REPORT

REVISED REPORT

Evaluation Interim Report for the Georgia II Industry-Led Skills and Workforce Development Project

September 23, 2019

Evan Borkum
Irina Cheban
Camila Fernandez
Ira Nichols-Barrer

Submitted to:
Millennium Challenge Corporation
1099 14th St., NW
Suite 700
Washington, DC 20005
Project Officer: Jenny Heintz
Contract Number: 95332418C0043/MCC-17-CON-0011

Submitted by:
Mathematica
955 Massachusetts Avenue
Suite 801
Cambridge, MA 02139
Telephone: (617) 491-7900
Facsimile: (617) 491-8044
Project Director: Ira Nichols-Barrer
Reference Number: 50399.01.150.013.000

This page has been left blank for double-sided copying.

ACKNOWLEDGEMENTS

This report reflects the contributions of many people. Jenny Heintz, the current technical officer for this evaluation at Millennium Challenge Corporation (MCC), as well as Jenner Edelman, Sonia Shahrigan, and Marina Kutateladze, also at MCC, gave us guidance and support throughout the project. We also acknowledge the many Millennium Challenge Account-Georgia (MCA-Georgia) staff and implementers who generously shared their time and attention to help improve the quality, comprehensiveness, and depth of the study. We received indispensable support and advice from the staff of the MCA-Georgia office, especially Zura Simonia, who managed the evaluation's data collector and has provided both substantive and technical expertise at every stage of the study. Nodar Surguladze and Elene Jibladze, also at MCA-Georgia, generously shared their deep knowledge about the project and helped to facilitate meetings with key stakeholders during our missions to Georgia. Anthony Tyrrel, MCC's workforce development consultant, provided valuable insights on the project and the Georgian technical vocational education and training sector. We appreciate the support of staff at PEM GmbH, especially David Handley, Valentin Mitev. Tsotne Iashvili, and Tatia Khubulava, who were so responsive to our many questions and requests for information. We are also grateful to Government of Georgia staff at the Ministry of Education and Science, who generously sharing their time and expertise and provided important information about the project's activities, implementation, and expected outcomes.

This report also depended on contributions from many data collection, supervisory, and support staff. We are grateful to the staff of GORBI for the successful implementation of the study's survey and qualitative data collection. We also thank the many people who responded to our surveys and participated in in-depth interviews and focus groups. Many components of the study's data collection would not have been possible without the contributions of Natia Gorgadze, who supervised data collection activities as a locally based member of Mathematica's evaluation team. At Mathematica, Arif Mamun provided technical input and useful comments on the analysis plan and draft report. We also thank the editorial and production staff at Mathematica.

Mathematica strives to improve public well-being by bringing the highest standards of quality, objectivity, and excellence to bear on the provision of information collection and analysis to our clients. The findings in this report solely reflect Mathematica's interpretation of available information. Mathematica staff involved in analyzing the information and authoring this report did not report any conflicts of interest. The evaluation was funded exclusively by MCC.

This page has been left blank for double-sided copying.

CONTENTS

TABLES

FIGURES

LIST OF ACRONYMS

CBA	Cost-Benefit Analysis
CEG	Career Education and Guidance
EBP	Education-Business Partnership
ERR	Economic Rate of Return
EU	European Union
GAU	Georgia Aviation University
GIPA	Georgia Institute of Public Affairs
GORBI	Georgian Opinion Research Business International
GMGA	Georgian Mountain Guide Association
GTU	Georgian Technical University
ISWD	Industry-Led Skills and Workforce Development
MCA-Georgia	Millennium Challenge Account-Georgia
MCC	Millennium Challenge Corporation
MES	Ministry of Education and Science
NCEQE	National Center for Educational Quality Enhancement
NTPDC	National Teacher Professional Development Center
PICG	Program Improvement Competitive Grants
PPP	Public-Private Partnership
QAF	Quality Assurance Framework
STPP	Strengthening TVET Provider Practice
SSC	Sector Skills Council
TVET	Technical and Vocational Education and Training
UNDP	United Nations Development Program
VNFIL	Validation of Non-formal and Informal Learning

This page has been left blank for double-sided copying.

EXECUTIVE SUMMARY

The Government of Georgia and the Millennium Challenge Corporation (MCC) developed a five-year compact (2014–2019) to improve the quality of education in science, technology, engineering, and math, and thereby develop a more skilled Georgian labor force. The Industry-Led Skills and Workforce Development (ISWD) project, with a total investment of $16 million, was designed to increase the number of Georgians with technical skills that are relevant to the local economy by investing in technical and vocational education and training (TVET).

MCC contracted with Mathematica to evaluate the implementation and potential effects of the ISWD project. The evaluation involves a mixed-methods approach that draws on both qualitative and quantitative data to explore how the project was implemented, what its effects on TVET trainees are, and how likely it is that project-supported activities will be sustained after the compact ends.

In this report, we present interim findings from data collected between mid-2018 and early 2019, during the final year of the project's implementation period when project activities were close to completion. This interim report has two main objectives. First, it provides preliminary findings on the evaluation's key research questions, including findings related to implementation and early results from all ISWD activities. Second, the report describes the background characteristics of the sample of trainees in TVET courses supported by the project, which will provide valuable context for the labor market outcomes analysis the evaluation will conduct and include in the study's final report in 2022.

A. ISWD activities, research questions, and evaluation design

The ISWD project is designed to improve the alignment between the skills of Georgian TVET graduates and the skills demanded by the labor market. The project comprises two different activities and four components: the Program Improvement Competitive Grants activity had a single component, and the Strengthening Sector Policy and Provider Practice activity had three separate components. The four project components are as follows:

- **Component 1: Program Improvement Competitive Grants (PICG),** is funding Georgian TVET providers on a competitive basis to establish new or improved training courses that reflect industry demand for skills. The 10 institutions selected to receive grants, which are located throughout Georgia, are establishing 26 new courses and seeking to improve 15 existing courses. These include courses in areas such as information technology, agriculture and veterinary services, aquaculture, maritime operations, tourism, railways, and aviation. Most of these courses are at TVET levels 4 and 5, which are training courses for upper secondary school graduates. This component accounts for the bulk of the project funding—$11.7 million of the total $16 million—with private industry making an additional contribution of about $6 million to the new and improved courses, for a total investment of $17.7 million.
- **Component 2: Strengthening TVET Provider Practice (STPP),** is providing small grants on a competitive basis to identify, document, and disseminate innovative best practices in the TVET sector. The grants are available to TVET providers and other institutions actively involved in TVET, including educational establishments, public or private companies, and

professional and nongovernmental organizations located throughout Georgia. Seven grants totaling about $69,000 were awarded in the first round in April 2016, an additional 10 grants totaling about $172,000 were awarded in the second round in April 2017, and a final 10 grants totaling about $177,000 were awarded in the third and final round in June 2018.

- **Component 3, Strengthening TVET Sector Policy,** is providing technical assistance to the Ministry of Education and Science (MES) related to TVET sector policy. To reflect the latest priorities of the MES, the efforts under this component have been consolidated into three main areas: (1) promoting increased business engagement in TVET; (2) improving and promoting the quality and attractiveness of TVET; and (3) supporting the enhancement of learning and qualifications opportunities for adults. These efforts were conducted in coordination with other TVET-related technical assistance provided contemporaneously to the MES by other donors.
- **Component 4, Annual TVET Conference,** serves as a forum for dialogue and information sharing among TVET stakeholders, and the dissemination of best practices. The first conference took place in July 2016, the second took place in October 2017, and the third took place in November 2018. (All conferences took place in the Georgian capital, Tbilisi.) The conferences are being complemented by other public relations and outreach events to promote the projects' objectives and Georgian TVET more generally throughout Georgia, such as awards ceremonies for project grants and a multimedia communications strategy to publicize the project.

The evaluation of the ISWD project is designed to answer eight key questions. These questions cover the implementation of the activities, their effects on project participants and the TVET sector more broadly, and their sustainability. They are as follows:

1. How did the implemented PICG courses compare with the original grant proposals, and what were the reasons for any deviations?
2. Did trainees enroll in PICG-supported courses and graduate from them at targeted levels?
3. What were the labor market outcomes (employment and wages) for graduates from PICG-supported courses?
4. What were employer perceptions of the graduates from the PICG-supported courses, and how did the availability of these graduates affect their hiring and training plans?
5. Will PICG-supported courses be sustained after the compact?
6. What are TVET providers' perceptions of the best practices identified and disseminated by the project, to what extent have they adopted them, and what are the main barriers to doing so?
7. To what extent have the MES and its agencies adopted the policy reforms supported by the project, (for example, those related to industry engagement, marketing of TVET, and quality improvement) and what have been the main challenges in doing so?
8. How and to what extent has the annual TVET conference influenced providers, employers, the MES, and other TVET sector stakeholders?

To answer these questions, we are conducting a mixed methods performance evaluation, which includes two studies: (1) a quantitative outcomes study of the PICG component, and (2) a qualitative study assessing all project components. To evaluate the possible effects of the PICG component, the outcomes study will measure the training and labor market outcomes of trainees in PICG-supported courses and, to the extent possible, compare those outcomes with those of a relevant sample of trainees who attended non-supported courses. The qualitative study will explore implementation of all the project activities, the potential mechanisms driving the results observed in the PICG outcomes study, and the likelihood of sustainability across all ISWD initiatives after the compact ends.

To gather preliminary evidence about these questions for the interim report, Mathematica conducted a baseline survey with trainees enrolled in PICG-supported courses, together with a wide range of qualitative interviews and focus groups. The baseline survey included a sample of 1,148 enrollees at PICG-supported courses who provided information about their demographic characteristics, employment history, experience and satisfaction with PICG-supported courses, and expectations for future employment and earnings. The qualitative data collection included in-depth, semi-structured interviews or focus groups with PICG grantees, PICG-affiliated employers, PICG course teachers, PICG trainees, and STPP grantees. In addition, the evaluation team conducted high-level stakeholder interviews with organizations that were involved in project implementation and/or in the TVET sector more broadly in order to gather information about challenges and successes during program implementation, and the prospects for sustainability.

B. Key interim findings about the PICG component

The PICG component successfully established 51 new or improved TVET courses. These courses included 38 degree courses and 13 short certificate courses. (Mathematica's evaluation focuses on 41 courses, comprising the 38 degree courses, plus 3 certificate courses that were initially expected to be accredited as degree courses.) They were established through close cooperation between the grantees and private sector partners, who provided valuable knowledge and material support during course development and implementation. Other notable features of implementation included a rigorous, multi-stage proposal development and selection process, strong grant management systems, and solid working relationships and open communication between key players (especially between MCA-Georgia and PEM, and PEM and the grantees). Together, these features contributed to the development of high quality PICG-supported courses.

The government accreditation process for the PICG-supported degree courses resulted in changes to the original course schedules and plans. During the same period that PICG-supported courses were developed, MCC and other international donors supported a TVET quality improvement initiative designed to standardize and strengthen government oversight of TVET course offerings. Many grantees reported that having the PICG-supported degree courses accredited in accordance with the government's new National Qualifications Framework, including reaching agreement on student evaluation criteria for each course, was labor-intensive and time-consuming. The start of many courses was substantially delayed and, in some cases, the grantees' original plans (as set out in their grant proposals) had to be changed substantially in response to the demands of the accreditation process. Overall, of the 47 degree courses that were

originally planned, 28 underwent substantial changes (altering the course level, or having the course cancelled, split up, or merged with other courses) and ultimately accreditation procedures pared back the list to 38 PICG-supported degree courses.

Although the size of the first cohort enrolling in PICG courses fell short of expectations, the total number of enrollees across all cohorts ultimately met expectations for the compact period. The first cohort of trainees in the 41 courses included in the evaluation sample had 760 enrollees, compared with an original projection of 1,271. However, some of the courses were also shorter than they were planned to be (largely due to changes adopted during the accreditation process), allowing more cohorts of trainees to enroll during the compact. Accounting for these later cohorts, a total of 1,451 trainees enrolled in the evaluation sample of PICG-supported courses as of this writing, a few months before the end of the compact. This brought the number close to the original projection of 1,500 for the entire compact period; this target is likely to be exceeded because of enrollment in the 10 non-evaluation certificate courses, and because another cohort is expected to enroll in many courses in spring 2019, before the end of the compact.

Trainees in PICG-supported courses were disproportionally male. Only 14 percent of all trainees in PICG-supported courses were female. Across the PICG grantees, the proportion of female trainees ranged from zero in one case (an aviation university) to about one-third (an agricultural university). The percentage of female trainees is generally lower for the providers offering courses in the sectors of aviation, electrical systems, railways, maritime vocations, and engineering. Female enrollment levels are higher (although still far from equal to male enrollment) in courses related to tourism, information technology, aquaculture, occupational health and safety, and agriculture and veterinary services. Stakeholders and trainees reported that these disparities likely reflect cultural norms and stereotypes associated with many of the occupations that are the focus of PICG-supported courses.

Almost half of the trainees in PICG-supported courses had completed some education or training beyond secondary school (grade 12), and many had substantial work experience. Most of the trainees in PICG-supported courses were in their 20s and 30s (the average age was 26), and about 44 percent had pursued education beyond grade 12. Enrollees in PICG-supported courses were substantially more educated than prior trainees in the preexisting courses that had been enhanced with PICG grants: PICG enrollees were 12 percentage points more likely to have completed at least some education beyond grade 12 (either in a different TVET course or in a university). Almost three-quarters of the trainees had work experience, and about half (52 percent) maintained some form of employment while enrolled in their course.

Trainees and teachers had positive first impressions of the PICG-supported courses, although there is room for improvement in specific areas. Stakeholders highlighted the quality of course content (which they perceived to be well aligned with industry needs), as well as the modern facilities and equipment that are available for hands-on practice at the PICG providers. Teachers in these courses appear to have received the necessary training to be effective as instructors, and are integrating practical sessions with theoretical ones to help trainees master the course material. However, in some cases trainees have struggled with their lack of core academic skills or foundational knowledge in their chosen subject areas, which prevents them from keeping up with course materials. Teachers and trainees both noted that there

continues to be a lack of high quality Georgian-language technical and training materials in their fields. The trainees seeking to maintain concurrent employment noted difficulties in attending class because of work commitments.

Although it is still too early to assess the labor market outcomes of graduates from PICG-supported courses, trainees and employers were optimistic about their prospects. Employers affiliated with the PICG courses were optimistic about the alignment between PICG-supported courses and their labor shortages, and hopeful that trainees could help to fill staffing needs at their organizations. Trainees were also optimistic about the potential for the courses to improve their own labor market outcomes: 86 percent of trainees expected to find satisfactory full-time employment upon graduating (and another 12 percent expected to continue on with further studies or training instead of entering the job market). Trainees with an employment history expected their monthly wages to increase by about 70 percent, on average, as a result of participating in PICG-supported training. However, we did find evidence of substantial disparities in the salary expectations of male and female trainees: although the expected rate of employment after graduation is similar for women and men, the mean monthly wage women expect is about 30 percent lower than the wage men expect to get. In the final report we will assess whether and how well the expectations for trainees' labor market outcomes were fulfilled, and also observe the gender gap in wages in practice.

The assumptions in MCC's ex-ante cost-benefit analysis (CBA) model might need to be adjusted to align with trainees' qualifications and wage expectations. Specifically, MCC's assumptions in the program's CBA model may have underestimated trainees' potential pre-training and post-training wage levels. In our sample, the average observed baseline monthly wage among PICG trainees (those who were employed immediately before or during training) is 803 GEL (US$297), approximately double the amount assumed in the CBA model. This is likely because trainees are more educated and have more work experience than originally assumed. Given the higher baseline wage, applying the same assumed percentage increase in wages (24 percent) as the original CBA model will lead to greater economic benefits. In addition, trainees are currently expecting a much larger percentage increase in wages (70 percent) than the model assumes, although these expectations may not be borne out in practice. In contrast, the expected employment rate for trainees after graduation is almost identical to that assumed in the CBA model (86 percent versus 85 percent); most of the remaining trainees who do not expect immediate employment are planning to engage in further training, and enter employment after a delay.

Although grantees plan to continue offering almost all of the PICG-supported courses after the end of the compact, there are risks to sustainability. In particular, in the absence of further grant support or any formal obligation for PICG partners to continue to contribute to the courses after the end of the compact (financially or in terms of expertise), it is unclear whether providers will have an adequate stream of resources to sustain the teaching staff and facilities associated with PICG-supported courses. This could be particularly challenging for public providers, who do not charge tuition and rely on the government's system of enrollment-based voucher funding. The amount of voucher funding varies by course (depending on the government's assessment of the course's length and resource needs), and public funding for some courses might not be sufficient to operate and sustain the course over time. These providers might have to adjust their funding streams and expenditures—for example, by creating new short

courses to raise revenue or reducing the involvement of foreign experts to save money. Another sustainability concern for public grantees is the potential loss of trained teachers after the grant period ends, because TVET institutions in the public sector have paid relatively low salaries in the past. The funding issue may be less of a concern at the private PICG grantees, because most of them have had strong demand for some of their PICG-supported courses despite charging high fees already, and they might benefit from government vouchers in the future.

C. Key interim findings about the STPP, technical assistance, and annual conference components

In many cases, the STPP grants supported dissemination of best practices in ways that could be replicated by other TVET providers and institutions. However, STPP grantees suggested that widespread adoption of new practices by more providers might be hindered by challenges such as providers' lack of awareness, inadequate financial resources, and limited capacity. Despite these challenges, the study did find examples of grants that had supported practices that are being considered or adopted by a range of other providers. The grant-supported practices with the highest potential for replicability were specifically aligned with the reform efforts of the MES. The evaluation will assess the extent to which STPP-supported practices were adopted in the longer term and include this analysis in the study's final report.

The technical assistance component succeeded in delivering support to the MES for a wide range of policy-relevant initiatives, but more work will have to be done after the compact ends. Strong existing relationships between implementing staff, ministry staff, and other donors active in the TVET sector helped ensure that technical assistance remained flexible, responsive to MES needs, and policy-relevant. However, the policy reforms supported by the component are long-term efforts and, although good progress was made during the compact, more work (and probably more donor assistance) will be necessary to finalize many of them. For example, several initiatives related to improving the quality and attractiveness of TVET have either begun or are close to implementation, but activities related to business engagement are at an earlier stage of planning. Changes in leadership and priorities at the MES, as well as limited resources and capacity, might also pose a challenge to the sustainability of some of the reform efforts.

Annual TVET conferences were well attended and well received by stakeholders. Attendees at the three annual conferences held during the compact included industry groups in certain sectors, TVET providers, government, and donors, among others. However, based on our interviews with employers affiliated with the PICG-supported courses, it appears that private sector employers did not widely attend the conferences. Overall, stakeholders believed that the conferences did have at least some potential to contribute to improving perceptions of TVET in Georgia. Although all stakeholders expressed a desire for the conferences to continue in the future, this will require financial support and an entity with the capacity to take charge of organizing it. The 2017 and 2018 conferences had substantial private co-funding and participation from MES officials; it is unclear whether these supports will continue in the long term although, as of May 2019, the MES is planning to provide support for TVET conferences as part of its post-compact activity plan.

D. Plans for the final evaluation report

The interim findings in this report provide important early indications that the pattern of medium and longer-term effects assumed in the ISWD program logic remains plausible, for the most part. However, these findings are primarily descriptive in nature and limited to near-term outcomes. The study's final report, due in 2022, will provide insights on how successfully the positive expectations of trainees, employers, implementers, and government stakeholders during the ISWD implementation period were ultimately met. In particular, the final report will describe the labor market outcomes of graduates from PICG-supported courses, using a variety of descriptive comparison group designs to place these outcomes in context and assess whether it is plausible that the new TVET courses are producing meaningful improvements in employment and wages. The final report will also provide longer-term evidence on the post-compact evolution and sustainability of the project's four components.

This page has been left blank for double-sided copying.

I. INTRODUCTION

Recognizing that economic growth in Georgia is being significantly hindered by skills shortages and education gaps in the workforce, the Government of Georgia and the Millennium Challenge Corporation (MCC) developed the $140 million Georgia II Compact to improve the quality of education in science, technology, engineering, and math, and thereby develop a more skilled Georgian labor force. This work builds on other efforts by the Government of Georgia, including a 2013 Vocational Education and Training Development Strategy, all of which share the goal of making effective vocational programs more available and flexible (Ministry of Education and Science [MES] 2013). The five-year compact, which entered into force in July 2014, includes three projects that focus on general education, workforce development, and higher education. This report presents interim evaluation results for the workforce development component of the compact.

The Industry-Led Skills and Workforce Development (ISWD) project, with a total investment of $16 million, is designed to increase the number of Georgians with technical skills that are relevant to the local economy by investing in technical and vocational education and training (TVET). MCC contracted with Mathematica to evaluate the implementation and potential effects of the ISWD project. The evaluation involves a mixed-methods approach that draws on both qualitative and quantitative data to explore how the project was implemented, what its effects on TVET trainees are, and how likely it is that project-supported activities will be sustained after the compact ends.

In this report, we present interim findings from data collected between mid-2018 and early 2019, during the final year of the project's implementation period, when project activities were close to completion. These data include a quantitative survey of trainees enrolled in TVET courses supported by the project; qualitative data collected from project participants and stakeholders involved in implementation or in the TVET sector more broadly; and project documents and administrative data related to project implementation. To provide context, we next describe the ISWD project's activities and logic model, and briefly review the existing literature on the impacts of vocational training programs in other developing countries. We then summarize the objectives of the interim report and present a roadmap for the rest of the report

A. Overview of the ISWD project

The ISWD project is designed to improve the alignment between the skills of Georgian TVET graduates and the skills demanded by the labor market. The Millennium Challenge Account-Georgia (MCA-Georgia) is managing the implementation of the project and has subcontracted the implementation to a consortium led by PEM GmbH. The project comprises two different activities and four components: the Program Improvement Competitive Grants activity had a single component, and the Strengthening Sector Policy and Provider Practice activity had three separate components. The four project components are as follows:

- **Component 1: Program Improvement Competitive Grants (PICG),** is funding Georgian TVET providers on a competitive basis to establish new or improved training courses that reflect industry demand for skills. The 10 institutions selected to receive grants, which are

located throughout Georgia, are establishing 23 new degree courses and seeking to improve 15 existing degree courses, as well as establishing 13 new short certificate courses. These include courses in areas such as information technology, agriculture and veterinary services, aquaculture, maritime operations, tourism, railways, and aviation. Most of these courses are at TVET levels 4 and 5, which are training courses for upper secondary school graduates. This component accounts for the bulk of the project funding—$11.7 million of the total $16 million—with private industry making an additional contribution of about $6 million to the new and improved courses, for a total investment of $17.7 million.

- **Component 2: Strengthening TVET Provider Practice (STPP),** is providing small grants on a competitive basis to identify, document, and disseminate innovative best practices in the TVET sector. The grants are available to TVET providers and other institutions actively involved in TVET, including educational establishments, public or private companies, and professional and nongovernmental organizations located throughout Georgia. Seven grants totaling about $69,000 were awarded in the first round in April 2016, an additional 10 grants totaling about $172,000 were awarded in the second round in April 2017, and a final 10 grants totaling about $177,000 were awarded in the third and final round in June 2018.
- **Component 3, Strengthening TVET Sector Policy,** is providing technical assistance to the Ministry of Education and Science (MES) related to TVET sector policy. To reflect the latest priorities of the MES, the efforts under this component have been consolidated into three main areas: (1) promoting increased business engagement in TVET; (2) improving and promoting the quality and attractiveness of TVET; and (3) supporting the enhancement of learning and qualifications opportunities for adults. These efforts were conducted in coordination with other TVET-related technical assistance provided contemporaneously to the MES by other donors.
- **Component 4, Annual TVET Conference,** serves as a forum for dialogue and information sharing among TVET stakeholders, and the dissemination of best practices. The first conference took place in July 2016, the second took place in October 2017, and the third took place in November 2018. (All conferences took place in the Georgian capital, Tbilisi.) The conferences are being complemented by other public relations and outreach events to promote the projects' objectives and Georgian TVET more generally throughout Georgia, such as awards ceremonies for project grants and a multimedia communications strategy to publicize the project.

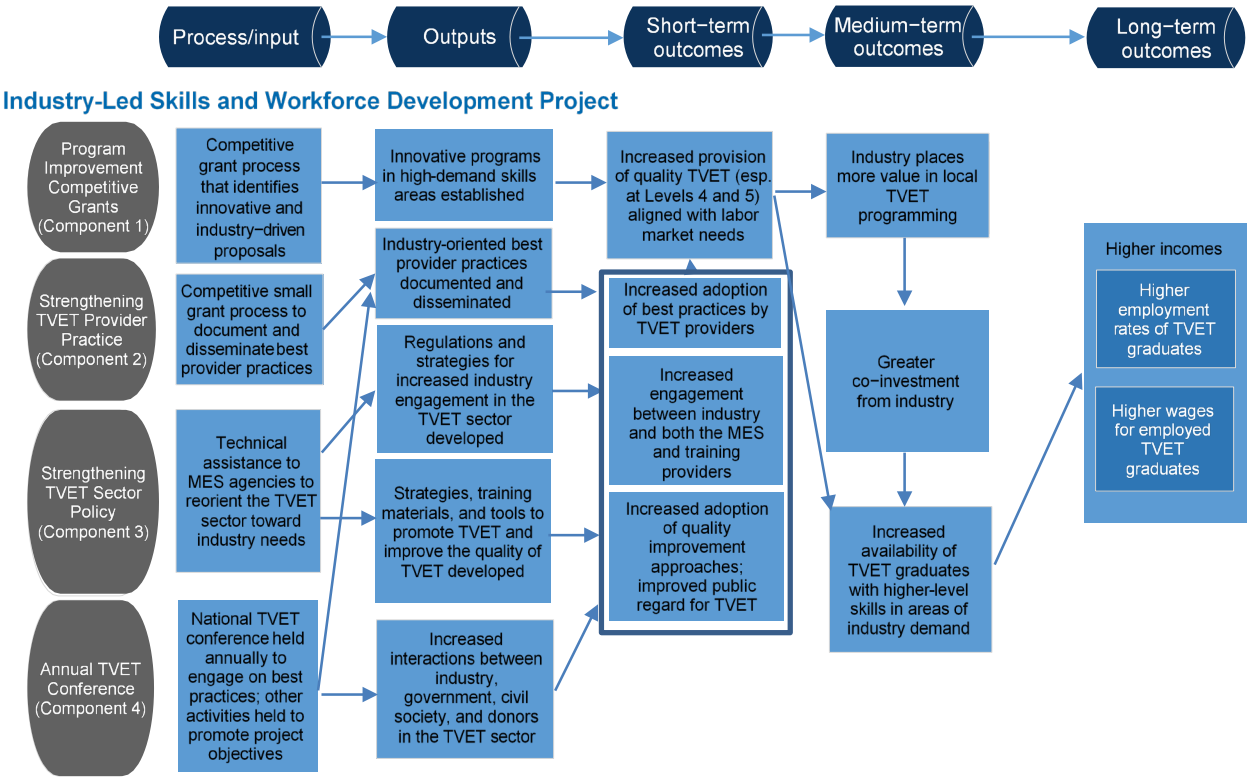
Figure I.1 is the ISWD project's logic model, a modified version of a model originally developed by MCA-Georgia and MCC. (As part of the evaluation planning process, we suggested updating the original logic model to more clearly highlight the key pathways through which the project activities are expected to influence the ultimate outcomes that the evaluation will examine.) The logic model indicates that, in the short term, the PICG component (Component 1) is expected to lead to an increase in the availability of industry demand-driven TVET courses (the PICG-supported courses). These courses—as well as Georgian TVET courses more generally—are also expected to benefit from improved quality and closer alignment with industry needs through the adoption of best practices disseminated by the STPP component (Component 2), as well as the implementation of policy changes supported by the technical assistance component (Component 3). By encouraging interaction between stakeholders, the annual conference component (Component 4) is expected to support the other

components—for example, by facilitating dissemination of best practices (identified through the STPP component) and greater industry engagement in TVET (promoted by the technical assistance component).

In the medium term, the combination of project activities is expected to increase the number of TVET course graduates with higher-level skills in areas of industry demand. This is expected to result in greater industry satisfaction with local TVET programs, which will lead to greater industry co-investment in the sector. In turn, this increased investment should feed back into an even larger increase in the availability of graduates with industry-demanded skills.

Finally, in the long term, the logic model implies that the close alignment of graduates' skills with market needs will lead to higher average incomes through higher employment rates (which reflects greater demand for their skills), and higher wages for those who are employed (which reflects their higher productivity). Ultimately, these outcomes are expected to contribute to increased economic growth and reduced poverty in Georgia (the Georgia Compact's overarching goal, not shown in the logic model).

Figure I.1. The ISWD logic model



MES = Ministry of Education and Science; TVET = Technical and Vocational Education and Training.

B. Literature review

In this section, we review the literature on the labor market impacts of vocational training programs in low- and middle-income countries. The program logic for the ISWD project anticipates that the project will eventually result in better labor market outcomes for Georgian TVET graduates—specifically, higher employment rates and wages. Outside of Georgia, a

number of high quality impact studies have examined the relationship between vocational training programs and these outcomes. These studies provide useful context and could help to indicate whether the ISWD program logic represents a plausible hypothesis about how the project activities could affect the ultimate outcomes of interest.

McKenzie (2017) recently reviewed 12 such impact studies that used an experimental design, which provides the highest standard of evidence (Appendix Table A.1).[1] Only 3 of the 9 studies that measured employment as an outcome found a statistically significant impact, and the mean impact was only 2.3 percentage points.[2] However, there is some evidence of larger impacts on formal employment, with a mean impact across studies of 3.6 percentage points—suggesting that training might shift workers from the informal to the formal sector. Only 2 of 9 studies that examined earnings as an outcome found a statistically significant impact, although most estimates were positive, with a mean increase of 17 percent and median increase of 11 percent. McKenzie (2017) concluded that most studies find only modest impacts of vocational training on employment and earnings, although those impacts are positive in some cases. He also suggested that few of these programs are likely to pass a simple cost-benefit test given the high cost of training and uncertainty about the sustainability of labor market impacts over time.

The findings from Mathematica's recent impact evaluation of MCC-funded scholarships for vocational training in Namibia (Borkum et al. 2017), which also used an experimental design, are consistent with the modest impacts described above. The trainee scholarships were provided by issuing competitive grants to training providers and were designed to fund training in high-priority skill areas. Although the evaluation found that receiving a scholarship offer had large impacts on the probability of enrolling in and completing vocational training, especially among women, there was no evidence of positive impacts on employment and wages. A complementary qualitative study suggested that the process TVET providers used to assess market demand was not fully developed when the grants were made, which could partially explain the project's limited labor market impacts.

Additional evidence on the implementation and the effects of vocational training programs in developing countries can be drawn from performance evaluations of specific programs. These evaluations often use mixed qualitative and quantitative methods and—in contrast with impact evaluations—are characterized by the lack of a rigorously defined comparison group. A review of the literature on youth workforce development over the past decade (U.S. Agency for International Development 2013) identified about 15 performance evaluations of vocational training programs in developing countries. The findings on the success of these programs in

[1] The literature also includes several relevant quasi-experimental impact evaluations. However, a review by Tripney et al. (2013) found that the quality of these studies is highly variable, making it difficult to interpret the similarly variable findings on labor market impacts. In addition, other studies have found that evaluations of the same training program using different quasi-experimental methodologies can yield very different results (Ibarrarán and Rosas Shady 2009; Delajara et al. 2006). Therefore, we focus our review on the higher quality experimental studies summarized in Appendix Table A.1, which have largely superseded these older quasi-experimental studies.

[2] McKenzie's review focused on the impacts of the offer of training; the impacts on those who actually received training were 20 to 40 percent larger, depending on the take-up rate of the offer of training in a particular study.

terms of employment and earnings, workforce readiness, and skills development were generally mixed, and depended on the features and context of the particular program.

