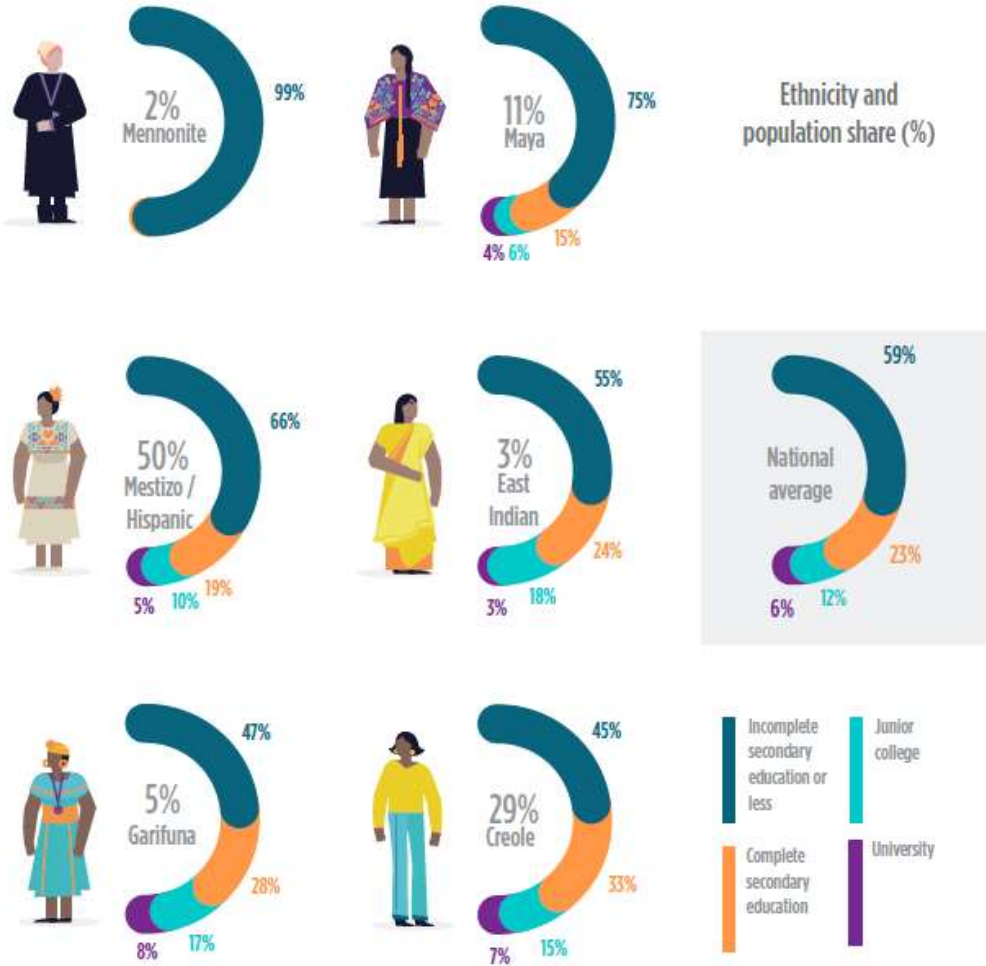
Figure 5: The most educated workers are in Belize District and Cayo
Share of population by education level and district



Source: Authors' calculations based on Belize's LFS of April 2018 (SIB, 2018).

Ethnicity is also correlated with the level of education of workers. Belize's Creoles, Garifuna, and East Indians have the highest levels of formal education of the country's six officially recognized ethnic groups, as a fifth of these populations has some higher education (above the 17 percent national average, Figure 6). At the other end of the spectrum, only 5 percent of Mennonites have completed secondary school. In all ethnic groups except Mennonite, women have higher education levels than men. For example, 10 percent of Creole women have some higher education, compared with 3.8 percent of men.

Figure 6: Different ethnicities have very different education levels
 Share of population by education level and ethnic group



Source: Source: Authors' calculations based on Belize's LFS of April 2018 (SIB, 2018).

Wages also differ across ethnicities. For example, Mayan high school and higher education graduates receive lower wages than Creoles with the same level of education. On average, Creoles and Garifuna receive the highest wages, while Mayans and Mestizos/Hispanics receive the lowest.

What happens in the labor market?

The educational attainment of the population is an important driver of labor-market outcomes. Education increases the likelihood of participating in the labor force, being employed, and earning higher wages; in some cases, education guards against unemployment. In this section we explore the relationship between educational attainment and labor-market outcomes in Belize. We also show how the disparities observed in educational attainment further affect opportunities to succeed in the labor market.

Gender and age matter for labor-market success

Education increases **labor-market participation for both men and women**. Individuals with higher education are about 25 percentage points more likely to participate in the labor market than individuals with less than a complete secondary education (Figure 7). Women's participation rates are lower than men's at all levels of educational attainment.

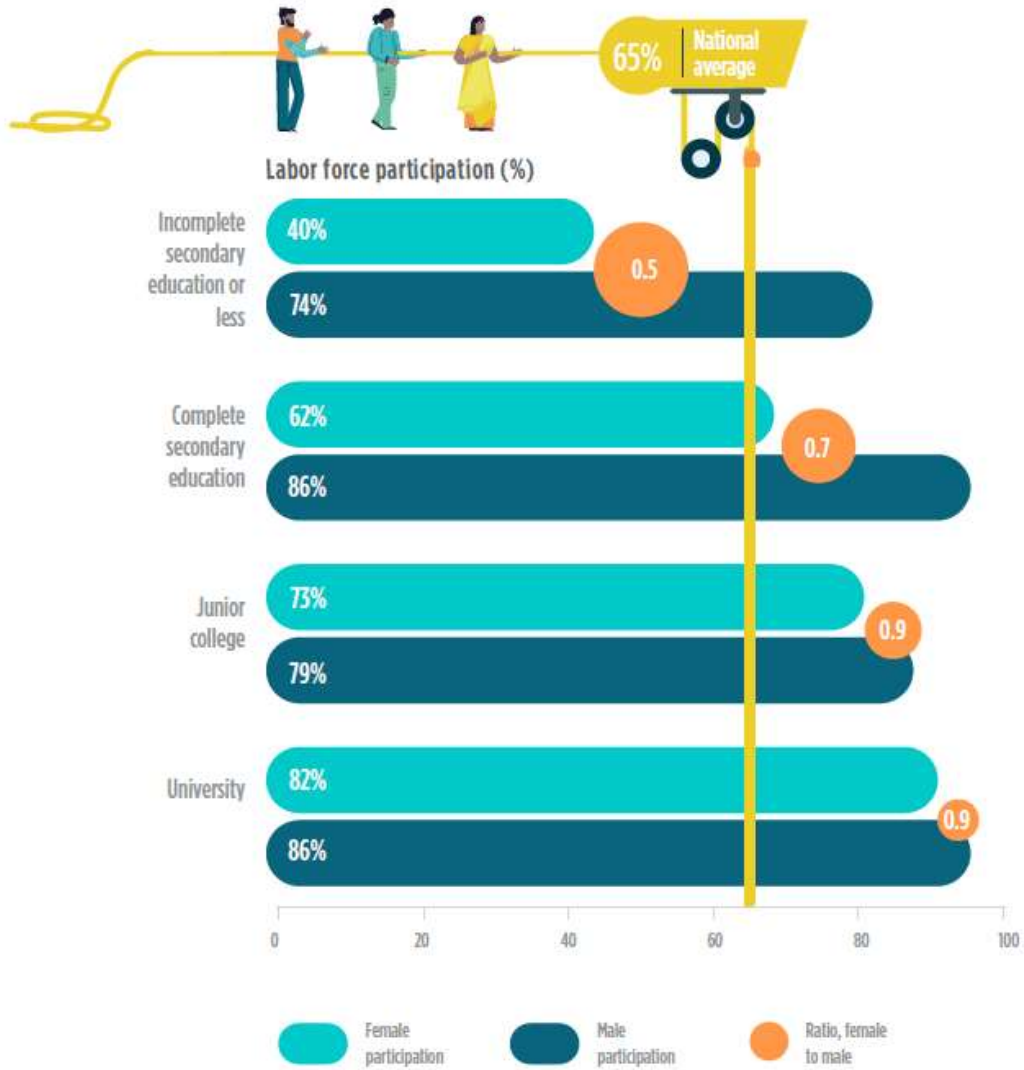
As women achieve higher levels of education, the gender gap in labor-market participation closes. The gender gap is 34 percentage points for workers who did not complete secondary school but drops to 20 percentage points among workers who did. Among workers with higher education, the gender gap in labor-force participation narrows to less than 5 percentage points (Figure 7).

The low labor-force participation of women with low levels of formal education is largely explained by household responsibilities. About half of women with less than higher education report that the main reason for not participating in the labor market is personal and family responsibilities. This figure is around 3 percent for men with the same level of education.

Women's chances of being employed increase more rapidly with education than do men's, with the largest employability gaps occurring at the lowest levels of formal education. At every level of education, the employment rate for men is always at least 70 percent, whereas the employment rate for women rises from 33 to 77 percent from the primary to tertiary level of education. Even at the highest education level, women's rate of employment remains 8 percentage points below the rate of their male peers (Figure 8).

