

EVALUATION OF CAREER DEVELOPMENT CENTERS IN IRAQ

INTERNATIONAL RESEARCH AND EXCHANGES BOARD

14 January 2021

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About IDinsight

IDinsight uses data and evidence to help leaders combat poverty worldwide. Our collaborations deploy a large analytical toolkit to help clients design better policies, rigorously test what works, and use evidence to implement effectively at scale. We place special emphasis on using the right tool for the right question, and tailor our rigorous methods to the real-world constraints of decision-makers. IDinsight works with governments, foundations, NGOs, multilaterals and businesses across Africa and Asia. We work in all major sectors, including health, education, agriculture, governance, financial access, and sanitation. We have offices in Dakar, Johannesburg, Lusaka, Manila, Nairobi, New Delhi, San Francisco, and Washington, DC. Visit www.IDinsight.org and follow on Twitter @IDinsight to learn more.

Acknowledgments

We wish to thank the 2017/2018 and 2018/2019 graduate respondents from all study programmes at the four sampled universities and partnering organizations. Special thanks to Stanley Currier, Lori Mason, and their colleagues at IREX for their input and support throughout the study.

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1. EXECUTIVE SUMMARY

In Iraq, the International Research and Exchanges Board (IREX) has partnered with universities to improve the relevance of higher education for the workforce by supporting career development centers (CDCs). In collaboration with the Ministry of Higher Education and Scientific Research and the national-level Higher Education Industry Advisory Board, IREX works with CDCs to develop experiential learning opportunities such as internship programs for students, strengthen students' skills and competencies through a range of career services, and create educational coursework to meet the skill gaps identified by industry leaders.

University graduates in Iraq face a challenging economic environment, with high rates of youth unemployment and difficult labor market conditions that have been exacerbated by the COVID-19 pandemic. CDCs attempt to smooth the transition between university and the workplace by providing students and graduates with information, skills, and networks to pursue meaningful career-development related opportunities and thrive in the workplace. CDCs provide a wide range of services to students, including internships, job boards, job fairs, workshops, guest speaker events, student advising, and other activities.

IREX partnered with IDinsight to evaluate CDCs' role in improving students' employability, assess the impact of CDC services on employment outcomes before and during COVID-19, and generate recommendations to strengthen CDC services. Four universities were selected from among 47 public universities where IREX has helped to establish CDCs. These universities were selected to capture a range of different types of university location, student demographics, and industry focus. Graduates from 2018 and 2019 from these universities were sent a web-based survey containing questions on employment outcomes and experiences with CDC services. 548 graduates responded to this survey. We matched respondents who participated in CDC services with similar respondents who did not participate in CDC services using demographic data collected in the survey and compared their outcomes. IREX also conducted focus group discussions with students, CDC staff, and industry partners; we incorporated the insights from these discussions into the analysis.

The results from the graduate survey and focus group discussions suggest that CDCs are likely having a positive impact on student employment outcomes, including the following:

- Prior to the COVID-19 pandemic, 26% of CDC participants were employed compared to 17% of matched non-CDC participants; the difference in employment rates is statistically significant at the $p = 0.10$ level. As of November 2020, CDC participants continue to be employed at higher rates than non-CDC participants (22% vs 16%), though the difference is no longer statistically significant.
- CDC participants are less likely to report that their employment has been negatively affected by the COVID-19 pandemic than non-CDC participants.
- CDC participants are more likely to report satisfaction with their job than non-CDC participants
- CDC participants are less likely to rely on personal connections to obtain a job than non-CDC participants.

While these results are promising, we acknowledge that the effect sizes may be imprecisely estimated due to the small number of employed graduates that participated in the evaluation. The data shows that it is likely that CDCs are having a positive impact on student employment outcomes, but we

cannot confidently estimate *how much* that impact is given sample size limitations in this survey. Survey items with low response rates yield imprecise estimates and should be interpreted with caution.

Feedback from graduates, CDC staff, and industry partners identified several strengths and areas of improvement in the CDC service delivery. While most CDC activities received high marks from participants and industry partners, most graduates were unaware of the majority of CDC activities.

Graduates and other stakeholders shared several ideas for how to improve CDC participation and strengthen and expand the activities offered by CDCs, including providing more support in the job search process, advertising CDC services on different social media, expanding training on other high-demand skills, providing more support with the internship experience, and engaging further with industry and university partners.

2. BACKGROUND ON THE INTERVENTION

PROGRAM BACKGROUND

IREX partners with Iraqi universities to improve the relevance of higher education for the workforce by supporting career development centers (CDCs). Under the U.S. Embassy-sponsored University Linkages Program (ULP), IREX launched the first CDCs in Iraq beginning in 2012. With IREX's support, CDCs offered students a range of services, including career education, soft skills trainings, experiential education, and career fairs. IREX also helped Iraqi partner universities to initiate changes to academic curricula to support a move from theoretical lectures to more hands-on, interactive learning to help students develop practical, applied skills through their academic programs.

In collaboration with the Ministry of Higher Education and Scientific Research, IREX has expanded support from initial pilot CDCs to now work with every public university CDC in Iraq (33 in South Central Iraq and 14 in Kurdistan) under the U.S. Iraq Higher Education Partnership Program. CDCs attempt to smooth the transition between university and the workplace by providing students and graduates with information, skills, experiential education experiences, and networks to pursue meaningful employment and thrive in the workplace. We detail the wide range of services provided by the CDCs below.¹

1. **Internships.** CDCs partner with local businesses to organize internships. The internships typically occur while a student is enrolled in regular classes or during the summer. Often the internship itself provides credit as an academic course. However, due to COVID-19, IREX is currently piloting virtual micro-internships in addition to the traditional internship design.
2. **Job boards.** IREX job boards are either a physical or a web-based listing (often hosted by the center's website). The job boards can range from simple hard copy paper postings to very sophisticated online portals. Students search for openings relevant to their field of interest,

¹ From the list of CDC services detailed, each university CDC selects a combination of services suitable for its target audience to meet their employment needs. See the Appendix for a specific list of services provided by each university CDC participating in the evaluation.

and employers can post the details of available positions to recruit applicants. A typical CDC job posting includes the recruiting organization's details, recruiter contact info, and job details.

3. **Job fairs.** CDCs host job fairs for recruiters from the industry to meet with students for potential job placement. These events offer students the opportunity to engage with businesses while providing access for businesses to recruit top talent for their companies.
4. **Design Days.** CDCs organize Design Days, during which students work in teams with faculty advisors and industry representatives to design solutions to real-world problems faced by local companies, simulating tasks that students would perform in the job. CDCs and local industry partners provide feedback and recommendations on student projects.
5. **Short courses.** Short courses provide training in technical skills identified by industry such as sales and customer services and are targeted primarily towards students and alumni from humanities colleges.
6. **Workshops and trainings.** CDCs host one-off workshops or trainings that cover a wide range of topics, especially on improving students' soft skills.
7. **Guest speaker events.** CDCs organize guest speaker events where they invite prominent persons in the industry to enlighten students on the different career paths they could take.
8. **Employer visits.** CDCs organize employer visits for students to gain insider knowledge about the industry directly from the professionals within the organization.
9. **Student advising.** CDCs help students and alumni identify their interests, abilities, and values that coincide with their majors and how they can relate to careers in their future.
10. **Walk-in sessions.** During walk-in sessions, CDCs address student and alumni career-related questions; this could include job search strategies, internships, and other CDC services.
11. **Curriculum Vitae and cover letter review.** CDCs encourage students and alumni to submit their CV and cover letter for review and provide feedback on how to improve them.

In **Appendix I**, we include a stylized Theory of Change (ToC) to demonstrate how these activities translate to employment outcomes.

3. LITERATURE REVIEW

In this section, we discuss past evidence on the impact of university career centers in supporting students in their transition to the workforce. This evidence largely comes from the United States, where the majority of past evaluations of university career centers have been conducted. We believe that this discussion provides useful context for our evaluation since many aspects of CDC programming in Iraq draw on similar models in the United States. However, given the different labor market conditions and economic environments of the two countries, we recommend caution in over-extrapolating evidence from the United States to Iraq.

More broadly, efforts to facilitate youth access to decent jobs are a development priority in the Middle East and North Africa (Dyer P., 2017). In **Appendix II** we provide a brief overview of the evidence on technical and vocational education and training (TVET) programs, which are one of the most common approaches that policymakers take to improve employment outcomes. We include this appendix since there is some overlap in the activities conducted by CDCs and those included in TVET, though the overall objectives and approaches of TVET and CDC are distinct.

Evidence on the Impacts of University Career Centers in the United States

University career centers in the United States play an important role in assisting students with the education to work transition, and in supporting students to pursue their professional interests, including internships and employment opportunities. The impact of a university career center depends upon many internal and external factors, including university leadership and faculty support, resources including staffing and budget, buy-in from students and alumni, strength of connections to industry, sectoral demands and the state of the economy.

Several studies demonstrate a strong link between career services and employment outcomes. An evaluation of the New York University Wasserman CDC (2019) shows that 96% of the graduates who participated in internships secured a post-graduate job compared to 90.6% of the graduates who did not hold an internship or part-time job. Another study at Mount Holyoke College conducted by NACE (2017) found that participation in internships helped students to secure employment. Similarly, 2019 graduates with internship experience had an offer rate of 79.6%, an acceptance rate of 79.6%, and a conversion rate of 56.1% (NACE, 2019). Wilton (2011) also shows that job placement programs for undergraduates can lead to increased employment.

On the other hand, at least one study from the University of Georgia found that career center services had little effect on graduate employment prospects (Paul and Xuedong, 2015). The study found no significant differences in the job search duration when finding an initial job and whether the job was in their desired field.