Overall, the literature suggests that, although the effects of many vocational training programs in developing countries are modest, these programs can be successful in specific contexts. The success of any given program likely depends on factors such as social, economic, and labor market conditions; existing skill levels of targeted groups; and training program characteristics. To the best of our knowledge, no large-scale, rigorous evaluations of vocational training programs in Georgia or other countries in the Caucasus region have taken place, so the likely range of effects in the Georgian context are unclear.

In addition, there are some important differences between many of the training programs studied in the literature and the PICG-supported courses. First, the PICG-supported courses are substantially longer in duration and involve training at higher technical levels. Second, PICG-supported courses have a much stronger market-related focus and a higher degree of industry involvement than most of the training programs studied in the literature. As we describe in Chapter III, employers were closely involved in developing the PICG-supported courses—for example, through co-funding arrangements (including monetary and in-kind contributions) and by advising providers on curriculum development—which could lead to stronger market alignment of these courses relative to other programs. Third, the ISWD project was explicitly designed to integrate market-relevant training with complementary activities and broader sector reforms aimed at improving the quality and market relevance of vocational training, and this was not the case for most other training programs. The expected changes in the TVET sector resulting from these complementary activities—for example, adoption of best practices by TVET providers, increased employer engagement, and improved public perceptions of TVET—could support broader improvements in outcomes for graduates of Georgian TVET programs. It is possible that these features of the ISWD project could make it more successful than typical vocational training programs.

C. Objectives of the interim report

This interim report has two main objectives. First, it provides preliminary findings on the evaluation's key research questions (which are presented in Chapter II), including findings related to implementation and early results from all ISWD activities. These findings will lay the groundwork for the final evaluation report, which will be a more comprehensive assessment of the long-term effects of supported TVET courses and the sustainability of the project's activities after the compact ends. Second, the report describes the background characteristics of the sample of trainees in PICG-supported courses whom we plan to follow to assess their labor market outcomes after they graduate. This description will provide valuable context for the final analysis of those outcomes. It also helps us assess the validity of one component of our evaluation design, which is intended to compare the labor market outcomes of trainees in improved PICG-supported courses to the outcomes of earlier cohorts in similar courses before they were improved.

The remainder of this report is structured as follows. In Chapter II, we list the research questions we seek to address, present the evaluation design, and describe the interim data and analysis approach. The following chapters present our findings related to the PICG component

(Chapter III) and the other project components (Chapter IV). We conclude in Chapter V with a discussion of the contribution of our findings the research questions, the implications of the findings for the evaluation, and our plans for the final evaluation report.

II. EVALUATION DESIGN AND INTERIM ANALYSIS

In this chapter, we review the design for the evaluation of the ISWD project and describe our interim analyses. We begin by listing the key evaluation questions and explaining how we expect the evaluation to answer them. We then describe the data analyzed in this interim report—which include quantitative and qualitative data, as well as project documents and administrative data—and our analysis approach.

A. Evaluation questions

The evaluation of the ISWD project is designed to address eight key questions (and related sub-questions). These questions cover the implementation of the activities, their effects on project participants and the TVET sector more broadly, and their sustainability. Because the PICG component (Component 1) is the project's largest component, five of the eight questions focus on that component.

1. How did the implemented PICG-supported courses compare with the original grant proposals, and what were the reasons for any deviations?

2. Did trainees enroll in PICG-supported courses and graduate from them at targeted levels?
   a. To what extent did women or members of socially disadvantaged groups (defined by language, region of origin, or other socio-demographic characteristics) enroll and graduate?
   b. Did these patterns differ across training sectors and grantees?

3. What were the labor market outcomes (employment and wages) for graduates from PICG-supported courses?
   a. How did the outcomes of these graduates compare to those of graduates from other, non-supported courses?
   b. Did these results differ by gender or other socio-demographic measures?
   c. Did the results differ across training sectors and grantees?

4. What were employer perceptions of the graduates from the PICG-supported courses, and how did the availability of these graduates affect their hiring and training plans?[3]
   a. Do employer perceptions of graduates from PICG-supported courses differ according to gender or socio-demographic categories?

5. Will PICG-supported courses be sustained after the compact?
   a. What are the main challenges to sustaining these courses, and how can they be overcome?
   b. How has the level of engagement between employers and grantees changed after the compact?

[3] This includes examining the extent to which graduates from PICG-supported courses displaced existing workers, and employers' perceptions of how hiring these graduates affected their firm's productivity and growth potential.

The remaining three key research questions focus on the other project components, with one question per component—STPP (Component 2), technical assistance for policy reform (Component 3), and the annual conference (Component 4):

6. What are TVET providers' perceptions of the best practices identified and disseminated by the project, to what extent have they adopted them, and what are the main barriers to doing so?
   a. How were best practices identified and disseminated in practice?
   b. How has the adoption of best practices affected TVET providers, including the grantees and other providers?
   c. Is the adoption of best practices sustainable, and is the extent of adoption likely to increase in the future?

7. To what extent have the MES and its agencies adopted the policy reforms supported by the project, (for example, those related to industry engagement, marketing of TVET, and quality improvement) and what have been the main challenges in doing so?
   a. How has the adoption of these reforms affected or expected to affect the TVET sector, and in what time frame?
   b. Are the policy reforms supported by the project sustainable, and how are these policies expected to evolve?
   c. Is there any evidence of a broader shift toward higher-level, industry-driven courses in the Georgian TVET sector? If so, what was the role of the project, and if not, why not?

8. How and to what extent has the annual TVET conference influenced providers, employers, the MES, and other TVET sector stakeholders?
   a. Who attended and financed the conference, and what were its main areas of focus?
   b. Is the conference likely to be sustained in the future?

To answer these questions, we are conducting a mixed methods performance evaluation, which includes two studies: (1) a quantitative outcomes study of the PICG component, and (2) a qualitative study assessing all project components. To evaluate the possible effects of the PICG component, the outcomes study will measure the training and labor market outcomes of trainees in PICG-supported courses and, to the extent possible, compare those outcomes with those of a relevant sample of trainees who attended non-supported courses. The qualitative study will explore implementation of all the project components, the potential mechanisms driving the results observed in the PICG outcomes study, and the likelihood of sustainability across all ISWD initiatives after the compact ends.

B. Evaluation design

This section describes the two components of the evaluation—the outcomes study and qualitative study—in detail, and highlights how this interim report contributes to them. The complete description of the evaluation design can be found in our evaluation design report (Borkum et al. 2018.)

1. Outcomes study

The outcomes study for The PICG component will describe the outcomes of trainees who enrolled in PICG-supported courses. This includes an analysis of their training experiences, graduation rates, and key post-graduation labor market outcomes—in particular, employment rates and wages. We will measure trainees' outcomes using data from a trainee tracer survey that will follow them into the labor market about one year after they graduate.

To place these outcomes in context, we also plan to use a combination of study-collected survey data and MES survey data to compare the labor market outcomes of trainees in the PICG-supported courses to those of trainees in a broad set of non-supported courses. We will use two complementary approaches to identify the non-supported courses for these comparisons:

- **A benchmarking approach**, which will compare the outcomes of trainees in PICG-supported courses to those of trainees enrolled contemporaneously in a broad set of public TVET courses in Georgia, using secondary tracer survey data collected annually by the MES. This approach will cover trainees in all 41 PICG-supported courses included in the evaluation sample. (The evaluation sample comprises 38 new or improved degree courses, plus 3 certificate courses that were initially expected to be accredited as degree courses.)
- **A pre-post design**, which focuses on the PICG-supported courses that the project worked to improve (instead of introducing new courses in those subjects), and compares the outcomes of trainees in these courses with those of an earlier cohort taking the same courses (before they were improved). This approach will cover trainees in 9 of the 41 PICG-supported courses included in the evaluation sample, which are those that existed in some form before the grants were awarded and for which we were able to collect data from a cohort of trainees who attended the courses before they were improved.[4]

In this interim report, we present findings from the analysis of baseline tracer survey data collected from trainees in PICG-supported courses and in the pre-improvement courses identified for the pre-post design, while training was still underway. We use these data to describe enrollment patterns in PICG-supported courses (evaluation question 2), assess trainees' initial perceptions of and expectations from these courses (relevant to evaluation question 3), and compare the characteristics of trainees in PICG-supported courses and trainees in the respective pre-improvement courses (also relevant to evaluation question 3).

2. Qualitative study

The qualitative study will draw primarily on interviews and focus groups with key stakeholders, complemented by contextual information from grantee documents and administrative data. This interim report focuses on findings from qualitative data collected in late 2018, toward the end of the compact; a final, post-compact, round of qualitative data collection is planned for 2021. The interim findings cover the following main areas:

[4] As we describe in Chapter V, we now plan to add a third approach, which will compare the post-training wages of trainees in all 41 PICG-supported courses included in the evaluation sample to the wages they earned before completing their training (among trainees who earned a wage in both periods). This approach is possible because slightly more than half the sample of trainees in the PICG-supported courses were either employed before training or are employed while they are taking their training course, and have also reported their associated wages.

- **Implementation of PICG-supported courses and their sustainability after the compact** (relevant to evaluation questions 1, 2 and 5). We sought to understand how the PICG grantees developed courses, how they calibrated curricula and instruction to industry needs, how they managed the accreditation process for these courses, and how and why implementation diverged from the original proposals. We also explored the perceived sustainability of the PICG-supported courses.
- **Trainees' and employers' perceptions about the potential benefits of PICG-supported courses** (relevant to evaluation questions 3 and 4). We examined trainees' initial perspectives about the training and their expectations for employment after they graduate (complementing information on these topics from the baseline trainee tracer survey conducted for the outcomes study). We also explored employers' perspectives on the quality of the PICG-supported courses and the implications for their hiring and training practices, focusing on local employers who partnered with grantees in establishing these courses.
- **Implementation of best-practice grants and adoption of best practices** (relevant to evaluation question 6). We documented how the best-practice grants were implemented, examined how the practices were disseminated once they were developed, and assessed the potential for wider adoption.
- **Implementation and potential effects of national changes in TVET policy** (relevant to evaluation question 7). We sought to understand progress made in each of the policy areas supported by Component 3 and to assess the likely sustainability of new policy initiatives after the compact ends.
- **Implementation and potential effects of the compact's annual TVET conference** (relevant to evaluation question 8). We examined how the conferences were implemented and analyzed the perceptions of TVET sector stakeholders on the benefits of attending conferences.

C. Interim data collection and analysis approach

This section describes the interim data we collected and the analysis we present in this report, organized by quantitative data, qualitative data, and project documents and administrative data, respectively.

1. Quantitative data

The quantitative data for the interim analysis are drawn from a baseline tracer survey of trainees who were enrolled in PICG-supported courses and pre-improvement courses.

Goals of the baseline survey

The main goals of the baseline survey were as follows: (1) to describe enrollment patterns in PICG-supported courses; (2) to compare the characteristics of trainees in the PICG-supported courses and the pre-improvement courses (which will provide context for the pre-post analysis); (3) to provide evidence on trainees' initial perceptions of the PICG-supported courses and their expectations for the future; and (4) to obtain detailed contact information for trainees in these courses for the follow-up survey.

Targeted sample and response rates

MCA-Georgia contracted with Georgian Opinion Research Business International (GORBI) to collect baseline data from as many trainees as possible who had enrolled during the compact in the 41 PICG-supported courses in the evaluation sample, regardless of their enrollment status at the survey date. This included up to three cohorts in each course, depending on the course dates. We were unable to cover all the cohorts that enrolled during the compact for two reasons: (1) in two courses (the Georgian Mountain Guide Association [GMGA] trekking guide course and the Spektri Level IV welding course), trainees in the first cohort had graduated before the baseline survey was conducted; and (2) given the timing of baseline data collection and this interim report, the baseline survey does not cover cohorts that will enroll in the final six months of the compact.

In total, the baseline survey collected data from at least one cohort in 40 of the 41 PICG-supported courses included in the evaluation sample (the exception was the Spektri water sewage systems exploitation technician course, which had no enrollees during the baseline data collection period). More specifically, the final sample comprised the first cohort of trainees in 38 of the 41 PICG-supported courses included in the evaluation sample, the second cohort in 26 PICG-supported courses, and the third cohort in 6 PICG-supported courses (Appendix Table A.2).[5] We also targeted the final cohort of trainees in 11 pre-improvement courses, which are linked to 9 PICG-supported courses (Appendix Table A.3).[6] (These links are not one-to-one, because in some cases the new PICG-supported course drew on aspects of more than one preexisting course.) For these pre-improvement courses, the sample frame consisted only of trainees who were present in class on the survey date (rather than all enrollees) because the time and resources available to conduct the survey before trainees graduated were limited.

Overall, according to administrative data collected by GORBI, there were 1,451 enrollees in the PICG-supported cohorts included in the interim analysis, including 760 in the first cohort, 420 in the second cohort, and 271 in the third cohort. Of these 1,451 enrollees, 1,148 completed a baseline survey, resulting in an overall response rate of 79 percent (80 percent for the first cohort, 73 percent for the second cohort, and 87 percent for the third cohort) (Table II.1). Respondents include some trainees who had dropped out and were no longer active in the course at the time of data collection (about 17 percent of trainees in the targeted sample and 9 percent of trainees in the respondent sample were not active at the time, according to grantee administrative data). In pre-improvement courses, a total of 179 enrollees in the final cohort of these courses (all of whom were active trainees at the time) completed a baseline survey. We are unable to

[5] As discussed in the evaluation design report (Borkum et al. 2018), because the PICG-supported courses are so new, most of them are likely to evolve substantially after the first cohort. For example, there could be substantial changes in terms of recruitment efforts, types of trainees enrolled, course content and delivery, technical facilities and equipment, and partnerships with employers for internships or job placements. Therefore, the training and labor market experiences of the first cohort might not reflect those of subsequent cohorts enrolled in a more developed version of these courses. To address this, we will conduct sensitivity checks in the final analysis that restrict the sample of trainees to those in the second and third cohorts.

[6] Appendix Table A.3 excludes several pre-improvement courses linked to the PICG-supported courses established by Community College Spektri. We attempted to schedule data collection for the final pre-grant cohort of trainees in these courses in June 2017, but were unable to do so before the trainees graduated. The number of trainees in these courses was relatively small compared to the overall number of trainees across all pre-improvement courses.

calculate an equivalent response rate for the pre-improvement courses because we do not have information on the total number of enrollees.

Table II.1. Sample sizes and response rates for the baseline trainee survey

	First cohort	Second cohort	Third cohort	Total
PICG-supported courses				
Number of courses	38	26	6	40
Number of enrollees at start of course	760	420	271	1,451
Number of completed surveys	606	306	236	1,148
Response rate (percent)	80	73	87	79
Pre-improvement courses				
Number of completed surveys[a]	–	–	–	179
Response rate (percent)[b]	–	–	–	n.a

Source: Information on the number of enrollees in PICG-supported courses is from administrative data collected from providers by GORBI.

[a]All trainees were from the final pre-improvement cohort in each course.

[b]For the pre-improvement courses, our sample frame comprised all enrollees present on the day of the data collection site visit; we did not seek to survey all enrollees. Because we do not have information on the total number of enrollees, we are unable to calculate a response rate.

n.a = not available.

Timing of the baseline survey

GORBI collected these data between May 2018 and February 2019, mostly using paper-based surveys that were completed by the trainees themselves during GORBI's site visits to each class. (For trainees who had dropped out or were absent from class on the day of the survey, GORBI used contact information from grantee administrative records and attempted to complete the survey by phone or email; about one-third of surveys were completed by phone, and only a handful by email.) We sought to survey trainees as close as possible to the start of the various PICG-supported course to minimize the effect of dropouts on sample attrition. However, in many PICG-supported courses, baseline data collection took place after trainees had been enrolled for several months, most commonly because the course had started before baseline data collection was in place. Only about one-third of respondents in PICG-supported courses were surveyed within one month of the course start date, and about one-third were surveyed more than seven months after this date (Table II.2). However, because most of the information captured in the baseline tracer survey should not vary much over time (for example, trainees' demographic characteristics, prior training, and pre-training job experience), these delays should not substantially affect the accuracy of the findings presented in this report.[7]

Baseline surveys in pre-improvement courses (the 9 courses that existed in some form before the PICG funds were awarded and whose trainees were part of our data collection before they graduated) were conducted by Mathematica's local consultant, who collected data from

[7] Trainees' perceptions of the courses and their expectations for the future might change as they progress through the courses, and would therefore be affected by the timing of the survey. However, our analysis of this information is intended to be preliminary because training was still underway when the data were collected; we will gather more complete information in the follow-up survey, after all trainees have completed their training.

trainees in the final cohort who were scheduled to graduate before the PICG-supported enhancements to the courses began. These surveys, which took place in May and June 2017, were paper-based surveys that were self-completed by trainees in class.[8] In most cases, trainees had been enrolled in these courses for several months when they were surveyed (and in some cases they were close to graduation) because most of the relevant student cohorts had enrolled well before the PICG funds had even been awarded (and before this evaluation's design process began). About two-thirds of respondents in the pre-improvement courses were surveyed more than seven months after the course start date (Table II.2). As with the surveys in PICG-supported courses, most of the information captured in the baseline tracer survey should not vary substantially over time, and we do not expect these delays to meaningfully affect the findings presented in this report.

Table II.2. Timing of the baseline survey relative to the course start date (percentage of respondents unless otherwise indicated)

	PICG-supported courses	Pre-improvement courses
0–1 month	31	12
2–6 months	36	19
7–12 months	30	59
More than 12 months	3	10
Mean (months)	4.5	6.8
Sample size (number)	1,148	179

Note: The gap between the course start date and the baseline survey date was calculated as the difference between the calendar month and year on which each occurred.

Contents of the baseline survey

The baseline tracer survey had several sections (Table II.3).[9] It collected data on enrollees' pre-enrollment training and activities (including employment and wages), expected activities and wages after graduation, and demographic characteristics, as well as their initial perceptions of and experiences with their current training course. We also obtained detailed contact information for trainees in order to get in touch with them for the follow-up survey. (The full baseline survey instrument is in Appendix B.)

[8] Mathematica's local consultant collected these data because it was necessary to mobilize quickly while the trainees were still enrolled, and MCA-Georgia had not yet procured the data collection through GORBI.

[9] We made some changes to the baseline survey for trainees in PICG-supported course (starting in early 2018) after it was administered to trainees in pre-improvement courses (in mid-2017). These changes involved adding or removing some questions, and making some changes in question order and skip patterns. Despite these changes, the basic survey instrument and methodology was similar for pre-improvement and PICG-supported courses, enabling us to combine data from both types of courses in the analysis.

Table II.3. Contents of the baseline trainee tracer survey

Domain	Survey contents
Training information and activities before enrollment	Main activity and wage one year before enrollment; how the trainee heard about the course; provider, name, and level of other training courses the trainee applied to
Expectations for the future	Expected main activity one year after graduation; expected wage; main employers of interest
Demographics and background information	Gender; age; home language; region of origin; marital status; number of children; disability status; parental education level; trainee education level; prior training completed and other concurrent training; current employment status; wage; and work experience
Perceptions of and experiences with current training course	Quality of instructors; classroom activities; quality of written materials; teaching materials; quality of the tools and teaching/laboratory equipment; quality of the building and training facilities; overall quality of the training course; funding sources; internship; career guidance
Contact information	Primary and secondary phone number; email address; Facebook contact information; name, phone number, and email of relatives or friends
Administrative data	National identification number; score in vocational training entry exam

Note: Table reflects the final version of the survey administered to trainees in PICG-supported courses. Contents are presented in the same order that they appear in the survey.

Quantitative analysis approach

Our analysis of the baseline tracer survey data from trainees in PICG-supported courses is largely descriptive in nature. In particular, most of the analyses presented in this report rely on straightforward calculations of the mean and/or distribution of key variables, and explore variation across providers, trainee cohorts, or trainee gender where relevant.

We also compared the characteristics of trainees in improved PICG-supported courses to those of trainees who enrolled in earlier versions of the same courses (before they were improved). To make this comparison, we used the following regression model:

$$Y_{ijt} = \alpha + \beta POST_t + \delta_j + \varepsilon_{ijt} \quad (1)$$

where Y_{ijt} is the characteristic of trainee i enrolled in course j at time t (where t is before or after the improvements); $POST_t$ is a binary indicator for the trainee being enrolled after the PICG-supported improvements; δ_j is a set of binary indicators (fixed effects), one for each PICG-supported course and the pre-improvement course(s) it is linked to;[10] and ε_{ijt} is a random error term. The estimated value of the coefficient β represents the difference in characteristics between the average trainee in PICG-supported courses and the average trainee in corresponding pre-improvement courses.

[10] For example, the PICG-supported Tetnuldi computer network and systems technician course is linked to two pre-improvement courses; the analysis includes a binary variable that is equal to 1 for all these courses and 0 otherwise.

2. Qualitative data

This interim report draws on two sources of qualitative data: (1) interviews and focus groups with project participants; and (2) interviews with high-level stakeholders.

Qualitative data collection

GORBI conducted the interviews and focus groups with project participants between November and December 2018. These project participants included PICG and STPP grantees, trainees and teachers in PICG-supported courses, and employers who partnered with PICG grantees. (Table II.4 summarizes the various types of respondents, the criteria used to select them, and the key topics that were covered.) Mathematica developed detailed protocols for this qualitative data collection and participated in training interviewers and piloting the protocols. GORBI recorded all interviews and focus groups and prepared transcripts in English.

Mathematica staff conducted the interviews with high-level stakeholders. These interviews, which took place in November 2018, included organizations that were involved in project implementation and/or in the TVET sector more broadly. (Table II.4 lists the organizations that we interviewed and summarizes the key topics covered in the interviews.) Mathematica prepared detailed notes from these interviews and used these in the analysis.

Qualitative analysis approach

Our analysis drew on these interviews and focus groups to identify similarities and differences in perspectives across respondents. For the interviews we conducted with high-level stakeholders, we drew on our interview notes to develop a set of initial themes soon after the data were collected. For the interviews and focus groups conducted by GORBI, we analyzed the translated transcripts in NVivo, using a coding scheme that was mapped to the protocols and research questions. We used the coded transcripts to triangulate responses across different respondent types. This approach enabled us to refine the themes developed from the high-level stakeholder interviews and develop new themes.

Table II.4. Interim interviews and focus groups

Respondent	Sample size[a]	Sampling approach	Key topics
Interviews and focus groups conducted by GORBI			
PICG grantees	10 interviews	All 10 PICG grantees	• Successes and challenges of implementation • Nature of and reasons for deviations from original implementation plans, including course development and industry collaboration • Perceived sustainability of PICG-supported courses, and risks to achieving long-term outcomes • Dissemination activities and potential for broader adoption of best practices (STPP grantees)
STPP grantees	8 interviews	8 STPP grantees (4 first round grantees and 4 second round grantees), selected as those whose practices have the best potential for wider adoption (based on discussions with PEM)b	

Table II.4 *(continued)*

Respondent	Sample size[a]	Sampling approach	Key topics
Trainees	11 trainee focus groups	10 mixed-gender, grantee-specific focus groups, and one female-only, cross-grantee focus group;[c] each focus group included 8–10 trainees, with participants selected to yield a diverse group in terms of PICG-supported course, age, and gender[d]	• Perceived strengths and weaknesses of course content, training quality, and training approaches • Perceptions on class attendance and engagement • Plans and expectations for further training and employment
Teachers	11 individual or small-group interviews	One teacher or small group of teachers per PICG grantee,[e] selected from those teaching PICG-supported courses, with participants selected to be diverse in terms of course subjects and gender (if possible)	• Training and professional development associated with the PICG-supported courses • Perceptions of trainees in PICG-supported courses (for example, their ability, interest, and motivation) • Perceptions on class attendance and engagement
Employers	10 interviews	One employer per PICG grantee, selected from those who partnered with PICG grantees to support course development and implementation	• Prior recruitment into and motivation for involvement with PICG-supported courses • Nature and extent of involvement during the course development and implementation phases, satisfaction with the process, and key challenges faced • How successfully initial expectations about these courses have been met, or are likely to be met
Interviews conducted by Mathematica			
MES staff	1 interview	Head of TVET department	• Status of various policy changes supported by the ISWD project, expectations for further changes, and related challenges
NCEQE staff	2 interviews	Head of TVET Quality Assurance Department; Qualifications Development Division staff	• The course development and authorization process for PICG-supported courses, implications for course design, and related challenges
PEM	3 interviews	Team leader and key program staff	• Successes and challenges of implementation • Nature of and reasons for deviations from original implementation plans • Perceived sustainability and risks to achieving long-term outcomes
MCA-Georgia, local MCC staff, and the MCC consultant	3 interviews	Key program staff	• Successes and challenges of implementation • Nature of and reasons for deviations from original implementation plans • Perceived sustainability and risks to achieving long-term outcomes
Other donors in the TVET sector	2 interviews	European Union delegation; United Nations Development Program (UNDP)	• Nature and scope of current and planned investments in the TVET sector • Interaction and coordination with ISWD project • Perceived sustainability of ISWD project and risks to achieving long-term outcomes

Table II.4 *(continued)*

Respondent	Sample size[a]	Sampling approach	Key topics
Industry groups	1 interview	Georgia Chamber of Commerce and Industry	• Extent and nature of engagement between industry, TVET providers, and the MES • Perceived skills of graduates from Georgian TVET programs • Awareness and perceptions of PICG-supported courses

[a]Some interviews were conducted with multiple respondents; these are recorded as single interviews in the table.

[b]We did not include third round STPP grantees because their grant-funded activities were ongoing when data collection was conducted.

[c]One mixed-gender focus group was conducted at each PICG grantee, except for GMGA and Tetnuldi. At GMGA, courses were not in session at the time of data collection; at Tetnuldi, two focus groups were conducted to cover a range of geographic locations where the courses were held.

[d]The female-only focus group was conducted in Tbilisi, and all female trainees in the area were invited to participate.

[e]One teacher interview was conducted at each PICG grantee, except for GMGA (no interview conducted because the courses were not in session) and Tetnuldi (two interviews conducted to cover geographic diversity in course location).

GMGA = Georgian Mountain Guide Association; GORBI = Georgian Opinion Research Business International; ISWD = Industry-Led Skills and Workforce Development; MCC = Millennium Challenge Corporation; MES = Ministry of Education and Science; NCEQE = National Center for Educational Quality Enhancement; PICG = Program Improvement Competitive Grants; STPP = Strengthening TVET Provider Practice; TVET = Technical Vocational Education and Training.

3. Project documents and administrative data

To complement the quantitative and qualitative data, the interim analysis draws on several types of project documents and administrative data. First, we examined the original PICG proposals and related documents to see how far the courses deviated from the original plans. Second, we used administrative data on enrollment in PICG-supported courses to compare actual enrollment to what was planned. Third, we analyzed documents related to STPP grantees (including the final PowerPoint presentations compiled by each grantee and the best-practices handbooks complied by PEM) to describe the best practices that were identified and the dissemination process for them. Finally, we drew on several reports developed by PEM, including quarterly and annual progress reports, reports on the TVET annual conference, and development briefs summarizing progress on policy reforms supported by the technical assistance component. In the next two chapters, we present integrated findings from the interim quantitative, qualitative, and administrative data sources that we analyzed.

This page has been left blank for double-sided copying.

III. FINDINGS ON THE PICG COMPONENT

In this chapter, we present interim findings on the PICG component (Component 1). We draw on both the baseline trainee survey and qualitative data collected from high-level stakeholders and project participants. We examine how the component was implemented, report enrollment levels in the PICG-supported courses, and analyze early perceptions about the quality and effectiveness of these courses from trainees, teachers, and employers. Finally, we examine early perspectives on the likely sustainability of the PICG-supported courses after the period of direct support during the Georgia II Compact comes to an end in mid-2019.

A. Implementation of the PICG component

In this section, we highlight the implementation process, including some of its successes and challenges. Specifically, we examine the processes used to select and oversee the grantees, and how the grantee providers engaged with their partners to develop and implement each PICG course. We also discuss the course accreditation process and how it led to grantees making some changes in the implemented courses from what they originally planned in their grant proposals.

1. Grant management

A rigorous selection process helped to identify high quality grant proposals. In interviews, most stakeholders involved in implementation commended the use of a multi-stage, rigorous selection process starting with a call for concept papers, followed by multiple rounds of reviewing grant proposals, and ultimately having a qualifying subset of applicants resubmit revised proposals.[11] Although this process frustrated some applicants, it gave PEM enough time to thoroughly engage with grantees, and it gave grantees time to improve their proposals and identify suitable partners. Stakeholders believed that this process ultimately yielded a high quality group of grant recipients, and the MES and other donors have expressed interest in replicating the grant selection and management approach for future grant schemes.

Strong grant management systems made it easier to successfully implement the PICG component. MCC and MCA-Georgia both think that the latter's hiring of PEM as a grant manager (instead of having MCA-Georgia manage the grants itself) contributed to the successful implementation of the PICG grants. This gave the project the flexibility to recruit experts in different areas as needed (which would have been difficult for MCA-Georgia to do directly), and avoided placing a substantial management burden on MCA-Georgia. PEM successfully provided grantees with intense and tailored support to refine their proposals, develop their courses for accreditation by the National Center for Educational Quality Enhancement (NCEQE), and supply the formal deliverables specified in the grant agreements. (This support was necessary because grantees had limited experience and capacity in these areas.) Also, because grant funds could only be used to rehabilitate existing physical infrastructure (buildings, workspaces, and related facilities) and not to build new infrastructure, grantees actively sought partnerships and co-

[11] More specifically, there was an initial call for concept papers (70 submissions received), shortlisting by the technical evaluation panel (29 submissions shortlisted); submission of full applications following training by PEM (21 applications received); compliance checks (19 applications accepted); due diligence site visits, feedback, and revised applications (19 applications resubmitted); cost-benefit analysis checks (14 applications passed); and in-person presentations to a technical evaluation panel, leading to final selection (10 grants awarded).

funding for any planned new infrastructure. Finally, having MCA-Georgia handle the procurement process for equipment that cost more than a relatively high threshold amount enabled MCA-Georgia to leverage its experience and capacity in dealing with international suppliers, reduced the burden on grantees, and ensured high quality in these expensive procurements.

Strong working relationships and open communication between key players were essential to the successful implementation of the PICG component. PEM and MCA-Georgia staff reported that despite some initial challenges, they were able to establish a strong working relationship characterized by regular, open, and frank communication. PEM also communicated regularly with a consultant who was an MCC sector expert, and was receptive to his feedback and advice. These interactions, together with joint participation in monitoring visits to PICG grantees, helped the project develop coordinated solutions to implementation challenges. Examples include the following:

- The PICG grants operation manual—the document that describes the operational rules and procedures that grantees have to follow—initially required formal approval for even minor changes to implementation plans, and this was leading to delays. PEM and MCA-Georgia legal staff worked together to amend the grant agreements so that some changes could be handled through a simpler mechanism.
- The Georgian Technical University's PICG cost-sharing commitment was impacted by the parliamentary elections in late 2016 because the existing cost-sharing arrangement had to be approved by the new government. PEM worked closely with MCA-Georgia and MCC to address this issue, and the grant agreement was suspended temporarily while the grantee secured a new cost-sharing arrangement.
- PEM found that certain aspects of the grantees' project management needed improvement, including the quality and speed of reporting and communication with PEM. A joint meeting was held between grantees, MCA-Georgia, and MCC in mid-2017 to highlight these issues, and grantee reporting and communication improved noticeably as a result.

PEM and MCA-Georgia were also attentive to the needs of the PICG grantees, and communicated regularly and openly with them. Grantees highlighted the collaborative nature of the process of working with PEM, saying they viewed PEM as a partner and not simply as the grant manager. Several grantees emphasized the meticulous support they received from PEM, and praised PEM for its responsiveness to their needs. Overall, grantees viewed their good relationship with PEM as having contributed substantially to the successful establishment of their PICG-supported courses.