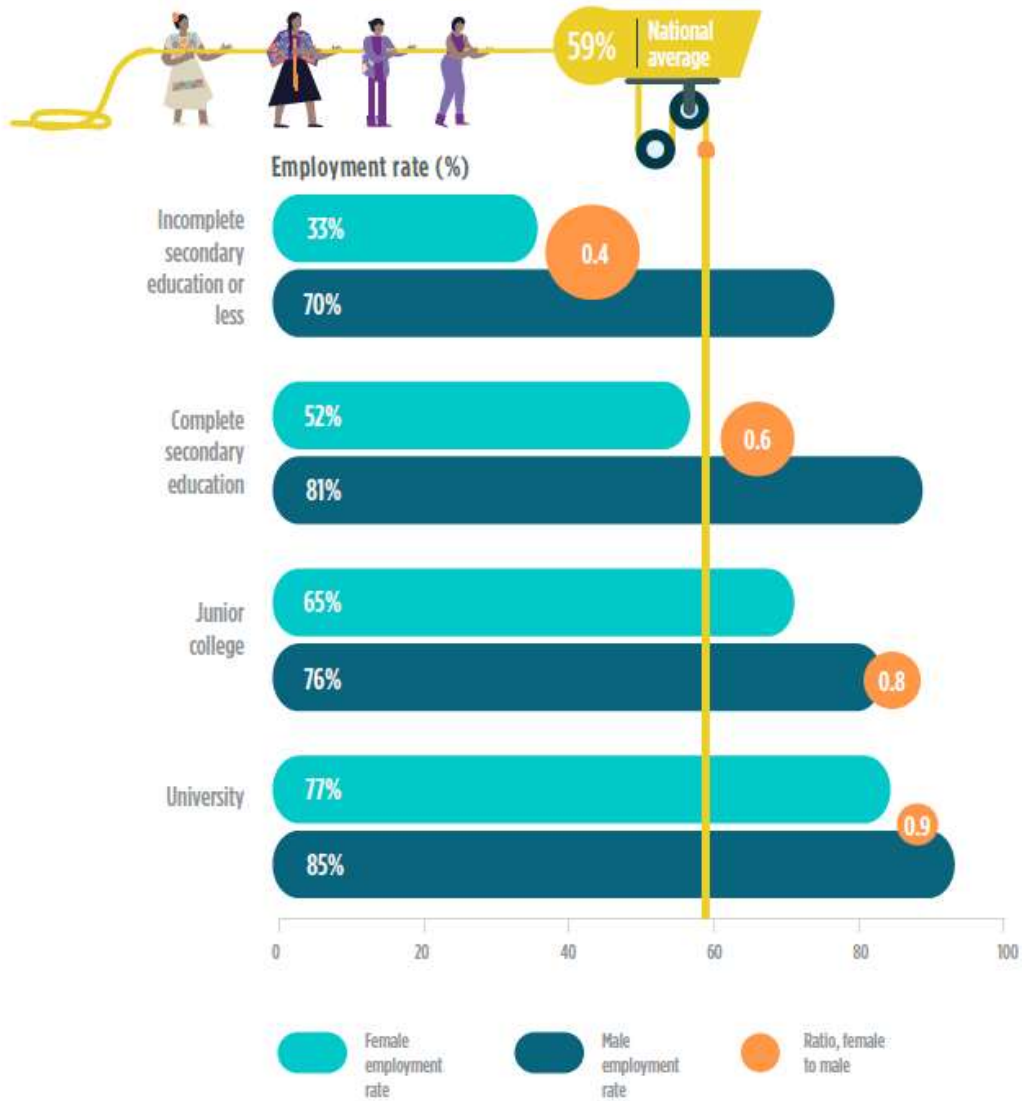
The gender unemployment gap is large, and education does not help close it. The unemployment rate for women is three times as high as for men. Although women have higher unemployment rates than men throughout LAC, in Belize the gap is particularly pronounced. Only Belize and the Dominican Republic have female unemployment rates more than double those of men. Although, the unemployment rate decreases as education rises for both men and women (Figure 9) unemployment rates are always higher for women.

Figure 7: Women's labor-market participation increase with education more than men's
 Participation in the labor force by education level and gender



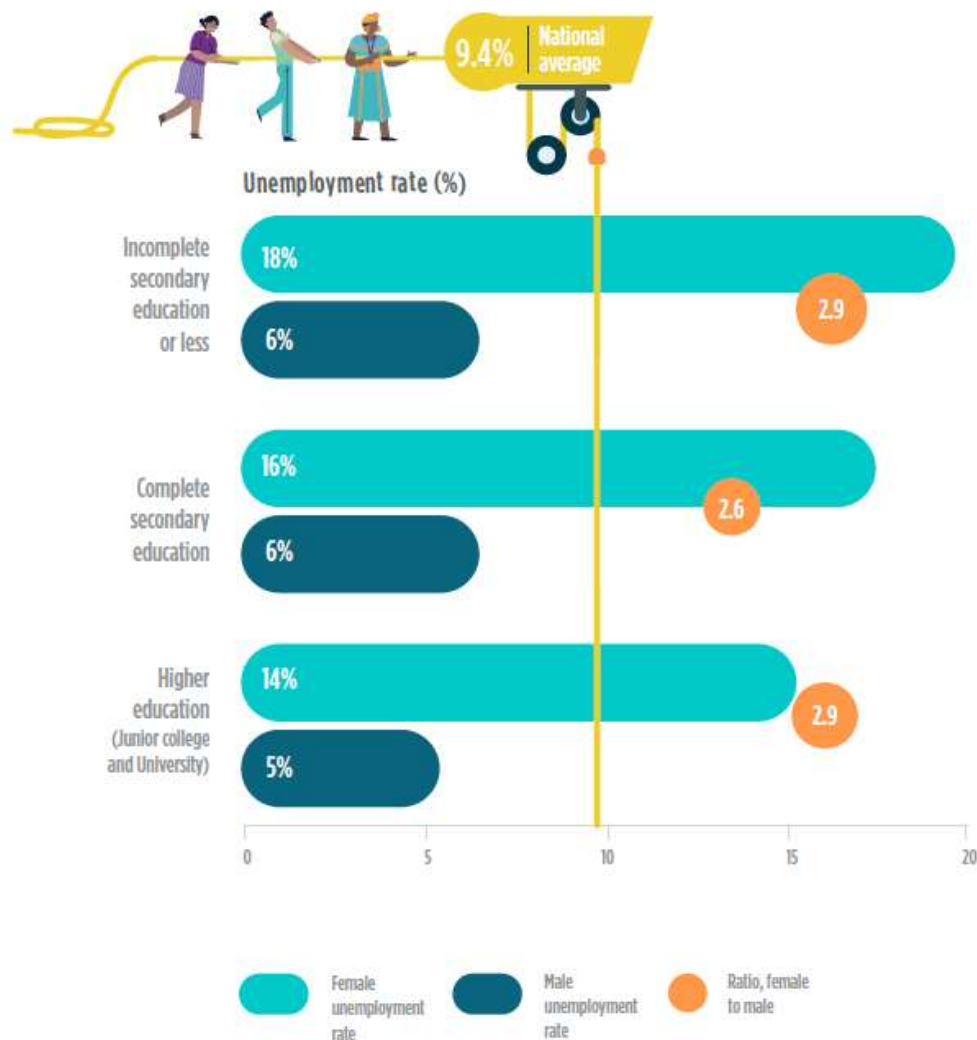
Source: Authors' calculations based on Belize's LFS of April 2018 (SIB, 2018).

Figure 8: Women's employment rate increases with education more than men's
 Employment rate by education level and gender



Source: Authors' calculations based on Belize's LFS of April 2018 (SIB, 2018).

Figure 9: Women’s rate of unemployment is three times that of men
 Unemployment rate by education level and gender



Source: Authors’ calculations based on Belize’s LFS of April 2018 (SIB, 2018).

Age has an impact on labor-market success. Belize’s youth unemployment rate is about twice the OECD average of 11 percent (OECD, 2018b), and more than 3.5 times the unemployment rate for Belizean workers 25 and older (5.7 percent). This suggests that, in Belize, young workers have a harder time entering the job market than in OECD countries.

Education and gender matter for wages and sector of employment

The relationship between schooling and wages is one of the most studied and accepted labor-market phenomena among economists and social scientists: Better-educated people earn higher wages (see, e.g., Shultz, 1960; Becker, 1964; Griliches, 1970; Mincer,

1974; Card, 1999; and many more). In this section we explore this relationship in Belize, with a focus on the differences between women and men.

Education is the path to higher-paying jobs (Table 1). The average monthly income of workers increases with their level of education. Workers with higher education receive average wages that are almost three times than those of workers who did not complete secondary school.

Table 1: Average wages increase with education, but there is a gender wage gap
Average monthly income by education level and gender

Education level	Average monthly Income (USD) by gender and education level			
	Females	Males	All	Ratio, female to male
Incomplete secondary education or less	379	525	481	0.72
Complete secondary education	558	681	629	0.82
Junior college	776	835	804	0.93
University	1,214	1,297	1,253	0.94
Other	214	-	214	-
All	577	628	609	0.92

Source: Authors' calculations based on Belize's LFS of April 2018 (SIB, 2018).

The returns to schooling in Belize are high (Figure 10).¹⁵ The average return to an additional year of education in Belize is 10.2 percent, higher than both the global average (8.8 percent) and the LAC average (9.6 percent).¹⁶ By level of education, the rate of return

¹⁵ The rate of return on education is a good summary of the costs and benefits associated with investing in education. It is expressed as an annual (percentage) yield, similar to that quoted for savings accounts or government bonds (Psacharopoulos and Patrinos, 2018). Additionally, the return on schooling takes into account differences in workers' characteristics (such as work experience), for a more accurate measurement of the individual benefit from education.

¹⁶ The global average is calculated in Psacharopoulos and Patrinos (2018) based on 705 estimates for 139 countries over the years 1950 to 2014. The estimate for LAC was computed in Busso et al. (2018) using data (mostly from around 2014)

is about 40 percent for secondary education,¹⁷ slightly smaller than the LAC average of 45 percent (Bassi et al., 2012); it increases to around 110 percent for university education. The magnitude of these wage returns shows reveals **an individual economic incentive to complete higher levels of education.**

Figure 10: Women’s returns to education are larger than men’s
Average returns (percent) to various levels of education, compared with average wages earned by those who did not complete secondary school (by gender)



Source: Authors’ calculations based on Belize’s LFS of April 2018 (SIB, 2018).

Notes: Each dot above shows the coefficient in a Mincer-type regression of the natural logarithm of the hourly wage on education level indicators, potential experience (age minus estimated years of education minus age at which schooling starts) and potential experience squared (Card, 1999). The circles show the 95% confidence interval. They represent the percentage increase in average hourly wage of completing a given education level with respect to not completing secondary education.

Although a gender wage gap exists in Belize’s labor market, it shrinks with education. Women’s wages are, on average, lower than men’s at all levels of education (Table 1).¹⁸ Among workers who did not complete secondary school, the gender gap in

from Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Uruguay, and Venezuela.

¹⁷ This means that the expected wage after completing secondary school is the expected wage if the worker had not completed secondary school, plus an additional 40 percent.

¹⁸ Compared with other countries in the region, Belize’s gender wage gap is not great. Belize’s women earn 92 percent of men’s average monthly salary, compared with the LAC average of 77 percent.

monthly income is 28 percentage points; it falls to 6 percentage points among workers with a university degree.