CDC proximity to the college appears to be a critical factor to student participation, who might otherwise not utilize their services. Greater access to advising, along with stronger links to the labor market, helps students make better program and course decisions, enter and complete programs sooner, and improve their ability to find jobs (Jenkins and Cho, 2012; Person and Rosenbaum, 2006).

The existing evidence suggests that investments in activities supporting students in their transition to the workforce can yield significant but varied employment gains. Career centers in the United States on net appear to lead to positive employment outcomes. However, the literature does not clearly show that one programme design is more effective than another. The details of implementation, as well as context, likely have a large influence on programme effects. Given these limitations, this evaluation seeks to build upon this evidence and inform CDC programming in Iraq.

4. EVALUATION METHODOLOGY

RESEARCH OUTCOMES AND INDICATORS

IDinsight conducted a quasi-experimental evaluation to determine the impacts of CDC services on students' transition from university to the workforce for students who graduated in 2018 and 2019, and to collect graduate perceptions and recommendations on how to improve CDC service delivery. We estimated the impact of CDC services by comparing self-reported employment outcomes between graduates who used CDC services and matched comparison graduates who did not use CDC services. The indicators were selected in collaboration with IREX to provide a view of graduates' employment

status and skills needed for career preparation. The evaluation employment outcomes and specific CDC services outputs and research indicators are highlighted in the tables below.

Table 1: Evaluation employment outcomes and indicators

Outcomes	Indicator
Employment	<ul style="list-style-type: none"> • Proportion of graduates currently employed • Proportion of graduates employed before COVID-19
Job satisfaction	<ul style="list-style-type: none"> • Proportion of graduates currently satisfied with their job <ul style="list-style-type: none"> - Graduate enjoys working at current job - Job provides graduates with new skills
Job security	<ul style="list-style-type: none"> • Proportion of graduates with written contracts in their employment before COVID • Proportion of graduates with written contracts in their current employment • Graduate perspective of their job security in the job before COVID-19
COVID-19 effects	<ul style="list-style-type: none"> • Proportion of graduate's employment positively affected as a direct result of COVID-19 • Proportion of graduate's employment negatively affected as a direct result of COVID-19 (including those lost their jobs) • Proportion of graduates who have had additional job opportunities due to COVID-19 • Proportion of graduates who have had additional business opportunities due to COVID-19
Job search duration	<ul style="list-style-type: none"> • Average length of months taken between graduation date and first employment after graduation • Where graduates knew about their job before COVID-19 • Where graduates knew about their current job
Days worked	<ul style="list-style-type: none"> • Average days employed per week in the current job • Average days employed in the job before COVID-19

Table 2: CDC Service feedback and perceptions

Outputs	Indicator
Service use	<ul style="list-style-type: none"> • Proportion of graduates using CDC services
CDC service usefulness	<ul style="list-style-type: none"> • Graduate feedback on how they knew about their current job • Graduate perspective on the skills the CDC helped them develop • Graduate perspective on the CDC services important to help them secure a job • Graduate perspective on the workshops and trainings most useful in securing a job • Graduate feedback on the courses that can be useful to offer current students to help them secure a job • Graduate perspective on skills relevant to offer as courses to current students
CDC service outreach	<ul style="list-style-type: none"> • Graduate recommendations to increase workshop and training service demand, if and when students return to universities

	<ul style="list-style-type: none"> Graduate recommendations on how to increase student awareness of CDC services
Readiness for the labour market	<ul style="list-style-type: none"> Top skills graduates report are needed in the labour market and where they gained those skills (if they have them) Graduate perspectives on university impact on their readiness for their employment before COVID-19 Graduate perspectives on university impact on their readiness for their current employment Graduate perspective on how well the university prepared their skills for the labour market Graduate perspective on skill importance for the labor market

We also explore outcomes by key subgroups, including gender and university. We provide additional context to the findings by illuminating detailed qualitative data from focus group discussions.

GRADUATE EMPLOYMENT SURVEY

IREX shortlisted four universities to participate in this evaluation. These universities were selected from among the 47 public universities where IREX has helped to establish CDCs. IREX selected these universities to capture a range of different types of universities in terms of the size of the student body, location, student demographics, and industry focus. For privacy purposes, we do not share the names of these universities, and instead refer to them as University 1, 2, 3, and 4.

All graduates from these four shortlisted universities who graduated in 2018 or 2019 were eligible for the study. IREX worked closely with each university's CDC and registrar's office to target alumni over email, direct messaging, and social media channels, including through Facebook, Telegram, and Viber. Table 3 below shows the number of students who were reached directly by each university.

Table 3: Eligible study population reached by each university

University 1	
Total sample	500+
Male	~300
Female	~200
Majors	Medicine, Engineering, Dentistry, Education, Arts, Administration, Economics, Environmental science, Veterinary, Agriculture, Nursing, Computer science, Law, and Fine Arts
University 2	
Total sample	153
Male	50
Female	103
Majors	Arts, Education, Science, Engineering, Law, Administration, and Economics
University 3	
Total sample	195
Male	110

Female	85
Majors	English, Sociology, Geography, Arabic, Petroleum Engineering, Chemical Engineering, Sports, Law, Kurdish, Political Science, Petroleum Engineering, Civil Engineering, Computer Science, Biology, Chemistry, Mathematics, Education, Engineering, and Science
University 4	
Total sample	208
Male	105
Female	103
Majors	Accounting, Engineering, Business Administration, Building and Construction, Electrical Engineering, Mechanical Engineering, Civil Engineering, Computer Science, Management, and Environmental Engineering

The messages from universities included links to a SurveyMonkey form in Arabic, Kurdish, and English. The survey link was live from 1 November 2020 to 13 November 2020, and alumni were sent three (3) reminders to complete the survey. We include the English PDF of the SurveyMonkey form as a separate attachment to this report.

A total of 1,146 individuals attempted the survey. Eighteen individuals were ineligible to complete the survey since they were not from one of the four shortlisted universities, and 543 individuals were ineligible since they were not from one of the two eligible graduating classes.² Three individuals started the survey but did not complete any items beyond the demographic section. Thus our final analytical sample consists of 538 individuals who completed at least some of the survey items on employment outcomes.

FOCUS GROUP DISCUSSIONS

IREX administered focus group discussions (FGDs) with key stakeholders: industry partners, students, and CDC staff to determine their perspective on CDC service impact on employment outcomes and their recommendations to improve CDC service delivery. IREX held FGDs with the different stakeholders separately. We summarise below the sample participants for each FGD.

Student FGDs: Included three students who had participated in Micro-Internships and another FGD with at least one student from each of the sample universities.

CDC Staff FGD: Included at least one representative from each sample university and a separate FGD with two CDC staff.

Industry partners FGD: FGD with industry partners included at least one representative from the three industry partners in fast moving consumer goods (FMCG), telecommunications, and social entrepreneurship.

² The survey link was disseminated on social media platforms that were accessible to students and alumni from other graduating classes and universities. It is also possible that respondents forwarded the link to ineligible students or alumni. Respondents who selected an ineligible university or graduating class at the beginning of the survey were automatically directed to the end of the survey.

We coded and grouped themes from the FGDs in Excel, and we report on the main patterns emerging from this analysis in the Results section below.

CAUSAL IDENTIFICATION STRATEGY

CDC services were not randomly assigned; students opted into CDC activities based on availability, interest, need, and other factors. This creates a fundamental problem for causal attribution. Since self-selection into CDC activities may be correlated with post-graduation employment outcomes, we cannot fully disentangle the employment effects of CDC activities from the factors that caused some students to opt into CDC activities and others to not.

Since random assignment was not possible, we constructed the most comparable groups of graduates who participated in CDC activities and graduates who did not participate in CDC activities, given data limitations. Our key assumption is that within this matched sample of students, the decision to opt into CDC activities was uncorrelated with employment outcomes. We think that this assumption is plausible, but we want to be clear that the evidence is not as reliable as a randomized controlled trial. In particular, we caution against over-interpreting results for individual indicators. Instead, we advise the reader to consider when multiple indicators point in the same direction and when quantitative and qualitative results are aligned as stronger evidence of the presence or absence of causal impact.

To construct comparison groups, we leveraged demographic characteristics collected in the survey form, including university, graduation year, gender, parental educational attainment, age, and the broad area of study major (Engineering & Information Technologies, Education, Business & Economics, or Other)³. First, we stratified on university and graduation year to ensure that matches came from the same graduation class. Second, within each stratum, we matched on the remaining characteristics using coarsened exact matching (CEM, Blackwell et al, 2009), an algorithm that bounds the degree of imbalance between treatment and comparison groups and has favourable estimation properties relative to other matching techniques. We allowed for matches to have differential weights to account for imbalanced CEM strata while retaining as many observations as possible; we include these weights as well as strata fixed effects in all regressions.⁴

The result of this procedure is to trim the sample of graduates that do not have matches in the opposite group and to reweight outcomes, putting more emphasis on graduates who are most similar to graduates in the opposite group. Thus, the matched sample is a smaller, non-random subset of the full sample. Table 4 below shows differences between the full sample and matched sample, as well as the improvement in balance that results from the matching procedure. The matching algorithm retained approximately half of all graduates who reported a treatment status. The matched sample is slightly less likely to have parents who went to college and slightly more likely to have pursued a major

³ We constructed major categories based on similar areas of study and to ensure a large enough treatment and comparison sample was within each group to accommodate matching.

⁴ Our analytical model accounts for this matching process by including university, graduation year fixed effects and CEM strata weights. We include controls for the covariates listed above to reduce variance, and estimate heteroskedasticity-robust standard errors.

outside of the three broad categories (Engineering/IT, Education, Business/Econ). At the same time, the matched sample is much better balanced on all observable criteria, which strengthens the comparability between the two groups.