2. Engagement between grantees and their partners

Grantees worked closely with their formal partners and other local employers to develop and implement the PICG-supported courses. All grantees created formal partnerships with private companies, industry associations, and/or educational institutions, and included these partnerships in their grant applications. Many of these partners were international entities; although only grantees applying for more than US$1 million were required to include international partners to help ensure the quality of the PICG-supported courses, ultimately all

grantees did so. Grantees' partners were involved in creating course standards, modules, and teaching materials (in three cases, international partners provided materials they already had developed, so they could be adapted and translated into Georgian); some were also involved in providing teacher training and issuing internationally recognized certificates to trainees.

According to both stakeholders involved in implementation and the grantees, the types of relationships grantees had with their partners varied, with some partners providing support to grantees on a largely commercial basis, and others engaging with the grantee in a closer, more committed way. The latter included partners who provided monetary or in-kind contributions (for example, equipment, expert consultants, or infrastructure) to help establish the courses. Overall, according to MCA-Georgia, about $6 million of the total investment of $17.7 million (34 percent) was co-funded by partners (including the value of in-kind contributions) greatly exceeding the minimum of between 10 and 15 percent required in the grant solicitation.

Most grantees also collaborated with local employers (firms headquartered in Georgia) as partners. The degree of collaboration during course development varied, ranging from occasional review of course materials (when the course drew largely on existing courses from other countries or was dictated by international standards, such as those in aviation or tourism) to more active engagement in developing new course content and teaching materials addressing novel topic areas. Some employer partners also provided support for training teachers, and some were even involved in entrance examinations and selection of trainees for admission. In addition, some employer partners provided training space for trainees (for example, the Phazisi aquaculture courses used employer laboratories for training so the grantee did not have to construct many different kinds of laboratories on site). As we discuss in Section III.C, local employers also interacted directly with trainees in other several ways during training.

Most local employer partners whom we interviewed reported that their primary motivation to participate in the PICG component was to fulfill the staffing needs of their organization. For example, one employer's main goal was to find younger workers because many people on the employer's staff were nearing retirement age, and younger workers tended to pursue opportunities abroad. Another employer highlighted concerns about the availability of certified staff given the organization's legal requirement that hired staff meet specific certification and qualification criteria for key job postings. In the case of Georgian Technical University (GTU) and Georgian Railways courses, the creation of the PICG-courses was directly driven by requests from employers who were seeking to retrain their existing employees and train future qualified staff.

3. Course accreditation process and implications for implementation

The complex and changing nature of the government accreditation process delayed enrollment in PICG-supported degree courses. All new TVET degree courses in Georgia have to be accredited by NCEQE to ensure their quality, a process designed to assess whether the course curriculum is aligned with the proposed qualification and whether sufficient resources are available to trainees. There is also a separate process for authorization of a TVET institution (to operate, and offer any courses), which is designed to assess whether the available educational courses, material resources, and human resources at the institution comply with government standard. Georgian Railways and the Georgian Mountain Guide Association had to apply for this

authorization as well as go through the accreditation process for specific courses, because they were new institutions created through the PICG component.

Many grantees reported that accrediting the new course content, including reaching agreement on student evaluation criteria for each course, was a labor-intensive process. NCEQE sought to provide substantial support to the PICG grantees to help them prepare the necessary materials and guide them through the complex accreditation and authorization processes. However, NCEQE had a limited number of staff supporting the grantees, and it was difficult for them to simultaneously provide the necessary support for so many new courses.

Another important challenge was that the PICG-supported courses were introduced in the midst of a TVET quality improvement initiative, which was supported by MCC and other international donors. As part of this initiative, accreditation standards were revised during the implementation period, which led to unanticipated requirements and the need to repeat the review process in some cases. For example, many PICG-supported courses had to be re-designed to meet new legal requirements that every course be defined in terms of pre-specified content "modules" covering specific skills. In addition, under the new National Qualifications Framework (NQF), a rigorous process was also introduced to define and approve new TVET "qualifications," creating a separate review process for each type of credential that a TVET course could pursue. Under this new regulation, qualifications had to be approved before any courses designed to earn those qualifications could be accredited. Because most of the PICG-funded courses introduced qualifications that were new to Georgia, providers had to go through this time-consuming qualification-review procedure before applying for accreditation for a course.[12]

In combination, these factors led to substantial delays in applying for and achieving final accreditation, which in turn delayed the start of many of the PICG-funded courses. For example, it was originally anticipated that about half of PICG-supported courses would have started by mid-2017, but in practice, only a handful did. Similarly, more than three-quarters of the courses were expected to have started by the end of 2017, but in practice, only about half had started. In some cases, these delays adversely affected enrollment in the first cohort. For example, one grantee mentioned that the delays in accreditation shortened the time available for an advertising campaign before the course started. Another reported that the delays in the start of the course resulted in many trainees losing interest and withdrawing their enrollment. (Other reasons for delays in starting the PICG-supported courses on time included delays in constructing infrastructure and procuring new equipment.) Nevertheless, by the end of 2018 almost all PICG-supported courses that were initially planned as degree courses (38 out of 41) had been accredited. The only exceptions were the courses offered by the Agricultural University; ultimately, this grantee decided not to pursue full accreditation and instead to implement their courses as certificate courses.

[12] The government's qualification review process required the involvement of "sectoral councils," which are composed of representatives from employers, trade unions, TVET institutions, and government in a given economic sector. Several of the PICG-supoorted courses were operating in new sectors that had not had TVET courses before, and in these cases delays occurred because the councils for that sector had not been established.

The accreditation process also led to changes in course design relative to what was planned. During the accreditation review process, NCEQE requested changes to the modules, course titles, and levels[13] associated with the new qualifications, which required grantees to revise their materials—leading to more delays and causing deviations from the original grantee proposals. Appendix Table A.4 summarizes the changes to the PICG-supported course titles, levels, and durations. Overall, of the 47 degree courses that were originally planned, 28 underwent substantive changes to the course level (most often, the level was lowered),[14] were cancelled, split up, or merged with other courses (ultimately, 38 PICG-supported degree courses and 3 certificate courses were created from the originally-planned 47 degree courses). Some grantees commented that NCEQE asked them to add modules that they did not consider necessary. However, on average these changes to original plans made the duration of the courses slightly shorter (17 months versus 20 months). Despite these changes, there was broad agreement across stakeholders that most of the PICG-supported courses were novel in the Georgian TVET market, offering new fields of study and more advanced training than had been available in the past.

B. Enrollment in PICG-supported courses

In this section, we describe how closely enrollment levels matched expectations by comparing the grantee proposals to administrative data we collected from grantees. Using data from the trainee tracer survey, we also describe the demographic characteristics, as well as the training and employment background, of trainees in PICG-supported and pre-improvement courses.

The PICG component was designed to create TVET courses that had the potential to improve the employment and earnings outcomes of trainees, and create an inclusive educational environment that would welcome trainees with diverse backgrounds and characteristics. Examining the profile of trainees will ultimately help place the evaluation's findings about employment and earnings outcomes in context and address the research question on the extent to which women or members of socially disadvantaged groups participated in PICG-supported courses.

1. Enrollment levels

The size of the first trainee cohort enrolling in PICG-supported courses fell short of expectations, but the total number of enrollees across all cohorts was close to expectations for the compact period. According to the grantees' original proposals, the first cohort in the 41 PICG-supported courses included in the evaluation sample was expected to include 1,271 trainees. In practice, only 760 trainees enrolled in this inaugural cohort, across all courses (Table

[13] Levels run from I to V; higher values represent more sophisticated course content with more stringent entry requirements.

[14] Ultimately, about three quarters of the PICG-supported courses in the evaluation sample were established at levels IV or V, the highest levels. However, slightly less than half of the trainees in the evaluation sample enrolled in these level IV and V courses, largely because of high enrollment levels in the Tetnuldi level III information technology course, which is offered across multiple campuses.

III.1).[15] The initial expectations for the number of enrollees in the first cohort of PICG-funded courses might have been too ambitious given that many of the courses were in entirely new areas, and grantees had limited time to advertise or conduct outreach for the first cohorts because of the delays in finalizing accreditation. This might have limited potential trainees' awareness of and interest in some of these courses when they were launched. In addition, during the accreditation process NCEQE required the number of places in some courses to be reduced to better match the human and physical resources at the institution. The relatively high academic entry requirements for the new courses might have been another challenge to enrollment.

However, when enrollment numbers for the first cohort were combined with enrollment numbers for the second and third cohorts, total enrollment in the PICG-supported courses included in the evaluation sample equaled 1,451 trainees through February 2019. This figure is very close to the project's original target of having 1,500 trainees enrolled by the end of the compact in mid-2019 (MCA-Georgia 2018). This target is likely to be exceeded because the evaluation sample does not include enrollees in the 10 non-evaluation certificate courses, and because another cohort is expected to enroll in many courses in spring 2019, before the end of the compact.[16] Of these 1,451 trainees, administrative data from grantees suggest that about 85 percent were still active in the course at the time of baseline data collection (typically several months into the course); the rest had dropped out or been expelled. The enrollment data by course and cohort are relevant to MCC's cost-benefit analysis (CBA) assumptions, which drive the estimated economic rate of return (ERR) for the project, and might be helpful to MCC as it updates the ex-ante CBA model.

[15] The latter is a slight underestimate because it excludes the first cohorts in the GMGA trekking guide course and the Spektri level IV welding course; trainees in these courses had graduated when baseline data collection was conducted, and so we did not collect administrative data on enrollment. According to administrative data from PEM (which we did not verify independently), this amounts to about 20 trainees in total.

[16] MCA-Georgia's monitoring data suggest that a total of 1,937 trainees enrolled in the PICG-supported courses over the period covered by this report. There are two main possible reasons for the discrepancy with our count of 1,451 trainees. First, we do not include trainees in certificate courses (except for the three certificate courses at the Agricultural University). Second, because GORBI collected administrative data from grantees after the courses were in session, it is possible that grantees did not retain records of trainees who enrolled but dropped out very early in the course.

Table III.1. Planned versus actual enrollment in PICG-supported courses

Training provider	Originally planned courses: Number of enrollees per cohort	Courses as implemented (enrollment as of February 2019): Number of enrollees in first cohort[a]	Number of enrollees in second cohort[b]	Number of enrollees in third cohort[b]	Total number of enrollees
Batumi State Maritime Academy	174	102	58	43	203
Georgian Mountain Guide Association	24	15	45	--	60
Vocational College Phazisi	45	43	--	--	43
Vocational College Tetnuldi	200	216	69	198	483
Georgian Aviation University	105	20	2	--	22
Community College Spektri	322	107	86	22	215
Georgian Technical University	96	66	45	8	119
Georgia Railway Transport College	125	110	28	--	138
Agricultural University of Georgia	140	57	61	--	118
Georgian Institute of Public Affairs	40	24	26	--	50
Total	**1,271**	**760**	**420**	**271**	**1,451**

Source: Information on the originally planned courses is from the PICG grantees' proposals. Information on the number of enrollees was estimated from administrative data collected from providers by GORBI.

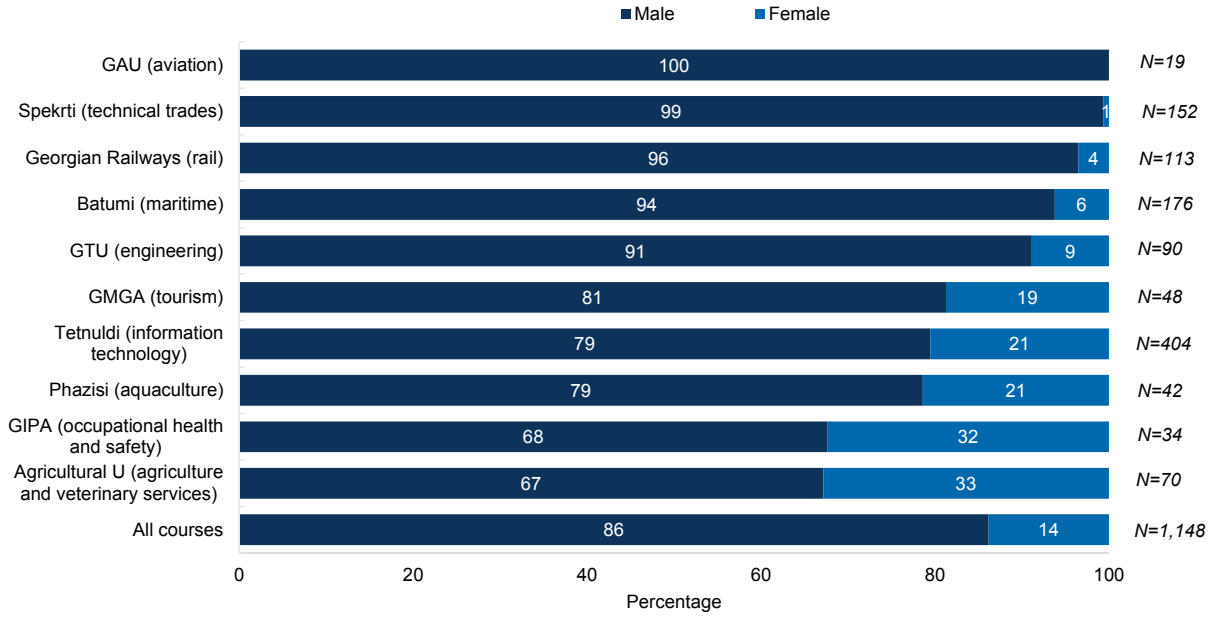
[a]Excludes the first cohort in the GMGA trekking guide course and the Spektri level IV welding course, because trainees had graduated when baseline data collection was conducted.

[b]As of February 2019, some courses were not yet scheduled to enroll a second or third cohort. These figures therefore do not represent the final size of the second and third cohorts. Dashes (--) indicated that the grantee had not enrolled a second or third cohort in any of its PICG-supported courses when the data collection was conducted.

2. Demographic characteristics

Trainees in PICG-support courses are disproportionately male. Only 14 percent of all trainees in our analysis sample for PICG-supported courses are female (Figure III.1). However, there is substantial variation across providers, with the proportion of female trainees ranging from zero to about one-third. The percentage of female trainees is generally lowest among the providers offering courses in sectors that are traditionally male-dominated (that is, Georgian Aviation University [GAU] aviation courses, Spektri technical trades courses, Georgian Railways rail courses, Batumi maritime courses, and GTU engineering courses); relative to these courses, female enrollment is higher (although still far from equal to male enrollment) in courses related to tourism, information technology, aquaculture, occupational health and safety, and agriculture and veterinary services.

Figure III.1. Gender of trainees in PICG-supported courses



Source: Baseline trainee survey.

GAU = Georgian Aviation University; GIPA = Georgian Institute of Public Affairs; GMGA = Georgia Mountain Guides Association; GTU = Georgian Technical University.

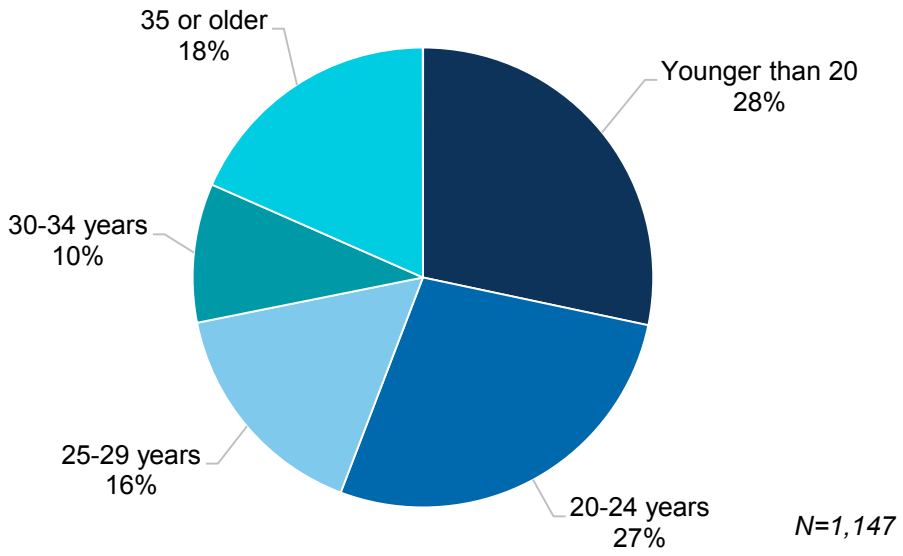
Qualitative data suggest that the gender imbalance in some PICG-supported courses reflects cultural stereotypes associated with certain occupations. Grantees, teachers, and trainees agreed that there are no explicit barriers for women when it comes to admission to or studying in PICG-supported courses—all are treated equally. In a few cases, trainees mentioned that providers and teachers specifically encouraged women to apply. However, there were still some courses in which all trainees were male (for example, Spektri welding courses, GAU aviation courses, or Batumi fishing vessels navigation courses). Women were likely reluctant to enroll in these courses because these professions were traditionally considered to be for men only, and women are consequently not confident about their employment prospects. This is especially the case in courses that require physical strength or exposure to harsh environments.

Trainees are typically in their 20s and 30s. Most trainees did not enroll in PICG-supported courses directly from secondary school: the typical trainee is substantially older. Specifically, about 3 in 10 trainees in our analysis sample were younger than 20, about 4 in 10 were in their 20s, and about 3 in 10 were in their 30s when they enrolled in the PICG-supported course (Figure III.2). The mean age of trainees at enrollment was 26, but this also varies across providers. On average, the Tetnuldi information technology courses have the youngest trainees (mean age at enrollment 22 years) and the Phazisi aquaculture and Spektri technical trades courses have the oldest trainees (mean age at enrollment of 34 and 32 years, respectively). (Appendix Figure A.1).[17] The overall age of trainees is consistent with the fact that, as we

[17] Because Tetnuldi has the largest number of trainees, the relatively young Tetnuldi trainees have a large influence on the overall mean age. The same is true for all our analyses that pool the PICG-supported courses; because we present unweighted results that apply to the average trainee, courses with more trainees affect the pooled means more than those with fewer trainees do.

describe below, many trainees enter the PICG-supported courses with advanced education and/or work experience, and not directly after completing their general education.

Figure III.2. Age at enrollment in PICG-supported courses



Source: Baseline trainee survey.

Almost half of trainees in PICG-supported courses had completed some education or training beyond secondary school. Among the 44 percent of trainees with an educational background beyond grade 12, having a university education was the most common (27 percent of all trainees), followed by vocational training (14 percent) and some other type of training (3 percent) (not shown). Trainees' education level again varies substantially across providers (Figure III.3). For example, about one-third of trainees in the Tetnuldi information technology courses had not completed grade 12, whereas all of the trainees in the GAU aviation courses had completed grade 12 or (more commonly) further education or training. Female trainees tended to have a higher level of education than male trainees (not shown),[18] which could reflect the concentration of female trainees in courses with higher entry requirements.

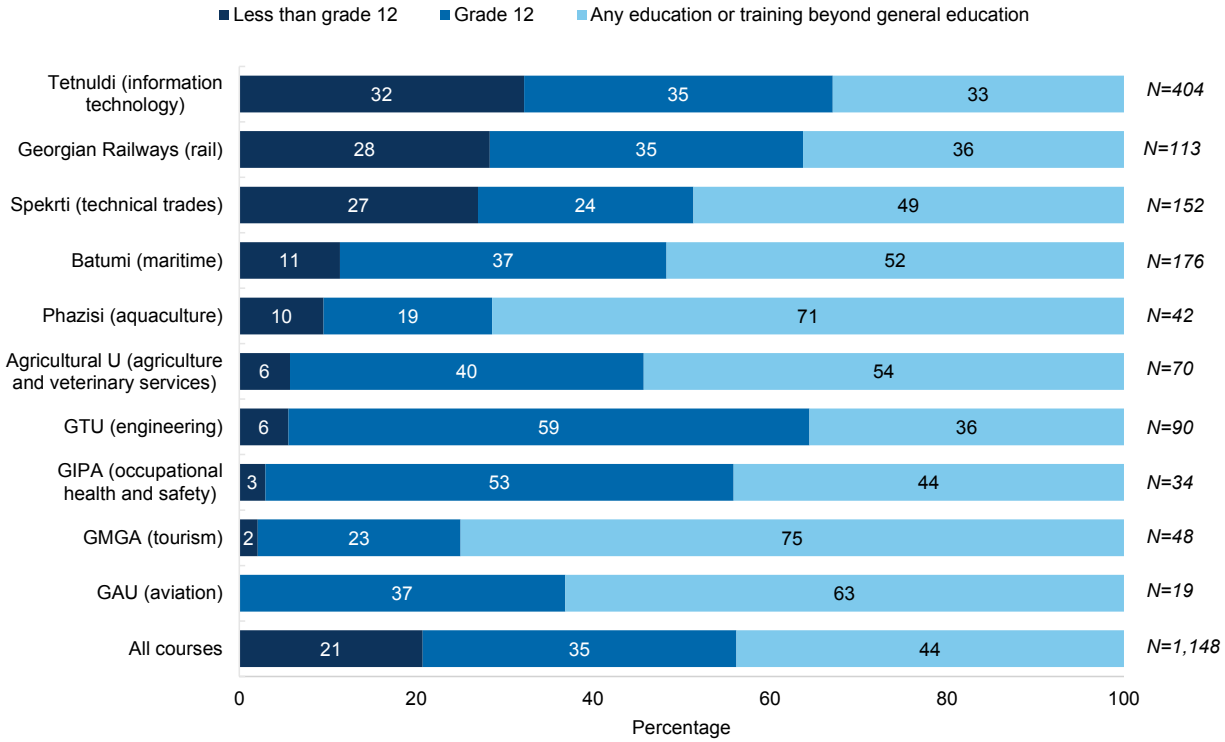
The PICG-supported courses accommodated a few non-Georgian trainees and trainees with physical disabilities. According to the baseline trainee survey, almost all trainees (97 percent) were native Georgian speakers, and only a few (about 3 percent and 1 percent, respectively; not shown) have a physical or mental disability. In focus groups, only a few trainees mentioned that they studied with trainees of other ethnicities, and all of them knew Georgian and therefore did not face any specific barriers to their participation in PICG-supported courses. Some grantees made an effort to accommodate non-native Georgian speakers by providing training materials in other languages (Russian or English), encouraging trainees to

[18] Specifically, female trainees were less likely than male trainees not to have completed grade 12 (12 percent versus 21 percent) and more likely to have completed some education or training beyond general education (60 percent versus 43 percent). The overall difference in the distribution of education level by gender was statistically significant.

make presentations in the language they are most comfortable in, or offering a preparatory course in Georgian.

Trainees from most providers mentioned that their classrooms and facilities are adapted for people with physical disabilities and did not think there were any barriers for them to study, although only a few directly mentioned studying with trainees who had disabilities. There were examples of trainees with hearing and visual impairments at two providers, and these trainees were able to participate in instructional activities with the help of aides.

Figure III.3. Educational background of trainees in PICG-supported courses



Source: Baseline trainee survey.

GAU = Georgian Aviation University; GIPA = Georgian Institute of Public Affairs; GMGA = Georgia Mountain Guides Association; GTU = Georgian Technical University.

For preexisting courses enhanced by PICG grants, prior trainees had lower education levels than the trainees enrolling after PICG-supported enhancements. To examine whether the PICG grants appear to have changed the profile of trainees at these providers, we also compared key demographic characteristics of trainees in improved PICG-supported courses to those of trainees in the equivalent courses before PICG-supported improvements began. Compared to the prior version of these courses, the percentage of female trainees and the mean age of trainees was similar, but trainees in the improved courses tended to have a substantially higher level of education than those in pre-improvement courses (Table III.2). Specifically, in the improved courses trainees were much more likely to have completed grade 12 and pursued education and training beyond their secondary education (35 percent versus 23 percent in the pre-improvement courses).

Table III.2. Demographic characteristics of trainees in improved PICG-supported courses and equivalent pre-improvement courses (percentage of trainees, unless otherwise indicated)

	Mean for PICG-supported courses	Mean for pre-improvement courses	Difference	*p*-value
Female	18	24	-5	0.152
Age at enrollment (years)	23	22	1	0.135
Educational background:				<0.001[a]**
Less than grade 12	31	53	-22	<0.001**
Grade 12	34	25	10	0.026*
Any education or training beyond general education	35	23	12	0.006**

Source: Baseline trainee survey.

Note: N = 478-479 for improved PICG-supported courses; N = 179 for pre-improvement courses. Pre-improvement course means and differences regression-adjusted using fixed effects for each group of linked courses.

[a]Chi-squared *p*-value for the equivalence of distributions, estimated using a multinomial logit model.

*Significantly different from zero at the 5 percent level, two-tailed test.

**Significantly different from zero at the 1 percent level, two-tailed test.

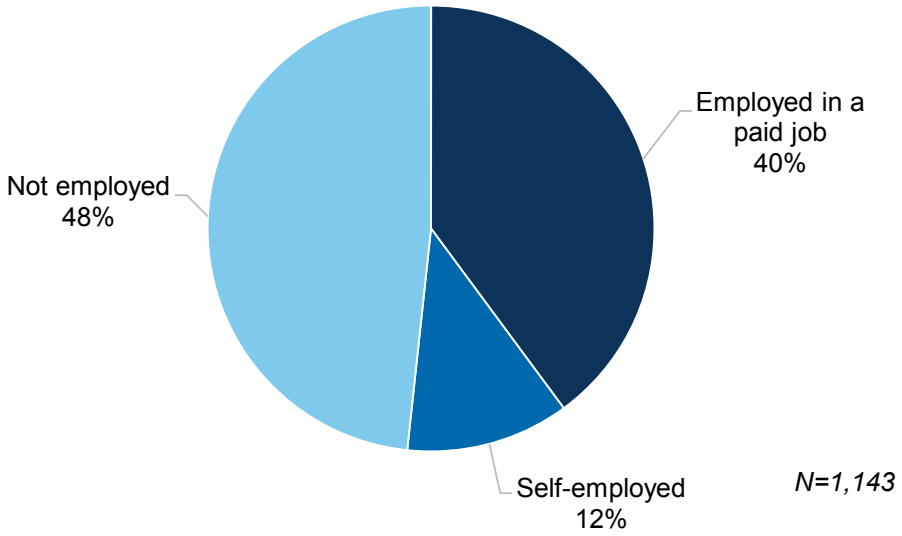
3. Training and employment background

More than half of the trainees were working while they were enrolled in PICG-supported training; many had substantial work experience. About 52 percent of trainees enrolled in PICG-supported courses were simultaneously working at the time of the baseline survey, the majority in paid jobs rather than self-employment (Figure III.4). Among trainees who were working at the time of the baseline survey, about three-quarters were working at least 40 hours per week, and about half were employed in a field relevant to the PICG-supported course (not shown). More than 80 percent of the trainees who were working also reported that paid employment or self-employment was their main activity in the year before the survey (not shown). Together, these findings suggest that many trainees stayed at their job, typically full time, even after they enrolled in the PICG-supported course.[19]

In addition, about 12 percent of trainees enrolled in PICG-supported courses were simultaneously engaged in other training. In findings not shown in the figure, the survey revealed that 4 percent of trainees were engaged in other vocational training, and 8 percent in university education. (About 6 percent of trainees were engaged in other training *and* working at the time of the baseline survey) Women were engaged in concurrent training at a rate double than that for men (20 percent and 10 percent, respectively), but the rate of concurrent employment was similar.

[19] As we discuss in Chapter V, the high number of employed trainees provides a new opportunity to measure pre-post changes in earnings in a meaningful way by comparing trainees' earnings after they graduate to their earnings before or during enrollment.

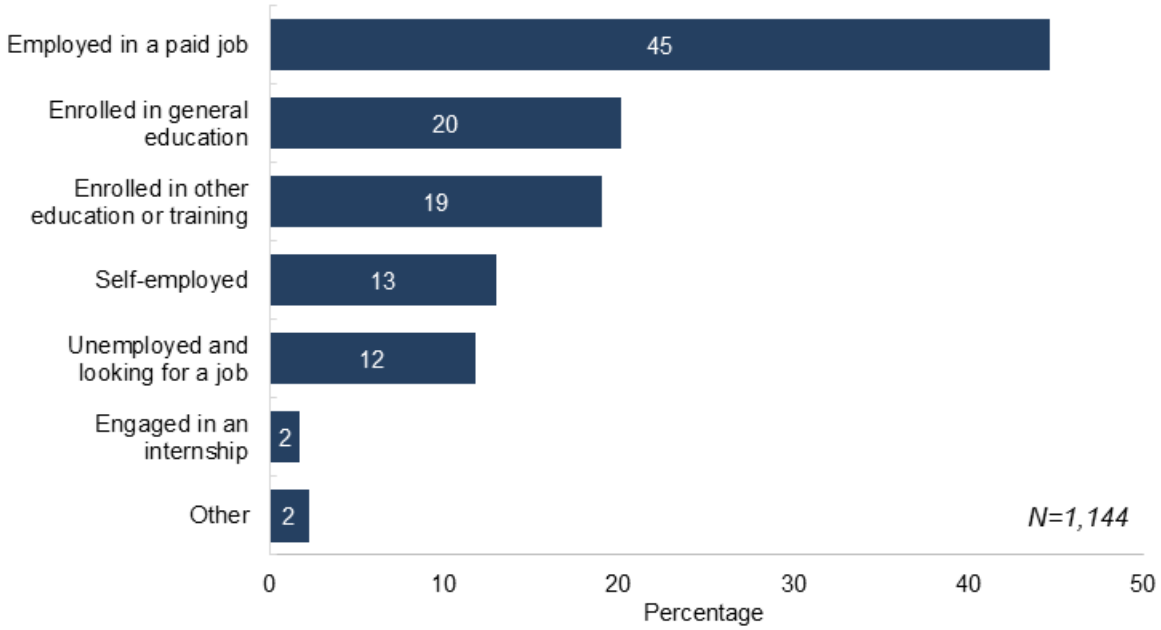
Figure III.4. Employment status of trainees in PICG-supported courses at the baseline survey date



Source: Baseline trainee survey.

Overall, many trainees who enrolled in the PICG-supported courses had substantial work experience. More than half of trainees in our analysis sample reported employment as their main activity in the year before enrolling (Figure III.5), and almost three-quarters had at least some work experience (Figure III.6). About 41 percent of trainees had at least five years of work experience; on average, the trainees had a total of almost six years of work experience before enrolling. This is consistent with the earlier findings on the age profile of trainees—most trainees were in their 20s and 30s, and therefore had the opportunity to accumulate work experience before enrolling in the PICG-supported courses.

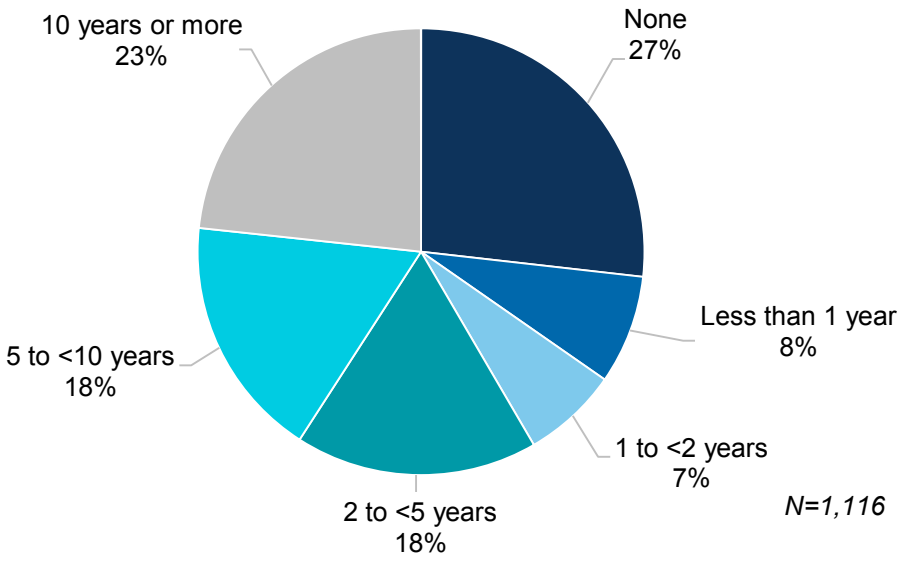
Figure III.5. Main activities in the year before enrollment in a PICG-supported course



Source: Baseline trainee survey.