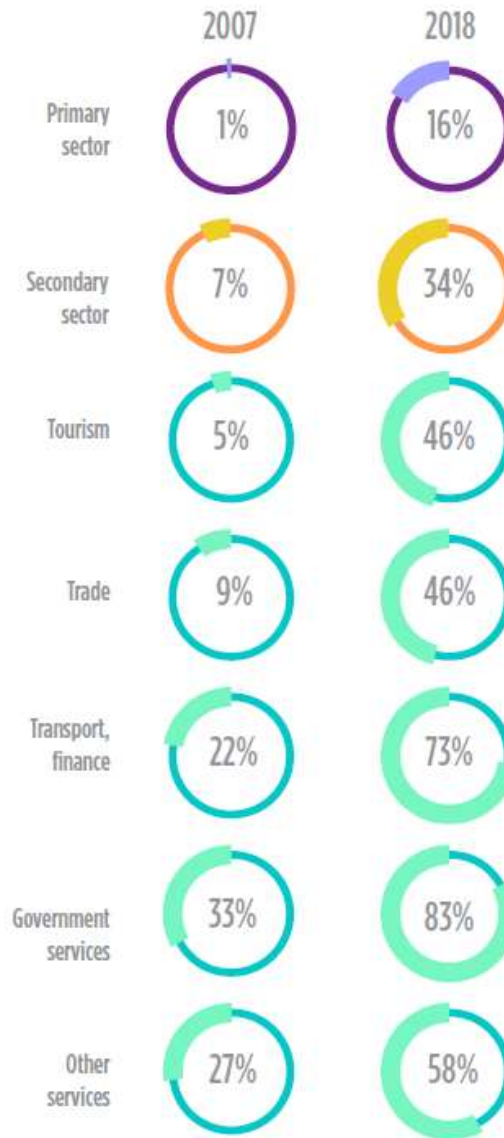
As a result, **women's returns to education exceed those of men at all education levels**. The return on completing high school is around 45 percent for women, compared with slightly over 30 percent for men. For university education, the return to schooling is 120 percent for women and around 90 percent for men. This suggests that **women's economic incentives to complete higher levels of education are even stronger than men's** and that education is a good investment for women and girls. As such, it should be a development priority.

Education also affects industry of employment. Industries in the tertiary sector tend to employ people who have at least a complete secondary education, with 60 percent of workers fitting this description in 2018. In contrast, industries in the primary and secondary sectors account for half of the labor force with less than a complete secondary education.

Over the past decade, the share of educated workers increased in all industries and economic sectors (Figure 11), with a corresponding decrease in the share of workers with less than secondary education. These dynamics show that **education is becoming more important in Belize's labor market**, particularly in high-growth sectors such as government services, tourism, and trade.¹⁹

¹⁹ Within the service sector, some industries have higher education requirements, as in the case of government services and financial intermediation and real estate. In these industries, workers with higher education represent the largest share of workers within all education groups.

Figure 11: All industries increased their demand for educated workers in the last decade
Share of workers with complete secondary education or higher



Source: Authors' calculations based on Belize's LFS of April 2007 and 2018 (SIB, 2018).

Note: The Primary sector includes Agriculture and Related Activities, Aquaculture, Forestry, Logging and Sawmilling and Mining and Quarrying. The secondary sector includes Manufacturing, Electricity, Gas and Water Supply and Construction.

The higher demand for educated workers is also reflected in within-industry wages.

As shown in Figure 12, average wages increase with education in all industries. Furthermore, the industries with the largest shares of educated workers (over 50 percent having at least completed secondary school) offer higher wages for workers with higher education and present the largest differential in wages between workers with low and high levels of education. These differentials could be signaling an unsatisfied demand for highly skilled workers, as well as structural differences in the type of occupations and wages available within those industries.

Figure 12: Wages increase with education in all industries
Average monthly income by education level and industry



Source: Authors' calculations based on Belize's LFS of April 2018 (SIB, 2018).

Note: The Primary sector includes Agriculture and Related Activities, Aquaculture, Forestry, Logging and Sawmilling and Mining and Quarrying. The secondary sector includes Manufacturing, Electricity, Gas and Water Supply and Construction.

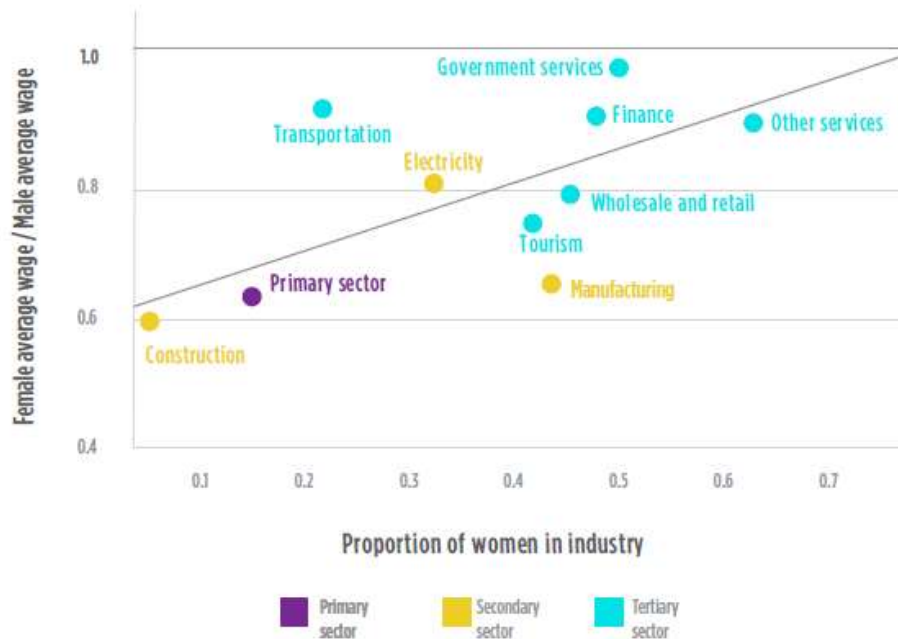
Industries employing larger shares of women tend to have lower gender wage gaps.

As shown in Figure 13, the wage gap decreases as the share of women in the industry increases. The two extremes are construction and other services.²⁰ Given that women in

²⁰ The wage gap in the transportation, storage and communications sectors is relatively small, given the small proportion of women in these industries. There are two possible reasons for this. First, women and men are employed in different occupations within these industries. While 43 percent of men are plant and machine operators and assembly workers, 47 percent of women are in elementary and services occupations. Consequently, women's occupations within these industries

Belize tend to have more education than men in all industries,²¹ the wage gap within certain industries and education levels may be even larger than the average gap.

Figure 13: Women opt for industries with lower gender wage gaps
Wage gap by proportion of women in industry



Source: Authors' calculations based on Belize's LFS of April 2018 (SIB, 2018).

Note: Graph excludes a salary outlier for women working in the transportation, storage, and communications sectors (see footnote 21). The Primary sector includes Agriculture and Related Activities, Aquaculture, Forestry, Logging and Sawmilling and Mining and Quarrying. The secondary sector includes Manufacturing, Electricity, Gas and Water Supply and Construction.

Field of study matters

Belize's workers are trained in humanities and social science rather than science, mathematics, technology, and engineering (STEM). While 17 percent of population with a higher education degree held a degree in STEM fields in 2010, almost 60 percent of population with higher education had specialized in social sciences and humanities (Table 2). Only a third of those individuals specialized in a STEM field, were women. Among social science, the most common specialization among both men and women with higher education is Management and business administration, accounting for 19 percent of population with this level of education in 2010. The second most common specialization

are likely to be better paid than men's occupations. Second, women in these industries are more likely to be employed in private sector companies, which are more likely to be related to tourism. These firms may have larger salaries than, for example, public sector transport companies.

²¹ The only exceptions are tourism and electricity, gas and water, where men are relatively more educated than women.

is Training for teachers at basic levels (7 percent). However, while 10 percent of women study Training for teachers at basic levels only 4 percent of men do.

Table 2: Workers with higher education in STEM fields command higher wages
Shares of graduates in STEM and non-STEM fields, and average monthly income of both groups, 2010

Field	Share of graduates (%)	Average monthly wages (USD)
STEM	17.0%	970.14
Non-STEM	83.0%	918.08

Source: Authors' calculations based on Belize's Census of April 2010 (SIB, 2017).

The overwhelming predominance of social science and humanities is unfortunate, since **the labor market demands STEM specializations**. In 2010, workers with STEM specializations earned wages that were 6 percent higher, on average, than those in other fields. For example, individuals with a degree in engineering earned, on average, about 20 percent more than workers with a degree in business or administration.

However, **even in relatively high-paying STEM fields, women are shortchanged**. The gender wage gap is higher in STEM specializations than in other fields. The average woman with a non-STEM degree earns 95 cents for every dollar a man earns, but the average woman with a STEM-related specialization makes only 90 cents for every dollar a man makes (Table 3). A possible explanation is that women with STEM specializations opt out of STEM occupations at a higher rate than men (Jiang, 2018). In 2010, most employed women with higher education STEM degrees worked in social sectors, such as education and health, while men with similar degrees tended to work more often in technical industries, such as Information and communication and Manufacturing and in governmental services (SIB, 2017).

This means that when we compare wages of men and women with tertiary STEM degrees, we contrast workers in different industries, which may lead to an artificially higher gender wage gap.

Table 3: The gender wage gap is wider among workers with STEM degrees
Wages earned by male and female with STEM degrees

Field	Women's average monthly Income (USD)	Men's average monthly Income (USD)	Ratio of average wages, women to men
STEM	878.68	974.32	0.90
Non-STEM	871.22	920.46	0.95
Total	871.91	933.53	0.93

Source: Authors' calculations based on Belize's 2010 Census (SIB, 2017).

Is there a skills mismatch in Belize?

In the previous sections, we analyzed the skills gap in Belize using available sources of information. We described employment trends by economic activity; profiled the typical worker; presented differences in educational attainment by gender, location, and ethnicity; and tracked the results observed in the labor market. We showed that higher levels of education are correlated with increased labor-market participation, lower unemployment, and higher salaries. For women, being more educated narrows the gap between their wages and men's. In this second part of the study, we complement the study with employers' reports of the skills they seek in workers and compare those reports with the skills developed in education and training institutions.

To document the demand for skills, we invited all of the employers in Belize's national registry of employers (maintained by the country's Chamber of Commerce and Industry) to participate in structured interviews (Villarzú et al., 2018). The response rate was 25 percent, for a total of 30 employers. The majority (80 percent) were private sector firms; the remainder public sector employers. The respondents cover the spectrum of economic sectors and firm sizes and include Belize's largest industries (see Table 12 in Appendix B).²² To the best of our knowledge, our survey is the only source of information on the skills demands of employers in Belize.

²² Although the survey is not representative of the universe of companies in Belize, the distribution of participating companies mimics the distribution of employment by economic sector. Specifically, 17 percent of our respondents belong to the primary sector, which employs 18 percent workers. Similarly, 17 percent of participating employers belong to the secondary sector, this sector employs 17 percent of workers. Finally, 66 percent of our respondents are employers in the tertiary sector, which employs 65 percent of workers. Additionally, firms of all sizes are represented, with 16 percent of employers being large firms, 26 percent median-size firms, 23 percent small firms and 33 percent microenterprises (Villarzú et al., 2018).

In parallel with the employer survey and to explore the supply of skills, all of Belize's educational institutions were invited for interviews. Here, the response rate was 71 percent.²³ Most of the surveyed institutions are high schools; two provide technical and vocational education and training (TVET); and four are postsecondary institutions (see Table 13 in Appendix B).

What skills do employers want?