Table 4: Balance on Observable Characteristics, Unmatched vs. Matched Samples

Subgroup	Full Sample (N = 475) ⁵			Matched Sample (N = 243)		
	Participated	Did Not Participate	Diff	Participated	Did Not Participate	Diff
% Female	0.52	0.54	-0.02	0.56	0.56	0.00
% Father College	0.47	0.44	0.03	0.35	0.36	-0.02
% Mother College	0.23	0.25	-0.02	0.15	0.15	0.00
Age (Years)	25.12	25.44	-0.32	24.78	24.75	0.02
% Major: Engineer/IT	0.34	0.23	0.11**	0.28	0.22	0.06
% Major: Education	0.10	0.18	-0.09**	0.10	0.15	-0.05
% Major: Busin/Econ	0.12	0.11	0.01	0.07	0.08	-0.01
% Major: Other	0.44	0.48	-0.04	0.55	0.55	0.00

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Matching occurred within university and graduation year strata.

As shown in Table 5, both the full sample and the matched sample contain graduates from each university and each graduation year, though response rates across university and year differ. Across all universities, more recent graduates were more likely to respond to the survey. The full sample contains a slightly larger percentage of graduates from University 1 (30%) and University 3 (29%) than from University 2 (22%) and University 4 (19%). In contrast, the matched sample contains a slightly larger percentage of graduates from University 2 (28%) and University 3 (37%) than from University 1 (20%) and University 4 (15%).

Table 5: Respondents across Universities and Graduation Year, Unmatched vs Matched Samples

University	Graduation Year	Full Sample		Matched Sample	
		#	%	#	%
University 1	2017-2018	48	9%	14	6%
University 1	2018-2019	113	21%	35	14%
University 2	2017-2018	25	5%	5	2%
University 2	2018-2019	94	17%	63	26%
University 3	2017-2018	63	11%	30	12%
University 3	2018-2019	100	18%	60	25%
University 4	2017-2018	19	3%	8	3%
University 4	2018-2019	86	16%	28	12%
Total		548		243	

LIMITATIONS OF THE EVALUATION

Non-random assignment of CDC services

⁵ The full sample in this table excludes 73 graduates who did not report a treatment status.

The key limitation of the study is the lack of random assignment of CDC services. Since graduates could opt into CDC services when they were students, there may be factors correlated with using CDC services that affect employment outcomes. Our matching strategy mitigates these confounding factors but cannot fully eliminate them. Therefore, we rely on the assumption that uncontrolled confounding factors are small enough in magnitude not fully to explain differences between the matched student samples. While we believe that this is plausible, we caution against over-interpreting any individual point estimate.

Non-response

We cannot precisely calculate the survey response rate since we do not know the exact number of eligible students. Based on the number of students who were directly sent links to the survey, as detailed in Table 3 above, we know that the eligible population was at least 1,056 graduates. Out of these, 548 or 52% completed the survey. The response rate varied substantially across universities, from 32% (University 1) to 84% (University 3). Since we have little information on non-respondents, we were limited in our ability to impute missing outcomes.

Eligible respondents may not have completed the survey for a variety of reasons, including not receiving an invitation, opting to not complete the survey despite receiving an invitation, forgetting about the invitation, or starting the survey but dropping out due to lack of interest, internet connectivity, time, etc. Since graduates who completed the survey may differ from those who did not, the results of this report should be interpreted as representative of those who completed the survey. At the same time, respondents included graduates from all universities, graduation years, genders, and study majors. So while the sample of graduates who completed the survey may not be statistically representative of the population of students in the four sampled universities or the 47 public universities, we believe that the survey sample is approximately representative of a large portion of the recent graduate population.

Response bias

The study relies on self-reported data, as opposed to data from universities, employers, or administrative records, making it potentially subject to response bias. Graduates may not accurately remember which CDC services they accessed during their time at university or may not report their employment outcomes. To minimize response biases in the survey, we designed the survey instrument to frame questions as clearly as possible without prompting respondents to certain responses. We also emphasized that individual data would be confidential in order to encourage honest responses to sensitive questions about employment outcomes. Nonetheless, it is possible that graduates may not have answered some questions accurately.

External validity

The study includes four universities out of the 47 where IREX has helped to establish CDCs. While these four universities were purposefully selected to represent a wide range of the types of universities where IREX works, it is not a *statistically* representative sample. This means that it is possible that we have not captured some heterogeneity in the larger group of 47 universities, and we cannot calculate population-level estimates for the group of 47 universities.

5. RESULTS

In this section, we present findings from the graduate employment survey and focus group discussions with key stakeholders. We first present employment outcomes, followed by feedback on CDC activities. We highlight priority indicators in this section; for more details on all indicators collected, see the summary statistics spreadsheet attached to this report.

EMPLOYMENT OUTCOMES AND CDC IMPACT

The survey results are consistent with CDC activities likely having a modest, positive impact on graduate employment outcomes. However, the effect sizes on many employment outcomes are imprecisely estimated due to the small number of employed graduates in matched sample. For more information on how to interpret the bar graphs in this report, see **Appendix III**.

1. Employment: Job status, type, satisfaction, and security

As shown in **Figure 1**, employment rates are low and have declined slightly over the course of the COVID-19 pandemic. Across the sample, 29% of graduates were employed before the pandemic, and 24% are currently employed.⁶

There is large variation in employment rates across universities, with a slight majority of graduates from University 3 employed compared to fewer than 10% of graduates from University 2. On the other hand, employment rates were similar across degree programs, including engineering, business/economics, education, and other degree programs.⁷

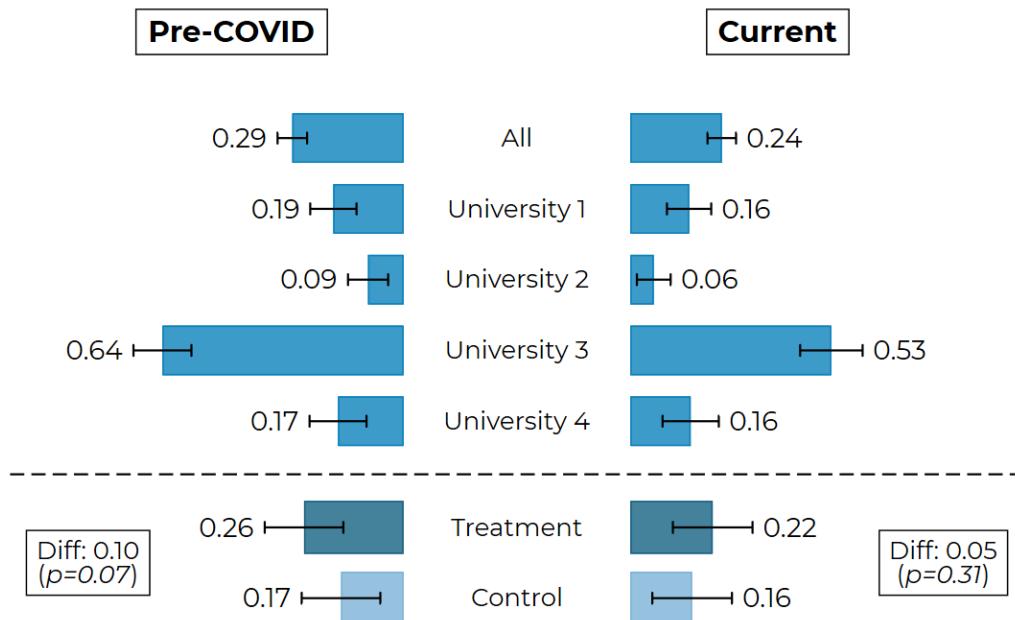
Graduates who participated in CDC activities were 9 percentage points (53%) more likely than matched comparison graduates to be employed before the pandemic. CDC participants continue to be more likely to be employed than their matched peers, but the difference between the two groups has halved (+5 p.p. or +31%) over the course of the pandemic.

"When I was a student, I had weekly-based activities with the CDC and was also a beneficiary of one of their grants. With the CDC's support, I implemented my project; as a result of this project, it opened my career path and allowed me to start working right after graduation."
- University graduate in Iraq

⁶ Interestingly, the unemployment rate in our sample (71% pre-COVID) is much higher than the International Labor Organization's 2020 estimate of unemployment among Iraqi youth (25% unemployment, ILOSTAT 2020). This difference could be due to a number of factors, such as youth in our sample being particularly prone to unemployment, and differences in definitions of unemployment across the two data sources.

⁷ While all four universities included respondents from a variety of degree programs, graduates from University 4 were relatively more likely to have studied engineering than graduates from other universities.

Figure 1: Employment status



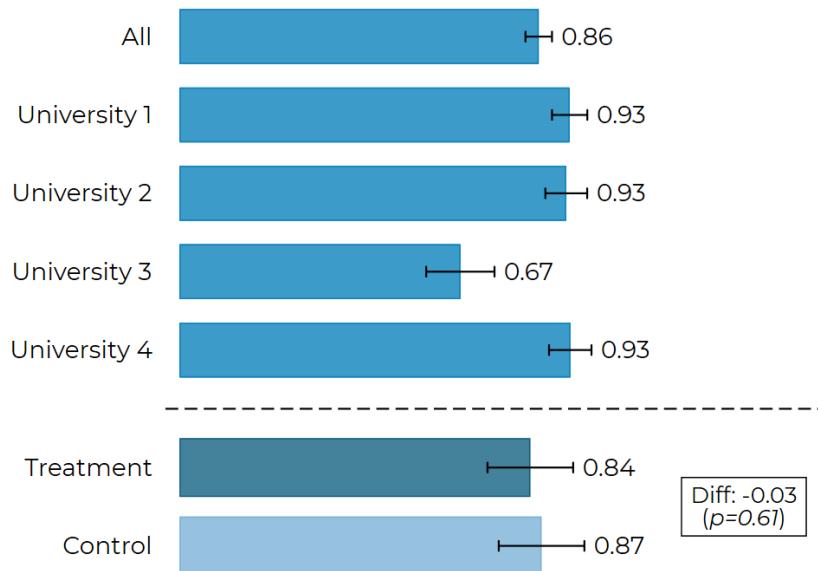
The positive effect of CDC participation on employment is consistent with how employers view graduates who participated in CDC activities. In focus group discussions, employers noted a large difference between students who participated in CDC activities, particularly internships, and those who did not. In employers' views, CDC participants were more knowledgeable about what employers are looking for and better prepared for the labor market. During hiring, employers prioritize graduates who have had more than 100 hours of intensive training in soft skills, organizational management, and email for entry-level employment.