Note: Categories sum to more than 100 percent because respondents could provide more than one response.

Figure III.6. Work experience of trainees in PICG-supported courses



Source: Baseline trainee survey.

Qualitative data suggest that it is a challenge for trainees to manage the demands of their PICG-supported courses while working. In focus groups, trainees agreed that the most common reason they missed classes was the challenge of having to balance the demands of the course with concurrent work commitments. Trainees who had to regularly miss classes tried to make up for the missed lectures by working with the teachers or logging onto an online course portal to get materials and study at home; those trainees said that their teachers supported their efforts. Some trainees had flexible jobs where they were allowed to adjust their schedules to attend classes, but others said they had failed exams or faced pressure to leave their current jobs.

"It is very hard for me, because I am working. In our life, it is difficult not to work and just attend classes, I can't afford it. I need money for transport and other things. I am trying my best. When I am not here I work because they help me at work, and I am working on Saturdays and Sundays. Training here starts at 3 p.m., so I can work before this time."

– PICG trainee

"I have to be absent sometimes, not very often, as I am employed. Sometimes, I am not able to attend the classes, but as everything exists in [an] electronic version, and all of us have our own username, I can study … from home, as I will know which module we stop [on and] where we are."

– PICG trainee

C. Perceptions of course quality and effectiveness

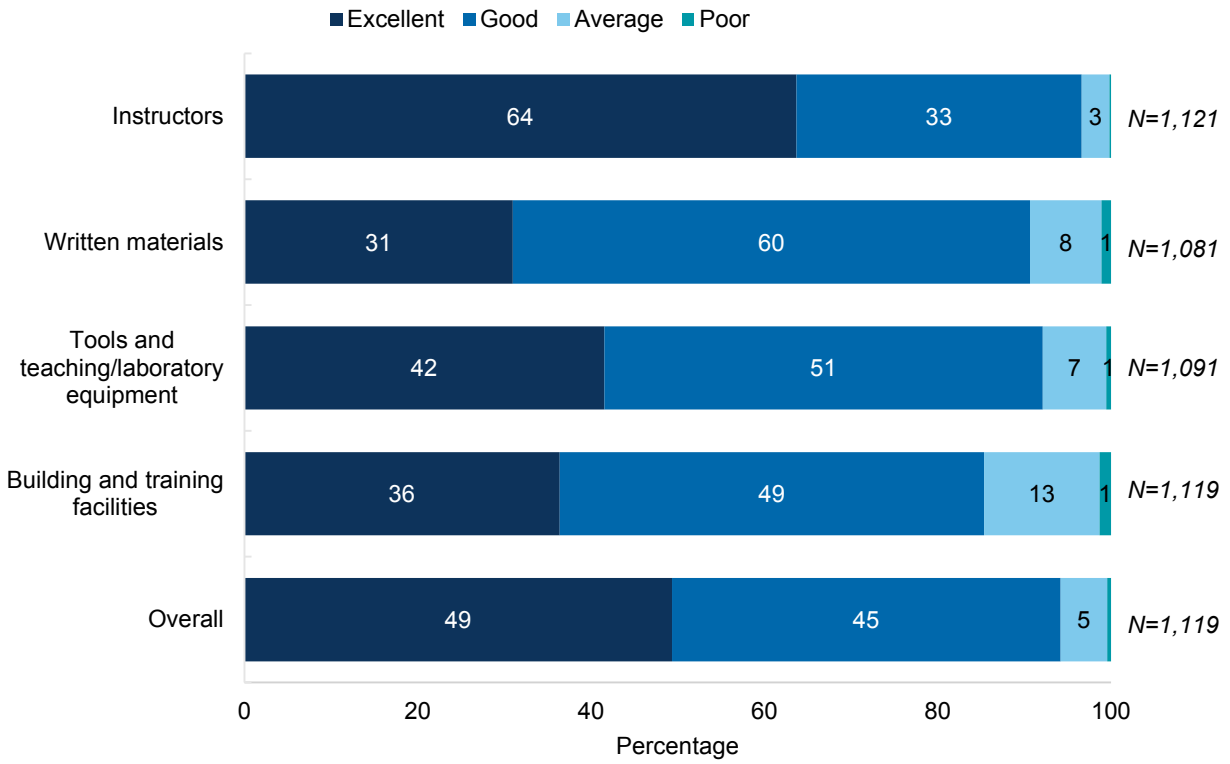
This section focuses on the initial perceptions about the PICG-supported courses and their potential effects on trainees. It is important to remember that in many cases, these qualitative and descriptive data were collected early in the training process—the final views of course graduates (after they have had time to enter the labor market and reflect on their course experience) will not be known until the evaluation collects data one year after these trainees have graduated for the study's final report.. Nonetheless, the initial perceptions of providers, instructors, and trainees provide important early evidence about the quality of these new or enhanced courses.

1. Perceptions of PICG course quality, equipment, and materials

Trainees were almost universally satisfied with the quality of PICG-supported courses. Trainees responding to the baseline survey gave their perceptions of various dimensions of training quality, rating each item on a four-point scale (excellent, good, fair, or poor). About 9 in 10 respondents, on average, reported that the quality of PICG-supported training was good or excellent, both overall and specifically with respect to instructors, written materials, tools and teaching/laboratory equipment, and buildings and facilities (Figure III.7). Further, 95 percent of trainees reported that the PICG-supported course had met their initial expectations. These findings were nearly identical for trainees across all cohorts of the PICG-supported courses (not shown in the figure).[20] Overall, these findings suggest that, at least from the trainees' early perspectives, the PICG-supported courses were providing a high quality training experience from the outset.

[20] Trainees' demographic characteristics, other measures of initial course experiences, and expectations for the future were also similar across cohorts within each course.

Figure III.7. Trainees' perceptions of the quality of PICG-supported courses



Source: Baseline trainee survey.

In focus groups and interviews, trainees and teachers highlighted the course content, facilities, and equipment as key strengths. In interviews, teachers said the course content was well aligned with the skills required in the labor market, and attributed this to the involvement of employers in course design. Trainees in focus groups, concurring with the teachers and substantiating the results of the trainee tracer survey, had high praise for their initial experiences in the PICG-supported courses, and many commented that the courses had exceeded their expectations. They largely agreed that the course content was comprehensive and covered relevant skills for their chosen professions. However, a handful of trainees thought their courses included some unnecessary modules. For example, some did not understand why there was a human biology module in the Georgian Insititur of Public Affairs (GIPA) occupational health and safety course, or a conversational English module in GTU courses. These trainees wanted the courses to focus on technical skills that are directly relevant to future employment. Trainees and teachers also agreed that their courses had the equipment, facilities, and laboratories

"[The course] definitely meets the initial expectations. I was not expecting such a high level of simulators, or even the level of education. I am truly astonished and positively surprised with the provided education, equipment and technologies. I will certainly finish the course."

– PICG trainee

"Working with a simulator is the most practical. Even though I have experience in this field and have been doing this for 20 years, this simulator has its advantages. There are various types of cranes programmed inside, which we do not have in the seaport. And it can be said that it's a bit unfamiliar … and at the same time you go closer to the job; go closer to reality."

– PICG trainee

necessary for trainees to master the skills taught in the course. Trainees praised the modern and high quality equipment, particularly the simulators they could practice on.

Some trainees struggled with the amount of technical material in PICG-supported courses. Although many trainees were pleasantly surprised with the course content and learned more than they thought they would, some were overwhelmed with the amount of information and found it difficult to learn everything in the allotted time. They suggested that making the courses last longer, shortening the duration of theoretical sessions (which in some cases last several hours), or varying topics within each session could help mitigate this. Some trainees also commented that it would have been good to come into the course with more foundational knowledge. For example, some trainees in the Agricultural University viticulture course lacked basic knowledge of the principles of chemistry and microbiology, and some trainees in the GTU courses came in knowing limited English, so they had trouble completing their course's English modules.

Teachers noted that the most common barriers to instruction are the learning gaps trainees carry over from secondary education, especially in mathematics, English, and computer literacy. Several teachers mentioned that they had to review material from secondary school, or to take time helping trainees who do not have the foundational skills necessary for certain technical topics. Short preparatory training in some of these areas before the start of the courses might have alleviated some of these problems.

Several trainees noted that the Georgian-language teaching materials in their courses were limited in availability and/or quality, making it hard for them to learn the material. This was highlighted as a particular challenge for younger trainees who lacked prior experience and required additional written explanations. Many grantees mentioned that they had to create new Georgian-language instructional materials; in some cases they adapted the materials from established courses abroad with guidance from international partners. The process of translating these materials to Georgian—and how long it took—was mentioned as a challenge by several grantees. It was difficult to find qualified translators who were familiar with the specific terminology, and the process was expensive and time-consuming because of the many rounds of revisions that had to be made. Some teachers also reported struggling with course materials that were not available in Georgian or had been poorly translated. To cope with this challenge, some teachers have provided more extensive notes in class, spent more time in lecture or explanation than the curriculum recommended, and complemented instruction with material available from the internet, videos, and other visual materials.

2. Perceptions of course instruction and pedagogical methods

Teachers in PICG-supported courses received extensive training and felt well prepared to teach the courses; trainees found their teachers to be competent and enthusiastic. Because the PICG-supported courses were largely new to Georgia, teachers required extensive training before each course could begin. Grantees collaborated closely with international and employer partners to provide this training; teachers received training on modular teaching methods, pedagogical approaches, competence-based assessments (a standardized training conducted by NCEQE), and specific subject content. Teachers of courses that had to follow specific international standards (for example, GAU aviation or GMGA mountain guide courses) also received trainings from foreign experts: some providers sent their teachers abroad for

training, whereas trainings on how to use the new equipment were often provided on-site at the provider campus by the companies that installed it.

Overall, teachers consistently reported being well prepared to use the relevant equipment and teach the courses thanks to the training they received, as well as their academic background and teaching experience in the relevant content area. Trainees agreed that their teachers had enough training to be effective as instructors. Some were aware that their teachers had recently undergone additional training on modern equipment, and noted that they had effectively passed that knowledge on to them. More broadly, trainees consistently spoke highly of their teachers' teaching skills and enthusiasm. Several highlighted the positive environment of the classrooms, which facilitated their engagement in the course.

> *"All the professors work that way, first they work on their presentations and show you everything with visual effect;, if you don't understand anything, they show you the videos, if you still don't understand after [that], they will explain it to you 10 more times and in parallel, of course, include practice."*
>
> – PICG trainee

Teachers used a variety of instructional methods in the PICG-supported courses. Trainees mentioned that teachers use a combination of traditional and modern teaching methods in the courses; the latter include, for example instructional video materials, actual and virtual laboratory experiments, case studies, and computer-based simulations. Trainees generally found the mix of instructional approaches to be effective, but tended to highlight these newer methods as particularly effective and more interesting than standard lectures. However, a minority of trainees and teachers noted that they struggled with the use of online platforms for instruction, assignments, and assessments because of limited Internet access or computer literacy. (The latter was mainly an issue for older trainees.)

Practical sessions using technical equipment or simulations are critical to help trainees master the course material. Trainees and teachers consistently highlighted the importance to the learning process of having practical sessions (including working with simulators) closely integrated with theoretical lessons. In the baseline survey, most trainees reported that they had been exposed to materials and activities that seem relevant to their chosen profession: 60 percent said they had practiced skills in work-like environments and 65 percent said they had been given opportunities to use job-specific equipment (not shown). In focus groups, most trainees who had already begun practical sessions in their courses thought that they received enough opportunities to practice; several commented that being employed while they were enrolled in training meant they had more opportunities to practice at work. Teachers also emphasized the importance of practical sessions in engaging and motivating trainees, as trainees view these sessions as exciting and job-relevant.

> *"In our specialty, it is more important to have the practical experience, because you might know the theoretical part but, if you had not come into contact with practice, it will be very difficult. In [our course] you have both, theory and practice […]: it is easier and more understandable."*
>
> – PICG trainee

> *"If you come to my laboratory, you will see how my trainees are engaged in work. They love the practical classes."*
>
> – PICG trainee

Although all grantees offer practical sessions, the mix of theoretical and practical sessions varies across courses based on the nature of the course and the availability of practice

opportunities. Teachers in courses on fish processing, veterinary services, and mountain or trekking guiding noted that their courses have unique needs for resources, and that they sometimes struggle to find places where trainees can engage in hands-on practice. For example, the veterinary course requires trainees to visit farms where they can find animals with specific types of pathologies, which can be difficult to find.

3. Engagement between trainees and employers

Many trainees have had opportunities to interact with employers during the early months of their course, and found these interactions to be beneficial. In focus groups, trainees at five out of nine providers mentioned that they had already had some interactions with employers during their courses.[21] (Courses at the remaining four providers had only started recently, so opportunities for such interactions at the time of data collection were limited.) Those interactions included visits to employers for informational site tours or practice sessions, employers' observation of trainees during practice sessions, informational meetings with employers on campus, and internships. (About 78 percent of trainees in the baseline trainee survey either had participated or expected to participate in an internship as part of their course.) Teachers emphasized the importance of these interactions with employers in motivating trainees to succeed in their courses.

Most trainees who had interactions with employers said they were beneficial and helped them network with employers; some trainees even said they have already received job offers as a result. Some teachers also said they linked trainees to employers in Georgia and abroad. For example, one teacher arranged employment for many graduates from his course by serving as a liaison with a company that sought to hire electricians and had difficulties finding workers with the right skill set.

4. Alignment between PICG-supported courses and employer needs

Employers have had trouble recruiting qualified candidates for vacancies in the past. According to the employers who participated in interviews, before the PICG-supported courses were established it was hard to finding work with the right skill set, and training workers was difficult. In some sectors, like aviation, the shortage of qualified workers was attributed to the scant number of relevant training programs in the country; also, the level of training and certification qualifications that companies require have not been available in Georgia. Employers in this sector often have to pay to have their workers certified abroad, or hire foreign employees. In other cases, such as in the railway sector, the shortage of qualified workers is related to the availability of higher paying opportunities outside of Georgia. Most of the employers described informal recruitment mechanisms based on self-directed efforts to reach out to their friends, family, and colleagues for recommendations. This recruitment mechanism sometimes leads to candidates with the right skill set, but employers find that in many cases, workers still lack technical and soft skills and have to learn on the job, which is challenging in the absence of a formal internal training program. Only 2 out of the 10 employers we interviewed reported offering a structured on-the-job training program, or that they have a designated training site for ongoing training.

[21] These include, but are not necessarily limited to, the grantees' employer partners.

In general, employers conveyed positive views about the PICG-supported courses, but cautioned that it was too early to tell how effective the training was. Some employers said the PICG-supported courses had met their expectations and improved their ability to recruit qualified staff with the necessary skills. One employer also said the skills of current employees whom the employer had enrolled in PICG-supported training had improved. However, most employers were uncertain about the performance potential of PICG trainees, and thought it was premature to conclude how effective the courses had been. There is also some evidence, although it is not conclusive, that in some sectors the market might not be able to absorb all the graduates. For example, the main employer in the railways sector noted that more people are enrolled in related training than it can hire. Another employer in the aviation sector stated that, based on its business plan, the demand for airliner pilots had already been met, and it expected to hire 20 percent of the course graduates.

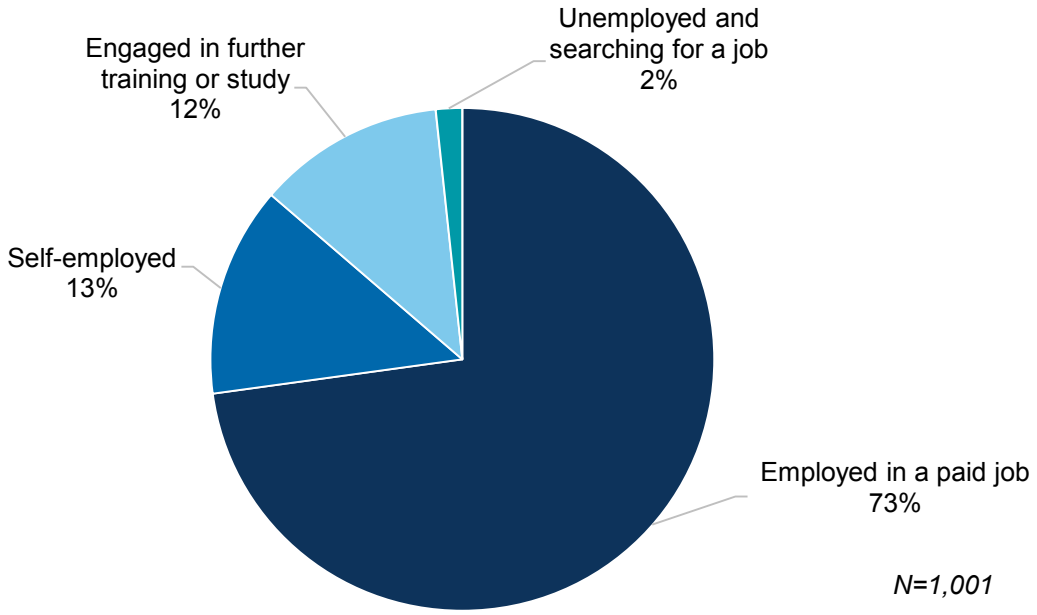
5. Trainee expectations for future employment and wages

Trainees were optimistic about their ability to find a job or improve their prospects at their current job. Most trainees who were not currently employed planned to enter the workforce after graduation. They were optimistic about their job prospects; several trainees from courses that issue internationally recognized certificates also commented on this advantage and how it gives them opportunities to search for jobs abroad. Of those trainees who were already employed, many said they enrolled to improve their pay and opportunities in their current job; a few noted they hoped to learn new trades and change their professions. Several trainees commented that their specialties were newly developed and in high demand in Georgia (for example, those taught in GIPA occupational health and safety courses or Phazisi aquaculture courses), and they were only taught at the PICG-supported providers; they thought this gave them an advantage when looking for a job. A few trainees plan to open their own businesses after graduation, and some plan to continue studying (mostly in related fields) in advanced TVET courses or at university.

> *"First of all, I believe that the field that I am studying offers a lot of opportunities. Because new regulations should be implemented in the near future—that is, when the license for fish is obtained—the license will require that the fish-producing companies have the processing factories. Hence, if we take into consideration that this specialty is not taught everywhere and taught in this college only, I will be a fairly competitive specialist in the near future."*
>
> – PICG trainee

Almost all trainees expect to be productively engaged in employment or further training after graduation. Using baseline survey data, we examined trainees' initial expectations for their labor market outcomes after graduating from their PICG-supported course. About 73 percent expect to be employed in a paid job, 13 percent expect to be self-employed, and 12 percent expect to be engaged in further study or training; only 2 percent thought they would be unemployed and searching for a job (Figure III.8). There is some variation in the mix of expected activities across providers (Appendix Figure A.2). For example, self-employment is a more common expectation for trainees taking courses in sectors that are typically associated with self-employment (for example, technical trades, agriculture and veterinary services, and tourism). Expectations for pursuing further training are highest for the Tetnuldi information technology courses (which are offered at a lower level than most other PICG-supported courses), with 20 percent of these trainees expecting to pursue further education.

Figure III.8. Main expected activity after graduation for trainees in PICG-supported courses



Source: Baseline trainee survey.

Among trainees in PICG-supported courses who expect to be employed after graduation, the mean expected monthly wage (or profit, for the self-employed) is 1,291 GEL (US$478),[22] with about two-thirds of trainees expecting to earn more than 1,000 GEL (US$370) per month (Figure III.9).[23] Among trainees with an employment history, these expected monthly wages are substantially higher than their current or prior wages. More specifically, expected wages are about 70 percent higher than those received by trainees who were employed in the year before enrolling or who were working while engaged in training at the time of the baseline survey (1,401 GEL versus 827 GEL, or US$518 versus US$306).[24,25] In the endline survey, we will find out how successfully these expectations were borne out.

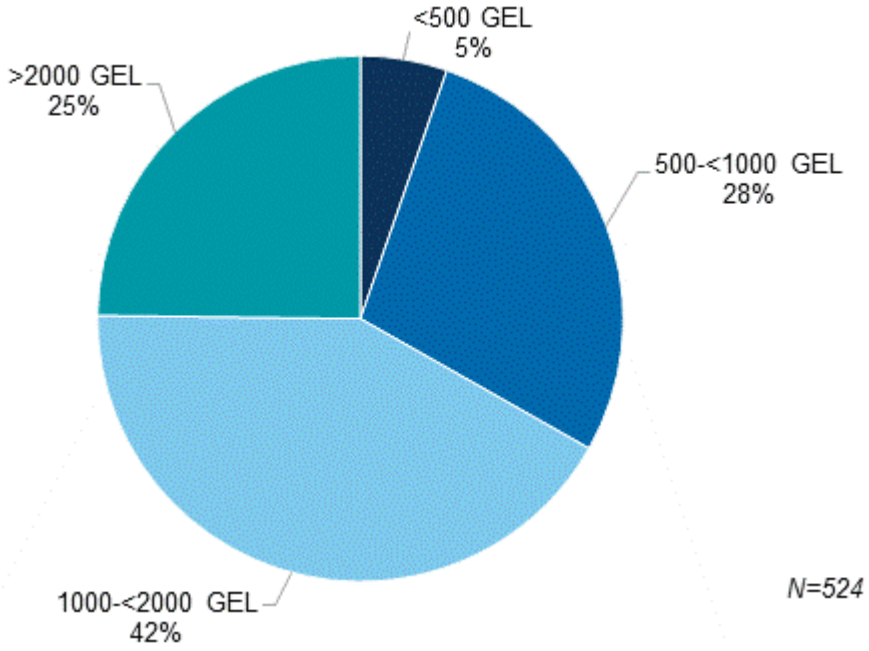
[22] All currency conversions in this report use the exchange rate as of December 31, 2018, which was 0.37 USD per GEL.

[23] The sample sizes for expected wages are relatively low because a large percentage of respondents who expected to be employed after graduation selected "do not know" as their response to this survey question.

[24] For trainees who were employed in the year before training *and* at the time of the baseline survey, we used the wage reported for the latter.

[25] In this sample, the mean expected monthly wage of 1,401 GEL (US$518) is slightly different from the mean of 1,291 GEL (US$478) mentioned above because we restricted the sample to respondents with a baseline wage (to avoid possible sample selection bias). Specifically, we restricted the sample for this comparison to respondents who reported an expected wage as well as a wage in the year before enrollment and/or at the time of the baseline survey.

Figure III.9. Expected monthly wage after graduation, among trainees who expect to be employed



Source: Baseline trainee survey.

Note: Mean expected wage is 1,531 GEL after accounting for outliers by top-coding at the 95th percentile.

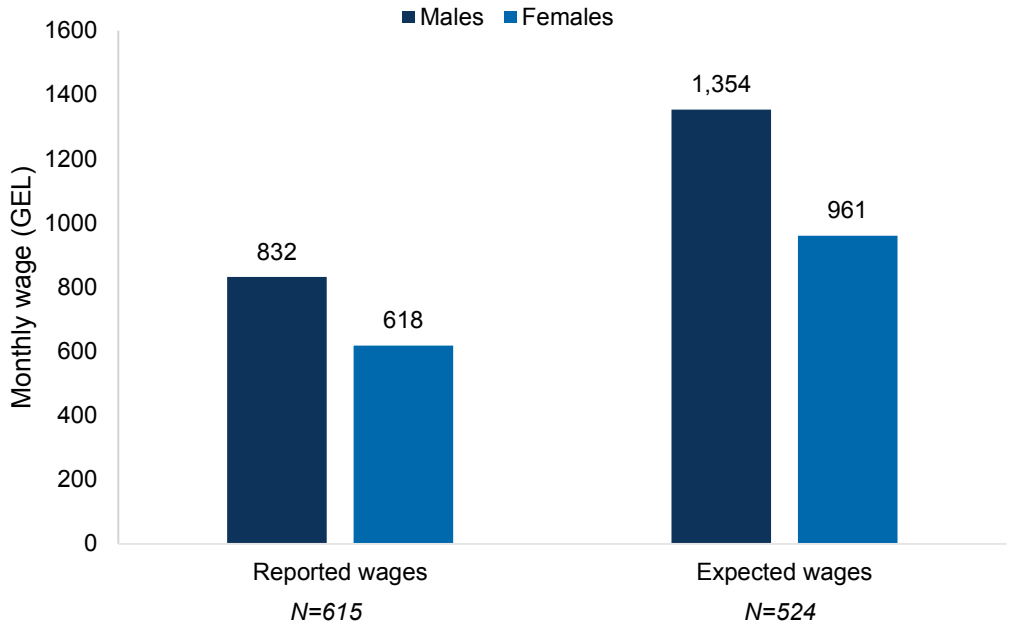
The estimated baseline wages and expected wage gains are both higher than assumed in MCC's ex-ante CBA model. Specifically, the average wage among PICG trainees who were employed immediately before or during training is 803 GEL in 2018 currency (US$297), whereas the current CBA model assumes a counterfactual wage of 319 GEL in 2010 currency, or 403 GEL in 2018 currency (US$149).[26] Further, trainees who were employed immediately before or during training expect an increase in wages of about 70 percent, on average, whereas the current CBA model assumes a 24 percent increase. This large expected increase should be interpreted carefully, as it might reflect overly optimistic expectations from trainees. In addition, these findings only apply to a subgroup of trainees—namely, those who were previously employed (these trainees might have different counterfactual wages and relative increases compared to other trainees). Nevertheless, these findings suggest the potential for larger economic benefits than those predicted in the current ex-ante CBA model.

Although women and men expect about the same rates of employment after graduation, there is a substantial and statistically significant gender difference in the wages they expect to earn. Specifically, the mean expected monthly wage for women is about 30 percent lower than the expected wage among men—961 GEL compared to 1,354 GEL (US$356 compared to US$501) (Figure III.10). The percentage difference is similar to the difference between women and men in their mean current or pre-enrollment wages. This suggests that

[26] To convert wages from 2010 to 2018 currency, we used the consumer price index from the national statistics office of Georgia, which shows that consumer prices were 26.4 percent higher in 2018 than 2010 (http://www.geostat.ge/index.php?action=page&p_id=128&lang=eng).

trainees do not expect enrollment in the PICG-supported courses to narrow the existing gender gap in wages.[27]

Figure III.10. Gender gap in reported and expected wages



Source: Baseline trainee survey.

Note: Wages in each bar are top-coded at the 95th percentile to account for outliers.

D. Sustainability

Here, we provide early perspectives about the likely sustainability of the PICG-supported courses, summarize grantees' current plans to continue or alter these courses, and highlight the main challenges to sustainability.

Grantees plan to keep offering most of the PICG-supported courses in the future, but some plan to adjust the course content, numbers of trainees, or admission requirements. Grantees currently plan to continue offering almost all of the PICG-supported courses after the end of the compact; two providers (Phazisi and Tetnuldi) even plan to expand their existing courses to other vocational colleges. The exception is the Agricultural University agribusiness course, which the grantee plans to replace with a short certificate course in response to limited demand for the longer course. (The grantee believes this two-year course was simply too long.) Batumi, GTU, and Phazisi also plan to add short courses (certificate courses or retraining courses focused on the needs of specific private companies), which are typically in high demand and profitable for providers. Many grantees also said they plan to continue improving their courses so that they remain relevant and align with employer needs (including retraining teachers, if

[27] This could reflect gender differences in the PICG-supported course mix. In particular, if male-dominated courses are in high-wage sectors, completing PICG-supported training would be expected to result in higher mean wages for men than for women. Unfortunately, sample sizes are too small to conduct a meaningful comparison of expected wages by gender within courses or grantees/sectors.

necessary). Several grantees mentioned that they plan to increase the quota of trainees they can admit to accommodate expected increases in the number of trainees who apply, although they might be restricted by the government course quotas set up during the accreditation process. Finally, two grantees mentioned that they will try to have stricter entrance exams and be more selective about which trainees they admit to courses.

Key challenges to the long-term sustainability of the PICG-supported courses include limited financial resources and high teacher turnover. PICG-supported courses at public providers are eligible for government subsidies through voucher-based funding, but it is unclear whether the level of voucher funding will be enough to sustain the PICG-supported courses at public providers in the future. The amount of voucher funding varies by course, depending on the government's assessment of the course's length and resource needs. At this point in time, it is not clear whether the level of public funding is sufficient to operate and sustain these courses over an extended period, particularly in courses with longer durations, lower enrollment levels, or high fixed operating costs for facilities and lab equipment. This issue may be somewhat less of a concern at the private PICG grantees (such as GIPA and GAU) because (1) these institutions did not receive voucher funding during the compact period, (2) the government is currently planning to extend voucher funding to private providers, and (3) private providers are experienced in setting fees at appropriate levels to cover their costs. On the other hand, private courses with relatively low enrollment or high operating costs (such as the helicopter pilot course offered by GAU) could also face sustainability challenges (but in general, demand for most of private PICG-supported courses has been strong despite the high fees.)

It is also unclear whether PICG partners will continue to contribute to the courses after the end of the compact, either financially or in terms of expertise, in the absence of any formal requirement to do so. Some grantees plan to launch additional income-generating activities to help cover the costs of their PICG-supported courses in the future—for example, having a short-term certificate course (Batumi, GTU, and Phazisi) or offering laboratory services to the private sector (Phazisi). Nevertheless, limited financial resources could affect aspects of the PICG-supported courses. For grantees who issue international certificates, trainees are currently not paying for those, but they may be required to in the future. Another grantee mentioned that without continued grant funding, it would no longer be able to bring in foreign experts to conduct trainings.

Finally, implementing stakeholders, the MES, and grantees also expressed concern about the potential for high teacher turnover in PICG-supported courses because teacher salaries in the public sector are so low. The government has recently announced an increase in public teacher salaries that could address this concern, but implementation of this change and its effects on teachers remains to be seen. When teacher turnover does occur, it could make the courses difficult to sustain because teachers trained through the PICG grants might leave and be replaced with less prepared instructors. (Each grant devoted significant effort and resources to training teachers in the curriculum, equipment, and materials needed for each course; as noted earlier, trainees and teachers generally agreed that these efforts were very important to the success of each course.) Several grantees mentioned that it was even hard to find qualified teachers when the courses were first established.

We will revisit the sustainability of the PICG-supported courses as part of our final data collection, which will take place about a year and a half after the end of the compact. In particular, we will assess whether and how these courses have been sustained, understand the reasons why any were not sustained, and assess the prospects for long-term sustainability.

IV. FINDINGS ON THE STPP, TECHNICAL ASSISTANCE, AND ANNUAL CONFERENCE COMPONENTS

In this chapter, we present the interim findings for the remaining ISWD project components: STPP grants, technical assistance for policy reform, and the annual TVET conference. These findings draw primarily on qualitative data we collected through interviews with high-level stakeholders and STPP grantees, project documents, and our in-person observations of the annual conference.

A. STPP component

In this section, we describe the selection of the STPP grantees, detail the various means for disseminating the practices developed with grant support, and assess the potential for wider adoption. Our main findings follow.