The shift of Belize's economy toward services, and away from agriculture, manufacturing, and construction, has implications for the skill set required of workers. But precisely what skills do workers need to thrive in today's service-driven Belizean economy? And what skills will workers need in the future if the country, as the government intends, shifts toward a more innovation-driven economy? In Table 4 we have organized the abilities that Belizean employers identify as critical for success in their firms.²⁴ They are described further below.

The abilities that are in highest demand by employers in Belize are those needed to face the fourth industrial revolution: teamwork, social skills, communication, responsibility,²⁵ and digital abilities.²⁶ These are skills that make workers flexible, and able to adapt to changes in work requirements.

Employers sent a clear and loud message that soft skills are paramount to all industries. While teamwork is mentioned by employers in all industries, social skills and communication are highlighted by employers in services industries, particularly in tourism, manufacturing, and agriculture (particularly agricultural jobs that require higher education). Attitude (e.g., customer service) is sought after for jobs that require less than higher education and is in particular demand by firms in the tourism industry. Commitment (a hardworking and dependable employee) is reported as relevant only among employers who contract workers with less than higher education, particularly in manufacturing.

²³ In 2017–2018 there were 79 education institutions in Belize, including 59 secondary schools (high schools), 11 junior colleges, 3 universities, and 6 vocational institutes (ITVETs/CET). In Appendix A we present a detailed description of Belize's education system.

²⁴ Those skills fall into five categories representing the 21st Century Individuals' Profile described in Mateo-Berganza et al. (2019). They are the "transversal" skills needed to thrive in the 21st century. The first four categories correspond to the four main challenges of the century as follows: (i) the fourth industrial revolution (artificial intelligence and automation); (ii) an aging population; (iii) climate change; and (iv) an increase in diversity fueled by increased migration flows and an extended recognition of disabilities. The fifth category comprises other abilities demanded by Belizean employers not included in the previous categories.

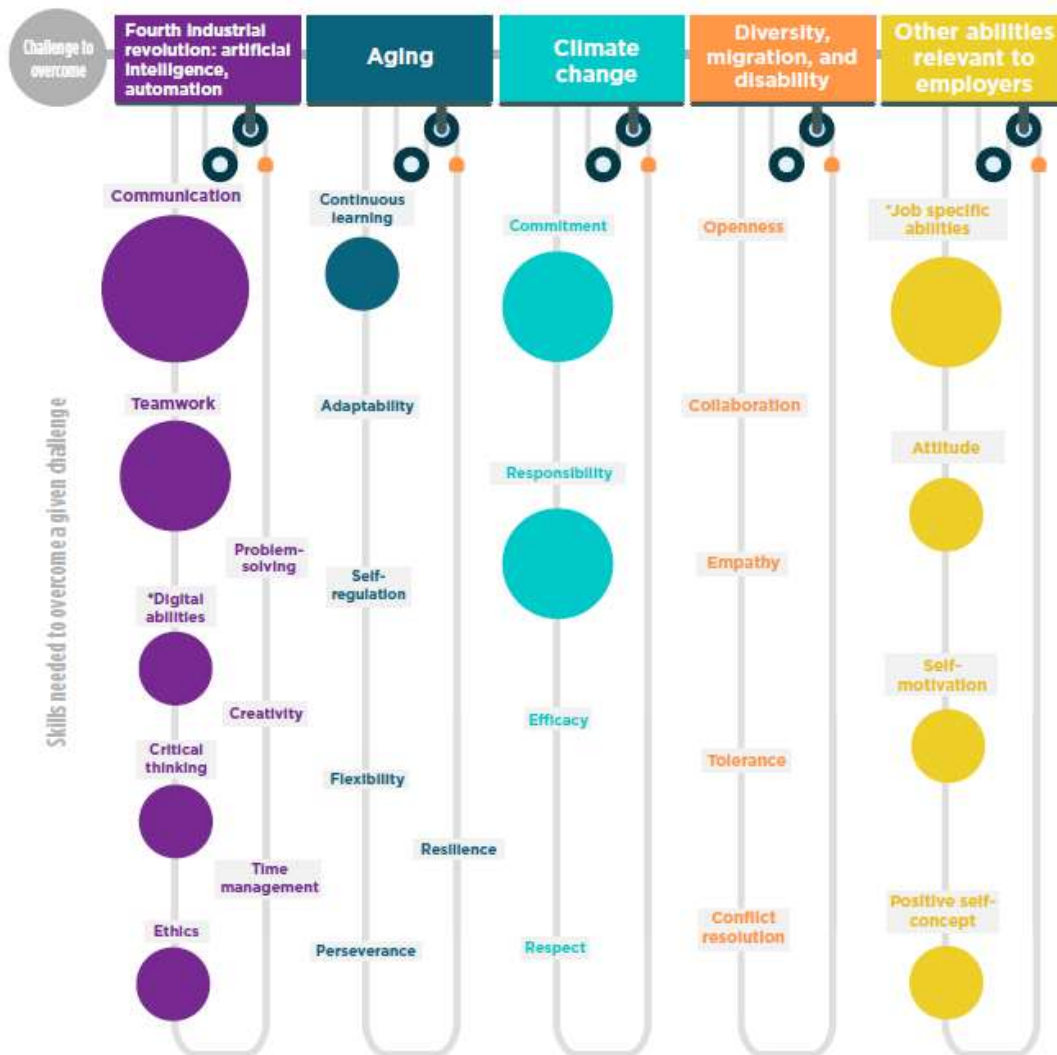
²⁵ Employers were asked to choose from a list the three most relevant soft skills needed for employees to be successful in their jobs. The complete list mentioned the following 10 skills: (i) social skills (i.e., interpersonal skills, people skills, politeness); (ii) higher-order skills (problem solving, analytical skills, decision-making); (iii) self-control (self-discipline, patience, ability to tolerate frustration); (iv) positive self-concept (self-esteem, self-belief, pride in their work); (v) communication (speaking, writing, expressiveness); (vi) hardworking and dependable (work ethic, diligence reliability); (vii) self-motivation (passion, desire to learn, self-direction); (viii) teamwork (compromise, collaboration); (ix) positive attitude (enthusiastic, enjoying the work they do); and (x) responsibility (i.e., accountability, ownership of the role).

²⁶ Digital skills were mentioned as the technical skill most needed by employers. In this case, employers were asked in an open question to mention the three most relevant skills.

Digital abilities are key in an increasingly data-driven future, in which the demand for workers with digital abilities will likely grow. Employers in a variety of industries mentioned information technology (IT) skills as among the most important technical skills that a worker in their firm should have. IT is often used by employers as an umbrella concept that encompasses basic digital skills such as computer literacy and “tech savviness,” as well as highly specific and technical skills such as system management or computer maintenance. Other technical abilities demanded by employers include a range of hard or job-specific abilities, such as financial management skills and agrobusiness skills.

Both technical and soft skills are identified by employers as key to developing new plans in their business, including future expansion.

Table 4: Employers demand skills to help them face the challenges of the 21st century
 Skills mentioned by employers as the most important for employees to have, larger circles indicate more-often-mentioned skills (see note)



Source: Developed by authors based on survey data in Villarzu et al. (2018).

Note: This table represents the number of times a given ability was mentioned in our survey to employers. Employers were asked to mention the three most important skills that a worker should have in the company. We had two separate questions, one for soft skills and another for technical skills. The larger the circle, the more often a given ability was mentioned. The largest circles represent 20% or more of all responses, followed by a slightly smaller size that represents a total amount of responses between 10 and 19%. Abilities not mentioned by employers do not have a circle. Classification based on Mateo-Berganza et al. (2019).

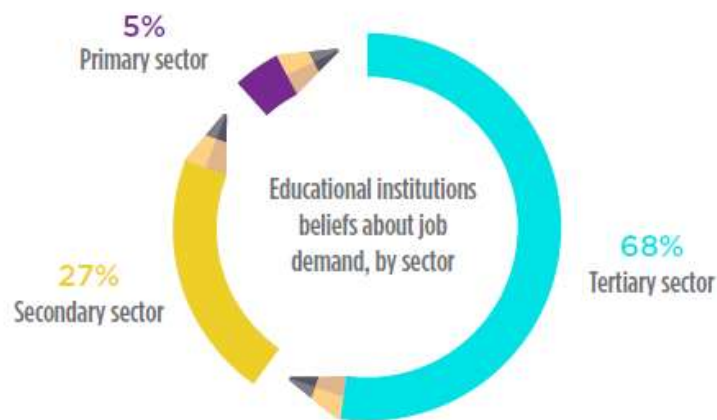
What skills do students learn?

High school is the last educational institution that most Belizeans attend. In 2018, 82 percent of the population had no higher education. After high school, students can either enter the labor market, enroll in a TVET institute, or attend a junior college or university. Details of Belize’s educational system can be found in Appendix A.

Educational institutions’ understanding of employment trends and the occupations most in demand in the labor market are basically accurate (Figure 14). Most institutions believe,

accurately, that the service sector exerts the highest demand for labor (68 percent).²⁷ TVET institutions report that electricians and other occupations in tourism and construction are currently in demand, while higher education institutions also mention occupations in services and IT.

Figure 14: Educational institutions have an accurate understanding of what jobs are in demand



Source: Villarzú et al. (2018) survey data.

Note: The Primary sector includes Agriculture and Related Activities, Aquaculture, Forestry, Logging and Sawmilling and Mining and Quarrying. The secondary sector includes Manufacturing, Electricity, Gas and Water Supply and Construction. The tertiary sector includes Wholesale and Retail trade, Tourism, Transportation, Storage and Communications, Financial Intermediation and Real estate, Government Services and Community, Social and Personal Services.

Although the labor-market expectations are largely accurate, **educational institutions generally fall short in teaching the skills that employers mention as the most relevant.** With regard to digital abilities in particular, a recent study from the International Labour Organization and the Belize Chamber of Commerce and Industry demonstrates that even at the postsecondary level, the few ICT-related programs available are not adequate to prepare students for middle-skilled jobs, especially in software, web development, and database networking.²⁸ The study highlights the need to invest in ICT skills development as early as elementary school. But the need for a strong skill development in STEM and digital areas at the secondary level goes beyond that, especially because less than 17 percent of the labor force in the country has completed higher education. These skills have been identified as “door openers” to the middle-skills

²⁷ The survey asked respondents to mention the five occupations or jobs that currently have the greatest demand in the labor market. The answers are very close to the current figures in 2018, as services accounted for 65 percent of jobs in 2018; tourism jobs, about 13 percent; and community services, 14 percent (SIB, 2018).