Employers suggested that internships were among the most beneficial CDC services for graduates' employment skills. After participating in internships, graduates had stronger job search skills, communication skills, and professionalism. Employers noted that students who have completed internships know what types of questions to ask during a job interview and that a differentiating factor is that they already come into jobs with an understanding of office life and company culture.

The vast majority (>90%) of employed graduates work full-time (at least five days per week). Approximately 2/3 work in the private sector, and 1/3 work in government jobs, with a handful of graduates in the non-profit sector. Graduates work across a wide range of fields, with education the most common (45% pre-COVID, 36% current). CDC participants do not have substantially different types of jobs than non-participants, though the small sample size may be masking modest differences.

As shown in **Figure 2**, a large majority of graduates from all universities, as well as CDC participants and non-participants, are actively looking for a job. In all subgroups, the fraction of respondents currently looking for a job exceeds the fraction who are unemployed.

Figure 2: Currently job hunting



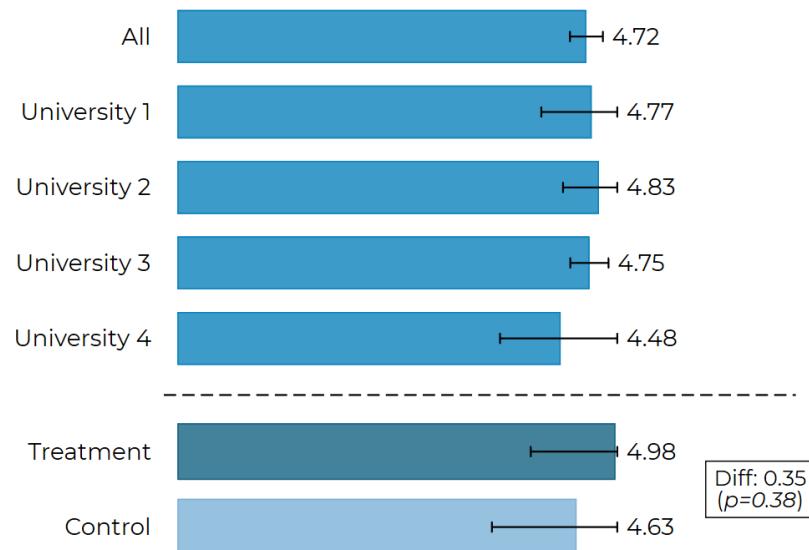
Although many employed graduates are job hunting, they also report high levels of job satisfaction. **Figure 3** shows the average of three survey items related to job satisfaction. Each survey item was a statement about job satisfaction (corresponding to enjoyment, passion, and learning new things), and respondents rated the statement on a scale of 1 (strongly disagree) to 5 (strongly agree). Graduates from all universities report being highly satisfied.⁸

"Students should understand that finding jobs and life is getting much harder than before so they have to work very hard and try to improve every kind of skill as they can in university because after university it is not easy to learn and develop essential skills." - University graduate

On average, CDC participants report being slightly more satisfied with their jobs than matched non-CDC peers, though the difference is not statistically significant. The lack of significance may partly be due to sample size since the number of employed graduates is small, though we have no guarantee that with a larger sample we would observe a similar effect size. We recommend interpreting differences between employed CDC participants and employed non-CDC participants with caution since participation in CDC activities appears to have increased employment somewhat. The types of CDC participants who received jobs may not be strictly comparable to the type of non-CDC participants who received jobs, which may confound comparisons between these subgroups.

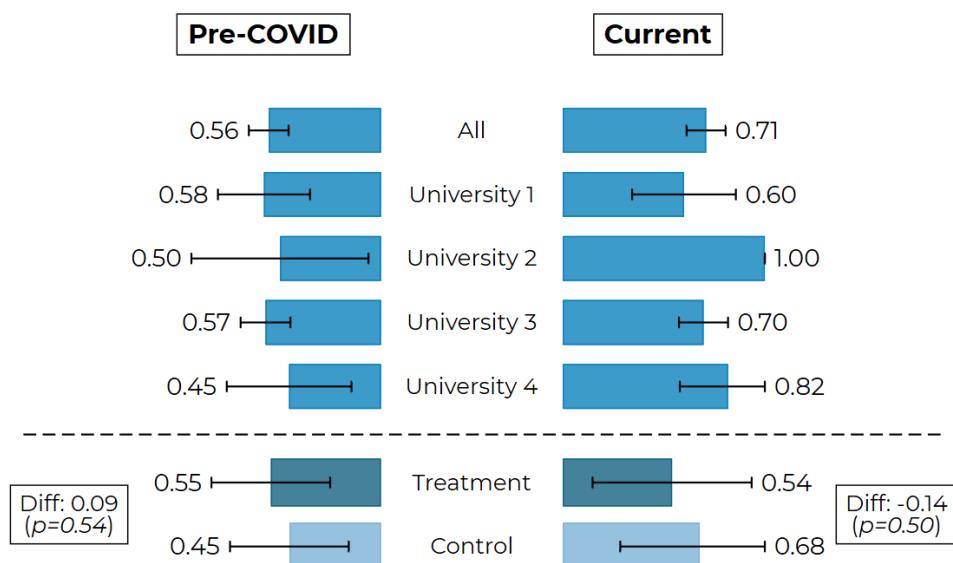
⁸ Graduates from University 4 are slightly less satisfied, mainly due to respondents giving a 4.0 average to the statement about learning new things.

Figure 3: Job satisfaction



As shown in **Figure 4**, a slight majority of graduates pre-COVID had written contracts protecting their employment, as opposed to a verbal agreement or no contract, with no clear differences across universities or CDC/non-CDC participants. The percentage of graduates with a written contract increased during the pandemic, likely reflecting the lack of security of jobs that were not protected by a contract.

Figure 4: Job security: Contract type

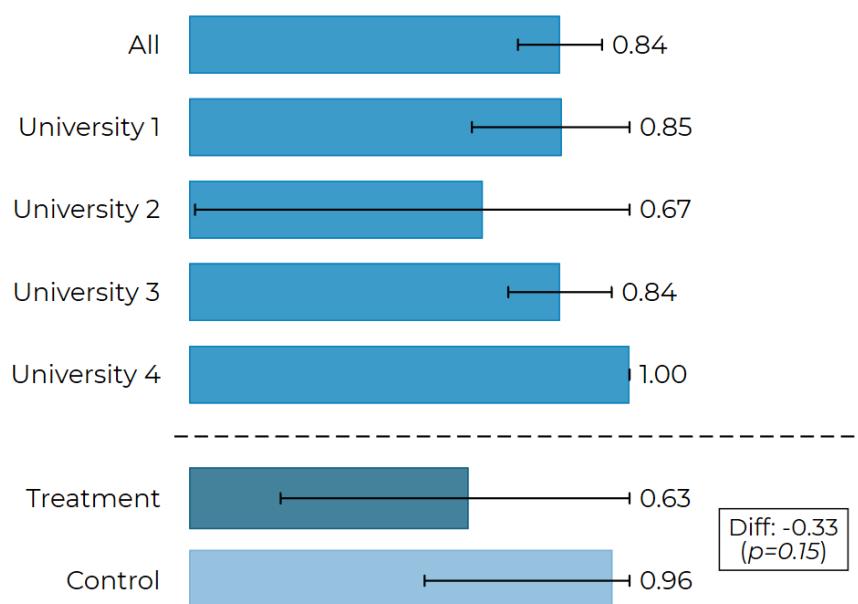


The COVID-19 pandemic has negatively impacted employment for a majority of previously-employed graduates. Forty-two graduates (42% of previously-employed graduates) are no longer working in the

same job as they were in January; half of those attribute their job loss to COVID-19. As shown in **Figure 5**, 84 graduates (84% of previously-employed graduates) report their jobs being negatively affected in some way by the pandemic, including lower pay, fewer hours, and the need to move for work or take unpaid leave. While fewer CDC participants report being negatively affected than non-CDC participants, our sample size of employed graduates pre-COVID is not large enough to detect precise differences between these groups.

"The [CDCs] can be effective for university graduates, especially in this COVID-19 crisis. The universities should find ways to increase their impact on the university youth" – University graduate in Iraq

Figure 5: Job negatively affected due to COVID (less pay, fewer hours, move location, unpaid leave)



We also asked respondents to report any positive labor market outcomes arising from the pandemic. 18% of graduates report earning more pay or working more hours due to COVID. 6% report having new jobs or business opportunities arising due to the pandemic.