The STPP grants reflected the policy priorities of the MES; interest in grants was strong, and the quality of grant proposals was high. The STPP grants in each round were solicited in specific areas that reflected the MES's policy priorities. Specifically, the MES expressed an interest in grants that were aligned with planned TVET reforms, were not covered through the existing state budgets, and had the potential for sustainability. Therefore, although the final set of STPP grants is very diverse, it is intended to contribute to the MES's broader TVET reform agenda. According to stakeholders involved in implementation, the first call for small grants resulted in many high quality proposals in the relevant priority areas. To broaden the pool of applicants, the project increased the maximum grant amount in the second round (from $10,000 to $25,000), and ultimately added a third round to accommodate the large number of applicants with strong proposals. Overall, the component provided 27 grants: seven in the first round, 10 in the second, and 10 in the third (one grantee, Akaki Tsereteli State University, received two grants). (Appendix Table A.5 provides a description of the full set of STPP grants.)

Most of the STPP best practices have the potential to be replicated by other TVET providers and institutions. Table IV.1 is a summary of the dissemination activities—as well as the potential for sustainability and wider replication—for the STPP grants for which we collected qualitative data. (As we mentioned in Chapter II, these were grants PEM identified as having high potential for replication). To stimulate awareness of and interest in the best practices, the STPP grantees conduced several types of dissemination activities during their projects. These included, for example, producing flyers or brochures, posting information and videos on social media, featuring them in television or radio slots, and conducting conferences. Mechanisms for replication could include other TVET providers offering new short courses that were developed, providers encouraging their teachers to follow new pedagogical approaches, and private companies participating in innovative work-based learning approaches. Institutions that are interested in replicating a specific practice can draw on the electronic handbooks posted on the project website (http://www.iswd.ge/). The website provides a summary of each practice, links to relevant materials, and contact information for each grantee. Some grantees have also posted relevant information and materials on their own websites. However, it is unclear how long these online materials—especially the electronic handbooks—will be maintained after the end of the compact.

Table IV.1. Dissemination activities and potential sustainability and replication for selected STPP grants

Grantee	Project name (grant amount)	Project description	Key dissemination activities	Opportunities and challenges for sustainability and replication
Business Academy of Georgia	Development of assessment tools for the Entrepreneurship and Introductory Practice Modules ($9,350)	Develop and pilot competence-based assessment tools for two new compulsory TVET modules.	• 28 private providers participated in a dissemination event. • Assessment guidebook and materials available on the grantee's website.	• The modules are compulsory for all TVET programs, so the scope for adoption is broad. • Piloting and dissemination involved private providers only, potentially limiting adoption by public providers. • TVET teachers might lack the capacity to implement the assessment tools.
Georgian Technical University	Development of E-Learning Course in Information Technology ($10,000)	Develop a web-based electronic course on basic information technology for TVET trainees.	• The grantee demonstrated the system to other providers and representatives of the MES and NCEQE. • The course is available for free on the grantee's server; cloned versions are available that providers manage independently.	• The modules are compulsory for all TVET programs, so the scope for adoption is broad. • The grantee has built on the STPP grant by creating a broader e-learning platform with more courses, which is being actively used by the 10 colleges that pilot tested the STPP-funded course. • Limited technical capacity could constrain independent management of the e-course by other providers and the development of new e-courses. • Some TVET teachers might be resistant to new technologies.

Table IV.1 *(continued)*

Grantee	Project name (grant amount)	Project description	Key dissemination activities	Opportunities and challenges for sustainability and replication
Vocational College Icarus	Employers' Forum for Industry Engagement in TVET Sector ($10,000)	Increase the responsiveness of the college's tourism courses to labor market needs. The project identified needs through trainee and employer surveys, and modified its courses accordingly. It also developed an electronic resources portal for trainees, teachers, and employers.	• The project convened an employers' forum (conference) to share the results of the project, demonstrate the electronic portal, and promote training in the tourism sector. • The survey questionnaires are available on the grantee's website.	• The grantee has continued to conduct labor market research biannually since the end of the project to keep its courses up to date. • The grantee has continued to operate the electronic resources portal, especially to link graduates to employers. • The conference on TVET in the tourism sector has become an annual event since the end of the project. • Another provider partnered with the grantee to conduct the labor market research in another region of Georgia, and modified its courses accordingly. • Labor market research approach is potentially generalizable to other sectors. • UNDP created a similar electronic resources portal in the agriculture sector.
Kutaisi Public School #33	Social Enterprise in Public Schools ($9,894)	Develop and implement short vocational training courses for general education (secondary school) students at the grantee and four partner schools, as a first step in their professional education. Participants received some business experience by selling their products created during the courses (furniture, clothing, and mushrooms) at a charity exhibition.	• The grantee created a blog to post information on the project. • The grantee held a public closing ceremony for local stakeholders. • The detailed methodology and teaching materials for specific occupations are available on the grantee's website.	• Teachers who were trained through the project could continue to implement the new courses at their schools. • Participation in the courses by students could encourage interest in TVET by their family members (several adult family members asked to participate). • Limited financial resources are a challenge in the absence of grant funding because schools are not legally permitted to cover course costs (such as raw materials) by selling the products produced. • The grantee already had the necessary facilities and experienced staff to conduct the courses, which might not be the case elsewhere.

Table IV.1 *(continued)*

Grantee	Project name (grant amount)	Project description	Key dissemination activities	Opportunities and challenges for sustainability and replication
Akaki Tsereteli State University	New Professional Personnel for the Use of Solar Energy ($19,900)	Develop and implement new vocational training courses in maintenance of solar energy equipment. The project also included other activities to support training and employment opportunities in the field of energy, including a summer camp for school children, a workshop on TVET programs in clean energy, and an employment forum for graduates from the new courses.	• A program about training and job opportunities in the field of solar energy appeared on local television. • The grantee prepared and distributed a project achievements brochure. • The grantee organized a half-day conference to share the results of the project. • Course curricula are available on the ISWD website.	• There have been no applications for the two new short courses at the grantee since the end of the project. • One new course was developed as a subject within an existing program and might not be sustained because of redesigning this program as a modular program. • Other vocational training providers participated in project events and expressed interest in taking up the new courses, but post-project follow-up has been limited. • Nongovernmental organizations also expressed strong interest, but the extent of adoption is unknown.
EasySoft Ltd.	Learning Platform of Innovation Technology for Professional Education ($16,885)	Develop a modular training course for a type of software that enhances the use of industrial laboratories at TVET providers. Trainings were conducted for teachers from several providers and a web-based learning platform was created to make the course more widely available for teachers and trainees.	• The grantee's government partner disseminated a video documenting project implementation. • The grantee presented project results at a closing event. • The web-based platform is available on the grantee's website.	• The teachers at several providers directly trained through the project can more effectively use the laboratories in their teaching. • Use of the web-based learning platform by others has been very limited, possibly because there were no funds to promote it effectively.
Mindworks Ltd.	Flipped Classroom Deployment in Bleksi and Erkvani Colleges ($17,500)	Introduce an innovative model of teaching and learning that expands the range of activities conducted in the classroom. A Georgian language handbook for implementation was created and the model was piloted.	• The Georgian language guide is available on the project website. • Highlights of the project appeared in education-focused blogs and other online articles. • The grantee created a documentary about the project.	• The pedagogical techniques in the model could potentially be applied across fields. • However, there has been no post-project follow-up with the grantee by the colleges where the project was piloted (something the grantee was expecting if the practice was to be sustained or expanded there). • TVET teachers might have weak basic teaching skills and knowledge, which could limit their ability to implement innovative teaching methods. • TVET teachers might have limited motivation to improve their teaching given their low pay.

Table IV.1 *(continued)*

Grantee	Project name (grant amount)	Project description	Key dissemination activities	Opportunities and challenges for sustainability and replication
The Georgian Patriarchate Community College of Decorative Gardening	Promoting TVET Related to Decorative Gardening Professions Among General School Students ($10,000)	Develop and pilot an integrated lesson in decorative gardening for general education students to increase their interest in the profession and vocational training in the field (which the grantee offers). The lesson was delivered to more than 20 schools in Tbilisi.	• An informational video about the project and a detailed lesson plan is available on the grantee's website.	• Teachers trained through the project could continue to implement the lesson at their schools. • Teachers' knowledge and motivation was limited and required an intense training effort during the project; therefore, broader adoption at other schools or by new cohorts of teachers might be unlikely without a similar training effort in the future.

Sources: The ISWD project website http://www.iswd.ge/, PEM best practice handbooks (PEM 2016a and PEM 2018a), grantee presentations, and qualitative interviews with STPP grantees.

Note: Grants are ordered by round and, within round, by the order on the ISWD project website.

Replication will depend on other institutions' awareness, interest, financial resources, and capacity. Overall, although aspects of these practices might be sustained at the grantee level, STPP grantees suggested that broader sustainability and replication might be difficult because of such challenges as a lack of awareness, inadequate financial resources, and limited capacity. Qualitative interviews with PICG grantees suggested that although many providers are aware of the STPP grants there was not a widespread initial pattern of providers coordinating directly with STPP grantees to adopt new practices. One exception is the PICG grantee Spektri, which was encouraging the use of a website (https://edu.aris.ge/) that was supported by an STPP grant and aims to help match trainees with employers. However, one stakeholder involved in implementation suggested that even if the effects of the grants were limited to the grantee institution and/or the period of the project (for example, piloting new training courses for a single cohort) the grants might have been worthwhile investments, given that the amounts were relatively small. Further, as we discuss below, some of the best practices grantees developed have the potential for broad, system-wide adoption.

Some STPP best practices have the potential for wider replicability at the system level. There was a close relationship between some of the STPP grants and the ISWD's policy reform technical assistance efforts, which covered similar priority areas identified by the MES. A handful of the STPP grants were successfully used to develop or pilot specific initiatives developed as part of the technical assistance component. Examples include a manual for employees of career centers at TVET institutions, an electronic course in information technology (which is now a compulsory module in all TVET courses), competence-based assessment tools for two other newly compulsory modules, and pilot testing a methodology for recognizing non-formal education. These practices and materials have wide potential for replication as reforms to the TVET sector take place; however, it is still unclear whether providers will adopt the specific practices and materials the grantees developed. More broadly, other donors have expressed interest in replicating the procurement and management procedures for STPP grants and have requested the relevant materials from PEM, which could have a substantive effect on their activities in the TVET sector in Georgia.

B. Technical assistance component

In this section, we describe the implementation of the technical assistance component, document progress in the key policy areas that it supported, and assess how the new policy initiatives might move forward in the future. Our key findings follow.

The technical assistance component was implemented in close coordination with other donors. In providing technical assistance to the MES, PEM worked closely with other donors on a regular basis—especially the European Union (EU) delegation and UNDP—to minimize overlap and take advantage of synergies. For example, each of the three donors worked on different aspects of developing the career guidance system, and UNDP helped to pilot some of the project-provided technical assistance efforts (mainly in the agricultural sector). Staff at PEM had previously worked closely with staff at other donors active in the TVET sector, and that history facilitated close cooperation between them for these policy reform initiatives. Most stakeholders we interviewed view these combined donor-funded efforts as having contributed substantially to advancing TVET reform in Georgia. However, PEM and other donors noted that

because the efforts of various donors are complementary, it is difficult to disentangle the effects of the ISWD activities from other efforts.

Overlap aside, **the component was more flexible than typical donor-provided assistance.** Stakeholders involved in implementation agreed that a major advantage of the technical assistance was that it was flexible, allowing for adjustments as MES priorities evolved. This is not typical for donor projects, which generally must follow an initial implementation plan more closely. PEM noted that the flexibility was sometimes challenging from an implementation perspective because of changes in activities and deliverables the MES requested, but they were generally able to be highly responsive to the MES's needs. Stakeholders involved in implementation agreed this created goodwill with the MES and helped build a strong partnership, which helped the implementation of the rest of the project. (Although there were some important staffing changes at the MES at the ministerial and deputy levels during the project, a handful of key staff remained in the same government positions throughout the implementation period, which facilitated the formation of enduring relationships between the MES and stakeholders involved in implementation.)

Additional work is necessary to finalize many of the policy reforms supported through the project and promote the sustainability of the reforms. Given limited time and resources, PEM mostly focused on developing contributory materials, conducting pilots, and holding small-scale trainings to initiate or advance policy reforms, rather than supporting their full implementation. Tables IV.2 through IV.4 summarize the technical assistance PEM provided in the three key areas of focus—business engagement in the TVET sector, quality and attractiveness of TVET, and learning and qualification opportunities for adults—and the additional work necessary to build on these efforts.[28]

In general, these policy reforms are long-term efforts, and although some of them are at an advanced stage, a great deal of work is necessary before others can be fully implemented. As we detail below, the initiatives at the most advanced stage are those related to the quality and attractiveness of TVET; those related to business engagement in the TVET sector and learning and qualification opportunities for adults are mostly at an early stage. Furthering these initiatives will likely require donor assistance. Other donors, such as the EU delegation and United Nations Development Program (UNDP) are already planning to follow up on several aspects of PEM's technical assistance with their own projects over the next few years. To facilitate this and avoid duplication of effort, PEM has available to other donors all the materials developed through the project. Nevertheless, changes in leadership and priorities at the MES, as well as limited resources and capacity, might pose a challenge to sustainability of the reform efforts. To promote sustainability within the MES, PEM has prepared development briefs to summarize what work the project conducted and what remains to be done in each area. This will help the MES to move forward with specific reforms that fit with its priorities and resources.

Stakeholders involved in implementation believe that some—but not all—of the policy reforms are likely to be sustained. For example, reforms related to quality assurance are expected

[28] The technical assistance took place mostly between March 2015 and March 2018. The number of technical assistance areas was consolidated to three from five starting in the second year of implementation (March 2016) to better align with resource limitations.

to be carried forward because it has been a steady MES policy focus over the past few years, NCEQE staff have the capacity to move them forward, and there is expected support from the European Training Fund. More broadly, the institutional capacity building at the MES resulting from the technical assistance could support future policy reforms in other areas that the project did not directly address.

PEM helped lay the foundation for increased business engagement in the TVET system, but the initiatives are new and the activities are not familiar to many employers. PEM provided technical assistance related to three mechanisms for private sector engagement in the TVET system, the first main area of focus (Table IV.2): (1) public-private partnerships (PPPs) between public training institutions and private sector entities, typically to establish and/or manage training courses; (2) sector skills councils (SSCs), consisting of industry representatives, which validate occupational standards and TVET qualifications (and could potentially take on additional roles related to skills development); and (3) education-business partnerships (EBPs) that link private sectors businesses and training providers to help graduates meet businesses' skills needs. PEM worked with the MES to develop concept papers and guidelines for each of these mechanisms. However, PEM noted that these are long-term initiatives that will require ongoing post-compact support if they are to be extensively adopted in the Georgian TVET system. For example, this may require the MES to actively promote PPPs, finalize and pilot the model for SSCs and pass the necessary supporting legislation, and develop and promote more comprehensive EBP models at the sector level.

Qualitative interviews with employers involved with the PICG-supported courses seemed to show that these efforts to increase business engagement in the TVET system (as well as the other areas of policy reform supported by the technical assistance component) were still not well known in the private sector. Although TVET providers who were PICG or STPP grantees were aware of the planning efforts relating to sector skills councils, only one PICG grantee reported being aware of MES efforts to cooperate actively with the partner employer. Employers we interviewed were generally not aware of the specific partnership mechanisms that are being planned.

Table IV.2. Key ISWD technical assistance activities and their status at the end of implementation: Business engagement in the TVET sector

Technical assistance area	Key technical assistance activities	Status at the end of implementation	Additional work required in the future
Public-private partnerships (PPPs)	• Helped draft the concept paper for PPPs in the TVET sector • Drafted request for ideas and expressions of interest by potential partners for use by MES	PPP concept finalized and areas for potential PPPs identified.	• Active promotion of the PPP approach and best-practice examples to Georgian industry • Incorporation of PPPs into other TVET initiatives (for example. TVET strategy, EBPs, and work-based learning initiatives) • Implementation of donor grant schemes with industry co-financing to provide examples of successful PPPs (building on the PICG example)

Table IV.2 *(continued)*

Technical assistance area	Key technical assistance activities	Status at the end of implementation	Additional work required in the future
Sector skills councils (SSCs)	• Prepared concept paper on long-term development of SSCs, including funding options • Proposed road map for implementation and timetable	MES and NCEQE have accepted new SSC concept; government is exploring collaboration with the Georgian Chamber of Commerce and Industry to host the SSCs.	• Piloting of new SSC model in different sectors and refinement of the model • Agreement on final SSC model, host organization, and funding arrangements • Legislation to provide for implementation of the new model
Education-business partnerships (EBPs)	• Developed guidelines about establishing EBPs and related best practices • Developed training materials and provided training to TVET providers on how to establish and benefit from EPBs	All guidelines and training materials were finalized and handed over to the MES.	• Development and implementation of comprehensive EBP models (including at the sector level) • Circulation of up-to-date EBP guidelines and best practices to TVET providers • Capacity building and new initiatives for effective use of EBPs by providers and industry • Incorporation of EBPs into other TVET initiatives

Source: PEM development brief (PEM 2018b).

PEM provided a broad range of technical assistance to improve the quality and attractiveness of TVET; some of the initiatives are at an advanced stage. PEM's technical assistance in this second area covered the development of a TVET communications campaign, support for improved Career Education and Guidance (CEG) at schools and TVET providers, development a new quality assurance framework (QAF) for TVET courses, support for teacher professional development for competence-based training and assessment, and advice on a new TVET strategy and funding approaches (Table IV.3). The training materials and guidelines the project produced related to CEG and teacher professional development have been finalized and could be widely adopted by the MES and its agencies after the end of the compact. The training materials and guidelines are also supported by other initiatives, such as the development of career libraries in schools. The development of the QAF is at an advanced stage, but it still requires additional work after the end of the compact to be fully implemented, including new legislation and full integration into the NQF. Most PICG and STPP grantees we interviewed were aware of at least some components of the policy reforms related to the quality and attractiveness of TVET; in the case of the quality assurance framework, several providers also reported that they had engaged with the MES directly in helping to develop QAF standards and procedures.

Table IV.3. Key ISWD technical assistance activities and their status at the end of implementation: Quality and attractiveness of TVET

Technical assistance area	Key technical assistance activities	Status at the end of implementation	Additional work required in the future
TVET branding and marketing	• Development of a communications plan to promote TVET, including a detailed campaign plan for the first year (2018–2019)	Campaign plan for 2018–2019 being implemented	• Monitoring and evaluation of the 2018-2019 campaign to assess its effects • Preparation of campaign plans for subsequent years • Capacity building for government and providers to improve effectiveness of their communication activities
Career education and guidance (CEG)	• Development of a concept paper for CEG • Development of a toolkit on CEG and training materials; providing training for careers staff in TVET colleges and schools • Development of standardized job descriptions for careers staff in TVET colleges and schools (including self-assessment questionnaire) • Development of best practices for collection of tracer survey data by providers, and piloting of data collection and analysis	All guidelines and training materials finalized and turned over to the MES	• Implementation of CEG across all schools and TVET providers in Georgia, including training for careers staff • Development of career libraries at providers and schools, with information about occupations and labor market demand • Development of a postgraduate qualification in CEG by local universities to professionalize the career guidance role • Support for improvement in the collection and use of trainee tracer studies conducted by providers
TVET quality assurance framework (QAF)	• Finalizing of QAF model and action plan for implementation, together with cost estimates • Development of comprehensive guidelines on the QAF model, verification of assessments, provider self-assessment, authorization of institutions and courses, and competence-based assessments • Development of training materials and conducting training of providers	The agreed-upon QAF is being introduced as part of the National Qualifications Framework (NQF)	• Legislation required to facilitate full implementation (for example, to enable external verification of assessments) • Refinement of QAF documentation based on initial implementation experiences • Full integration of QAF into the NQF, following European guidelines, as well as incorporation into other TVET initiatives • Capacity building for providers around QAF requirements
Teacher professional development	• Provision of support for a training needs assessment of teachers in public TVET providers (related to their capacity to conduct competence-based training and assessments) • Development and piloting of training materials for TVET teachers on modular program delivery • Development and piloting of guidelines on competence-based assessment and related training materials for TVET teachers	Findings from training needs assessment used by the National Teacher Professional Development Center (NTDPC) to plan training activities; finalizing of all guidelines and training materials and handed over to NTDPC	• Widespread training of TVET teachers using the training materials developed by the project • New initiatives to improve quality of instruction in TVET courses—for example, by improving attractiveness of the TVET teaching profession, increasing industry involvement in the planning and delivery of TVET programs, and systematically update teachers' knowledge of industry-related skills requirements

Table IV.3 *(continued)*

Technical assistance area	Key technical assistance activities	Status at the end of implementation	Additional work required in the future
TVET strategy and financing	• Provision of assistance in estimating costs for TVET strategy, TVET courses, and implementation of new TVET regulations • Development of ideas for increasing flexibility of voucher system	Providing cost estimates and ideas for voucher funding to MES to support updating of the TVET strategy action plan	• Full, in-depth study of TVET system funding needs and potential funding models, resulting in a comprehensive set of recommendations

Source: PEM development brief (PEM 2018b).

PEM provided technical assistance related to learning and qualification opportunities for adults, but additional policy reform in this area is necessary. The focus of PEM's assistance in this third and final area was on validation of non-formal and informal learning (VNFIL), which refers to learning credentials for adults that can be obtained outside the formal TVET course system (especially through work experience). PEM developed a concept paper on VNFIL implementation as well as guidance and training materials for TVET providers (Table IV.4). However, additional efforts will be required after the end of the compact to facilitate implementation of VNFIL at scale. In May 2019 the government announced formal plans to authorize new types of adult-learning credentials, but it remains to be seen whether VNFIL and other adult-learning initiatives will establish a sustainable funding model or attract meaningful numbers of providers or trainees.

Table IV.4. Key ISWD technical assistance activities and their status at the end of implementation: Learning and qualification opportunities for adults

Technical assistance area	Key technical assistance activities	Status at the end of implementation	Additional work required in the future
Validation of non-formal and informal learning (VNFIL)	• Preparation of concept paper for VNFIL implementation as well as a paper on funding options • Development of guidance manual and training materials on VNFIL implementation for TVET providers; conducting training • Development of job description for role of VNFIL advisor at TVET providers • Piloting of VNFIL assessment • Provision of support for drafting new VNFIL regulations	Finalization and transfer to MES of all guidelines and training materials. MES announcement of plans for authorizing adult-learning courses.	• Further piloting of VNFIL, including assessments, and related capacity building • Agreement on a funding model for VNFIL • Spreading awareness of VNFIL among potential applicants and employers • Developing of partnerships for VNFIL among providers and business or social organizations
Adult and life-long learning policy	• Production of adult education policy report	Analysis and recommendations provided to MES	• MES to consider recommendations and determine whether and how to move forward

Source: PEM development brief (PEM 2018b).

C. Annual conference component

In this section, we describe the implementation of the final ISWD component: the annual TVET conference. We examine how the conference was organized and funded, and how it was received by stakeholders. Our key findings follow.

There was variation in the focus and structure of the three annual TVET conferences. The annual conference was initially envisioned as a forum to facilitate the exchange of ideas, sharing of best practices, and policy dialogue among stakeholders in the TVET sector. The first conference, in mid-2016, largely reflected this approach. It featured several international keynote speakers and a series of workshops on aspects of TVET policy that aligned with MES priorities and the technical assistance provided by the project. (Table IV.5 provides a summary description of each of the annual conferences.)

The fall 2017 conference and related events placed a greater emphasis on publicizing improvements in the Georgian TVET sector more broadly, as well as highlighting the PICG-supported courses. The conference itself included an international keynote speaker, several panel discussions, and "spotlight" talks during which successful young Georgians working in TVET fields shared their experiences. Immediately after the conference, a TVET fair featuring booths where grantees were available to provide information and discuss their courses with prospective trainees and their parents took place to promote the PICG-supported courses. (Other aspects of the annual conference have also supported the PICG component by conducting awards and launch events for the grants, as well as assistance to grantees in communication, branding, and promotion.) A National TVET Awards ceremony took place on the same evening to highlight excellence in the sector.

The fall 2018 conference was similar in design and structure to the 2017 conference, including international keynote speakers, panel discussions, and "spotlight" talks, and with a focus on highlighting the TVET sector. It was the first event in a "week of skills," which featured open days at all PICG institutions and culminated in the National TVET Awards ceremony.

The annual conferences were well received by stakeholders. The annual conferences were well attended by stakeholders including industry groups, TVET providers, government, donors, and others. About 200 to 250 individuals registered each year; attendance at the 2017 TVET fair and 2018 PICG open days was also high. MES and the donors and industry group representative (the Georgia Chamber of Commerce and Industry) we interviewed said that overall the conferences and related events were high quality, well organized, and high profile, with good media exposure within Georgia. All PICG grantees and all but one of the STPP grantees that we interviewed said they had attended at least one TVET conference, and most said they attend annually. Most of the grantees said the conferences were beneficial because they provided opportunities to interact with other attendees and exchange information with them (learning about new laws, teaching methods, and so on). Several PICG grantees mentioned they liked the "marketplace" format of the TVET fair following the 2017 conference, where they could showcase their institutions and the PICG-supported courses. Among the 10 employers we interviewed (all of which were involved with PICG-supported courses), just four were aware of the conference and only one had participated in it (three others said they would have attended if

they had been invited). The employer who did attend spoke highly of the event and the value of the networking opportunities it affords. Overall, stakeholders believed that the conference would contribute to improving perceptions of TVET in Georgia, but only as one component of a much broader effort (which includes the other components of the ISWD project).

The 2017 and 2018 conferences secured significant co-funding; however, the likelihood of continuing the conferences is difficult to predict. The 2016 conference was entirely funded by the project, as MCA-Georgia required. In 2017 and 2018, the project secured substantial financial support funding from the Gudavadze Patarkatshishvili Foundation. There were also contributions from other organizations, including financial contributions, in-kind contribution of technical equipment by a local events management company, and sponsorship for speakers' travel expenses. The total percentage of co-funding for the conference and associated events was 48 percent in 2017 and 55 percent in 2018, exceeding expectations. However, it is unclear whether conferences will take place after the end of the project. Although there is strong interest from the MES and other donors in continuing it in some form, it is costly—even with co-funding—and requires significant effort to organize successfully. Continuing these conferences in the long term would likely require new streams of donor support. However, as of May 2019, the MES is planning to provide support for TVET conferences as part of its post-compact activity plan.

Table IV.5. ISWD annual TVET conferences, 2016–2018

Date	Conference theme	Related events	Conference schedule	Approximate number of attendees	Private sector co-funding
July 18, 2016	Vocational Education for Economic Development	None	• Several international keynote speakers • Panel discussion on the theme "Industry-Led Skills and Workforce Development for Economic Growth" • Parallel workshops on PPP in TVET; increasing TVET participation rates; and work-based learning	250	None
October 31, 2017	Skills for the Future	TVET fair and Annual TVET Awards ceremony (same day)	• One international keynote speaker • Three panel discussions on the themes "TVET for employment: policy and business perspectives"; "TVET for economic development: the role of the private sector"; and "Branding of TVET" • "Spotlight" talks featuring personal experiences of professionals in TVET fields	200	48 percent: • Financial contribution from Gudavadze Patarkatshishvili Foundation • Discount on technical equipment from events management company • Two speakers' travel costs covered by their organization

Table IV.5 *(continued)*

Date	Conference theme	Related events	Conference schedule	Approximate number of attendees	Private sector co-funding
November 5, 2018	Investing in Human Capital	Week of skills: PICG open days and annual TVET awards ceremony	• Two international keynote speakers • Panel discussion on the theme "The reworking of work" • "Spotlight" talks featuring personal experiences of professionals in TVET fields	250	55 percent: • Financial contribution from Gudavadze Patarkatshishvili Foundation • Financial contribution from Georgian Aviation University and Georgian Railway

Source: PEM Annual TVET Conference reports (PEM 2016b, PEM 2017, and PEM 2018c) and author observations.

V. CONCLUSION

This report has presented interim findings on the Georgia ISWD project evaluation from data collected during the final year of the project's five-year implementation period. In this concluding chapter, we summarize how these findings have contributed to answering the evaluation's research questions, and highlight the key implications of these findings for the evaluation. We also briefly review our plans for the final evaluation report.

A. Interim findings about the PICG component

Below we summarize the key findings related to each of the research questions for the PICG component (Table V.1). These key findings are as follows:

- **The PICG component successfully established 51 new or improved TVET courses.** These courses included 38 degree courses and 13 short certificate courses. They courses were established through close cooperation between the grantees and private sector partners, who provided valuable knowledge and material support during course development and implementation. Other notable features of implementation included a rigorous, multi-stage proposal development and selection process, strong grant management systems, and solid working relationships and open communication between key players. Together, these features contributed to the development of high quality PICG-supported courses.
- **The government accreditation process for the PICG-supported degree courses resulted in changes to the original course schedules and plans.** The complex and changing nature of the government accreditation process for these courses made it necessary for grantees to change their originally planned designs for most courses' modules, titles, and levels, and caused substantial delays in starting enrollment for many courses. Although these delays contributed to the relatively small size of the first trainee cohort, eventually the total number of enrollees across all cohorts met expectations for the compact period.
- **Trainees in PICG-supported courses were disproportionally male; many trainees had substantial work experience**. Only 14 percent of all trainees in PICG-supported courses were female, probably reflecting cultural gender norms associated with many of the occupations that PICG-supported courses focused on. Almost three-quarters of the trainees had work experience, and about half (52 percent) maintained some form of employment while enrolled in their course.
- **Trainees and teachers had positive first impressions of the PICG-supported courses, although there is room for improvement in specific areas.** Stakeholders highlighted the quality of course content, as well as the modern facilities and equipment that are available for hands-on practice at the PICG providers. Teachers in these courses appear to have received the necessary training to be effective as instructors, and are integrating practical sessions with theoretical ones to help trainees master the course material. However, in some cases trainees have struggled with their lack of core academic skills or foundational knowledge in their chosen subject areas, which prevents them from keeping up with course materials. Teachers and trainees both noted that there continues to be a lack of high quality Georgian-language technical and training materials in their fields. The trainees seeking to maintain concurrent employment noted difficulties in attending class because of work commitments.

- **Although it is still too early to assess the labor market outcomes of graduates from PICG-supported courses, trainees and employers were optimistic about their prospects.** Employers were optimistic about the alignment between PICG-supported courses and their labor shortages; trainees were also optimistic about their own labor market outcomes after graduation. Trainees with an employment history expected their monthly wages to increase by about 70 percent, on average, as a result of participating in PICG-supported training. However, although the expected rate of employment after graduation is similar for women and men, the mean monthly wage women expect is about 30 percent lower than the wage men expect to get. In the final report we will assess whether and how well the expectations for trainees' labor market outcomes were fulfilled, and also observe the gender gap in wages in practice.
- **Although grantees plan to continue offering almost all of the PICG-supported courses after the end of the compact, there are risks to sustainability.** In the absence of further grant support or any formal obligation for PICG partners to continue to contribute to the courses after the end of the compact (financially or in terms of expertise), it is unclear whether providers will have an adequate stream of resources to sustain the teaching staff and facilities associated with PICG-supported courses. This could be particularly challenging for public providers, who do not charge tuition and rely on the government's system of enrollment-based voucher funding. These providers might have to adjust their funding streams and expenditures—for example, by creating new short courses to raise revenue or reducing the involvement of foreign experts to save money. Another sustainability concern for public grantees is the potential loss of trained teachers after the grant period ends, because TVET institutions in the public sector pay low salaries. The funding issue may be less of a concern at the private PICG grantees, because they have had strong demand for some of their PICG-supported courses despite charging high fees already, and they might benefit from government vouchers in the future.

Table V.1. Contribution of interim findings to research questions for the PICG component

Research question	Key interim findings
1. How did the implemented PICG-supported courses compare with the original grant proposals, and what were the reasons for any deviations?	• The government accreditation process required grantees to change their plans on the design of most courses. • The accreditation process also delayed enrollment in PICG-supported courses. • Most trainees were satisfied with the quality of PICG-supported courses.
2. Did trainees enroll in PICG-supported courses and graduate from them at targeted levels?	• The size of the first trainee cohort fell short of expectations, but total enrollment across all cohorts is close to expectations for the compact period. • Trainees in PICG-supported courses are predominantly male. • Most of the courses have not been operating long enough to assess graduation rates reliably—they will be measured in the evaluation's final report.