²⁸ Some programs in ICT and computer science are offered in the three universities in Belize (University of Belize, the University of West Indies, and Galen University) but only at the bachelor’s level. Furthermore, UWI does not offer any ICT programs locally. It is important to note that Wesley Junior College offers some programs in Web development and multimedia (at the associate level). The cited study from the International Labour Organization and the Belize Chamber of Commerce and Industry performed a qualitative content analysis of the ICT curriculum, contrasting it with work requirements and competences needed in occupations, following Mahmood (2003) and Pasipamire (2014).

market worldwide and can definitively meet the requirements of local employers, offering viable career and job opportunities to high school graduates.²⁹

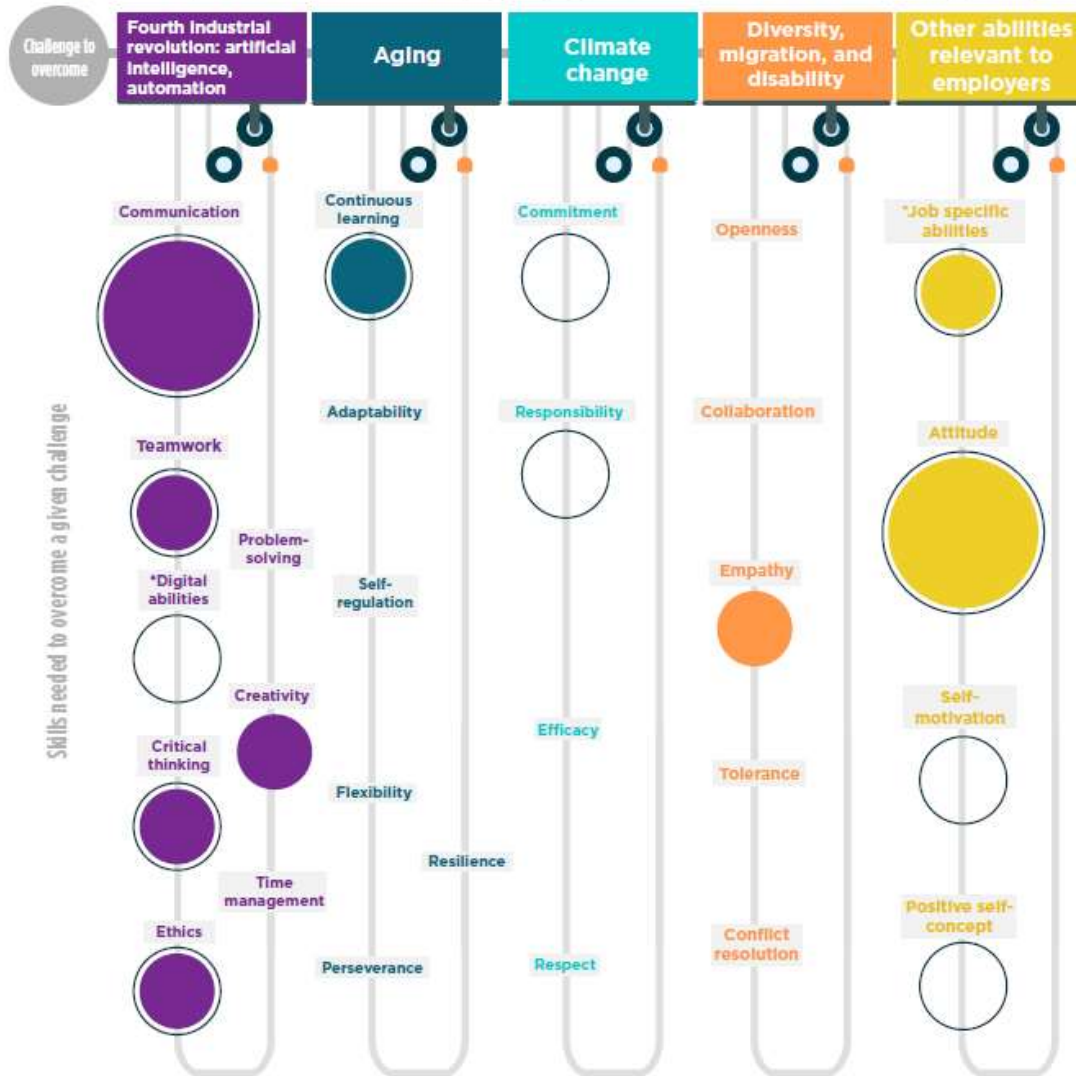
Training institutions mention having in their curriculums some of the soft skills demanded by employers. For example, almost all institutions report communication as a key skill developed in their programs. In addition, TVET institutions state that they emphasize attitude (e.g., customer service and positive attitude), ethics, professionalism, and empathy. Higher education institutions report that they teach critical thinking, continuous learning and creativity.

However, a gap exists between the demand for most soft skills and the supply of those same skills. In sharp contrast to employers—who cited teamwork as the most demanded soft skill—only one institution (a TVET institution) mentions teamwork as a transversal skill that they emphasize as a learning objective. Because the same is true for other skills, such as commitment and responsibility, educational programs (including TVET programs) need to be revisited, with a view to restructuring learning objectives and pedagogical approaches.

To prepare students to succeed in the labor market, Belize’s educational institutions should ideally focus on teaching skills relevant to employers, including soft skills—teamwork, communication, responsibility and commitment—and digital abilities. The differences between the abilities cited by employers and educational institutions indicates that the latter must make greater efforts to respond to labor-market demands.

²⁹ According to Bradley et al. (2017), digital skills serve three key functions for middle-skill job seekers: (i) as a door opener to the middle-skill market, which accounts for more than four million annual job postings in the United States; (ii) as a source of career advancement in lieu of advanced education; and (iii) as a defined set of domain-specific competencies for specialized roles. Another relevant example is the case of web developers whose career perspectives are ample even after a short period of high-quality training. In fact, according to Stack Overflow’s 2016 survey, 56 percent of developers do not have a college degree in computer science or related fields, and almost a third of them have less than a bachelor’s degree.

Table 5: Educational institutions teach only some of the soft skills demanded by employers
 Skills mentioned by institutions as transversal to their programs, larger circles indicate more-often-mentioned skills (see note)



Source: Developed by authors based on survey data in Villarzú et al. (2018).

Note: This table represents the number of times a given ability was mentioned in our survey to training institutions. The larger the circle, the more often a given ability was mentioned. The largest circles represent 20% or more of all responses, followed by a slightly smaller size that represents a total amount of responses between 10 and 19%. Abilities not mentioned by training institutions do not have a circle. The exterior black circle denotes whether an ability was mentioned by employers. Classification based on Mateo-Berganza et al. (2019). *Skills that are not considered soft skills and were not included in the question.

Do employers and education providers communicate?

The existence of communication channels between training institutions and employers is a precondition for making education and training systems more responsive to the needs of the labor market (Amaral, 2017; Pouliakas and Ranieri, forthcoming). Such channels allow employers, as well as other experts, to make known the skills they need and to define exit profiles for graduates (Amaral, 2017). Unfortunately, the interaction between employers and training institutions is very limited in LAC as a whole—and Belize is no exception. In particular, the country lacks a mechanism to systematically identify skills

needs; mechanisms to allow the productive sector to influence training policy are few. Currently, the only formal space in which employers might potentially exert some influence is the National Council for Technical and Vocational Education and Training (NCTVET), but this institution is focused exclusively on TVET institutions (Villarzú et al., 2018).

This section presents an overview of the available interactions between training institutions and employers in Belize, focusing on three channels: communication and general collaboration; internships; and feedback to training institutions about the labor-market performance of their graduates.

Communication/collaboration between training institutions and employers is limited and sporadic (Table 6). Only 27 percent of training institutions report having processes or mechanisms to identify skills needs in the private sector. None of these are systematic or shared with other institutions. All institutions that have a mechanism have a unique one. The most common are consultations with employers and informal surveys. The scant use of communication mechanisms is troubling, given that the country lacks a national system or other institutionalized mechanisms to track skills needs and make them known to schools. In other countries, schools benefit from national information systems and employers' organizations that provide them with timely information (Amaral et al., 2017; Dunbar, 2013; OECD, 2019).

During in-depth interviews, TVET directors mentioned an interesting mechanism called "workplace attachment," in which the training institution instructor participates in the productive process of the company to identify gaps in the training content (Villarzú et al., 2018). Some firms have an agreement with training institutions to recruit graduates but, again, they are a low proportion of surveyed firms (23 percent). Only 34 percent of firms have ever had a collaborative relationship with a training institution. Close to 41 percent of firms surveyed have been contacted by a training institution about their training needs, but the contact is not regular or part of a systematic effort. These findings suggest that, while some communication takes place, it is not widespread and is probably insufficient to allow training institutions to respond effectively to skill needs.

Table 6: Communication between education and employers is not systematic, but internships are widespread
Communication channels between employers and training institutions in Belize

Communication channel	Training Institutions (%)	Firms (%)
Training institutions that have a process or mechanism to identify skill needs in the private sector	27%	-
Firms that have an agreement with a training institution to recruit graduates	-	23%
Firms that have or have had a collaboration relationship with training institutions	-	34%
Firms that were contacted by training institutions about their training needs	-	41%
Training institutions (firms) that ask for (have been asked to) provide feedback about training institution graduates	54%	39%
Training institutions having an internship as part of their programs/ Firms offering workplace learning	73%	48%

Source: Villarzú et al. (2018) survey data.

Contacts between training institutions and employers occur mainly when there are job openings (46 percent, see Table 7) or when employers request a specific on-the-job training program for employees (38 percent). A third form of contact occurs when firms offer employees as instructors or space for educational activities (8 percent). Firms in the manufacturing and tourism industries base their relationship on offering work positions. In contrast, service firms, including financial firms, mostly request specific on-the-job training programs for employees. Firms in the service sector use all three interaction channels.

Table 7: The most common contact between education and training institutions and employers is through job openings
Percentage of employers by economic sector and by how the firm engages with training institutions

	Offer work positions	Request the program	Offer employees as instructors or workspace	Other	Number of firms
Tourism	100%	0%	0%	0%	2
Finance/banking	0%	100%	0%	0%	1
Services	29%	57%	14%	0%	7
Manufacturing	67%	0%	0%	33%	3
Total	46%	38%	8%	8%	13

Source: Villarzú et al. (2018) survey data.