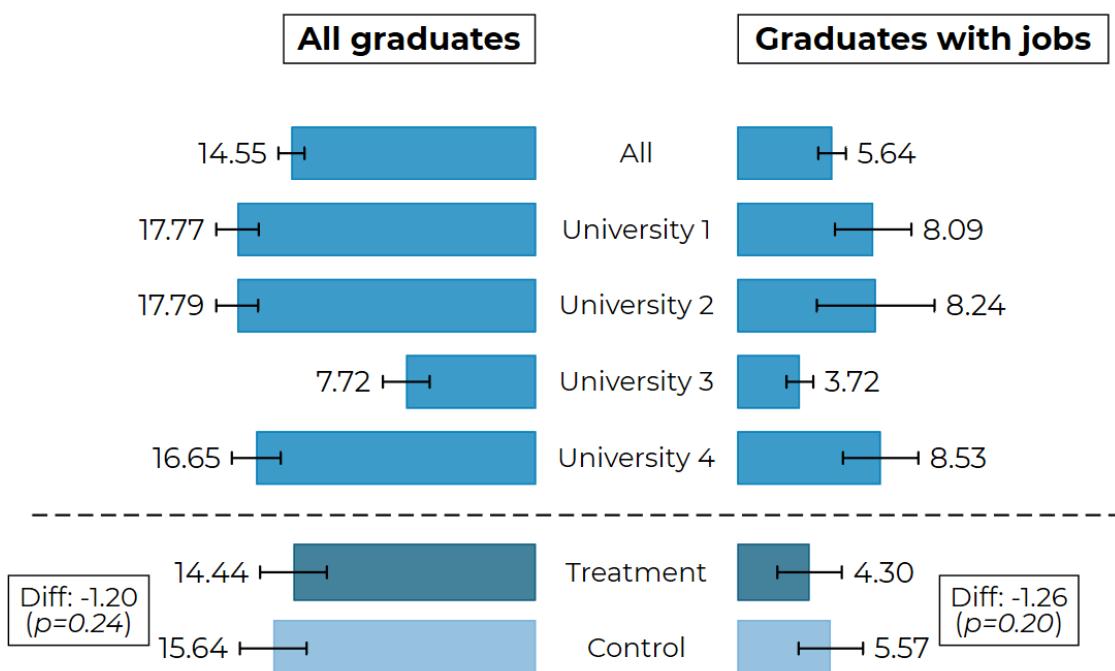
"There were a lot of benefits in the pandemic. I had a shop in the village, with the outbreak of COVID-19; I sold food items for as much as one year in one month because people were afraid of these items would become rare in the market." – Iraq university graduate

2. Job search

Graduates report long periods of unemployment after graduation. Only 4% of graduates were employed immediately after graduation, and 18% were employed within three months of graduating. As shown in **Figure 6**, among those graduates who eventually secure jobs, the average time that it

takes to find a job after graduation is 5.6 months.⁹ However, considering that 75% of graduates are still unemployed, this greatly underestimates the duration of unemployment.¹⁰ The bottom panel in **Figure 8** shows the average duration of unemployment since graduation among all respondents. On average, graduates were unemployed for 14.5 months since graduating. CDC participants were employed for an average of 1.2 more months since graduating than matched non-CDC participants, though the difference is not statistically significant. However, it is worth noting that workshops about finding a job receive high marks from CDC participants, and job boards are among the most requested CDC services (more details available in the CDC section below), suggesting that CDCs may play a crucial role in supporting graduates in their search for employment opportunities.

Figure 6: Time to employment

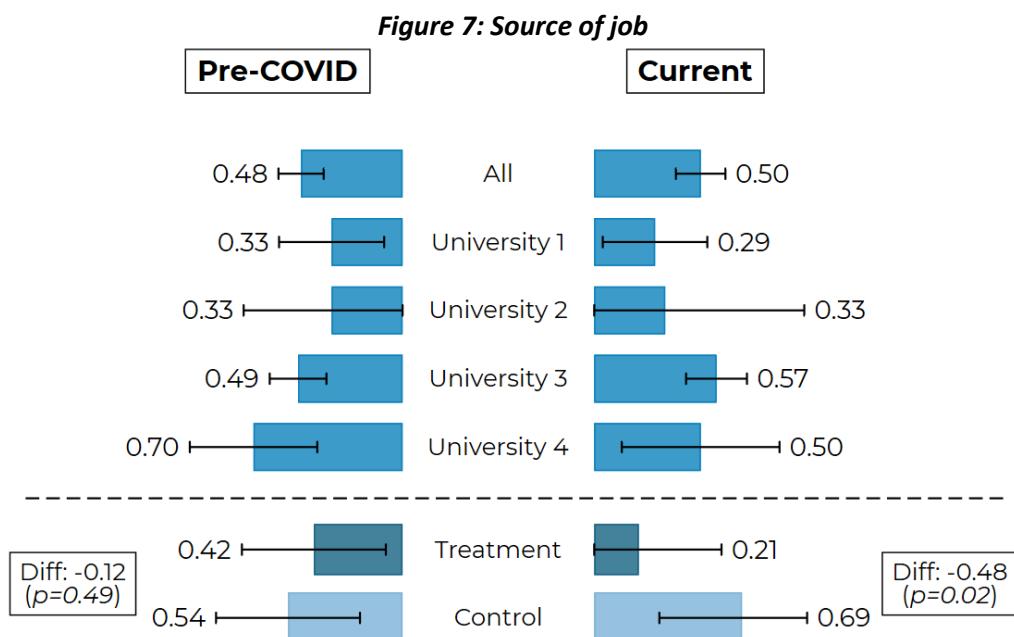


As shown in **Figure 7**, nearly half of employed graduates acquired their jobs through a personal connection, rather than through university or CDC resources, social media, or other methods. Employed graduates from University 1 and University 2 were slightly less likely to get their jobs through personal connections than graduates from University 3 and University 4. CDC participants were less likely to get their jobs through personal connections than non-CDC participants, particularly

⁹ Our survey question asked graduates to select a time window for how long it took to find employment: immediately, less than 1 month, 1-3 months, 4-6 months, 6-9 months, 10-12 months, more than 1 year, never employed. We convert these to numeric responses by calculating the midpoint of each time window. For respondents who selected more than 1 year, we took the midpoint between 1 year and the total length of time between graduation and this survey.

¹⁰ The actual duration of unemployment can be estimated once all graduates in the sample secure employment. Since the majority of graduates have never been employed since graduating, it is unclear how long graduates will remain unemployed after graduation.

those CDC participants who remained employed through the pandemic, suggesting that CDC tools and networks may be substituting for more traditional networks of acquiring jobs.



GRADUATE FEEDBACK AND PERSPECTIVES OF CDC SERVICE EXPERIENCE

Existing CDC Activities

53% of graduates reported being aware of CDC activities when they were students, with similar levels across the four universities. However, as shown in **Figure 8**, awareness about specific CDC activities was low, with relatively more graduates aware of workshops and internships. This pattern holds across universities. The one outlier in terms of awareness is that 46% of respondents from University 3 were aware of workshops and trainings; otherwise, awareness about each activity at every university was below 26%.

In focus group discussions, graduates suggested that most students were not aware of CDC services because they were publicized on social media platforms on which students are not active, and that opportunities through the CDC are not always publicized widely throughout the university. Those students who did hear about CDC activities found out through social media (Facebook, Instagram, Telegram Viber), or through emails and personal contacts with CDC staff.

CDCs should advertise the continuous courses and activities on social media to help students and graduates resort to the CDC and obtain assistance in improving their performance in their field of study and specializations. – Iraq university graduate

43% of graduates reported participating in at least one CDC activity. Participation followed a similar pattern as awareness, with relatively more students attending workshops and internships than engaging in other activities. Participation in CDC activities was slightly higher at University 3 (50%) and University 4 (51%) than at University 1 (35%) and University 2 (35%), though this may also reflect differences in how universities disseminated the survey among CDC or non-CDC participants.

Figure 8: CDC activities—Awareness and participation



At the same time, survey respondents did not indicate that skills-based training should be CDCs' only priority for future cohorts, as seen in **Figure 9**. Survey respondents were also asked to select up to three existing activities that CDCs should prioritize offering in the future. Internships top the list, suggesting that students recognize the benefits of internships for securing employment, as shown in prior studies (e.g. O'Higgins and Pinedo, 2018; NYU, 2019; and NACE, 2017). Workshops, job fairs, and job boards are also rated as high priority activities. Internships and job boards had the largest differences between past participation and future prioritization, suggesting that further promotion of these activities could substantially boost participation. Based on focus group discussions, micro-internships seem to be a particularly promising service to help graduates gain employment skills, particularly during the pandemic. However, some challenges with micro-internships were also raised, including the lack of physical office space, limited in-person connections, and limited graduate expertise.

The fact that at least 12% of respondents prioritized each activity suggests that students have different career needs, and so it may be most effective for CDCs to continue to offer many different types of activities to students.

"[CDCs] should have multiple branches in all colleges, strong media, and continue offering most of the classes." – Iraq university graduate

Figure 9: Graduate prioritization of future activities



Respondents were asked to select the most effective suggestions for how to improve student participation in future CDC activities. **Figure 10** shows the results. Survey respondents suggest that offering more workshops and trainings to 1st and 2nd year students may be the most effective way to increase CDC participation, consistent with evidence from the U.S. where students rated practical workshops as the most useful activity offered by university career centers (Chin, et al 2018). Graduates also suggested involving more company representatives and offering more advanced training topics. Evening workshops were not seen as an effective way to increase participation in CDC activities.

Figure 10: How to increase future student CDC participation



Potential CDC activities

Survey data and focus group discussions also offer insights into how CDCs could expand their service package in the most effective ways to enhance their impacts on student employability. Survey respondents who reported pre-COVID employment were asked to rate how well their university prepared them in various employment skills on a scale of 1 (Not prepared at all) to 5 (Very prepared). **Figure 11** shows the fraction of employed graduates who responded 1 or 2 to each skill; this can be thought of as the ‘unmet demand’ for learning each skill. Skills with more unmet demand may indicate where further CDC support could be beneficial. **Figure 12** shows the fraction of all survey respondents who reported whether the CDC helped them to develop each skill; this can be thought of as the CDC’s current ‘supply’ of developing each skill. Skills with large differences in unmet demand and current CDC supply may indicate where reallocation of CDC services could be beneficial.