Table V.1 *(continued)*

Research question	Key interim findings
3. What were the labor market outcomes (employment and wages) for graduates from PICG-supported courses?	• Almost all trainees expect to be productively engaged in employment (86 percent) or further training (12 percent) after graduation. • More than half of trainees were working while enrolled in training; many of them might stay in their current jobs. • Among trainees with an employment history, expected monthly wages are about 70 percent higher than their current or prior wages, on average. • Female trainees expect to earn substantially lower wages after graduation than men do. • Analyses for the evaluation's final report will directly measure whether these expectations were fulfilled, one year after trainees graduate.
4. What were employer perceptions of the graduates from the PICG-supported courses, and how did the availability of these graduates affect their hiring and training plans?	• Employers have had difficulty recruiting qualified candidates in the past; many recruits lacked technical and soft skills and had to learn them on the job. • Employers have positive views about the PICG-supported courses, but it is too early to tell whether the courses will improve employers' ability to recruit qualified staff with the necessary skills.
5. Will PICG-supported courses be sustained after the compact?	• Grantees plan to continue offering most of the PICG-supported courses in the future, but some plan to adjust aspects of the course content, the number of trainees, or admission requirements. • Key challenges to the long-term sustainability of the PICG-supported courses include limited financial resources and high teacher turnover; these concerns are experienced most intensely by public grantees.

B. Interim findings about the STPP, technical assistance, and annual conference components

Next we summarize the key findings on each of the research questions for the remaining ISWD project components—STPP grants, technical assistance for policy reform, and the annual TVET conference (Table V.2). These key findings are as follows:

- **In many cases, the STPP grants supported dissemination of best practices in ways that could be replicated by other TVET providers and institutions.** However, STPP grantees suggested that widespread adoption of new practices by more providers might be hindered by challenges such as providers' lack of awareness, inadequate financial resources, and limited capacity. Despite these challenges, the study did find examples of grants that had supported practices that are being considered or adopted by a range of other providers. The grant-supported practices with the highest potential for replicability were specifically aligned with the reform efforts of the MES. The evaluation will assess the extent to which STPP-supported practices were adopted in the longer term and include this analysis in the study's final report.
- **The technical assistance component succeeded in delivering support to the MES for a wide range of policy-relevant initiatives, but more work will have to be done after the compact ends.** Strong existing relationships between implementing staff, ministry staff, and other donors active in the TVET sector helped ensure that technical assistance remained flexible, responsive to MES needs, and policy-relevant. However, the policy reforms supported by the component are long-term efforts and, although good progress was made during the compact, more work (and probably more donor assistance) will be necessary to

finalize many of them. For example, several initiatives related to improving the quality and attractiveness of TVET have either begun or are close to implementation, but other activities related to business engagement and establishing learning and qualification opportunities for adults are at an earlier stage of planning. Changes in leadership and priorities at the MES, as well as limited resources and capacity, might also pose a challenge to the sustainability of some of the reform efforts.

- **Annual TVET conferences were well attended and well received by stakeholders.** Attendees at the three annual conferences held during the compact included industry groups in certain sectors, TVET providers, government, and donors, among others. However, based on our interviews with employers affiliated with the PICG-supported courses, it appears that not many private sector employers were at the conferences. Overall, stakeholders believed that the conferences did have at least some potential to contribute to improving perceptions of TVET in Georgia. Although all stakeholders expressed a desire for the conferences to continue in the future, this will require financial support and an entity with the capacity to take charge of organizing it. The 2017 and 2018 conferences had substantial private co-funding and participation from MES officials; it is unclear whether these supports will continue in the long term although, as of May 2019, the MES is planning to provide support for TVET conferences as part of its post-compact activity plan.

Table V.2. Contribution of interim findings to research questions for the STPP, technical assistance, and annual conference components

Research question	Key interim findings
1. What are TVET providers' perceptions of the best practices identified and disseminated by the project, to what extent have they adopted them, and what are the main barriers to doing so?	• Most of the STPP best practices have the potential to be replicated by other TVET providers and institutions. • Aspects of these practices might be sustained at the grantee level, butt broader sustainability and replication might be difficult because of potential providers' lack of awareness, inadequate financial resources, and limited capacity. • Some STPP best practices have the potential for wider replicability at the system level; however, it is unclear whether providers will adopt the specific practices and materials developed through the grants.
2. To what extent have the MES and its agencies adopted the policy reforms supported by the project, and what have been the main challenges in doing so?	• The initiatives at the most advanced stage are those related to the quality and attractiveness of TVET; those related to business engagement in the TVET sector and learning and qualification opportunities for adults are mostly at an early stage. • Furthering these long-term initiatives will likely require donor assistance, and other donors are already planning to follow up on several aspects of PEM's technical assistance with their projects over the next few years. • Nevertheless, changes in leadership and priorities at the MES, as well as limited resources and capacity, might pose a challenge to sustainability of the reform efforts.
3. How and to what extent has the annual TVET conference influenced providers, employers, the MES, and other TVET sector stakeholders?	• The annual conferences were well attended and well received by stakeholders including industry groups, TVET providers, government, and donors, among others. • The 2017 and 2018 conferences secured significant co-funding; however, their long-term sustainability after the end of the project is unclear. • Stakeholders believed the conference would contribute to improving perceptions of TVET in Georgia.

C. Implications of interim findings for the evaluation

The interim findings have several implications for the design and implementation of the ISWD project evaluation:

- **Because so many of the trainees have employment histories, we plan to add a new analysis to assess changes in trainees' earnings.** As described in Chapter II, we had planned to use two approaches to assess the changes in employment and earnings associated with participation in PICG-supported courses. The first, a benchmarking approach, will use secondary data from the MES to compare the labor market outcomes of trainees in the PICG-supported courses to those of trainees in a broad set of non-supported courses. The second is a pre-post design, which will compare the labor market outcomes of trainees in improved PICG-supported courses to those of trainees in earlier cohorts in the same courses, before they were improved.

  The high number of trainees who were employed immediately before or during training provides a new opportunity to measure changes in their earnings, by comparing earnings after they graduate to their prior earnings. This approach is feasible because slightly more than half of our sample of trainees were either employed before training or concurrently employed with their training course, and also reported their associated wages in the baseline survey. An important strength of this approach is that, by comparing wages for the same individuals at two points in time, we can account for the confounding effects of any trainee characteristics that are fixed over time (including unobserved characteristics such as intrinsic motivation).

  As with the study's other descriptive analyses, however, we will still not be able to account for confounding related to time-varying conditions, such as differences in labor market conditions in different years, and these estimates therefore cannot be viewed as causal. In addition, they will only apply to a subsample of (typically older and more experienced) trainees, namely those who were previously employed and reported their prior wages. Nevertheless, this approach will provide a valuable complement to those already planned, enabling us to triangulate the findings across three different descriptive approaches.

- **It will be important to control for education levels in the original pre-post analysis, which compared trainees in PICG-supported and pre-improvement courses.** As noted, one of our approaches to assessing the change in employment and earnings is a pre-post design, comparing trainees in improved PICG-supported courses and the equivalent pre-improvement versions of those courses. In Chapter III, we showed that, although the age and gender profiles of trainees in PICG-supported courses and equivalent pre-improvement courses were similar, PICG trainees had substantially higher levels of education. These baseline differences are likely to be correlated with employment or earnings outcomes, and could therefore bias the descriptive analysis. To account for this, we will control for differences in education levels in a regression framework when we conduct the pre-post analysis. (We will also control for age and gender even though the two groups of trainees are similar on both characteristics, to improve the statistical precision of the analysis.).

- **The assumptions in MCC's ex-ante cost-benefit analysis (CBA) model might have to be adjusted.** As part of our final evaluation report, we plan to assess whether the assumed

improvements in employment and earnings in MCC's ex-ante CBA model are reasonable.[29] Our interim findings have two implications for the ex-ante CBA model, which are relevant if MCC plans to updates this model at the end of the compact. First, in Appendix Table A.2, we have used administrative data from grantees to provide detailed information about the number of trainees enrolled in each PICG-supported course, as well as the timing of these courses; this will enable MCC to update these key parameters in the model. Second, MCC's assumptions in the program's CBA model may have underestimated trainees' potential pre-training and post-training wage levels. In our sample, the average observed baseline wage among PICG trainees (those who were employed immediately before or during training) is 803 GEL (US$297), approximately double the amount assumed in the ex-ante CBA model. This is likely because trainees are more educated and have more work experience than originally assumed. Given the higher baseline wage, applying the same assumed percentage increase in wages (24 percent) as the original CBA model will lead to greater economic benefits. In addition, trainees are currently expecting a much larger percentage increase in wages (70 percent) than the model assumes, although these expectations may not be borne out in practice. In contrast, the expected employment rate for trainees after graduation is almost identical to that assumed in the CBA model (86 percent versus 85 percent), although most of the remaining trainees expect to engage in further training and enter employment after a delay.

D. Plans for the final evaluation report

The final evaluation report will complement these interim findings with two future data collection efforts. The first effort is the follow-up trainee survey, which will gather information from trainees in the baseline sample in both PICG-supported and pre-improvement courses, one year after they graduate: these post-graduation surveys will be complete in late 2021. We will primarily use these data to describe the labor market outcomes (employment and wages) of graduates from PICG-supported courses and assess changes in these outcomes using our proposed designs. The second effort is the final round of qualitative data collection, which we also plan to complete in 2021. It will include interviews with grantees, PICG graduates, and employers, as well as other stakeholders such as the MES, other donors, and industry groups. These qualitative data will enable us to explore the longer-term effects of the project activities and their sustainability in the post-compact period. Together, all of these data sources will inform the final evaluation report, which we expect to submit in 2022.

[29] As described in the evaluation design report, MCC's ex ante ERR model focuses on Component 1, which accounts for most of the ISWD project funding and has the most clearly defined benefits. The costs in the ERR model include the total PICG investment amount from both MCC and the private sector, as well as tuition costs. The main benefits are higher earnings of PICG trainees compared to what their earnings would have been had they taken existing courses.

REFERENCES

Acevedo, Paloma, Guillermo Cruces, Paul Gertler, and Sebastián Martínez. "Living Up to Expectations: How Job Training Made Women Better Off and Men Worse Off." Cambridge, MA: National Bureau of Economic Research, March 2017.

Alzúa, María Laura, Guillermo Cruces, and Carolina Lopez. "Long-Run Effects of Youth Training Programs: Experimental Evidence from Argentina." *Economic Inquiry,* vol. 54, no. 4, 2016, pp. 1839–1859.

Attanasio, Orazio, Adriana Kugler, and Costas Meghir. "Subsidizing Vocational Training for Disadvantaged Youth in Colombia: Evidence from a Randomized Trial." *American Economic Journal: Applied Economics,* vol. 3, no. 3, 2011, pp. 188–220.

Attanasio, Orazio, Arlen Guarín, Carlos Medina, and Costas Meghir. "Long Term Impacts of Vouchers for Vocational Training: Experimental Evidence for Colombia." Cambridge, MA: National Bureau of Economic Research, 2015.

Borkum, Evan, Arif Mamun, and Malik Khan Mubeen. "Evaluation of the Vocational Training Grant Fund in Namibia: Final Report." Washington, DC: Mathematica, March 2017.

Borkum, Evan, Ira Nichols-Barrer, and Irina Cheban. "Evaluation Design for the Georgia II Industry-Led Skills and Workforce Development Project." Cambridge, MA: Mathematica, November 2018.

Card, David, Pablo Ibarrarán, Ferdinando Regalia, David Rosas-Shady, and Yuri Soares. "The Labor Market Impacts of Youth Training in the Dominican Republic." *Journal of Labor Economics,* vol. 29, no. 2, 2011, pp. 267–300.

Cho, Yoonyoung, Davie Kalomba, Ahmed Mushfiq Mobarak, and Victor Orozco. "Gender Differences in the Effects of Vocational Training: Constraints on Women and Drop-out Behavior." Policy Research Working Paper No. WPS 6545, Impact Evaluation Series No. IE 99. Washington, DC: World Bank Group, 2013.

Delajara, Marcelo, Samuel Freije, and Isidro Soloaga. "An Evaluation of Training for the Unemployed in Mexico." Working Paper 0906. New York, NY: Inter-American Development Bank Office of Evaluation and Oversight, 2006.

Diaz, Juan Jose, and David Rosas. "Impact Evaluation of the Job Youth Training Program ProJoven." IADB Working Paper No. 693. Washington, DC: Inter-American Development Bank, 2016.

Hirshleifer, Sarojini, David McKenzie, Rita Almeida, and Cristobal Ridao-Cano. "The Impact of Vocational Training for the Unemployed: Experimental Evidence from Turkey." *Economic Journal,* vol. 126, no. 597, 2016, pp. 2115–2146.

Honorati, Maddalena. "The Impact of Private Sector Internship and Training on Urban Youth in Kenya." Policy Research Working Paper No. WPS 7404; Impact Evaluation Series. Washington, DC: World Bank Group, 2015.

Ibarrarán, Pablo, Jochen Kluve, Laura Ripani, and David Rosas. "Experimental Evidence on the Long-Term Impacts of a Youth Training Program." IDB Working Paper No. 657. Washington, DC: Inter-American Development Bank, 2015.

Ibarrarán, Pablo, Laura Ripani, Bibiana Taboada, Juan Miguel Villa, and Brigida Garcia. "Lifeskills, Employability, and Training for Disadvantaged Youth: Evidence from a Randomized Evaluation Design." *IZA Journal of Labor and Development,* vol. 3, no. 10, 2014.

Ibarrarán, Pablo, and David Rosas Shady. "Evaluating the Impact of Job Training Programmes in Latin America: Evidence from IDB Funded Operations." *Journal of Development Effectiveness,* vol. 1, no. 2, 2009, pp. 195–216.

Maitra, Pushkar, and Subha Mani. "Learning and Earning: Evidence from a Randomized Evaluation in India." *Labour Economics*, vol. 45, 2017, pp. 116–130.

MCA-Georgia. "Monitoring and Evaluation Plan, Compact II." Tbilisi, Georgia: MCA-Georgia, version 3, January 2018.

McKenzie, David. "How Effective Are Active Labor Market Policies in Developing Countries? A Critical Review of Recent Evidence." *IZA Discussion Papers*, No. 10655*,* 2017.

Ministry of Education and Science, Georgia. "Vocational Education and Training Development Strategy for 2013-2020." Tbilisi, Georgia: Ministry of Education and Science, 2013.

PEM GmbH. "Good Practices Description under 1st STPP Projects." Düsseldorf, Germany: PEM GmbH, December 2016a.

PEM GmbH. "First Annual TVET Conference Report." Düsseldorf, Germany: PEM GmbH, July 2016b.

PEM GmbH. "Second Annual TVET Conference & Fair Report." Düsseldorf, Germany: PEM GmbH, November 2017.

PEM GmbH. "Good Practices Description under 2nd round STPP Projects." Düsseldorf, Germany: PEM GmbH, March 2018a.

PEM GmbH. "Development Brief." Draft report submitted to MCA-Georgia. Düsseldorf, Germany: PEM GmbH, 2018b.

PEM GmbH. "Week of Skills 2018: Third Annual TVET Conference, Open Door Days, and TVET Awards." Düsseldorf, Germany: PEM GmbH, November 2018c.

Tripney, Janice, Jorge Garcia Hombrados, Mark Newman, Kimberly Hovish, Chris Brown, Katarzyna T. Steinka-Fry, and Eric Wilkey. "Post-Basic Technical and Vocational Education and Training (TVET) Interventions to Improve Employability and Employment of TVET Graduates in Low- and Middle-Income Countries." *Campbell Systematic Reviews,* vol. 9, no. 9, 2013.

U.S. Agency for International Development. "State of the Field Report: Examining the Evidence in Youth Workforce Development." Washington, DC: U.S. Agency for International Development, 2013.

APPENDIX A:

SUPPLEMENTARY TABLES AND FIGURES

This page has been left blank for double-sided copying.

Table A.1. Experimental evaluations of vocational training programs in low- and middle-income countries

Country	Study	Population	Follow-up period relative to end of training	Impact of the offer of training				Cost per trainee (US$)
				Employ-ment (percentage points)	Formal employment (percentage points)	Earnings (percent)	Formal earnings (percent)	
Argentina	Alzúa et al. (2016)	Low-income youth	18 months	n.r.	**8.0**	n.r.	**64.9**	$1,722
		Low-income youth	33 months	n.r.	4.3	n.r.	23.1	
Colombia	Attanasio et al. (2011)	Low-income youth	14 months	**4.5**	**6.4**	**11.6**	**27.1**	$750
	Attanasio et al. (2015)	Low-income youth	Up to 10 years	n.r.	**4.2**	n.r.	**13.6**	
Dominican Republic	Card et al. (2011)	Low-income youth	12 months	0.7	2.2	10.8	n.r.	$330
	Ibarrarán et al. (2014)	Low-income youth	18 to 24 months	-1.3	1.8	6.5	n.r.	$700
	Ibarrarán et al. (2015)	Low-income youth	6 years	-1.4	2.6	-1.9	n.r.	$700
	Acevedo et al. (2017)	Low-income youth	3 years	0.7	n.r.	n.r.	n.r.	n.r.
India	Maitra and Mani (2017)	Low-income women	18 months	**8.1**	n.r.	**95.7**	n.r.	$13
Kenya	Honorati (2015)	Low-income youth	14 months	**5.6**	n.r	29.7	n.r.	$1,150
Malawi	Cho et al. (2013)	Low-income youth	4 months	n.r.	n.r.	-19.6	n.r.	n.r.
Peru	Diaz and Rosas (2016)	Low-income youth	36 months	1.6	**3.8**	13.4	n.r.	$420
		Low-income youth	36 months	n.r.	4.5	n.r.	n.r.	
Turkey	Hirshleifer et al. (2016)	The unemployed	1 year	2.0	2.0	5.8	8.6	$1,700
		The unemployed	2.5 years	n.r.	-0.1	n.r.	-0.8	
Namibia	Borkum et al. (2017)	Low-income youth	1 year	-6.1	-0.1	-5.1	n.r.	n.r.

Source: McKenzie (2017) and Borkum et al. (2017).

Notes: Impacts that are statistically significant at the 5 percent level are in bold.

n.r. = not reported.

Table A.2. Targeted sample of trainees for the baseline survey of PICG-supported courses

Training provider	Course name	Level[a]	Duration (months)[b]	First cohort		Second cohort		Third cohort	
				Start date	Number of enrollees at start of course[c]	Start date	Number of enrollees at start of course[c]	Start date	Number of enrollees at start of course[c]
Batumi State Maritime Academy	Welder	III	6	Dec 2017	26	Dec 2018	16	–	–
	Welder	IV	14	Dec 2017	22	Jul 2018	5	–	–
	Fishing vessel navigator	V	14	Dec 2017	19	May 2018	14	Dec 2018	30
	Cargo handling logistic operator	IV	12	Dec 2017	5	Jul 2018	5	–	–
	Port logistics manager	V	8	Dec 2017	8	Dec 2018	10	–	–
	Crane operator	III	7	Dec 2017	12	Jul 2018	8	Dec 2018	13
	Crane operator	IV	16	Dec 2017	10	–	–	–	–
Georgian Mountain Guide Association	Trekking guide	III	11	–	–	Nov 2017	15	–	–
	Mountain guide	IV	16	Nov 2016	15	Dec 2018	30	–	–
Vocational College Phazisi	Fish breeding technician	IV	25	May 2018	16	–	–	–	–
	Fish processing specialist	IV	24	May 2018	14	–	–	–	–
	Fish laboratory technician	IV	25	May 2018	13	–	–	–	–
Vocational College Tetnuldi	IT support specialist[b]	III	11	Nov 2017	172	May 2018	55	Dec 2018	198
	Computer net administrator[b]	V	27	Nov 2017	16	May 2018	14	–	–
	Computer network and systems technician[b]	IV	17	Nov 2018	28	–	–	–	–
Georgian Aviation University	Helicopter pilot	V	24	Oct 2018	7	–	–	–	–
	Aircraft maintenance technician (B1.1)[d]	V	24	Feb 2018	13	Oct 2018	2	–	–
	Aircraft maintenance technician (B2)[d]	V						–	–
Community College Spektri	Welder	III	7	Nov 2017	24	May 2018	21	–	–
	Welder	IV	16	–	–	May 2018	17	Dec 2018	8
	Electrician	III	10	Nov 2017	36	May 2018	28	–	–
	Electrician	IV	16	Nov 2017	26	May 2018	14	–	–
	Air-conditioning systems technician	IV	11	Nov 2017	11	May 2018	6	Dec 2018	14
	Water supply systems exploitation technician	IV	10	May 2018	10	–	–	–	–
	Water sewage systems exploitation technician[e]	IV	–	–	–	–	–	–	–
Georgian Technical University	Mechanical engineer technician	V	24	Nov 2017	11	May 2018	12	Dec 2018	8
	Industrial automation technician	V	21	Nov 2017	11	May 2018	13	–	–

Table A.2 *(continued)*

Training provider	Course name	Level[a]	Duration (months)[b]	First cohort		Second cohort		Third cohort	
				Start date	Number of enrollees at start of course[c]	Start date	Number of enrollees at start of course[c]	Start date	Number of enrollees at start of course[c]
	Electrical technician, high voltage	IV	13	Nov 2017	23	May 2018	13	–	–
	Mechatronics technician	V	24	Nov 2017	21	Dec 2018	7	–	–
Georgia Railway Transport College	Construction of railway track	III	20	Dec 2018	25	–	–	–	–
	Railway power supply system's mechanic	IV	22	May 2018	5	Dec 2018	12	–	–
	Rolling stock mechanic	IV	20	Dec 2018	5	–	–	–	–
	Rail car maintenance mechanic	IV	20	Dec 2018	13	–	–	–	–
	Rail carrier	IV	20	Dec 2018	22	–	–	–	–
	Rail signalization, centralization and blocking mechanic	IV	20	Dec 2018	9	–	–	–	–
	Locomotive driver	IV	20	Dec 2018	18	–	–	–	–
	Monitor of railway track	III	22	May 2018	13	Dec 2018	16	–	–
Agricultural University of Georgia	Farmer/agribusiness manager	cert	7	Nov 2017	18	–	–	–	–
	Veterinary service specialist	cert	8	Nov 2017	11	Oct 2018	15	–	–
	Viticulturist-oenologist	cert	10	Sep 2017	28	Oct 2018	46	–	–
Georgian Institute of Public Affairs	Occupational health safety and environmental specialist/manager	V	22	Feb 2018	24	Sep 2018	26	–	–
Total	**–**	–	**–**	**–**	**760**	**–**	**420**	**–**	**271**

Source: Information on PICG-supported course names and levels was originally provided by PEM and was cross-checked against the baseline tracer survey data. Information on course duration and start date is from the baseline tracer survey, and information on the number of enrollees is from administrative data collected from providers by GORBI.

[a]Levels run from I to V; higher values represent more sophisticated course content with more stringent entry requirements.

[b]About half of the PICG-supported courses had varying course duration across cohorts, based on administrative data collected by GORBI; in those cases,we reported the modal duration. Also, Vocational College Tetnuldi offers its courses at different vocational colleges across Georgia; the duration shown in the table reflects the modal duration across all colleges and cohorts. The Tetnuldi courses at different locations also had various start dates; the table shows the modal start date across colleges.

[c]Dashes (–) indicate that information on enrollment for a specific cohort was not available because (1) the course was not implemented (several courses), (2) the course had no enrollees (Community College Spektri water sewage systems exploitation technician course), (3) the first cohort had graduated before data collection was conducted (Community College Spektri level IV welder course and Georgian Mountain Guide Association trekking guide course), or (4) the second and/or third cohort had not yet enrolled when data collection was conducted (several courses).

[d]Trainees in these two courses were surveyed together because they were enrolled in the same module when the baseline survey was conducted; we are unable to separate out enrollment or responses by course.

[e]This course did not have any enrollees when baseline data collection was conducted.

Table A.3. Targeted sample of trainees for the baseline survey of PICG-supported courses and linked pre-improvement courses

PICG-supported courses					Pre-improvement courses				
Provider	Course name	Level[a]	Duration (months)	Number of respondents	Provider	Course name	Level[a]	Duration (months)	Number of respondents
Vocational College Tetnuldi	IT support specialist[b]	III	11	355	Vocational College Tetnuldi	IT support specialist[a]	III	15	39
						IT[b]	III	8	40
	Computer network and systems technician[b]	IV	17	26		Computer network and systems technician[b]	III	10	25
						Internet technician (web specialist)	III	12	22
Georgia Railway Transport College	Construction of railway track	III	20	22	Georgian Technical University	Tracklayer	III	18	5
	Railway power supply system's mechanic	IV	22	14		Railway power supply system mechanic	III	18	7
	Rolling stock mechanic	IV	20	4		Rolling stock mechanic	III	18	11
	Rail carrier	IV	20	18		Rail carrier	III	10	11
	Rail signalization, centralization and blocking mechanic	IV	20	7		Rail signalization, centralization and blocking mechanic	III	18	9
	Rail car maintenance mechanic	IV	20	9		Rail car mechanic	III	18	7
Georgian Technical University	Mechanical engineer technician	V	24	24		Mechanical engineer technician	III	10	3
Total	--	--	--	**479**	**Total**	--	--	--	**179**

Source: Information on the duration of PICG-supported courses is the same as in Appendix Table A.2; we include the number of respondents instead of the number of enrollees for comparability with the information available for pre-improvement courses. Information on pre-improvement courses was collected from trainees by Mathematica's local consultant during initial baseline data collection.

[a]Levels run from I to V; higher values represent more sophisticated course content with more stringent entry requirements.

[b]Vocational College Tetnuldi offers these courses at different vocational colleges across Georgia. For the PICG-supported courses, the table shows the modal duration across colleges, and for the pre-improvement courses it shows the modal duration across trainees (because there was some variation in trainee responses within colleges).

Table A.4. Comparison of original plans for PICG-supported courses and those implemented

	Courses as originally planned				Courses as implemented (enrollment as of February 2019)					
Grantee	Course name	Level	Duration (months)	Number of enrollees per cohort	Course name	Level	Duration (months) [a]	Number of enrollees in first cohort[b]	Number of enrollees in second cohort[b]	Number of enrollees in third cohort[b]
Batumi State Maritime Academy	Welder	III	12	54	Welder	III	6	26	16	--
	Welder	IV	18	30	Welder	IV	14	22	5	--
	Sailor	V	24	60	Fishing vessel navigator	V	14	19	14	30
	Logistics manager	V	24	10	Cargo handling logistic operator	IV	12	5	5	--
					Port logistics manager	V	8	8	10	--
	Crane operator	V	24	20	Crane operator	III	7	12	8	13
					Crane operator	IV	16	10	--	--
Georgian Mountain Guide Association	Trekking guide	III	12	8	Trekking guide	III	11	--	15	--
	Alpine guide	V	18	5	Mountain guide[c]	IV	16	15	30	--
	Ski guide	V	18	6						
	Mountain guide	V	21	5						
Vocational College Phazisi	Fish breeding technician	IV	18	15	Fish breeding technician	IV	25	16	--	--
	Fish processing specialist	IV	20	15	Fish processing specialist	IV	24	14	--	--
	Fish laboratory technician	IV	16	15	Fish laboratory technician	IV	25	13	--	--
Vocational College Tetnuldi	IT support specialist	III	4	110	IT support specialist	III	11	172	55	198
	Computer network administrator	V	6	30	Computer network administrator	V	27	16	14	--
	Systems Administrator	V	6	30	--	--	--	--	--	--
	Computer network and systems technician	IV	6	30	Computer network and systems technician	IV	17	28	--	--
Georgian Aviation University	Helicopter pilot	V	24	20	Helicopter pilot	V	24	7	--	--

Table A.4 *(continued)*

Grantee	Courses as originally planned				Courses as implemented (enrollment as of February 2019)					
	Course name	Level	Duration (months)	Number of enrollees per cohort	Course name	Level	Duration (months) [a]	Number of enrollees in first cohort[b]	Number of enrollees in second cohort[b]	Number of enrollees in third cohort[b]
	Aircrafts and engines maintenance technician	V	24	45	Aircraft maintenance technician (B1.1)[d]	V	24	13	2	--
	Aircraft avionics and electronics system maintenance technician	V	24	40	Aircraft maintenance technician (B2)[d]	V				--
Community College Spektri	Welder	V	24	40	Welder	III	7	24	21	
	Welder	IV	18	40	Welder	IV	16	--	17	8
	Electrician	V	24	40	Electrician	III	10	36	28	--
	Electrician	IV	18	66	Electrician	IV	16	26	14	--
	Air-conditioning systems technician	IV	18	40	Air-conditioning systems technician	IV	11	11	6	14
	Air-conditioning systems technician	V	24	20	--	--	--	--	--	--
	Underground water and sewage systems technician	IV	18	46	Water supply systems exploitation technician	IV	10	10	--	--
					Water sewage systems exploitation technician[e]	IV	--	--	--	--
	Underground water and sewage systems technician	V	24	30	--	--	--	--	--	--
Georgian Technical University	Industrial mechanic	IV and V	24	24	Mechanical engineer technician	V	24	11	12	8
					Industrial automation technician	V	21	11	13	--
	Industrial electrician, high voltage	IV and V	24	24	Electrical technician, high voltage	IV	13	23	13	--
	Instrumentation technician	IV and V	24	24	Mechatronics technician	V	24	21	7	--
	Industrial electrician, low voltage[f]	IV and V	24	24	--	--	--	--	--	--
Georgia Railway Transport College	Track repairer	V	18	15	Construction of railway track	III	20	25	--	--
	Electrical mechanic	V	24	15	Railway power supply system's mechanic	IV	22	5	12	--

Table A.4 *(continued)*

Grantee	Courses as originally planned				Courses as implemented (enrollment as of February 2019)					
	Course name	Level	Duration (months)	Number of enrollees per cohort	Course name	Level	Duration (months) [a]	Number of enrollees in first cohort[b]	Number of enrollees in second cohort[b]	Number of enrollees in third cohort[b]
	Rolling stock mechanic	V	24	15	Rolling stock mechanic	IV	20	5	--	--
	Rail car maintenance mechanic	V	24	20	Rail car maintenance mechanic	IV	20	13	--	--
	Rail carrier	V	30	15	Rail carrier	IV	20	22	--	--
	Rail signalization, centralization and blocking mechanic	V	24	15	Rail signalization, centralization and blocking mechanic	IV	20	9	--	--
	Locomotive driver	III	24	15	Locomotive driver	IV	20	18	--	--
	Testing inspector	III	24	15	Monitor of railway track	III	22	13	16	--
Agricultural University of Georgia	Farmer	V	25	80	Farmer/agribusiness manager	cert	7	18	--	--
	Veterinary service specialist	IV	22	25	Veterinary service specialist	cert	8	11	15	--
	Wine and viticulture specialist	III	18	35	Viticulturist-oenologist	cert	10	28	46	--
Georgian Institute of Public Affairs	Occupational health safety and environmental specialist/manager	V	23	40	Occupational health safety and environmental specialist/manager	V	22	24	26	--
Total	**--**			**1,271**	**--**	**--**	**--**	**760**	**420**	**271**

Source: Information on the originally planned courses is from the PICG grantees' proposals. Information on the final course names and levels was provided by PEM and verified by GORBI during data collection. Information on final course duration was estimated from the baseline tracer survey data. Information on the number of enrollees was estimated by GORBI using administrative data collected from providers.