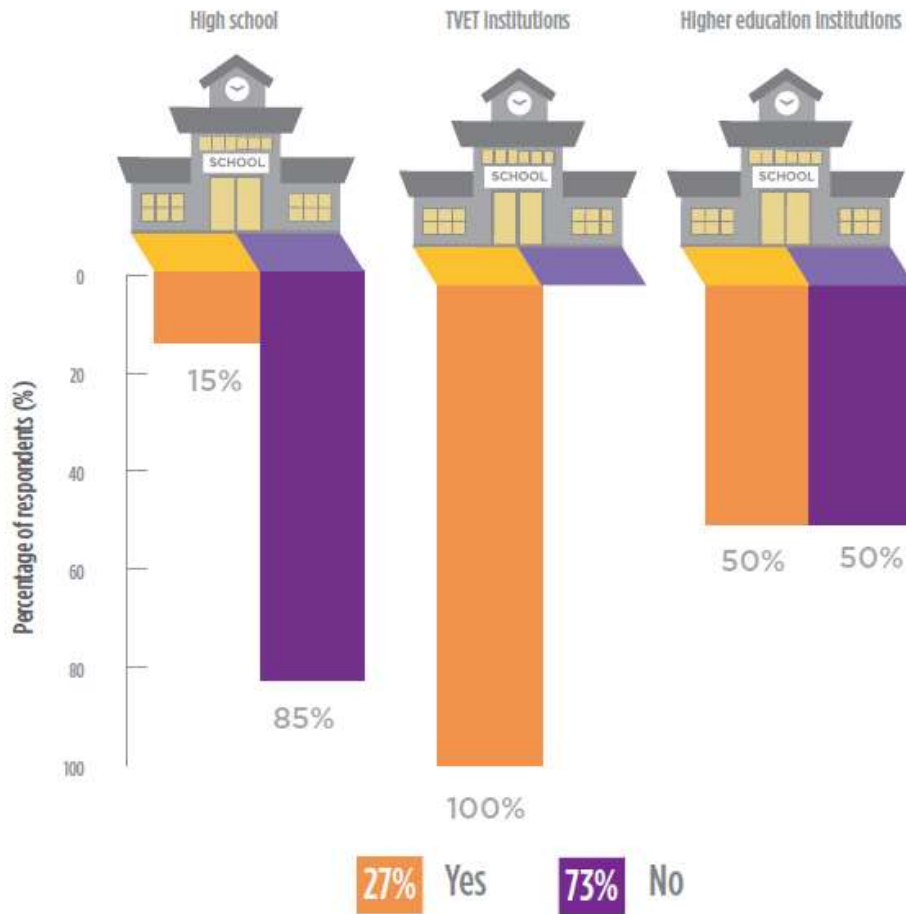
Despite the limited formal collaboration between training institutions and firms, internships are widespread. Three-quarters of training institutions offer internships (see Table 6). About half of the sample of employers offer workplace learning opportunities, making internships the most widespread collaboration between training institutions and employers. In-depth interviews with employers and meetings with government representatives show that internships in Belize are highly unstructured. The internships typically have no clearly stated learning objectives, and most students and employers are not aware of the skills that should be developed during the internship, limiting the effectiveness of this experience as a complement to classroom education.

For training institutions, getting feedback on the internship performance of their students would be helpful not only to address individual learning needs, but also to provide information about employer skill needs. **Over 50 percent of training institutions claim that they ask for feedback about their graduates from employers** (Table 6). In contrast, only 39 percent of firms report that training institutions request feedback on the performance of their students and graduates. Nevertheless, this interaction channel stands out as the most used by training institutions to obtain information about needed skills.

In some industries and institutions there is more collaboration. TVET institutions, followed by higher education institutions, communicate with employers significantly more frequently than do high schools. For example, even though only 27 percent of training institutions have a process or mechanism to identify skill needs in the labor market, all TVET institutions surveyed and half of the postsecondary institutions surveyed do have some type of mechanism in place to identify skill needs (Figure 15). Similarly, all programs in TVET and higher education training institutions include an internship, compared with 65 percent of high school programs.

It is worrisome that high schools are the least likely to gather skill-demand information and adapt to labor-market needs. As in most Latin American countries (Bassi et al., 2012), 82 percent of Belize's population has no more than some secondary education. This means that high school is the highest level of education for most workers. If high schools fail to provide graduates with the skills demanded by employers, they will enter the workforce underskilled.

Figure 15: 85% of high schools do not have a mechanism in place to identify skill need
 Number of training institutions by type that have a process or mechanism to identify skill needs in the private sector

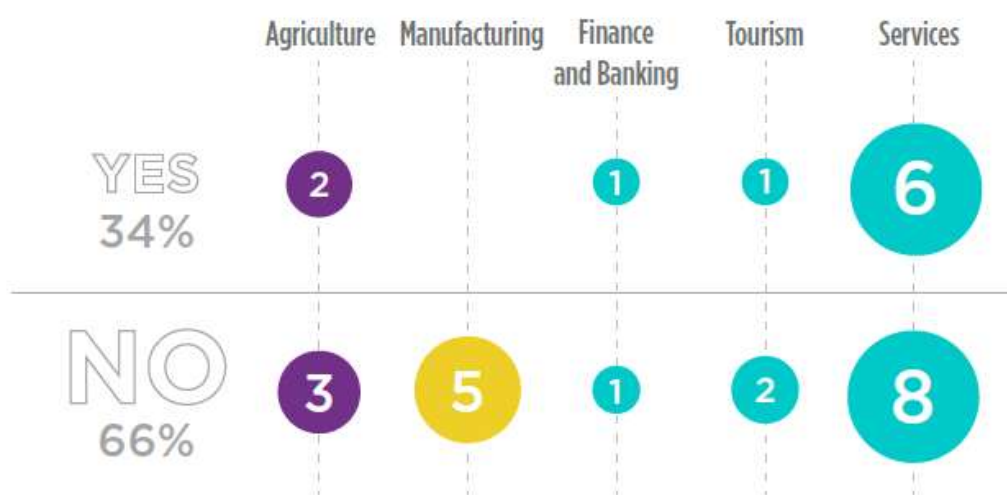


Source: Source: Villarzú et al. (2018) survey data.

Note: This figure includes information from 20 high schools (approximately 30% of high schools in Belize), 2 TVET institutions (33% of TVET institutions in the country) and 4 higher education institutions (25% of institutions in Belize).

The firms surveyed in the manufacturing industry have no interaction with educational institutions. The lack of interaction, including the absence of internships, is noteworthy, as manufacturing employs 9 percent of the population (SIB, 2018). Other industries reported interactions with training institutions. Figure 16 shows the pattern across industries for all questions in our survey.

Figure 16: Firms in the manufacturing industry have no interaction with education and training institutions
 Number of employers by economic sector that have or have had a collaborative relationship with a training institution



Source: Villarzú et al. (2018) survey data.

Note: This figure includes information from 14 firms in the services sector, 2 in finance/banking, 3 in tourism, 5 in manufacturing and 5 in agriculture. These results are not representative by economic sector.

What can Belize do to close the skills gap?

This study provides new insights on the changing landscape of Belize’s economy and the challenges those changes pose for students and workers seeking to thrive in an evolving labor market. The study fills in our knowledge about the mismatch between employer needs and workers’ skills and analyzes the efforts of the education and training system to close the skills gap. In this section, we summarize the key findings from the report and provide suggestions for policy responses and future research.

Based on census data and labor-force surveys, we find that Belize’s economy is transitioning toward the service sector and away from agriculture, manufacturing, and construction. The shift of the economy has important implications for the education and training system, which will have to make significant adjustments if it is to equip students with the skills demanded by the changing labor market.

Using data from an original survey of employers and training institutions, we document a mismatch between employers’ need and workers’ skills. The survey suggests that companies are preparing for the fourth industrial revolution and are demanding workers skilled in teamwork, communication, and the digital arts. Despite the high value placed by employers on digital skills, only 2 percent of Belize’s higher education graduates specialized in computer science in 2010.

Our study paints a stark picture of gender and ethnic inequality in the Belize labor market. Ethnic minorities fare worse in the education and labor markets than majority groups. For example, Mayan workers with higher education receive lower wages than

Creole workers with the same education. Although women's labor-market participation has increased over the past two decades, their results (compensation, unemployment) remain worse than men's, in Belize and in the region generally. Paradoxically, women's relative unemployment rate increases with university education. A gender wage gap permeates the labor market, with women who completed STEM specializations experiencing larger wage differentials than women who specialized in other fields.

The price of prejudice is high for the Belize economy. Belize has a highly educated female workforce that should be utilized. Particularly in the growing tertiary industries, which require higher levels of education (at least complete secondary), Belize's economy needs to tap into the female workforce. Including women in the labor market can help Belize's economy grow faster by expanding labor supply (Verick, 2014) and by adding new skills to the job market (Largarde and Ostry, 2018). A portion of the increase in productivity over the last few decades is due to the rise in women's participation in the labor market. This suggests that wider inclusion of women in the labor market could end up increasing even men's wages (Largarde and Ostry, 2018).

Our findings raise a series of questions, particularly given that Belize already invests heavily in skills development. The country devotes 21.7 percent of public expenditure to education, representing a spending ratio of 7.10 percent of GDP, one of the highest in the region (UNESCO, 2018). How can the country face the double challenge of ensuring access to quality education for all and improving the response of education and training to the needs of the labor market in a changing economy? How can Belize bridge the skills gap, develop a more inclusive workforce, and spur economic growth and international competitiveness? How can the education and training system impart the skills needed for a more dynamic economy?

Belize needs to evolve toward an ecosystem for skills development that provides high quality services in close coordination with employers and other stakeholders, considering the aspirations of workers.³⁰ This ecosystem will not only prepare workers for the labor market but also ensure that Belize has the labor force needed to propel sustainable economic growth. In this spirit, we propose five principles to help guide policymaking and develop a better skills ecosystem for the country (Amaral et al., 2017, 2018). Although by no means exhaustive, these principles are widely accepted as hallmarks of high-performing education and training ecosystems capable of minimizing the labor-market skills mismatch.

First, Belize needs a strategic vision for skills development as well as an effective governance structure to guide policymaking and to coordinate all parties involved in the skills system. High-performing education and training ecosystems have a strategic vision for human-capital development with clear objectives. The vision is supported by strong and effective governance structures that align the human-capital strategies with the

³⁰ The word ecosystem is used to highlight the multiple stakeholders involved in the skill formation process (schools, students, parents, communities, employers, civil society organization, etc.); as well as the continuous and coordinated interactions among them as they work towards shared objectives. For early definitions of skill ecosystems within specific contexts see Finegold (1999); Buchanan et al. (2001); Wrights and Sissons (2012); and OECD/ILO (2017).

country's overall economic development strategy. They also coordinate interministerial and intraministerial work and ensure participation of the private sector, civil society, and other interested parties (Amaral et al., 2017). An example is South Korea, where the national aspiration to become an innovation economy inspired the design of the national training system. In the same way, better governance of the secondary education and TVET systems would allow Belize to complement its development strategy with a well-focused human-capital strategy³¹.

Belize has shown progress in developing a national vision as well as a strategic plan with clear objectives. Two statements—Horizon 2030 and the Growth and Sustainable Development Strategy (2016–2020)—attest to that progress. The country has also created an institutional framework for the operationalization of the Growth and Sustainable Development Strategy, both at the political/administrative and technical levels. The newly created Sustainable Development Unit of the Ministry of Agriculture, Fisheries, Forestry, Environment, Sustainable Development, and Immigration plays a significant role, and the activation of technical committees and round tables for each of the four critical success factors identified are signs of progress. However, many challenges remain to ensure active participation of key stakeholders and to foster collaboration and coordination among institutions, agencies, and nongovernmental stakeholders. For one thing, the private sector, academia and civil society are not participating formally in the round tables. Efforts have been made to map the activities of different ministries related to each of the critical success factors, however, it will be necessary to go beyond mapping to determine a coordinated program of joint actions by ministries.