While all skills have unmet demand, critical thinking, English, verbal communications, and computer skills top the list. Few graduates report learning critical thinking from CDCs, though this may be beyond the scope of CDCs to provide. On the other hand, written communications, numeracy, and negotiation techniques have relatively high unmet demand and low supply from CDCs. CDCs seemingly have a good supply in English language and verbal communication skills, despite a huge demand still for these services. In focus group discussions, industry partners cited email proficiency and communications as key skills for employees (as well as Microsoft training, English communication, and taking initiative). These may be fruitful areas where CDCs may consider getting more involved.

Figure 11: Skills not fully developed by university (“unmet demand”)

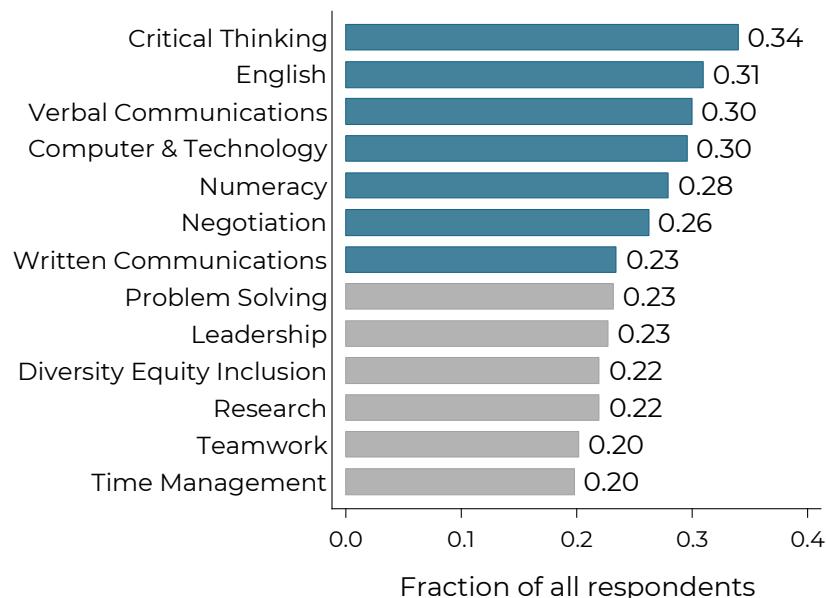
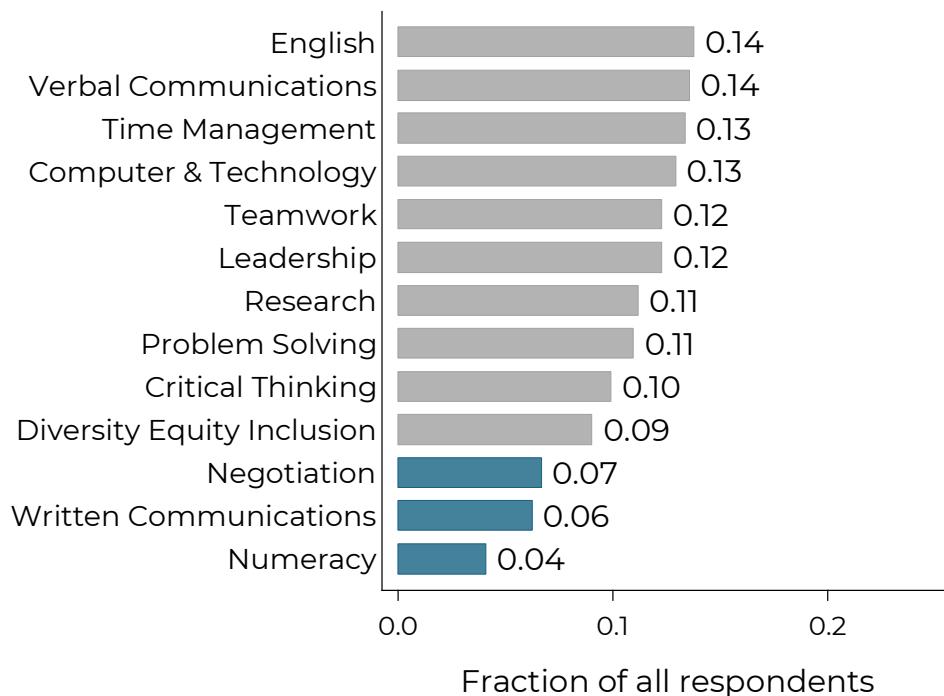


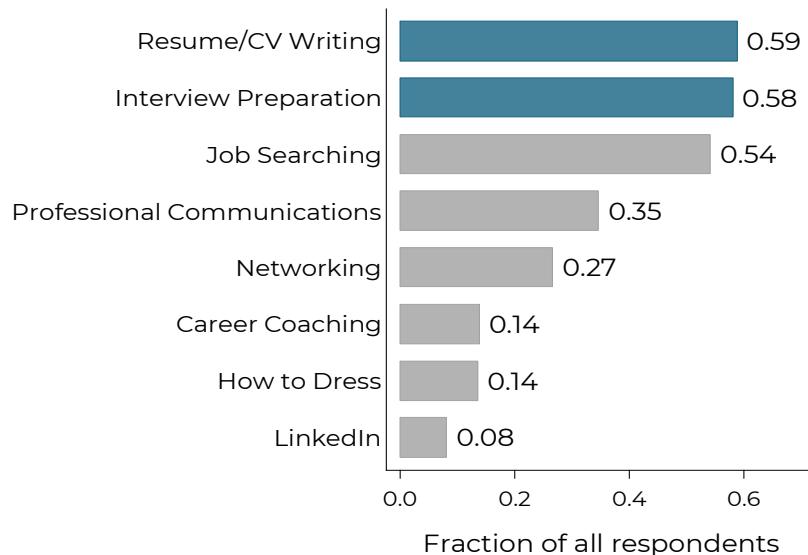
Figure 12: Skills that CDCS helped to develop (“current supply”)



Respondents were asked to report the workshops, trainings, and activities that were most useful in securing a job, irrespective of who facilitated. As shown in **Figure 13**, CV writing and interview prep were rated as the most useful. This is consistent with feedback from industry partners, who cite these skills as key to preparing for the job market. However, as seen above in **Figure 9**, CV writing and counseling were not highly attended or prioritized CDC activities, perhaps suggesting that students

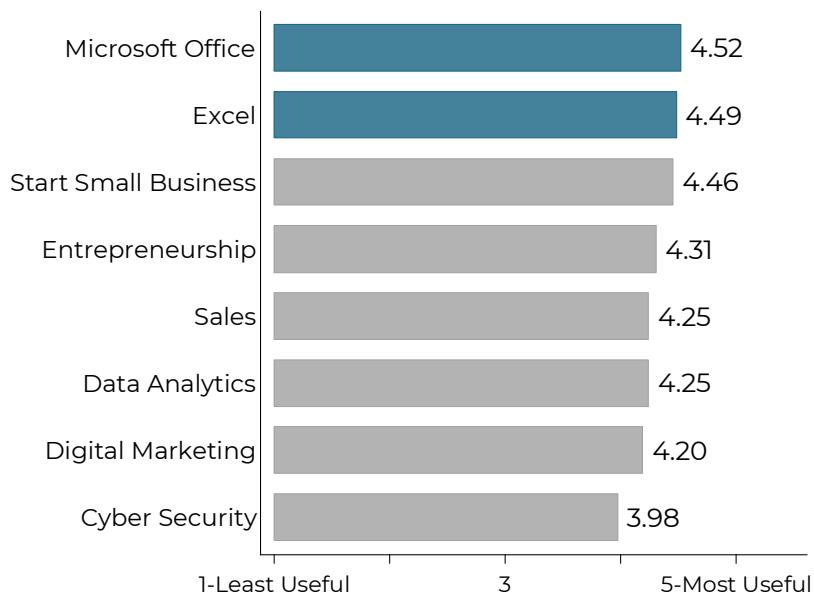
seek this support from advisors or friends outside of CDCs. On the other hand, job searching was rated as a highly useful activity that was also listed by graduates as a CDC priority, suggesting that CDCs may consider expanding support related to job searching in the future.

Figure 13: Most useful workshops & trainings by any source



Respondents were also asked to predict how useful new course offerings would be for future graduates on a scale of 1 (Not useful at all) to 5 (Very useful). **Figure 14** shows the results. On average, survey respondents rated all suggested courses as useful, though Microsoft Office and Excel stood out as potentially the most useful courses, followed by training related to running a business. During focus group discussions, respondents also highlighted activities during the Career Prep Academy as especially useful, including how to develop a LinkedIn profile, creating a professional brand, and elevator pitches. CDCs might consider offering these as well in future courses.

Figure 14: Most useful future courses



CDC STAFF AND INDUSTRY PARTNER FEEDBACK OF CDC SERVICES

In focus group discussions, CDC staff and industry partners reflected on the opportunities and challenges faced by CDCs as they support students in developing employment skills.

Respondents identified several successes and strengths, including:

- **Good relationships and strong network with industry partners:** Industry partners have been instrumental in providing feedback on CDC services such as the Design/Innovation competitions. Industry partners have been open to having students intern in their companies as well as employ their formal interns in entry-level jobs after graduation.
- **Competent and adaptable staff:** CDC staff have been able to adapt to the demands of the pandemic and offer some virtual workshops, online trainings, and micro-internships for students.
- **Useful and impactful services:** CDC staff have received positive feedback from students on career support such as CV writing, interview techniques, and job search strategies. Internships, language skills (English and Turkish), and computer skills have been instrumental to students. The CDC staff have noted that students who use career services are exposed to more job opportunities and trainings than those who don't. However, graduates from humanities still find it challenging to acquire jobs despite participating in CDC services.