[a]Course duration across cohorts varied for about half of the PICG-supported courses, according to administrative data collected by GORBI; in those cases, we reported the modal duration. Additionally, Vocational College Tetnuldi offers its courses at multiple vocational colleges across Georgia; the duration we report in the table reflects the modal duration across all colleges and cohorts.

[b]Dashes (–) indicate that information on enrollment for a specific cohort was not available because (1) the course was not implemented (several courses), (2) the course had no enrollees (Community College Spektri water sewage systems exploitation technician course), (3) the first cohort had graduated before data collection was conducted (Community College Spektri level IV welder course and Georgian Mountain Guide Association trekking guide course), or (4) the second and/or third cohort had not yet enrolled when data collection was conducted (several courses).

[c]The mountain guide course that was implemented combined aspects of the originally planned alpine guide, ski guide, and mountain guide courses.

[d]Trainees in these two courses were surveyed together because they were enrolled in the same module when the baseline survey was conducted; we are unable to separate out enrollment or responses by course.

[e]This course did not have any enrollees when baseline data were collected.

[f]This course was introduced at Community College Spektri, outside of the PICG component; to avoid duplication, it was not implemented at Georgian Technical University.

IT = information technology; PICG = Program Improvement Competitive Grants.

Table A.5. STPP grants

Grantee	Project name	Grant amount	Project description
Round 1. $68,994; implementation period: April to November 2016			
1. Business Academy of Georgia (SBA)	Development of Assessment Tools for the Entrepreneurship and Introductory Practice Modules	$9,350	Develop and pilot competence-based assessment tools for two new compulsory TVET modules.
2. Community College AISI	Teacher's Professional Development Practice	$9,750	Support the introduction of teachers' clubs at four other TVET providers. These clubs organize regular events such as extra-curricular activities, discussion forums, and seminars with industry representatives to engage teachers in continuous professional development, with the goal of improving teacher retention and teaching outcomes.
3. Georgian Employers' Association	Non-Formal Educational Program in the Work-Based Learning Format	$10,000	Develop and pilot a flexible model to meet companies' human resource needs through work-based learning and other training opportunities for current employees and their family members.
4. Georgian Technical University	Development of E-learning Course in Information Technology	$10,000	Develop a web-based electronic course on basic information technology for TVET trainees.
5. Kutaisi Public School #33	Social Enterprise in Public Schools	$9,894	Develop and implement short vocational training courses for general education students at the grantee and four partner schools, as a first step in their professional education. Participants received some business experience by selling their products at a charity exhibition.
6. Mindstream Ltd.	Career Planning & Employer Communication Strategy	$10,000	Enhance a career planning and employer communication strategy for career centers at TVET providers. The project developed a manual for career managers, which included a model job description for career managers and a compilation of good practices and tools. This complemented the work of the technical assistance activity around career guidance.
7. Vocational College Icarosi	Employers' Forum for Industry Engagement in TVET Sector	$10,000	Increase the responsiveness of the college's tourism courses to labor market needs. The project identified these needs through trainee and employer surveys, and modified its courses accordingly. It also developed an electronic resources portal for trainees, teachers, and employers.
Round 2. $172,186; implementation period: April 2017 to January 2018			
1. Akaki Tsereteli State University	New Professional Personnel for the Use of Solar Energy	$19.900	Develop and implement new courses in maintenance of solar energy equipment. The project also included other activities to support training and employment opportunities in the field of energy, including a summer camp for school children, a workshop on TVET programs in clean energy, and an employment forum for graduates from the new courses.
2. Community College Akhhali Talga	Supporting Individual Learning Paths of TVET students	$9,980	Develop and deliver a course for TVET teachers on the learner-centered approach, which involves developing individual learning plans for trainees and providing them with individually tailored support.

Table A.5 *(continued)*

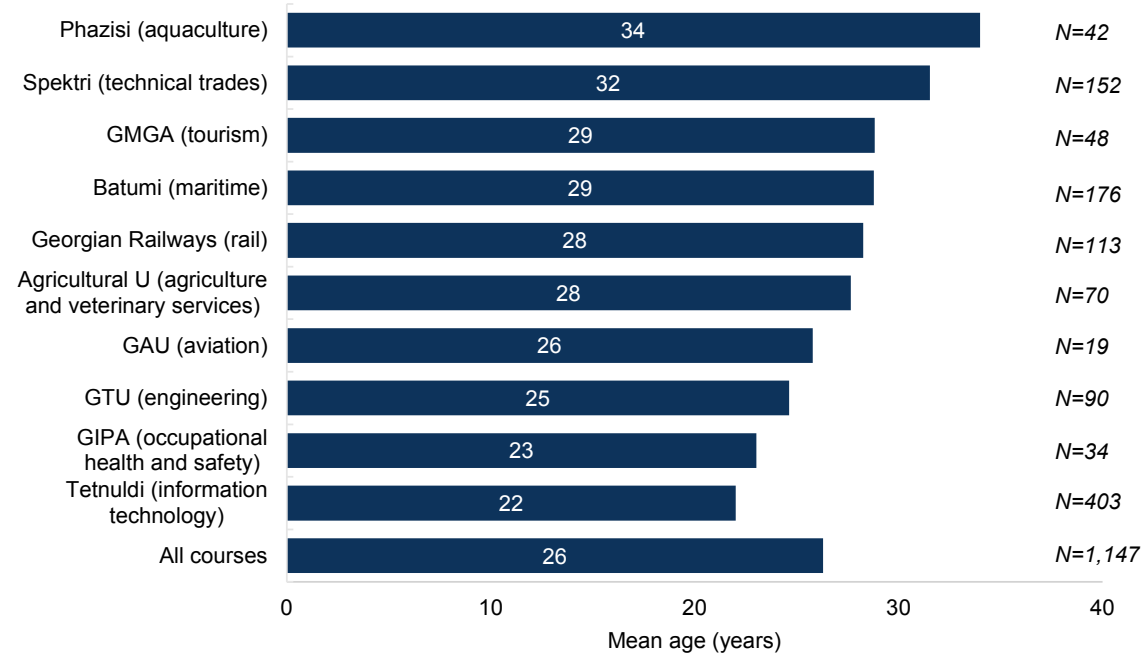
Grantee	Project name	Grant amount	Project description
3. EasySoft LTD	Learning Platform of Innovation Technology for Professional Education	$16,885	Develop a modular training course for a type of software that enhances the use of industrial laboratories at TVET providers. Trainings were conducted for teachers from several providers and a web-based learning platform was created to make the course more widely available.
4. Community College Information Technologies Academy	Introducing Informal Education Recognition Methodology	$9,550	Provide training to eight public and private colleges in the validation of non-formal and informal learning. The training piloted a methodology developed through the technical assistance activity.
5. Georgian Adult Education Network (GAEN)	Strengthening Entrepreneurial Training in Non-formal Education	$21,940	Strengthen non-formal entrepreneurial education through adult and community education centers. The project adapted the existing entrepreneurship module for a non-formal setting, developed assessment guidelines, trained teachers, and piloted the new module.
6. GeoTuran Ltd.	Euro Master 2017	$19,970	Hold a competition to identify the best trainees in the field of home heating communication system installation. Competition participants received theoretical training from international experts, and the grantee (a private company) recruited top-placed participants.
7. ISET Policy Institute	Strengthening Entrepreneurial Training in Formal TVET system	$22,150	Develop business case studies based on the experiences of successful local entrepreneurs to be used in the teaching of the compulsory entrepreneurship module. The project also trained several teachers at three partner colleges in the business case-based teaching method.
8. Mindworks Ltd.	Flipped Classroom Deployment in Bleksi and Erkvani Colleges	$17,500	Introduce an innovative model of teaching and learning that expands the range of activities conducted in the classroom. The grantee also created a Georgian language handbook for implementation and pilot tested the model.
9. The Georgian Patriarchate Community College of Decorative Gardening	Promoting TVET Related to Decorative Gardening Professions Among General School Students	$10,000	Develop and pilot an integrated lesson in decorative gardening for general education students to increase their interest in the profession and vocational training in the field (which the grantee offers). More than 20 schools in Tbilsi received the lesson.
10. Vocational College Modusi	Vocational Training Through Distance Learning, Based on Theory, Practice and Visual Media	$24,311	Provide distance learning to employees at a large private company. The distance learning course was based on the existing vocational education program in auto mechanics, but adjusted to the needs of the company.
Round 3. $177,010; implementation period: June to December 2018			
1. NGO Green Sector	Mariculture Vocational Education Program	$17,000	Develop and pilot a short vocational training program in mariculture (marine farming).
2. Akaki Tsereteli State University	New Professional Personnel for the Green Building Sector in Georgia	$20,000	Develop, promote, and implement three short vocational training programs in green (energy efficient) building.
3. Imereti Scientists' Union Spectri	Recycling: New Challenges and New Professional Opportunities	$20,000	Develop, promote, and implement four short vocational training programs in recycling.

Table A.5 *(continued)*

Grantee	Project name	Grant amount	Project description
4. Olive Ltd	Piloting New Model of Work Skills Development Program for School Pupils	$10,000	Create and test an integrated electronic platform for the MES' Work Skills Development program. The platform will facilitate the engagement of stakeholders—including schools, students, TVET providers, TVET teachers, and program managers—in the program.
5. Innovations for Inclusive Society	Inclusive Model in Dual Education	$14,970	Create and pilot a guidebook, draft regulations, and assessment tools to facilitate the participation of special-needs trainees in work-based learning.
6. LEPL 112 of Ministry of Internal Affairs of Georgia	Developing Dual-Modular Vocational Education Program for Call Center Operators on the Basis of 112 Training Center	$18,000	Create a training program for emergency service call operators.
7. Colors of the Caucasus	Internet Marketing and Sales for TVET Products and Professions	$18,280	Provide training to TVET providers and trainees about internet branding and marketing in professions with high commercialization potential.
8. Triesdorf Agribusiness Corporation	Development of Competences of Professionals Supporting Work-Based Learning Experiences in Agriculture	$19,300	Develop and pilot a training program for farmers to become farmer-instructors and train students on their farms.
9. Jump Start Georgia	GOGO Code	$20,000	Conduct a professional orientation camp to teach teenage girls the basics of computer programming and encourage their participation in STEM fields.
10. Aris.ge Ltd	Increase the Attractiveness of Professional Education and Support its Popularization	$19,460	Integrate TVET content into an existing Georgian education website. The TVET section of the website will include a searchable index with information about training providers and courses. It will also provide a communication platform to engage students and employers.

Sources: The ISWD project website http://www.iswd.ge/, PEM best practice handbooks (PEM 2016a and PEM 2018a), grantee presentations, and personal communication with PEM.

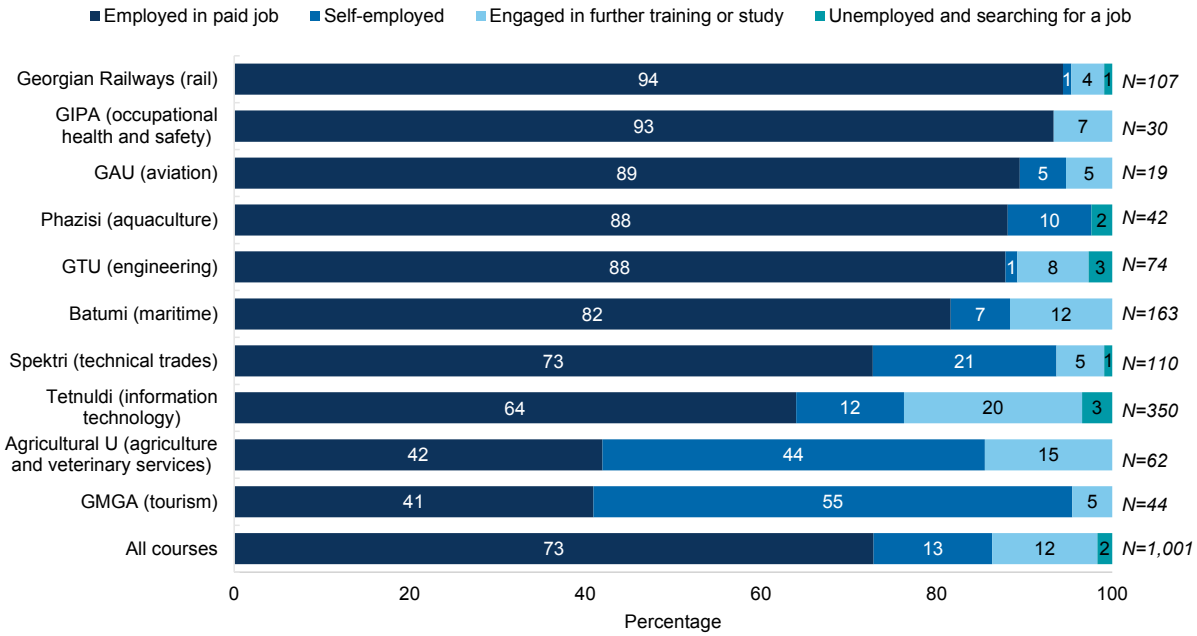
Figure A.1. Mean age at enrollment in PICG-supported courses



Source: Baseline trainee survey.

GAU = Georgian Aviation University; GIPA = Georgian Institute of Public Affairs; GMGA = Georgian Mountain Guide Association; GTU = Georgian Technical University; PICG = Program Improvement Competitive Grants.

Figure A.2. Main expected activity after graduation for trainees in PICG-supported courses



Source: Baseline trainee survey.

GAU = Georgian Aviation University; GIPA = Georgian Institute of Public Affairs; GMGA = Georgian Mountain Guide Association; GTU = Georgian Technical University; PICG = Program Improvement Competitive Grants.

This page has been left blank for double-sided copying.

APPENDIX B:

BASELINE TRAINEE SURVEY INSTRUMENT

This page has been left blank for double-sided copying.

MATHEMATICA
Policy Research

Georgia Technical Vocational Education and Training Baseline Survey

April 2018, version 2

COURSE INFORMATION SHEET

This course information sheet should be completed by the survey team with training institute staff before starting the survey. Only one course information sheet is required for each group of trainees surveyed.

X1. Code of vocational training course (please enter a unique code provided by the survey supervisor; this should match the code on the consent statement, Y1)

|__|__|

X2. What is the name of this vocational training institute?

_____

X3. What is the name of this vocational training course?

_____

X4. What is the level of this vocational training course?

MARK ONE ONLY

1 ☐ Level I
2 ☐ Level II
3 ☐ Level III
4 ☐ Level IV
5 ☐ Level V
6 ☐ Does not have a level

X5. What month and year did this vocational training course start?

|__|__| |__|__|
Month Year

X6. What month and year will this vocational training course end?

|__|__| |__|__|
Month Year

Y.1 Code of vocational training course (prefill)|__|__|

Georgia Technical Vocational Education and Training Baseline Survey

CONSENT STATEMENT:

Mathematica Policy Research, a U.S. based evaluation firm, is conducting a study of vocational training in Georgia. We plan to gather information about employment outcomes of trainees who graduated from vocational training courses in order to study improvements in the vocational education system. Our study is funded by the Millennium Challenge Corporation, an agency that provides assistance to other countries' development projects, and is being carried out with the support of Millennium Challenge Account - Georgia. If you agree to participate in this survey, we will gather information about your experience with existing vocational training courses and anticipated future employment. We will also collect your contact information to follow up with you one year after your course ends to talk about employment outcomes. In addition, we will gather information on your national identification number and NAEC test scores (if applicable) directly from the administrative records held by your vocational training institute.

The survey is expected to take 20 minutes. Any information you provide that can identify you will be kept confidential by the parties conducting this study, including MCC employees, employees of the survey firm, and researchers, to the maximum extent permitted by the laws of the United States of America and the laws of the Republic of Georgia. These data will be used for statistical purposes only.

Your participation is voluntary and you may choose not to answer any or all questions for any reason. In other words, you have the option to not participate and there will be no consequences for nonparticipation. You may contact Dr. Natia Gorgadze at *[Local Phone Number]*, if you have questions, concerns or complaints about the study or your rights as a participant. If you have any questions for us, please feel free to ask at any time.

Y2. Please indicate your decision whether to participate in the study by checking one of the boxes below. If you agree to participate in the study, please provide your first name, last name, and sign to confirm your participation.

☐ I AGREE TO PARTICIPATE IN THIS STUDY

First name: _____

Last name: _____

Signature: _____

☐ I DO NOT WISH TO PARTICIPATE IN THIS STUDY

SECTION A: TRAINING INFORMATION AND EXPECTATIONS FOR THE FUTURE

A1. Please think back to the year before you enrolled in your current training course. In the 12 months before you enrolled, what were your main activities?

MARK ALL THAT APPLY

1 ☐ Enrolled in general education
2 ☐ Enrolled in other education or training
3 ☐ Engaged in an internship
4 ☐ Employed in a paid job
5 ☐ Self-employed
6 ☐ Unemployed and looking for a job
7 ☐ Other (specify) _____
d ☐ Don't know
r ☐ Refused

If you indicated that you were self-employed or employed in a paid job (options 4 and 5 above), continue to A2, otherwise, skip to A3.

A2. Please provide the monthly salary or profits from your most recent job or self-employment in this one year period, in GEL (after taxes).

|__|__|__|__|__|__| GEL PER MONTH
d ☐ Don't know
r ☐ Refused

A3. How did you learn about the vocational training course in which you are currently enrolled?

MARK ALL THAT APPLY

1 ☐ Radio
2 ☐ TV
3 ☐ Newspaper
4 ☐ Vocational training institute (including their website or social media accounts)
5 ☐ Other websites or social media accounts
6 ☐ Family member
7 ☐ Friend
8 ☐ Other (specify) _____
d ☐ Don't know
r ☐ Refused

A4. Were you interested in any other training courses when you applied for your current course?

1 ☐ Yes
0 ☐ No → GO TO A5
d ☐ Don't know
r ☐ Refused

A4a. What <u>other</u> training courses were you interested in when you applied to your current course? Please give the institute name, course name, and level for up to five training courses you were interested in at the time, ranked in order of interest (starting with the course in which you were most interested). Also, please indicate which of these courses you applied to, if any.

		MARK ONE PER ROW						MARK ONE PER ROW	
		LEVEL						DID YOU APPLY	
INSTITUTE NAME	COURSE NAME	I	II	III	IV	V	NONE	YES	NO
a.		1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	1 ☐	0 ☐
b.		1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	1 ☐	0 ☐
c.		1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	1 ☐	0 ☐
d.		1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	1 ☐	0 ☐
e.		1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	1 ☐	0 ☐

d ☐ Don't know
r ☐ Refused

A5. What do you expect to be your main activity one year after you graduate from your current training course?

MARK ONE ONLY

1 ☐ Employed in a paid job
3 ☐ Self-employed
4 ☐ Engaged in further training or study → GO TO A7
5 ☐ Unemployed and searching for a job → GO TO A7
6 ☐ Other (specify) _____ → GO TO A7
d ☐ Don't know → GO TO A7
r ☐ Refused → GO TO A7

A6. Please provide the monthly salary or profits you expect to receive from your job or self-employment one year after graduation, in GEL (after taxes).

|__|__|__|__|__|__|__| GEL PER MONTH
d ☐ Don't know
r ☐ Refused

A7. Please give the names and locations of up to three employers you would be interested in working for one year after graduation, ranked in order of interest (starting with the employer in which you are most interested).

EMPLOYER NAME	LOCATION
1.	
2.	
3.	

d ☐ Don't know

r ☐ Refused

SECTION B: BACKGROUND INFORMATION

B1. Are you male or female?

1 ☐ Male
2 ☐ Female
d ☐ Don't know
r ☐ Refused

B2. What is your date of birth?

|__|__| / |__|__| / |__|__|__|__|
Month Day Year

d ☐ Don't know
r ☐ Refused

B2a. How old were you when you started the vocational training course in which you are currently enrolled?

|__|__| AGE

d ☐ Don't know
r ☐ Refused

B3. What is the main language spoken in your home?

MARK ONE ONLY

1 ☐ Georgian
2 ☐ Abkhaz
3 ☐ Armenian
4 ☐ Azerbaijani
5 ☐ Russian
6 ☐ Other (specify) _____
d ☐ Don't know
r ☐ Refused

B4. What is your region of origin?

MARK ONE ONLY

1 ☐ Abkhazia
2 ☐ Samegrelo-Zemo Svaneti
3 ☐ Guria
4 ☐ Adjara
5 ☐ Racha-Lechkhumi and Kvemo Svaneti
6 ☐ Imereti
7 ☐ Samtskhe-Javakheti
8 ☐ Shida Kartli
9 ☐ Mtskheta-Mtianeti
10 ☐ Kvemo Kartli
11 ☐ kakheti
12 ☐ Tbilisi
13 ☐ Another country (specify) _____
d ☐ Don't know
r ☐ Refused

B5. Are you currently married?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

B6. How many children do you have? Please do not leave blank; if you do not have any children, enter zero.

|__|__| CHILDREN

d ☐ Don't know
r ☐ Refused

B7. Do you have a physical disability, such as a serious hearing or vision problem that cannot be corrected or a condition that substantially limits basic physical activities such as walking or climbing stairs?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

B8. Do you have an emotional or mental condition that makes it difficult to learn or fully participate in education and training?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

B9. What is the highest level of education that your father completed?

MARK ONE ONLY

1 ☐ Less than grade 9
2 ☐ Grade 9
3 ☐ Grade 12
4 ☐ Vocational education
5 ☐ University bachelor's degree
6 ☐ University master's degree or PhD
d ☐ Don't know
r ☐ Refused

B10. What is the highest level of education that your mother completed?

MARK ONE ONLY

1 ☐ Less than grade 9
2 ☐ Grade 9
3 ☐ Grade 12
4 ☐ Vocational education
5 ☐ University bachelor's degree
6 ☐ University master's degree or PhD
d ☐ Don't know
r ☐ Refused

B11. What is the highest grade of general education that you have completed?

MARK ONE ONLY

1 ☐ Less than grade 9
2 ☐ Grade 9
3 ☐ Grade 10
4 ☐ Grade 11
5 ☐ Grade 12
d ☐ Don't know
r ☐ Refused

B12. Before enrolling in your current vocational training course, did you <u>complete</u> any other education or training course beyond general education?

[Select one; if you have completed more than one type of additional training, please select the highest level completed].

MARK ONE ONLY

1 ☐ Yes, vocational training
2 ☐ Yes, university education
3 ☐ Yes, other education or training
0 ☐ No → GO TO B14
d ☐ Don't know → GO TO B14
r ☐ Refused → GO TO B14

B13. Please give the institute name, course name, level, course duration, and completion date for the *highest level* training course that you completed before enrolling in the current course. If you have completed more than one course at this level, please provide the information for the course you completed most recently.

Institute name _____

Course name _____

1 ☐ Level I
2 ☐ Level II
3 ☐ Level III
4 ☐ Level IV
5 ☐ Level V
6 ☐ University bachelor's degree
7 ☐ University master's or PhD degree
8 ☐ None
9 ☐ Other (specify) _____

Duration of course in months: |__|__|

Month and year of completion: |__|__| |__|__|__|__|

d ☐ Don't know
r ☐ Refused

B14. Are you currently enrolled in any training course besides the course where we are interviewing you?

1 ☐ Yes
0 ☐ No → GO TO B16
d ☐ Don't know → GO TO B16
r ☐ Refused → GO TO B16

B15. Please give the institute name, course name, level, course duration, and expected completion date for the other course in which you are currently enrolled.

INSTITUTE NAME _____

COURSE NAME _____

1 ☐ Level I
2 ☐ Level II
3 ☐ Level III
4 ☐ Level IV
5 ☐ Level V
6 ☐ University bachelor's degree
7 ☐ University master's or PhD degree
8 ☐ None
9 ☐ Other (specify) _____

Duration of course in months: |__|__|

Month and year of completion: |__|__| |__|__|__|__|

d ☐ Don't know

r ☐ Refused

B16. Are you currently employed in a paid job or self-employed? Please only include jobs or self-employment activities that generate an income. Do not include internships.

MARK ONE ONLY

1 ☐ Yes, employed in a paid job

2 ☐ Yes, self-employed

0 ☐ No → GO TO B20

d ☐ Don't know → GO TO B20

r ☐ Refused → GO TO B20

B17. Is your current employment related to your current field of study?

1 ☐ Yes

0 ☐ No

d ☐ Don't know

r ☐ Refused

B18. Please provide the monthly salary or profits you currently receive from your job or self-employment, in GEL (after taxes).

|__|__|__|__|__|__| GEL PER MONTH

d ☐ Don't know

r ☐ Refused

B19. How many hours per week do you currently work (across all current jobs that you have)?

|__|__| HOURS PER WEEK

d ☐ Don't know

r ☐ Refused

B20. How many total months or years of work experience do you have? Please do not leave blank; if you have never worked, enter zero.

|__|__| TOTAL MONTHS OR YEARS OF WORK EXPERIENCE

1 ☐ Months

2 ☐ Years

d ☐ Don't know

r ☐ Refused

B21. How many months or years of work experience do you have that are <u>related to your current field of study</u>? Please do not leave blank; if you have never worked in this field, enter zero.

|___|___| TOTAL MONTHS OR YEARS OF WORK EXPERIENCE

1 ☐ Months

2 ☐ Years

d ☐ Don't know

r ☐ Refused

SECTION C: PERCEPTIONS OF AND EXPERIENCES WITH CURRENT VOCATIONAL TRAINING COURSE

C1. In your opinion, what is the quality of the instructors in the vocational training course that you are currently attending?

MARK ONE ONLY

1 ☐ Excellent
2 ☐ Good
3 ☐ Average
4 ☐ Poor
d ☐ Don't know
r ☐ Refused

C2. In the vocational training course that you are currently attending, did you complete any of the following activities?

MARK ALL THAT APPLY

1 ☐ Write a paper
2 ☐ Take a quiz/test
3 ☐ Work in small groups with other students
4 ☐ Practice skills in work-like environments
5 ☐ Visit worksites of potential employers
6 ☐ Attend lectures presented by guest speakers
7 ☐ Do laboratory work
8 ☐ Use a simulator
9 ☐ Another activity (specify) _____
10 ☐ None
d ☐ Don't know
r ☐ Refused

C3. In your opinion, what is the quality of the written materials in the vocational training course that you are currently attending?

MARK ONE ONLY

1 ☐ Excellent
2 ☐ Good
3 ☐ Average
4 ☐ Poor
d ☐ Don't know
r ☐ Refused

C4. In the vocational training course that you are currently attending, is the instructor using any of the following teaching materials?

MARK ALL THAT APPLY

1 ☐ Computers
2 ☐ Laboratories
3 ☐ Job-specific equipment
4 ☐ Other (specify) _____
5 ☐ None
d ☐ Don't know
r ☐ Refused

C5. In your opinion, what is the quality of the tools and teaching/laboratory equipment in the vocational training course that you are currently attending?

MARK ONE ONLY

1 ☐ Excellent
2 ☐ Good
3 ☐ Average
4 ☐ Poor
d ☐ Don't know
r ☐ Refused

C6. In your opinion, what is the quality of the building and training facilities in the vocational training course that you are currently attending?

MARK ONE ONLY

1 ☐ Excellent
2 ☐ Good
3 ☐ Average
4 ☐ Poor
d ☐ Don't know
r ☐ Refused

C7. In your opinion, what is the overall quality of the vocational training course that you are currently attending?

MARK ONE ONLY

1 ☐ Excellent
2 ☐ Good
3 ☐ Average
4 ☐ Poor
d ☐ Don't know
r ☐ Refused

C8. Overall, has the vocational training course that you are currently attending met your expectations?

1 ☐ Yes
0 ☐ No
d ☐ Don't know
r ☐ Refused

C9. How are you funding your participation in this vocational training course?

MARK ALL THAT APPLY

1 ☐ Government voucher
2 ☐ Scholarship
3 ☐ Parent's money
4 ☐ Own money
5 ☐ Other (specify) _____

d ☐ Don't know
r ☐ Refused

C10. Did you do an internship during this vocational training course?

MARK ONE ONLY

1 ☐ Yes
2 ☐ No, and I do not expect to do one → GO TO C12
3 ☐ Not yet, but I expect to do one → GO TO C12
d ☐ Don't know → GO TO C12
r ☐ Refused → GO TO C12

C11. How long was your internship in weeks or months?

|__|__| LENGTH
1 ☐ Weeks
2 ☐ Months
3 ☐ Days
d ☐ Don't know
r ☐ Refused

C12. Has the training institute provided you with any type of career guidance?

MARK ONE ONLY

1 ☐ Yes
2 ☐ No, and I do not expect to receive career guidance → GO TO D1
3 ☐ Not yet, but I expect to receive career guidance → GO TO D1
d ☐ Don't know → GO TO D1
r ☐ Refused → GO TO D1

C13. What type of career guidance has the training institute provided?

MARK ALL THAT APPLY

1 ☐ Provided a list of potential employers
2 ☐ Organized a job fair
3 ☐ Provided help with preparing job application materials
4 ☐ Arranged informational meetings with potential employers
5 ☐ Other (specify) _____
d ☐ Don't know
r ☐ Refused

C14. How useful did you find this career guidance?

MARK ONE ONLY

1 ☐ Very useful
2 ☐ Somewhat useful
3 ☐ Not useful
d ☐ Don't know
r ☐ Refused

SECTION D: CONTACT INFORMATION

As we mentioned earlier, we would like to conduct another round of this survey in the future to learn about your experiences after graduation. For this reason, we would like to collect your contact information.

D1. What is your mobile phone number?

|__|__|__|__|__|__|__|__|__|__|

d ☐ Don't know

r ☐ Refused

D2. If we cannot reach you on that number, is there a second number we can use?

|__|__|__|__|__|__|__|__|__|__|

d ☐ Don't know

r ☐ Refused

D3. What is your e-mail address?

_____

d ☐ Don't know

r ☐ Refused

D3a. What is your alternate e-mail address, if you have one?

_____

d ☐ Don't know

r ☐ Refused

D4. What name do you use on Facebook? Please give the name in English or Georgian, exactly as used on Facebook.

_____

d ☐ Don't know

r ☐ Refused

D5. What is the first name and surname of a family member or a close friend who would be able to locate you if your contact information changes?

_____

d ☐ Don't know

r ☐ Refused

D6. What is this person's relationship to you?

MARK ONE ONLY

1 ☐ Mother
2 ☐ Father
3 ☐ Sibling
4 ☐ Spouse
5 ☐ Other relative
6 ☐ Friend
7 ☐ Child
d ☐ Don't know
r ☐ Refused

D7. What is the best contact phone number for this person?

|__|__|__|__|__|__|__|__|__|__|

d ☐ Don't know
r ☐ Refused

D8. What is this person's e-mail address, if you know it?

_____

d ☐ Don't know
r ☐ Refused

D9. What is the first name and surname of an additional family member or a close friend who would be able to locate you if your contact information changes?

_____

D10. What is this person's relationship to you?

MARK ONE ONLY

1 ☐ Mother
2 ☐ Father
3 ☐ Sibling
4 ☐ Spouse
5 ☐ Other relative
6 ☐ Friend
7 ☐ Child
d ☐ Don't know
r ☐ Refused

D11. What is the best contact phone number for this person?

|__|__|__|__|__|__|__|__|__|__|

d ☐ Don't know
r ☐ Refused

D12. What is this person's e-mail address, if you know it?

_____

d ☐ Don't know

r ☐ Refused

D13. What is your permanent home address?

_____

_____

_____

Thank you again for your time! If you have any questions about this survey, please contact Dr. Natia Gorgadze at *[Local Phone Number]*.

SECTION E: ADMINISTRATIVE DATA

TO BE COMPLETED BY THE SURVEY TEAM FROM TRAINING INSTITUTE RECORDS

E1. National ID: |__|__|__|__|__|__|__|__|__|__|__|__|

E2. NAEC exam score (if you didn't the exam, leave this blank): |__|__|__|

APPENDIX C:

RESPONSES TO STAKEHOLDER COMMENTS

This page has been left blank for double-sided copying.