As it advances along its present path, Belize should seek opportunities to strengthen its governance structure pertaining to human capital and skills development. It will also be important to continue monitoring the progress of the already-established round tables and technical committees so as to identify and exploit synergies in their work in different areas.

Second, an integrated skills information system is needed to identify present and future skills needs in a systematic way. Such an information system would allow Belize to allocate resources to the development of skills that meet the needs of employers. Skills information systems democratize access to information for all employers and providers of education and training, while controlling quality and reducing the cost associated with producing and processing the data. Currently Belize has some initiatives underway—for example, within the Statistical Institute of Belize and the Ministry of Labor—that could be used as steppingstones for the creation of an integrated information system. However, the country needs to centralize efforts and create a single system capable of serving the needs of all potential users. One crucial aspect is to ensure that the system integrates information about the dynamics of job vacancies, offering real-time data on changes in the labor

³¹ In this context, the NCTVET could be a potential candidate to centralize TVET efforts. “The NCTVET was created to oversee the system, and is responsible for the development of a National Human Resource Policy framework for TVET, as well as the assessment, certification, and award of NVQs (national vocational qualifications), and monitoring of all TVET in Belize” (Allais, 2017). In addition, it is chaired by the chief education officer, with representatives from the private sector and civil society. Currently, however, the NCTVET concentrates exclusively on ITVET/CET, and its structure is limited because it is a voluntary body that lacks full-time staff and an operational budget.

market and in skill needs. The country has invested in the creation of the Belize Education Management Information System; this platform could be exploited by adding a skills supply module to provide information on the skills of students in the educational system. The module would enable secondary schools and TVET institutions to collect data on their graduates as they entered the labor market or pursued further studies.

Third, establishing forums in which employers and educators can meet regularly will help ensure that the education and training system responds to the changing needs of employers. A great example of collaborative spaces are the collective bodies of New Zealand and Australia (sector/industry skill councils) that channel the voice and input of employers in specific industries, generate information on skills needs, and coordinate curriculum design. Similar bodies have been implemented in several countries in the LAC region, including the mining sector in Chile and Peru. Forums for collaboration between employers and education providers can also focus on the design and implementation of workplace learning opportunities. A trend in countries with successful skill strategies is the use of apprenticeship models and/or practical training in the workplace, both in secondary schools (South Korea) and in postsecondary institutions (Australia, New Zealand). Such forums establish a permanent relationship between educational institutions and employers. Given the high prevalence of internships in Belize, the formalization of internships and other workplace learning activities would be a good way to initiate systematic conversations to close the skills gap. Such an approach could both identify skills needs and establish channels through which the productive sector could influence training policy. Currently, the only formal space in which employers might exert some influence is the NCTVET, but, as previously noted, this institution is focused exclusively on TVET institutions (Villazú et al., 2018).

Fourth, quality assurance mechanisms to monitor, maintain, enhance, and ensure the quality of the services provided by educational institutions are a vital part of the effort to align skills with the needs of the country. Well-functioning education and training systems have a component to ensure the quality of the services they provide. That component ensures the quality of institutions, their faculty, and the certifications and qualifications they confer (Amaral et al., 2017). Different countries have different quality-assurance systems and mechanisms. However, it is important that one entity should oversee and coordinate the work of the various agencies and institutions responsible for monitoring, ensuring, and improving quality.

Belize's government is presently working on a proposal to create a National Qualifications and Quality Assurance Authority that would set standards and mechanisms for the assessment and accreditation of all institutions and programs. Such an authority would consolidate standards to be enforced at all levels of education and improve coordination between education and training providers, the NCTVET, and the Ministry of Education, Youth, Sports, and Culture.³² The proposal should be aligned with ongoing efforts to

³² The Belize Education and Training Act (2010) authorizes the ministry to be tasked with this type of coordinating role at the primary, secondary, and postsecondary levels. The ministry's Quality Assurance and Development Services unit

prepare a Human Resource Development Strategy and a Secondary Education Curricular Reform.

Most successful skill systems have qualification frameworks based on learning outcomes, competence statements, and occupational standards. Such frameworks provide common standards for defining and assessing quality at different levels of education. In this context, Belize is ahead of other countries in the region that do not have a system of national standards with defined qualifications. However, the country needs to advance its implementation³³ and aim to develop a comprehensive national qualification framework that covers all education and training (not only TVET institutions) in order to ensure that all training providers operate under comparable standards and be able to ensure quality across the system (Allais, 2017).

Finally, Belize could develop a rigorous assessment and certification system to see that secondary education and training graduates gain the required technical, cognitive, and social skills. To ensure quality and buy-in from different actors, any assessment would need to be developed jointly by educational institutions and employers.

Fifth, women are needed in the Belize labor market. Women have higher levels of education than their male peers, but their low labor-market participation hampers economic growth. We recommend that the government tap into this underused human capital resource by promoting women's entry and permanence in the labor market.

According to the Belize National Women's Commission, many factors contribute to the difficult conditions of women at work, most of them related with childbearing and family responsibilities. For example, despite the recent increase in maternity leave from 12 to 14 weeks, women are still at a disadvantage because they can be fired while pregnant or be forced to dispute with employers that refuse to pay the difference in maternity payment provided by the Social Security Board. For single mothers the situation is aggravated by the stigma of having children out of wedlock, which has been put forward as a reason for women to lose their jobs or not to be hired. Belize has to ensure effective implementation of its legislation on equal pay for work of equal value, which has yet to be tested in court (NWC, 2013).

Finally, women's underrepresentation in STEM occupations and careers should be fostered to provide the economy with skills in high demand by employers. A range of actions could help increase the number of women in STEM, ranging from efforts to combat wage discrimination and stereotypes to the creation of mentoring networks and training for STEM employers in how to cultivate a more inclusive workplace. Within the education and training system, one line of action that has emerged to engage more female students

oversees the quality assurance system for pre-primary, primary, and secondary schools. The system encompasses educational standards, school supervision, inspection, self-evaluation, and improvement (Villarzú, 2018). Similarly, the Belize Technical and Vocational Education and Training (TVET) Act of February 2005 assigned a coordinating mission to the NCTVET. Belize has no formal quality assurance system in place at the tertiary level, although many institutions have their own mechanisms in place.

³³ There is a fair amount of TVET provision outside of the framework. Currently only three of the six institutions in the country that provide TVET offer programs leading to the national vocational qualifications (Villarzú, 2018).

is to include “art” in STEM curriculums to make STEAM. The approach places greater emphasis on problem-solving and artistic thinking skills. Beyond increasing GDP, closing the gender gap in STEM also has the potential to improve the social relevance of STEM products and services.

Implications for further research

The skills mismatch identified in this study hampers the innovation, growth, and competitiveness of companies; most likely, it also has implications at the macroeconomic level. What is certain is that unemployment, involuntary part-time work, and overeducation waste human resources. To improve our understanding of the linkages between Belize’s labor market and its system of secondary and TVET system, we conclude by highlighting three areas for future research.

First, we maintain that training and educating scores of women who then remain outside the labor market is wasteful and hampers economic growth. Future research should explore the drivers of the disproportionately high unemployment rate of women, including cultural barriers and wage discrimination. It is particularly important to assess the reasons for the higher wage discrimination of women with STEM qualifications, as this is a sector where employers complained about the lack of skills. Such research should include audit studies to analyze hiring discrimination on racial, ethnic, and gender grounds.

A second interesting avenue of research would be to analyze the reasons behind the differences in educational attainment of different ethnicities. To achieve inclusion in the labor market, inclusion in education must first be achieved. Given the educational needs of Belize’s labor market, it is incomprehensible that more than 70 percent of some of Belize’s ethnic groups still do not complete secondary education. It should be determined whether this is due to cultural barriers, lack of access, discrimination, or another cause.

Finally, further research should seek a better understanding of the skills mismatch in Belize and its costs for individuals, employers, and the economy in order to suggest new policy alternatives. For example, instead of focusing solely on employers’ difficulty in finding required skills, one might quantify the existing unrecognized and underutilized skills in the labor market. We have mentioned this in the context of the female labor force, but something similar could be happening within certain ethnic groups. In a similar vein, other adult populations may have informally acquired skills that, though not formally recognized, could help improve labor productivity.

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Appendices

Printed Appendices

Appendix A: The educational system in Belize

Appendix B: Additional tables

Appendix A: The educational system in Belize

The educational system in Belize comprises eight years of primary education (Infant 1–2 and Standard 1–6) and up to four years of secondary education (Forms 1–4). Education is compulsory between the ages of 5 and 14. Technical and vocational education and training (TVET) is offered at the secondary and postsecondary levels, as well as through non-school-based training programs.

Secondary education is divided into two tracks: the general education track and the vocational and trade track (Figure 17). While the vocational and trade track is purely TVET, the general education track also contains elements of technical and vocational education. In fact, most of the 59 secondary schools in Belize offer TVET subjects at the lower secondary level, and 22 high schools offer it at the upper secondary level.

When students finish secondary education, they take the Caribbean Examinations Council Certificate examinations, electing one of two possible certificates. They obtain either a certification of completion of secondary education valid for employment, called the Caribbean Secondary Education Certification, or a qualification to progress to further studies, called the Caribbean Advanced Proficiency Examinations (CAPE) (UNESCO-UNEVOC, 2013).

Currently, the government is pursuing a Secondary Education Curricular Reform that will provide a framework for core subjects, including information and communications technologies, and improve “student achievement levels by enhancing the curriculum and the way in which it is delivered.”

After graduating from high school students possessing the CAPE may enroll in junior college for an associate’s degree, or in university, where they can pursue a certificate, diploma, associate’s degree, or bachelor’s degree (UNESCO-UNEVOC, 2013).

Three universities operate in Belize. They are the University of Belize, University of the West Indies Open Campus (UWI), and Galen University. The University of Belize was established in 2000 from the merger of five institutions: the University College of Belize, the Belize Technical College, the Belize Teachers’ Training College, the Belize School of Nursing, and the Belize College of Agriculture. In 2017, the university graduated 1,206 students, 62.8 percent of whom were women (University of Belize, 2017).

Six vocational institutes offer TVET programs in each of the six districts of Belize: five public Institutes for Technical and Vocational Education [ITVET] and the Centre for Employment and Training [CET] in Cayo³⁴). Each institution has a manager and a board of governors. The Employment Training and Education Services unit of the Ministry of Education, Youth, Sports, and Culture provides supervision and support for the six TVET institutions. Students must be 15 years or older to enroll, but students as young as 13 are accepted in prevocational programs. In general, these programs are targeted to students

³⁴ The CET is a community institution funded by annual grants from the government of Belize that cover a percentage of operational costs. Other funding is obtained through agency grants for specific projects (e.g., equipping a computer lab, purchasing expensive equipment), sales of services, and tuition fees paid by trainees and sponsors.