Respondents also identified several challenges in delivering services, especially related to the current pandemic:

- **Fewer CDC activities:** Despite moving some activities online, CDCs have had to substantially scale back their service offerings.
- **Lower student participation:** Some students have not been able to participate in virtual CDC activities due to the lack of reliable internet connectivity. Other students have been skeptical about the value of online activities. However, CDCs have noticed a shift toward more willingness to participate in online activities as they adapt to the ‘new normal.’
- **Less willingness to pursue private-sector employment:** Some students have been less willing to participate in CDC activities with private sector industry partners due to the perception of less job security than public sector employment.
- **Limited advertising through CDC channels:** Industry partners indicated that they do not currently advertise job opportunities through CDC platforms due to lack of CDC staff capacity and limited platform options. Instead, employers recruit by uploading vacancies to their official sites and then sharing the advertisement links to job engines such as LinkedIn, Forsa, Tathqik, and social media. This may suggest that strengthening job boards, which were prioritized by graduates in their survey, maybe a key service that CDCs could build on.

6. RECOMMENDATIONS FOR FUTURE CDC ROLE AND ACTIVITIES

The results from the graduate survey and focus group discussions suggest that CDCs are likely having a positive impact on student employment outcomes. CDC participants are more likely to be employed, less likely to have had their employment negatively affected by the COVID-19 pandemic, more likely to be satisfied with their jobs, and less likely to rely on personal connections to obtain a job than matched non-CDC participants. However, the effect sizes on most employment outcomes are imprecisely estimated due to the small number of employed graduates, and causal attribution may be undermined if CDC participants differ from non-CDC participants on unobservable characteristics. Further research, such as a prospective impact evaluation of individual CDC services, may be able to shed more light on the precise impacts of specific activities.

Feedback from graduates, current students, CDC staff, and industry partners identified several strengths and areas of improvement in the CDC service delivery. While most CDC activities received high marks from participants and industry partners, most graduates were unaware of the majority of CDC activities. Graduates and other stakeholders shared several ideas for how to improve CDC participation and strengthen and expand the activities offered by CDCs below. For select recommendations, we highlight evidence on the success rate of interventions that have utilized these recommendations.

KEY RECOMMENDATIONS FOR CDC STAFF

1. Support job searching

A large majority of graduates remain unemployed years after graduating (76%), and even more, graduates are actively looking for a job (86%). Half of the graduates still relying on a personal connection to get a job. CDCs may be able to help graduates find more success on the job market in a few ways:

- **Provide workshops on how to find a job.** A majority of graduates say that workshops on job searching would be among the most useful CDC trainings. Current student participants in IREX's Career Preparation Academy noted further job search training on topics including how to write a strong CV, interview preparation, and how to find a job aligned to interests, skills, and personality. Prior studies have found that job search assistance and job matching can have large short-term effects (Ahmed, Kevin, and Adam, 2018).
- **Provide and maintain job boards.** Graduates rate job boards are one of the highest priority CDC services, yet fewer than 8% of graduates have used job boards. Industry partners have also indicated a willingness to post on job boards if CDCs provided the platform and support to use it.
- **Create a database of students and/or alumni on the job market and share with industry partners.** CDCs could also use such a database to manage student and alumni records, track graduate employment outcomes, facilitate further research in the most effective ways to support students and alumni, and facilitate recruitment processes.
- **Encourage graduates to pursue employment in the private sector.** Most graduates are not confident in private sector employment, as a result, they limit their opportunities for public sector employment. According to the World Bank, four out of five jobs created in Iraq are in the public sector. However, with graduates entering the workforce faster than public jobs are created, many still wait indefinitely for work. On the other, the private sector faces a shortage of skilled labour needed in a modern, knowledge economy (Iffat, 2018).

2. Improve awareness about CDC services

CDC services receive high marks from graduates in terms of relevance and usefulness. Respondents appreciate the wide range of CDC offerings: while workshops, internships, job fairs, and job boards were cited as most useful for future students, every CDC activity was in the top 3 for at least 12% of students. However, most students are unaware of most CDC services, and CDCs may be able to do more to advertise them:

- **Identify channels that students actively use, and publicize on those.** Focus group discussions with students indicate that CDC services have historically been publicized on social media platforms where students were not active. Students noted Instagram and Telegram as platforms that they currently use. Internships and job boards had the largest differences between past participation and future prioritization, suggesting that further promotion of these activities could substantially boost participation.
- **Disseminate more success stories and emphasize the importance as part of the marketing strategies.** A major reason for not participating in CDC activities was due to uncertainty about the value and impact of the activity, as well as time constraints. These success stories could

spread the word about CDC activities and encourage more students to participate. The format for these success stories could include short fact sheets or testimonial videos by alumni and industry partners. Sharing the impacts of CDCs to student will boost participation, for instance, increasing their likelihood of employment, less reliance on personal connections, etc.

3. Expand and update workshops, and short courses

Workshops are among the most well-known and highest-attended CDC activities. Feedback from graduates indicate ways to build on this success:

- **Provide short courses or workshops on high-demand skills.** This includes high-demand subjects that are currently offered by CDCs, such as English, verbal communications, and computer skills (especially Microsoft Office & Excel, which receive high marks for likely usefulness). Other high-demand skills that CDCs may consider expanding further include critical thinking, initiative taking, numeracy, negotiation, and written communications.
- **Expand workshops to 1st and 2nd year students.** 65% of students indicate that offering workshops to junior classmates could increase future CDC participation.
- **Increase hands-on learning and role-playing in workshops.** In focus group discussions, graduates highlighted these techniques as especially effective.
- **Provide certificates for completing workshops and short courses.** Industry partners indicated that these certificates can help to make an applicant more competitive.
- **Innovate service provision in light of COVID-19.** Since most learning has shifted online for the foreseeable future, CDC could provide more online workshops and package in the most accessible format for students.
- **Continue providing practical workshops.** In focus groups discussions, current students report that one of the major factors contributing to participation in CDC activities participation is the practicality of the services offered.
- **Cooperate with other university departments to ensure that CDC service periods are coordinated with other university programming.**

4. Increase internships and provide more support with the internship experience

- **Encourage more student participation in (micro-) internships:** Only 22% of respondents were aware of internships, and only 12% participated when they were students. Yet internships were cited by graduates as one of the most important activities that CDCs could offer. Employers also mentioned that internships were key to picking up employment skills. Prior studies, including rigorous impact evaluations, have found that internships can lead to better employment outcomes (e.g. McKenzie, Assaf, and Cusolito, 2016 and NACE, 2019).
- **Ensure that there is a strong match of skills between the students and employers** to minimize any technical challenges interns could face. CDCs could also provide technical trainings to interns before their internship, such as trainings on how to use Zoom and other online platforms that facilitate remote work.
- **Include one day of in-person interaction with remote internships,** if possible to do so safely while adhering to COVID-19 regulations. Interns report better motivation and understanding of the business when they can interact with employers in-person.

- **Manage employer expectations as they recruit interns.** CDC students may not have the same skills as an entry-level employee.

5. Engage CDC partners in CDC service delivery and design

CDC partners recognize the value of CDC activities and can be leveraged to further strengthen the relevance and effectiveness of activities. CDC could engage CDC partners in the following ways below:

- **Engage industry partners and alumni to lead more trainings, workshops, and short courses** as students find this approach more useful. Prior studies also find that employer and alumni engagement in university career services can strengthen faculty, alumni, and employer connections, ensure the career services mirror local industry, and ultimately, help students gain employability skills and are prepared for employment (National Council for Workforce Education, 2014; and Hanover Research, 2014).
- **Solicit industry partner input on CDC curriculum design** to ensure CDCs are providing relevant, high-priority skills.
- **Solicit student/alumni feedback.** CDCs should establish systems to solicit feedback from participants to help tailor the services to help meet the needs of their target audience. Some of the feedback generation channels could include having a suggestion box and service reviews from participants after each CDC activity.

KEY RECOMMENDATIONS FOR UNIVERSITY LEADERS

IDinsight and IREX provide additional recommendations for university leaders, the donor community, and Ministry officials. These recommendations are grounded in the results of this analysis, including data on effective university - industry engagement and career preparation programming, as well as a review of IREX programming and stakeholder engagement in Iraq.

1. Professional development for faculty and CDC staff

- **Support professional development for academic faculty and CDC staff** to facilitate introduction of new instructional strategies and student-centered learning models supporting critical thinking, negotiation, communication and others skills highlighted through this evaluation.

2. CDC operations and infrastructure support

- **Allocate resources to ensure dedicated staff.** Ensure that at a minimum, each CDC has dedicated staff who are able to provide core career services including workshops and trainings, internship programming, employer outreach and engagement, and alumni engagement.
- **Provide infrastructure and capacity building support.** Enhance CDC capacity by providing additional software and IT support, and CDC data management and reporting by supporting the development of a data management system and providing physical office space to enable the CDCs execute activities effectively and facilitate staff training.

- **Allocate an operating budget.** Provide an operating budget to enhance CDC service delivery for areas including job/career fairs, transportation for visits to employers, professional networking events, marketing materials, and office supplies.

3. Industry engagement

- **Promote CDC as a university focal point for industry engagement and private sector recruitment needs.** When engaging with external partners, promote the CDC's capabilities to meet private sector internship and entry-level employment needs.

4. University alumni engagement

- **Support CDC Staff to track alumni outcomes.** Coordinate first destination surveys through CDCs to track alumni outcomes and use data to inform programming.

KEY RECOMMENDATIONS FOR DONOR COMMUNITY AND MINISTRY/GOVERNMENT OFFICIALS

1. Develop stronger private sector and university engagement to support economic development

- **Strengthen capacity of academic institutions** to support private sector through applied research and development, pipeline of qualified employees, and training opportunities.
- **Expand role of university career centers** aimed at assisting institutions and individuals to connect to private sector.
- **Create and participate in industry advisory boards or committees** for input into academic programs as a vital resource for adapting curriculum and programs to address current and forecasted industry needs.
- **Facilitate sector-specific focus groups** with industry leaders for more detailed and nuanced sector specific information, as well as recommendations for addressing changes in academic programs.
- **Support infrastructure for university adoption of Career Management Systems.** Customized software that acts as a comprehensive platform for university career centers to manage interaction with, provide services for, and track data with students, alumni, and employers.