Table C.1. Responses to stakeholder comments

Page Number	Comment	Mathematica response
xi	Correction: This activity accounts for the bulk of the project funding—$11.7 million of the total $16 million—with private industry making an additional contribution of about $6 million to the new and improved courses, for a total investment of $17.7 million.	Thank you for these corrections--we have updated the report accordingly.
xii	Research Question 2: I know that this is based on MCC wording, but I realize that it is a bit unclear. What is meant by 'targeted levels' - the number of enrollees and graduates, the rates of graduation, and/or the level of training that they received (i.e., level 3, 4, or 5)? It could be good to include a note for clarity. I see that a. and b. are added on pg. 7.	Our understanding of this research question was that "targeted levels" referred to the MCA monitoring target, namely 1,500 enrollees by the end of the compact. There is also a monitoring indicator related to graduation (dropouts, defined as the number of graduates relative to enrollees), although no target is provided. In the report we address whether enrollment reached the targeted level of 1,500 and discuss enrollment patterns more broadly (by grantee and various trainee characteristics). In the final report we will also document graduation rates--overall, by grantee, and by trainee characteristics.
xii	How is sustainability defined? The infrastructure too. The creation of business plans seems to be a key missing point for me.	In this interim report we have flagged a few potential concerns for sustainability, including teacher turnover and course funding. In the final evaluation we will be able to explore multiple dimensions of sustainability, based on what actually happened post-compact. These include infrastructure and equipment (has it been maintained and/or improved), teachers (has there been turnover, have teachers received more training), trainee demand (are the courses attracting enough students), and financial sustainability (how is the grantee funding the courses and can they cover their costs now and in the future).
xii	Was there no evaluation question, explicitly or implicitly which got at the question of whether the applicants and selected grantees met the expectation of the investment memo (or other documentation)? This seems like a gap in the report, i.e. the report takes this set of grantees as fixed, without asking the question of whether or not it met the original promises in terms of levels, quality, types of training,	As we describe in the report, there was an extensive and rigorous grantee selection process that appeared well-suited to identifying the highest quality proposals. Research question 1 addresses how the implemented courses related to the initial proposals; in the report, we document that there were many changes to initial plans as a result of the accreditation process (for example, in course titles, levels, duration, and so on). Nevertheless, the qualitative data that we collected suggested that there was a broad perception across different types of stakeholders that the project succeeded in creating high-quality courses that were innovative in the Georgian context.

Table C.1 *(continued)*

Page Number	Comment	Mathematica response
xiii	Correction: The PICG activity successfully established 51 new or improved TVET courses (38 degree programs and 13 certificate programs)	Thank you for this correction--we have updated the report accordingly. Our initial count of 41 new or improved courses included 38 degree courses and the 3 courses at the Agricultural University that were established as certificate courses although they were expected to be accredited as degree programs. Our evaluation (and the trainee tracer survey) will focus mainly on these 41 courses, although we plan gather qualitative information from graduates of some of the other 10 certificate courses.
xiii	As mentioned by a local stakeholder, the numbers of programs needs to adjusted to 38. There is a distinction made between updated and new courses, it would be beneficial to also note those that are accredited courses and the certificate programs.	We were not aware of the situation with the non-accreditation of the Agricultural University courses when we wrote the report, and have now updated the numbers accordingly (38 degree courses, 3 Agricultural University certificate courses, and 10 other certificate courses).
xiii	"Together, these features contributed to the development of high quality PICG-supported courses." Should this be “appear to have contributed to”?	Because we are claiming contribution not attribution, we do not think it is necessary to soften the language here (this was an almost universal perception in the interviews we conducted).
xiii	Accreditation: This is interesting. Wonder how this feedback was received by the government and whether adjusting this was addressed in sub-activity 2 at all, or based on this experience.	Our understanding is that the government is aware of the issues with accreditation; some of the information about these challenges is from our interviews with NCEQE. These issues are related to aspects of Component 2 dealing with quality improvement to TVET. Specifically, the evolution of the TVET accreditation system is driven by the need to align qualifications with the national qualifications framework (NQF) and the related quality assurance framework (QAF), which Component 2 supported. Thus the PICG component was implemented in the context of a contemporaneously evolving/reforming accreditation (and TVET) system rather than a static system. The system was new for grantees and NCEQE, and NCEQE also overwhelmed by having so many accreditation requests at once. These challenges might not persist once the system stabilizes and providers and NCEQE are more familiar with the reformed accreditation system and its requirements.
xiii (several other places)	47 courses were 'originally' planned - does 'original' throughout the report translate to information provided in their final proposals?	This is correct--we have clarified this in the text.
xiii-xiv	Given how close we are to the Compact, it would likely be best to update a few of these numbers within the report - particularly those of trainees enrolled and graduated.	We have added some details in the relevant chapter about MCA's monitoring numbers related to the number of enrollees.

Table C.1 *(continued)*

Page Number	Comment	Mathematica response
xiv	Report on Page XIV says: Accounting for these later cohorts, a total of 1,451 trainees enrolled in PICG-supported courses as of this writing, a few months before the end of the compact. This brought the number close to the original projection of 1,500 for the entire compact period. Total enrollment (for the report submission period) is 1937 and exceeds target for compact (by 25%), on top of that, additionally one more enrollment is planned for May 2019, until end of compact, which is not mentioned here.	We have clarified in the report text that another cohort is still expected before the end of the compact. For completeness we have also mentioned the difference between MCA-Georgia's count of trainees for monitoring purposes and the count obtained by GORBI during visits to the grantees. There are two main possible reasons for this discrepancy: (1) we do not include trainees in certificate courses (except for the three certificate courses at the Agricultural University); and (2) because GORBI collected administrative data from grantees after the courses were in session, it is possible that GORBI's counts do not include records of trainees who enrolled but dropped out very early in the course.
xiv	Male dominated training: For Aviation University this is interesting because during the site visit I saw many women studying and on the campus. I had actually asked this question specifically. I thought that he had said that it was about 45% women and 55% men. He was likely referring to the University overall rather than the PICG-specific courses. It seems that women are there, so I am curious what fields they are studying, if they are not in those that we are supporting. Why?	Unfortunately we do not have information about enrollment in courses beyond the PICG courses at GAU or any other providers.
xiv	One local stakeholder had requested to breakdown further to understand their previous education. I'd agree with that. Also, how many hours are they typically working in a week - during the days of classes? Railroad school mentioned that they have worked with railroad to have them work on the days there are not classes - two days during the week.	We describe the breakdown by education in Chapter 3: 27 percent of trainees had a university education, 14 percent had vocational training, and 3 percent had some other type of post-secondary training (this sums to the 44 percent with post-secondary education). As mentioned in Chapter 3, about three-quarters of those who were working at the same time as training were "currently" working at least 40 hours a week (that is, full-time), although a minority of students might have more flexible part-time arrangements.
xiv	I appreciate the gender analysis- both about the gender representation in the various courses/tracks but also with regards to salary expectations. I hope this sort of analysis can continue in the final report as well.	Thank you--we will continue to explore these issues in the final evaluation.
xv	Report on Page XV says: Although grantees plan to continue offering almost all of the PICG-supported courses after the end of the compact, there are risks to sustainability.... Unclear whether PICG partner employers/institutions will continue to contribute in terms of money or expertise.... There were no formal obligation from partners to continue contribution. During the PICG implementation period overall co-contribution of PICG partner employers/institutions (50% from component total funding) greatly exceeded planned co-funding volume (10-15 %).	These are both important points. In the body of the report we emphasize the large volume of partner contributions relative to initial expectations, where we discuss the cooperation between partners and grantees in further detail (Section III.A.2 p.20), . We have also made a change to emphasize that partners are under no obligation to continue contributions post-compact, although this in itself might pose a challenge for sustainability.

Table C.1 *(continued)*

Page Number	Comment	Mathematica response
xv	Report on Page XV says: Another sustainability concern for public grantees is the potential loss of trained teachers after the grant period ends…Whilst this could be a some challenge for sustainability, it is worth to mentioned, that initial ITT # for trained teachers/instructors was 40, while 473 professionals were retrained during implementation which momentously exceeds set target (by 1182 %). This outstanding achievement is completely omitted elsewhere; It is also to be hoped that teacher training reforms in process at NTPDC will pick up on the inevitable staff turnover, thus, to some extent, mitigating the risk.	We emphasized this point because teacher turnover was consistently mentioned by a variety of different stakeholders as a potential risk to sustainability, despite the substantial teacher training that occurred through the project. That said, we will have to wait until the final round of data collection to determine whether this risk materialized in practice.
xv	Minor Terminology: ERR Model. There has been a shift to discuss the CBA model and the ERR as a summary statistic from that model, rather than an ERR model.	We have corrected this throughout the report.
xv	"What came from the sustainability exercise by PEM? Did they help them to produce business models for the future and discuss this in more detail? Interesting differences noted between the public and private sectors. It would be good to learn more about this. Asked Irene about this a bit, seems that they are thinking about this but not sure about the way forward.	PEM did mention that they had worked with grantees on drawing up sustainability plans, but did not discuss these in detail with us. Despite any plans that might be in place, PEM and other stakeholders identified uncertainly around voucher funding and low teacher salaries as potential risks to sustainability. We will explore these and other dimensions of sustainability (e.g. trainee demand and maintenance of infrastructure and equipment) in the final evaluation. Regarding the public versus private providers, our understanding is that the public financing of TVET providers has been in flux in recent years (for example, whether vouchers can be used for private providers, how the level of voucher funding is determined, and so on). In the follow-up round of data collection, we will learn more about how those aspects have evolved and their implications for the sustainability of PICG courses at public vs private providers.
xv	Interesting observation that the unexpectedly higher levels of students in terms of academic achievement and prior work experience will need to be considered when calculating the final ERR.	Thank you.
xv	What is the periodicity of the wages cited here?	These are monthly wages--we have clarified in the text.

Table C.1 *(continued)*

Page Number	Comment	Mathematica response
xv	Weren't the grants explicitly or implicitly restricted to investments in capital expenditure such that the programs would be more naturally sustainable based on market-rate fees for service and/or government voucher rates?	The largest investments were indeed on capital expenditure items, especially in terms of infrastructure and equipment. As we discuss in the report, there were few concerns about private providers being able to cover future recurring expenses through fees, since they have a proven ability to do that. However, the situation is less clear for public providers, especially given the potential for teacher turnover, which would require substantial expenditure on training new teachers. These providers might also struggle to continue to fund the continued engagement of foreign experts, which they benefited from during the project through agreements with their partners.
xv	Related, did the programs foundational documents point to a focus on capital and/or non-recurring expenditures?	Please see the response above.
xvi	Table ES.1 seems a bit redundant, given that all the findings are presented right before this. Perhaps in the body, but since this is an executive summary, it seems like this makes the exec summary unnecessarily longer than it needs to be.	We have removed this table as suggested, to cut down on the length of the executive summary.
xvi	Report on page XVI says that: STPP grantees suggested that widespread adoption of new practices by more providers might be hindered by challenges such as providers' lack of awareness, inadequate financial resources, and limited capacity….Initial adoption not widespread..... Survey was conducted within no representative group. It has to be done within target focus-group, i.e. beneficiaries. Applied methodology was incorrect. Also, the adoption/replication issue does not seem to be a problem to us. The practices were fully adopted within the immediate partnerships/networks of the grantees and were widely publicized and disseminated, opening the way to wider replication. Not all good practices are sufficiently general to be useful everywhere, but it there is clear evidence that many of them have already had a systemic impact beyond the partnerships/networks that developed them.	To clarify the methodology, we plan to interview potential adopters of the best practices in the second round of qualitative data collection (although this will not be a fully representative sample, but rather those providers identified by selected STPP grantees as potential adopters). In this first round, we were seeking to better understand the scope for broader adoption/replication and some of the potential challenges by interviewing the selected STPP grantees themselves. As we discuss in detail in Chapter IV, our findings are consistent with the view expressed here that the scope for broader adoption/replication varies substantially across the practices. That is, some practices might have limited generalizability beyond the immediate grantee and their network, but others might have a more systemic impact. We will be better able to assess the extent of broader adoption/replication of the latter in the final round of data collection.

Table C.1 *(continued)*

Page Number	Comment	Mathematica response
xvii	Report on page XVII says: (TA) However, more work (and probably more donor assistance) will be necessary to finalize many of the policy reforms supported during the compact. - In this component PEM provided greater volume of assistant rather it was contractually agreed, results were widely disseminated and all other donors acknowledge that (please check the other donors' periodic reports). Also, it is rather simplistic to identify the need for more donor-supported work as a major issue (which implies that we didn't finish the job). It should be recognized that many reforms are long-term and have to be introduced and implemented incrementally over time and within the limitations of the capacity of institutions to sustain momentum on the one hand, and of the available financial resources of MESCS and its agencies on the other. Not all reforms that were begun could be completed within the timespan of our project. Of course PEM introduced changes and started the processes of change, but the beneficiaries will inevitably benefit from any additional support that may be forthcoming in the months or years ahead.	We agree that these policy reform efforts are long-term and that it would be unreasonable to expect that PEM would complete implementation of these reform initiatives during the project (especially given the relatively limited resources allocated to this component of the project). We have made some edits to the text to clarify the long-term nature of these reforms, but still feel it is important to emphasize that taking them forward in the future will require additional commitment from the MES and other donors.
xvii	On the Annual Conferences and TVET awards, maybe the comment about sustainability was intended to help push MESCS into a stronger commitment, but it is clear that they would like to continue holding them even after 2019 (which has already been agreed). MCA PCP clearly states that post-MCA successor entity will conduct such activity in 2019-20.	We agree that there was strong interest from MES (and other stakeholders) in holding the conference in the future but, as we describe in the report, there was uncertainty over the availability of resources and capacity to organize it. We were not aware that there were concrete plans to continue the conference as part of the post-compact plan, and will add that information to the report.
xvii	Were employers a target of this conference? Doesn't seem like a natural place to engage employers, so perhaps it's a good thing they didn't attend in significant numbers.	The conference was intended to engage different types of stakeholders in the TVET sector and serve as a forum for them to interact with one another. Since employers are critical sector stakeholders (especially given the project focus on industry engagement), it seems that their participation would have been desirable.
xvii	Same comment for Table Es.2 as Table ES.1	We have removed this table as suggested, to cut down on the length of the executive summary.
xvii	The report says that some technical assistance initiatives are implemented, while others (specifically establishing learning and qualification opportunities for adults) are at an earlier stage of planning. Actually this is under implementation, as the Government announced acceptance of adult learning courses in early May.	Thank you for this update. We have revised the report to acknowledge that these adult learning initiatives have moved into an implementation phase as of May 2019.

Table C.1 *(continued)*

Page Number	Comment	Mathematica response
3	In the input and output columns, the logic refers to the PICG as aiming to fund "innovative and in high-demand/industry-driven". Seems like an important program signal if it's both an input and an output, but the report doesn't address much about how innovative the programs were. Even discarding the ambiguity around the term "innovative" which is often a struggle for this type of evaluation, it seems critical to have a more detailed understanding of how much of the programming was even "new" beyond simply noting what programs are new for the grantee. i.e. if a program is new for a grantee, but basically existed in the market in a slightly different form/name, or whether the programs are actually bringing a totally new function to the provision of skills in Georgia.	The PICG-supported programs were largely new to the Georgian market, whether they were entirely new courses or improved versions of existing courses (at higher levels or using modernized curricula and equipment). It is therefore appropriate to think of them as innovative or novel in the Georgian context. We have edited the text slightly to emphasize this in Section III.A.
4, footnote 1	"In addition, other studies have found that evaluations of the same training program using different quasi-experimental methodologies can yield very different results (Ibarrarán and Rosas Shady 2009; Delajara et al. 2006)." Given this footnote, how are we ensuring that our evaluation approach will allow for reliable results? Have those studies been reviewed to ensure that we are incorporating lessons learned to strengthen the approach and evaluation design?	The studies referred to here were quasi-experimental designs that were seeking causal attribution; these were sensitive to the methodology (e.g. matching approach). Our study is a performance evaluation, so these issues to not apply. More broadly, however, we plan to use several approaches to contextualize our findings from the tracer survey, as described in Section II.B. This will enable us to triangulate across different descriptive approaches and determine whether a consistent story emerges.
9, Pg. 11	Earlier in report you note that there were 15 improved courses. Only 9 are selected for the pre-post design, but there is no mention about what motivated that selection or sample size. More information would be helpful for understanding the design decisions and any potential implications that may have on interpreting results.	We provide more details about this where we describe the sample (FN 9, p.14). Essentially the reason for omitting the remaining pre-existing courses is because the pre-PICG trainees had already graduated when we conducted baseline data collection. The implications for the evaluation are limited because this pre-existing course sample is not representative of all PICG courses in any case, and the number of trainees in the excluded pre-existing courses was relatively small (as shown in Table A.3., the pre-existing course sample is concentrated in the Tetnuldi IT courses).
11, 12	Timing of the Baseline Survey: The percentages given in the text do not add up to 100%, and it is a bit unclear how to interpret and seems to beg for the response rates, which are provided in the next section. Table II.1 is clear. Perhaps it would make sense to first talk about the targeted sample and response rate, then the timing and contents of the baseline survey. That may read a little easier/clearer.	We are not sure which numbers in the text do not sum to 100 percent, as the discussion just refers to Table II.1. We have reorganized the text as suggested to improve the flow of topics.
13, footnote 7	Agreed, and this is really what we want - not static, but programs that change to improve and better align with the market. Are we capturing this or tracking it systematically.	In the final round of data collection we will explore how and why the PICG courses have evolved since the end of the compact through qualitative information collected from grantees.

Table C.1 *(continued)*

Page Number	Comment	Mathematica response
15-16, Table II.4	I think that it could be helpful to change the title from 'key topics' to mirror the language of baseline survey used above. This will clarify that this were the questions asked during qualitative data collection rather than what was covered, which is more on the reporting findings part.	We believe that "key topics" is more accurate because the qualitative protocols had several questions under each discussion topic.
15-16, Table II.4	STPP grantees are first and second round. What is the thinking on including round 3 grantees?	This was simply a timing issue: implementation for the third round grants was ongoing at the time of data collection, and we decided to cover grants that had been completed so that the grantees could better reflect on their overall experience. We have clarified with a table note. From discussions with PEM, we do not believe that there was a systematic difference between the second and third rounds of grants (except that the specific grantees differed).
15-16, Table II.4	The key topics are listed as the same for both PICG grantees and STPP grantees, is that correct?	That is correct: the broad topics were similar, but the specific questions were tailored to each type of grantee.
15-16, Table II.4	Teachers Endline: Given the potential sustainability risk noted, as related to teacher turnover, it seems that it would be good to include questions related to that within the final evaluation - e.g., how long do you plan to teach at this center? . . .	We are not planning to interview teachers again at follow-up; however, interviews with the grantees should be able to identify any challenges experienced with teacher turnover.
15-16, Table II.4	Employers Endline: What is the approach for collecting data from employers in the final evaluation? See above notes on displacement, job quality and relevance, productivity, growth potential, etc. It would be good to have more information to better understand getting to the end of the program's logic. A question on what is limiting growth of the firm could be useful too - was it an educated workforce before? Is it still now? If not, then what was/is? What can we really expect to see in final results if this wasn't the original constraint to the firm, or if they are heavily weighed down by other major constraints?	We are planning to interview two employers per PICG grantee, selected from the most common employers of PICG graduates (according to the follow-up trainee tracer survey). These are all good suggestions to be included in those qualitative protocols for those respondents and, as noted earlier, we have added a footnote next to research question #4 as a reminder. MCC will also have the opportunity to review the qualitative protocols when we develop them (expected in 2021).
22	In talking to PEM, a lot of the push for this accreditation process came from PEM's TA to the TVET dept. In follow up interviews, it might be worthwhile to discuss with the ministry how the process went and if anything could be streamlined	We agree, although note that PEM's focus on TVET quality assurance was driven by MES priorities, as was the entire technical assistance component. The challenges experienced with accreditation were the result of trying to accredit many courses simultaneously in an evolving system that was unfamiliar to NCEQE. In the final round of data collection it will be interesting to learn whether the system is working more smoothly (especially for any new innovative courses that are introduced).

Table C.1 *(continued)*

Page Number	Comment	Mathematica response
23, Footnote 13	Is there an intention to verify those graduate estimates to include the 20 within the enrollee and graduation estimates of trainees?	We have not verified these estimates; the data collector was focused on collecting information for currently-enrolled trainees during their visits to the provider, which did not include these trainees. However, this small number of trainees would not substantively affect our assessment that enrollment was on track to meet targets. We have also added more information to the report to emphasize that we have likely underestimated total enrollment during the compact given that we do not cover all courses and cohorts, and we have included information about MCA's monitoring data on the number of enrollees.
24	Table III.1: Planned VS actual enrollment table: possible to have this disaggregated into males and females?	Unfortunately we do not have the information on total enrollment by gender, since this was not available in the administrative data we collected. However, the gender ratio should be similar to that reported in Figure III.1, given that the survey response rate was high (almost 80%).
24	It will be important for MCC to coordinate with MPR to obtain and verify estimates by course and cohort on enrollment, graduation, dropout rates, start date and end date. And perhaps others.	We look forward to coordinating once this information is available.
25	Observation: "Women were likely reluctant to enroll in these courses because these professions were traditionally considered to be for men only, and women are consequently not confident about their employment prospects." Would industry engagement as seen for course content have been impactful here?	Industry engagement might potentially play a role in shifting these perceptions, although our evaluation does not address this directly. However, we would expect that changing these deeply-ingrained social norms might require a sustained long-term effort from multiple stakeholders (including industry, government, TVET providers, schools, and so on) that would go beyond the scope of a single project.
25	Table III.2: again, it would be interesting to see the breakdown by age for each gender. To see if there is anything significant.	In our analysis we examined all characteristics by gender, but for the report we chose to highlight findings about gender when there was a noteworthy pattern. In terms of age, mean age is almost identical for men and women enrollees.
26	It will be important to look at level and quality of employment, especially given that most of the participants were previously employed.	We agree. Our main measure of quality of employment will be wages, but we also have measures such as relevance of the job to completed vocational training, the formality of employment, and job satisfaction.
33	Observation: training professors and trainers in differentiated learning techniques might mitigate the challenges of teaching a class with varied student knowledge and experience levels.	We agree, although substantial training was already required to familiarize teachers with the course content and equipment, so additional training might not have been feasible.
41-43, STPP	A clear question for sustainability is who will own this work after MCC leaves. There are some notions proposed here, but I hope that the final report and indicate where these efforts were continued, and particularly where the handbook was posted for future use.	We agree that this will be important for the final evaluation, and have made this point more prominent in the text.

Table C.1 *(continued)*

Page Number	Comment	Mathematica response
42, Table IV.1	Vocational College Icarus: Based on the description it is unclear whether this could be replicated within other sectors. Can you state this explicitly? If this is possible then any thoughts on how to get further traction and adoption.	We agree that this approach could potentially be generalizable to other sectors and have noted this in the table. However, this would likely require substantial effort to develop new trainee and employer surveys, develop a sampling approach, and analyze the data, for which providers might need external support. (It seems likely that they would have to work closely with the grantee to understand their approach, and we should learn of such cooperation in the final round of data collection, if it occurred.) It appears that another aspect of the approach--the electronic resources portal--was already replicated by UNDP in the agricultural sector, as noted in the table.
42, Table IV.1	Mindworks: Can you clarify whether this is pedagogical and can be applied across fields. I don't fully grasp. Are there training programs or requirements for TVET teachers/trainers currently - at least by institutions if not at the MES level?	We have clarified that these techniques could, in theory, be applied across fields. However, they are not integrated into existing teacher training and we are not aware of any plans to do so (though we will learn more in the final round of data collection).
42- 44, Table IV.1	The focus of the table is on the 8 grantees noted earlier in the report. Could be good to note here again. Also, will there be any grantee from the 3rd cohort included. If no, then why not?	As noted above, we did not include the third round of grantees because those grants were in progress when data collection was conducted. We plan to interview the same first and second round STPP grantees at follow-up so that we have the detailed context of implementation to inform our analysis of subsequent sustainability and replication of best practices.
43, Table IV.1	Kutaisi Public School #33: What products? I am not clear on this one. What kind of general education course? Can you explain this project further?	We have made some changes to the table to clarify. Essentially these are secondary school students who took courses in furniture making, sewing, and mushroom cultivation, and then sold the products they produced during the courses.
General comment	Most positive findings are not reflected in presented interim evaluation summary file. Much of this information is absent from the short presentation to MESCS, which seems to concentrate on lessons learned which, taken in isolation, appear a lot less positive. This is a pity because it does not create such a good impression of the project's achievements, and there is quite a contrast in the impressions given by the two presentations.	We encourage stakeholders to use the executive summary of the report, together with the evaluation brief that will be published on MCC"s website, to obtain a full and accurate summary of the report and the study's findings. Due to time and space constraints, PowerPoint presentation slides often leave out important and useful insights. The evaluation report and summary documents prepared by the evaluation team for public use are the best source of information for policymakers and stakeholders.
General comment	Minor Terminology: Compact. Throughout the report the word compact is used with lowercase c, but this would typically be an uppercase to distinguish that/when this is a title, not compact generally, but the Compact.	Our understanding from the MCC style guide is that compact should be capitalized when used as a proper noun, as in "the Georgia II Compact was signed". Most of our usage is as a common noun, as in "the compact period" (e.g. "during the compact", "after the end of the compact"). We will ask our editors to pay close attention to this in future reports.

Table C.1 *(continued)*

Page Number	Comment	Mathematica response
General comment	Displacement? One criticism of previous TVET-type training programs is that students are being trained simply to displace others. Are we overstating the benefits to the program by not accounting for those that have been removed from positions to make way for those that are more qualified? This is clearly a more complex issue, as we are aiming to create more efficient and productive employees given their level of training, so they would have value-added to each firm where they work and in turn they earn higher wages for those skills. However, given that this has been a big point in the recent literature I think that it would be good to try and reflect on this within the report and incorporate related questions within the future analysis. For example, Research Question #4 - employer perceptions. It would be good to know if the MCC-supported graduates filled positions that were open, previously held by a foreigner or by a non-skilled Georgian, or other. What do they perceive are the impacts on their productivity, ability to grow, etc.?	These are excellent points which we can explore in the follow-up data collection, once the graduates have entered the labor market. We have added a footnote next to research question #4 to remind us to examine these issues.
General comment	Food for Thought, Final Evaluation: I think that it will be important to capture not only whether these graduates obtain jobs, but the quality and relevance of that job, especially as compared to what they had before the training. This would link well with the current discussions on jobs - Brookings, ILO, WB, etc. These are just some initial thoughts, but perhaps some elements of this would be formal vs. informal, relevance to training, satisfaction, and underemployment.	We are definitely thinking about these issues, and have included most of these items in the follow-up tracer survey to capture formality of employment, work hours, job relevance to training, and job satisfaction.
General comment	Likely not necessary in this report, but in the final report it will be important to reflect on the labor markets (demand, supply, regulations, policy changes, etc.) and economy overall (or any other influential events) to get a sense for the context in which we are finding the results related to wages and employment decisions and outcomes.	This is also an important point. Our follow-up interviews with employers and other stakeholders will seek to capture the broader context to help us interpret the tracer survey findings.
General comment	This information will be helpful for updating the ERR in the closeout CBA model. This will be limited by the information available at the time of creation - this calendar year. Hopefully, the evaluation-based ERR from MPR can pick up where this work leaves off - clearly, along with any other changes to assumptions, parameters, etc. that MPR sees necessary.	We are glad that data collected for the evaluation may be helpful in preparing the closeout CBA model. We agree it will be interesting examine the assumptions in the model as compared to the final set of outcome data collected by the evaluation.

Table C.1 *(continued)*

Page Number	Comment	Mathematica response
General comment	Comment overall: "trainees" are often treated as a monolithic whole, which can mask important disparities or interesting trends or correlations. Would recommend Mathematica, as a matter of habit, disaggregate by gender whenever possible as male and female experiences in VET are quite possibly very different, which we would like to capture, especially if we are trying to encourage more women in non-traditional tracks and trades.	We agree, and made sure to do this in our baseline analysis (see response above). We will seek to do this in the final evaluation as well.
General comment	The program logic highlights a focus on levels IV and V. By my calculations from Table A.2, only a minority of enrolled students were enrolled in courses of level IV and V, yet the report doesn't seem to call this out at all. Have I misunderstood this? If I recall, the program was never expected to be exclusively Levels IV and V, but if it's a minority of enrolled students (albeit a majority of the programs), it seems like that's a pretty divergent result and therefore should be highlighted as a fairly significant finding. Clearly, lots of interesting programs in Levels IV and V were supported, but it is at least worth analyzing why the relative numbers were so few.	About three-quarters of the 41 courses in our sample were ultimately established at levels IV and V. It is true that in terms of trainee numbers this fraction is lower--slightly less than one half--but that is largely because of high enrollment in the Tetnuldi IT level III course (this courses are offered at multiple campuses). We have added clarifying information about this in the report, but do not view this as a major divergence from the program logic given its focus on "increasing the provision of quality TVET", which we interpret as the number of course offerings. In addition, even the level III courses were perceived by stakeholders to represent innovative offerings in the Georgian context that differed substantively from what was previously available.
General comment	The findings about the Government accreditation process and its impact on PICG courses is correct, and the new accreditation process has delayed a bit the process and resulted in changes of names and often the levels of courses too. However, the way it is written gives the impression that what happened is not good and shouldn't have happened. In reality it is great that Government has adopted the new course authorization framework as a result of technical assistance from other donors. And it should be highlighted that actually this was one of the mechanisms for project to ensure the quality of newly developed courses. Similarly, the "qualification frameworks" for TVET professions is a positive externality of the program which will have a huge impact on the whole system. Development of "qualification framework" means that for that profession, for example the 'high voltage welder III level,' the framework will list all the skills that graduates must have in order to receive the diploma, and the framework will also list what are the subjects/modules to get those qualifications. These frameworks will be used by all other providers if they decide to do program in that field. So practically it will benefit many others. In fact it will be great if Mathematica gets and reports on the number of frameworks developed through Compact.	Thank you for providing this additional perspective on the purpose and benefits of the new course accreditation process, and the potential benefits of the National Qualifications Framework. We have added additional contextual information about the purpose of these reforms to the executive summary and PICG results chapters. We also agree that it will be very interesting to assess whether these reformed accreditation procedures have longer-term benefits to TVET providers or produce quality improvements in the TVET sector more broadly. We plan to explore these issues through qualitative interviews with government stakeholders and TVET providers as part of the evaluation's final report.

Table C.1 *(continued)*

Page Number	Comment	Mathematica response
General comment	Regarding the findings on PICG sustainability, most of our programs have modular funding. It would be good to mention that the modular funding system is also a novelty, and specifically that program funding is different based on the complexity and time (we have some where voucher is over 3,000 GEL, and some only 800 GEL). We also can't say that this is more problematic for public than for private. For example, Aviation which is private has low recruitment rates exactly due to the high fees. Also, while I agree with the concern about teacher salaries, it will be worthwhile to mention the government's recent 35% increase in their salaries.	Thank you for sharing these insights about the sustainability of PICG courses. We have added additional information in the executive summary and PICG results chapter noting the reasons why voucher-funding levels vary across courses, as well as the potential effects of this increase in public teacher salaries. We will assess these issues again as part of the sustainability analyses in the evaluation's final report.

www.mathematica-mpr.com

Improving public well-being by conducting high quality, objective research and data collection

PRINCETON, NJ ■ ANN ARBOR, MI ■ CAMBRIDGE, MA ■ CHICAGO, IL ■ OAKLAND, CA ■ SEATTLE, WA ■ TUCSON, AZ ■ WASHINGTON, DC ■ WOODLAWN, MD