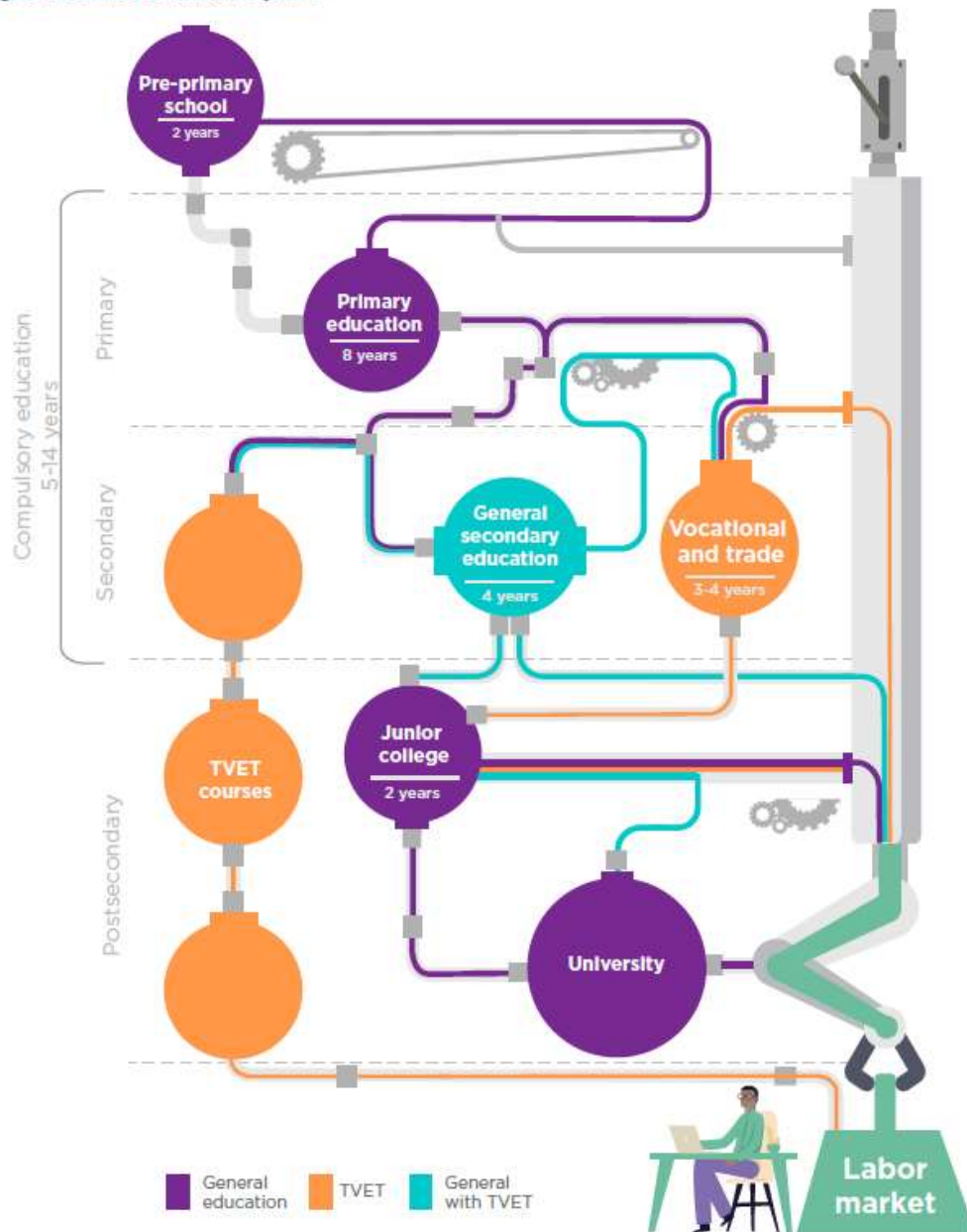
outside of the formal education system: high school dropouts, high school graduates who did not pursue higher education, and, sometimes, workers seeking customized training. According to Villarzú et al. (2018), 50 percent of students in the TVET institutes are enrolled in one-year full-time programs leading to a certificate; 41.5 percent are taking part-time courses; and 8.5 percent are pursuing customized programs.

The majority of programs offered by ITVET/CET are related to the services sector. In fact, 41 of the 90 programs offered in 2015/2016 were in tourism and services. By contrast, very few programs are related to digital technologies. Just 4 of the 90 programs focused on information technologies, as shown in Table 8.

The high proportion of programs in tourism and services reflects the increased importance of services for Belize's economy and suggests how educational institutions can respond to changes in labor-market needs.

Additional TVET programs targeting specific needs are offered by public and private institutions. For example, the government funds an apprenticeship program and a skills training program targeting at-risk youth (UNESCO-UNEVOC, 2013).

Figure 17: Belize's educational system



Source: Author's elaboration from the 2000 revised version of the Education Act of 1990 and the Census of 2010.

Note: The universities in Belize are the University of Belize, Galen University, and the University of the West Indies Open Campus.

Table 8: Number of TVET programs by economic sector



Source: Villarzú et al. (2018) with data from ETES 2017.

Preschool enrollment rates in Belize are significantly lower than in other countries in the subregion. Just 38 percent of children aged 3–4 were enrolled in preschool in the academic year 2016/2017 (Table 9). In contrast, preschool enrollment rates of nearby countries, such as Jamaica and Barbados, were about 80 percent in 2016, twice the rate of Belize, according to the World Bank (World Bank, 2019).

Table 9: Enrollment by level of education, 2017-2018

Education	Total	Net enrollment rate
Preschool	7,349	38%
Primary	66,465	79%
Secondary	22,027	50%
Technical/vocational education and training*	729	-
Junior college**	4,167	25%
University**	5,260	17%

Source: Ministry of Education (2018) and Central Bank of Belize.

Notes: * Indicates enrollment only in full-time courses. **Gross enrollment rate computed applying the population age structure from the 2010 Census to the 2017 total population.

Primary education covers almost all students of primary school age, with an 88 percent gross enrollment rate for students aged 5–12 in 2017/2018. This rate is lower than the 92 percent shown in Näslund-Hadley et al. (2013), suggesting that the decreasing trend in primary education noted in that work continued beyond 2009.

In the case of secondary education, enrollment is significantly lower. Only 62 percent of students aged 13–16 are enrolled in secondary education (gross enrollment rate). Even though gross enrollment has increased from the 45 percent reported by Näslund-Hadley et al. (2013) for 2009, this value is still low.

With respect to postsecondary education, the enrollment rate is higher in junior colleges (ages 17–18) than in university (ages 18–21). The combined enrollment rate in higher education was 20 percent in 2017/2018.

Finally, TVET in Belize is relatively small. Only 729 students were enrolled in ITVET/CET institutions in 2017/2018.

Appendix B: Additional tables

Table 10: Proportion of population 14 years and older by education level and occupational status

Education	Panel A: Labor force participation			Panel B: Employment rate			Panel C: Unemployment rate		
	F	M	T	F	M	T	F	M	T
Incomplete secondary or less	40%	74%	58%	33%	70%	52%	18%	6%	10%
Complete secondary	62%	86%	74%	52%	81%	66%	16%	6%	11%
Junior college	73%	79%	76%	65%	76%	70%	10%	4%	7%
University	82%	86%	84%	77%	85%	80%	7%	1%	4%
Other	22%	28%	24%	22%	28%	24%	0%	0%	0%
Total	53%	78%	65%	45%	73%	59%	15%	6%	9%

Source: Authors' calculations based on Belize's LFS of April 2018 (SIB, 2018).

Table 11: Population and percentages by labor market status

	LFS 1999	LFS 2007	LFS 2018
Population (total)	243,754	313,924	395,882
Working age (14 and up)	150,790	206,870	264,130
Labor force	86,867	118,258	172,086
Women	28,160	41,099	69,894
Men	58,708	77,159	102,192
Employed	78,239	107,731	155,950
Women	24,187	35,509	64,143
Men	54,052	72,221	91,806
Unemployed	8,629	10,527	16,136
Women	3,973	5,589	5,750
Men	4,656	4,938	10,386
Not in the labor force	63,923	88,612	92,044
Working age/total population (%)	61.9%	65.9%	66.7%
Labor force participation rate (%)	57.6%	57.2%	65.2%
Women	36.9%	38.7%	52.6%
Men	78.9%	76.6%	77.9%
Unemployment rate (%)	9.9%	8.9%	9.4%
Women	14.1%	12.0%	14.9%
Men	7.9%	7.2%	5.6%
Youth unemployment rate (14-24, %)	17%	19%	21%

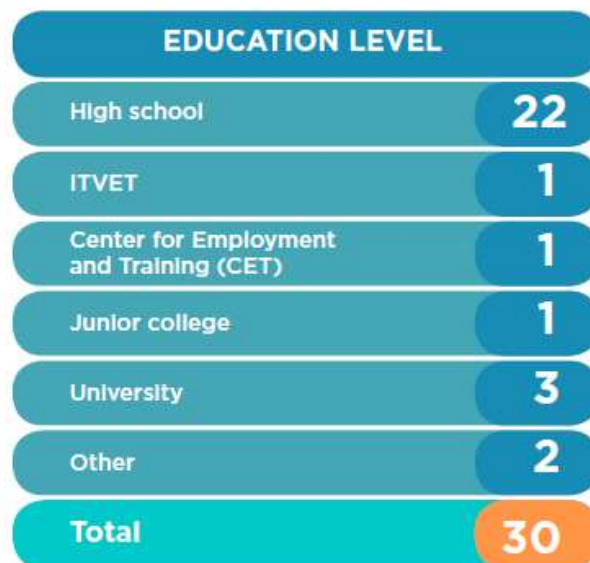
Source: Authors' calculations based on Belize's LFS of April 1999, 2007 and 2018 (SIB, 2017a, 2017b and 2018).

Table 12: Surveyed firms by economic sector and size

Economic sector	Size				Total
	Large (>199 workers)	Median (50-199 workers)	Small (11-30 workers)	Microenterprise (<11 workers)	
Agriculture	0	2	3	0	5
Tourism	1	1	1	0	3
Finance/banking	1	1	0	0	2
Services	3	2	2	8	15
Manufacture	0	2	1	2	5
Total	5	8	7	10	30

Source: Villarzú et al. (2018) survey data.

Table 13: Surveyed training institutions by type



Source: Villarzú et al. (2018) survey data.

Note: Other refers to a Tour guide program offered by the Belize Tourism Board and one program offered directly by the Ministry of Education, Youth, Sports, and Culture.