2. Strengthen key skills for international business including English language and computer/ ICT skills for the workplace

- **ICT/Computer skills and digital literacy training should be introduced** across all academic departments in universities, colleges, and TVET institutes.
- **Partnerships with employers** to co-develop or even co-implement these trainings should also be explored.
- **Continued support for strengthening English language skills** through education, higher education, and English language training for educators, MOHE strategy development for

improving English for non-English majors, and development of high quality English language centers on all Iraqi university campuses.

3. Develop competencies of university graduates to meet labor market needs

- ***Support initiatives that develop soft skills of university students such as experiential education programs.*** Internships, apprenticeships and other practical hands on initiatives provide a basis for students to develop skills and gain crucial real-world experience.
- ***Support universities' flexibility and autonomy to offer certificates, short-term courses, design day or innovation challenges*** that work to build the soft skills, technical skills and entrepreneurial mindset among students and alumni.

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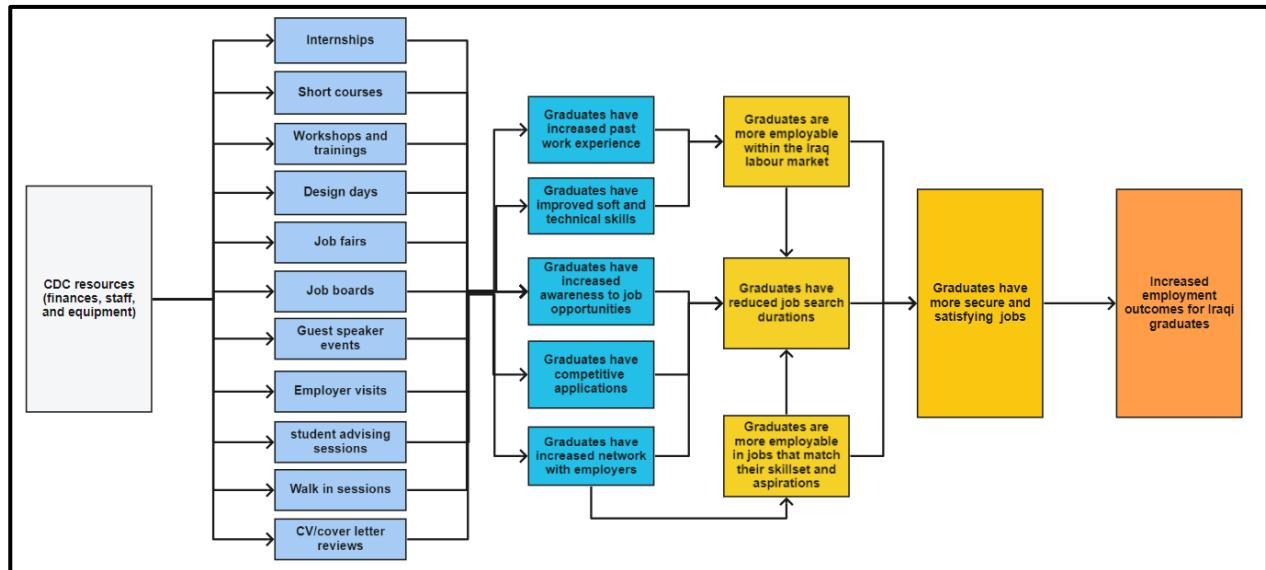
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8. APPENDIX

APPENDIX I: IREX CDC Theory of Change



APPENDIX II: PRIOR EVIDENCE ON THE EFFECTS OF VOCATIONAL TRAINING PROGRAMS ON EMPLOYMENT OUTCOMES

Education and “employability” skills are considered core factors in determining young people’s opportunities in the labour market (Fox L. and Kaul U., 2017; Filmer and Fox, 2014). As a result, skills training programmes are the most widely used labour market interventions for young people worldwide and are increasingly delivered as a complement to other labour market measures such as job search assistance, internships, and job experience (Betcherman et al, 2007; Tony Wilson, 2013; Dench et al, 2006; Dyer P. et al, 2017; and Filmer and Fox, 2014).

Job training and skills development interventions have had mixed success in increasing employment. For instance, Ahmed et al (2018) found that a job matching, training, and counseling programme conducted by several NGOs focusing on improving employment outcomes of youths out of school and work who have completed their school at the most in Egypt increased employment rates among the programme participants by 12 percentage points, a 34 percent increase from the control group. Similar to these results, Emily Beam and Stella Quimbo (2017) evaluation of a youth employment bridging programme in the Philippines suggest that the programme increased the likelihood of being employed by 3.9 percentage points, a 70 percent increase from the comparison group rate of 5.6 percent.

On the other hand, an evaluation of an apprenticeship and skills development intervention of youth job seekers in Cote d’Ivoire by Bertrand et al (2015) reports limited impacts on the participant’s levels

of employment - reflecting a context with limited employment opportunities. Groh et al (2012) study on soft skills training for female community college graduates outside the formal education system to improve their employability and transition into the labour market in Jordan also found that the programme had no impact on average employment outcomes. Groh attributes these null results on the difficulty of measuring the extent to which trainings actually improve skills and the possibility that the diagnosis that a lack of soft skills are the key constraint to employment could be incorrect.

Skills training programmes more often increase the employment rates for women (Bertrand et al, 2015). Shubha (2016) reports similar impacts from job trainings and employment placement services for unemployed youth in Nepal, where women experienced significant positive employment outcomes, whereas men did not. Several factors could account for this differential impact between men and women. These factors include 1) female students attend classes more and are more diligent than male students; 2) an earlier intervention which provided skills training for women; 3) the fact that men start out with higher levels of employment compared to females, hence could be easier to make large gains on the extensive margin for women; and 5) the difference between the types of employments men tend to apply for (Shubha, 2016).

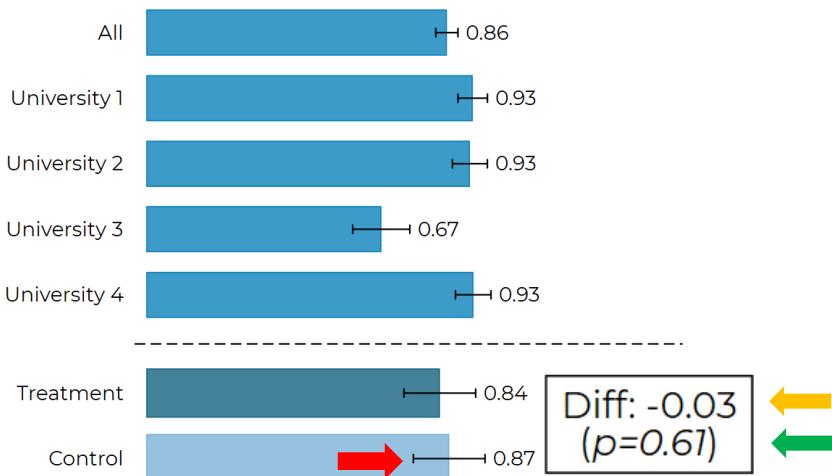
One of the factors attributed to increased employment outcomes of graduates is their past work experience. According to the National Association of Colleges and Employers (NACE) (2015), which explores key aspects of employers' internship and co-op programmes, including hiring projections, conversion, retention, compensation, recruiting strategies and programme structure, 95% of employers reported that candidate experience is a factor in their hiring decisions. The internship programmes for students in Rwanda and Morocco report marginal positive effects on employment status – particularly for women (Alcid and Martin, 2017; Dyer et al, 2017).

Job training programs have mixed success in improving the job search process for participants. For example, Bertrand et al (2015) reports that job trainings' were effective in improving graduate job search skills because they led to graduates applying these skills in practice. The graduates intensified their job searches by using CVs, searching job ads, and successfully applying independently. Youths that participated in training programme coupled with counseling and job search assistance in the Dominican Republic saw a reduction in hours spent job-seeking (Ibarrarán et al, 2014).

APPENDIX III: INTERPRETING BAR GRAPHS IN THIS REPORT

This report displays results in bar graphs like the one below. These graphs depict the average values of each outcome for the following subgroups: All survey respondents, survey respondents from each of the four universities and survey respondents in the matched treatment and matched control groups. These graphs contain several additional pieces of information that are useful for assessing the robustness of the evidence, as indicated by the arrows and descriptions below.

Figure 2: Currently job hunting



- **Diff:** This value is the difference between the Treatment group average and the Control group average. Positive (negative) numbers indicate that the treatment mean is greater (less) than the control mean. In this graph, the difference is -0.03, meaning that 3 percentage points more graduates in the control group are currently job hunting than in the treatment group.
- **p-value:** This value is commonly reported with statistical analysis. The p-value is the probability that a result is due to chance rather than to true program impact. The reason that a result may be due to chance is because of sampling: It may be that more students who are job hunting happened to be sampled in the control group than in the treatment group, and that the negative difference reflects this imbalance rather than an impact due to CDCs. The smaller the p-value, the less likely that the difference is due to chance, and the more likely that it reflects a true impact of the program. In this graph, the p-value is very high: There is a 61% chance that this difference of -0.03 is due to sampling chance rather than to program impact. In general we tend to look for results with p-values less than 0.10 as evidence of true impact.¹¹
- **Confidence interval:** This range is also reported with statistical analysis. The confidence interval denotes the range where the true mean is likely to be. The reason why the true mean may differ from the sample estimate is also because of sampling chance.

¹¹ Academic journals tend to look for p-values less than 0.05. However, we believe that this threshold is overly-conservative for our purposes. Academic journals demand extremely conclusive evidence before ascribing statistical meaning. But for the purposes of informing programmatic decisions, as is the objective of this report, we believe that p-values < 0.10 are sufficient evidence that CDCs are likely having an impact on employment outcomes.