Effects of Recognition of Prior Learning on Job Market Outcomes

Impact Evaluation in Bangladesh

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Abstract

The recognition of prior learning provides opportunities for workers to have their skills assessed and certified. In many countries, recognition of prior learning is expected to broaden individuals' empowerment and economic opportunities. Using a randomized control trial method, this impact evaluation study aims to assess whether and to what extent assessment and certification of prior learning effectively improve economic and other job outcomes among assessment participants in Bangladesh. Five hundred applicants were randomly assigned to the treatment group and 500 applicants to the control group. The baseline survey took place in June 2018 and the end-line survey in January 2019. The findings indicate that assessment prior learning positively impacts workers' employment outcomes and quality of employment, including the chance of getting employed, wage levels, formality of employment, and workers' confidence in their skills and jobs. The findings also suggest that women may benefit more than men from certificates of recognition of prior learning in Bangladesh. The transition analysis further supports the finding that recognition of prior learning facilitates the transition of unemployed or not-working workers into employment. Recognition of prior learning also increases the chances of finding work through formal job search channels and at formal and larger private companies. These findings align with the assumption and expectation behind the recognition of prior learning programs in the context of economic development. The participants in assessments and certification of prior learning had overwhelmingly positive opinions about them. The study has some limitations and suggestions for future research.

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Acknowledgments

1 Introduction

Background

Skills through Informal Learning

Informal employment continues to be the dominant form of work in Bangladesh despite the economic growth in the past two decades. Its share in total nonagricultural employment remains high, between 82 and 91 percent (WDI 2019). Informal employment is more common among workers with less education. Nearly half (48 percent) and a third (32 percent) of workers with tertiary education and higher secondary certificates, respectively, have formal employment. The share goes down sharply to 19 percent for secondary education certificate holders and 11 percent for primary school leavers.

Many workers still have limited formal education and training attainment in Bangladesh. Despite the remarkable expansion of educational opportunities in the past few decades, only about 12 percent of the working-age population has a higher secondary or tertiary education certificate. Vocational training opportunities are few and far between. Only 1.7 percent of the working-age population has attended formal vocational training (BBS 2018). Opportunities for them to train through formal technical and vocational education and training (TVET) remain insufficient. It is often the case that school leavers enter the workforce with limited job-relevant skills and cannot access formal vocational training programs once they are in the labor force. There is, therefore, a broad recognition in Bangladesh that many workers, who may not have skill certifications, have acquired necessary job-relevant skills through professional experience or on-the-job training as informal apprentices.

Workers are likely to face many difficulties when they have no certificates to prove their skills. First, they would be less competitive in the job market, especially in the formal job market. Job applications may not pass the screening if there is no certificate to show. It is also not hard to imagine that wages or earnings would be lower than they should be relative to their skill level. Employers may not consider uncertified skills in their work contracts, or customers may not be confident in advance about the quality of their work.

Furthermore, the lack of formal certification often deprives them of opportunities to access vocational training. Vocational training programs in Bangladesh often set forth specific education qualifications as a prerequisite for enrollment. That would disqualify applicants with no certificates even if they have equivalent skills and knowledge.

The 2011 National Skills Development Policy (NSDP) prepared by the Government of Bangladesh features *recognition of prior learning* (RPL) prominently. It has mandated designated RPL centers to formally assess knowledge and skills gained and recognize these skills against the competencies and qualifications aligned with the National Technical and Vocational Qualifications Framework (NTVQF) (MoE 2011). The NTVQF is an integrated system of qualifications to define occupational standards and support quality assurance in TVET (STEP 2016).[1] The NSDP also mentions that public and private training institutions affiliated with the Bangladesh Technical Education Board (BTEB) are required to provide opportunities for RPL to all prospective students.

The Recognition of Prior Learning Initiative in Bangladesh

The RPL program's pilot and rollout started in Bangladesh as part of the Skills and Training Enhancement Project (STEP) to provide skills assessment and certification opportunities to informal sector workers. The

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[1] The NTVQF has six levels, with level 1 being the lowest and 6 being the highest. The knowledge, skill, responsibilities, and job classification for each level are provided in appendix A.

Government of Bangladesh implemented STEP with the World Bank and the Government of Canada's financial and technical support from 2010 to 2019. The pilot expected to determine whether (1) RPL certification would increase workers' employability and earnings, (2) allow them to access formal training opportunities, and (3) boost their aspirations for the future and confidence in their professional skills.

STEP launched the RPL assessment in Bangladesh in September 2014 on a pilot basis. By the end of the pilot in 2016, the project has established 10 assessment centers across Bangladesh and certified 9,628 assessment participants (STEP 2016). Given the considerable demand for RPL assessment during the pilot phase, the project scaled up the RPL assessment during the later stage of STEP—the target was to assess 30,000 applicants from 30 assessment centers, but this too was exceeded, and the project decided to include a further 12,000 assessments before the project completion.

The RPL assessment process was uniform across the assessment centers, and the assessment and certification followed standards prescribed in the NTVQF. As the first step, the project publicly advertises the opening of assessment rounds and solicits applications to the nearest RPL assessment centers. Awareness-raising campaigns at the grassroots level boost the interest and receptivity among the potential assessment participants. The assessment centers would collect and compile applications submitted by the deadlines and then screen applications to verify their basic literacy, basic numeracy, and work experience. They also interview candidates, if needed, to check the candidates' competencies. Once the assessment centers confirm that the applicant is suitable for the level they are applying to, they would send the official invitation for assessment. The assessment itself takes three days to complete. The first two days are devoted to orientation sessions, including the briefing on RPL and NTVQF systems, registration with BTEB, and most important, explanation of and practice on how to take the assessment. The assessment exercise takes place on the third day. The project assigns assessors to the assessment centers from the pool of BTEB-certified industry assessors. At least one BTEB representative is present on the day of assessment to ensure compliance. Assessors compile the assessment result sheets at the end of the assessment sessions, and assessment participants receive assessment certificates one week later (STEP 2016).

This impact evaluation study aims to assess whether and to what extent RPL assessment and certification effectively improve economic and other outcomes of interest (employment, earnings, confidence, access to formal training, and so forth) among assessment participants. The study attempts to contribute to the knowledge base for RPL by filling the void in the literature about the impacts of RPL assessment, using a rigorous impact evaluation method. To the best of our knowledge, this is the first study to estimate the effects of RPL certification on the outcomes of interest using a randomized control trial (RCT) method. In this design, every person in the sample has an equal chance of being in a treatment or comparison group, as the study randomly assigned them into one or the other. This RCT method has gained significant popularity in development-related research because the attribution of observed outcomes to a specific intervention is more convincing. Since the treatment and control group participants are, by design, comparable in observable and unobservable characteristics before the intervention, identified changes and differences in outcomes after the intervention would be attributable to the intervention.

In the next section of chapter 1, the report presents a literature review of RPL, followed by a section on methodology of the study. Chapter 2 presents the sample's baseline characteristics and moves on to discuss the end-line features. Chapter 3 discusses the impact evaluation findings, and finally, chapter 4 presents a discussion and conclusion.

Literature Review on RPL

RPL has become an increasingly important policy instrument across the world, in both developed and developing economies. Recognition of learning is the process of recording and assessing skills and knowledge of individuals arising from any informal and nonformal learning in any environment against the competencies required by industry or formal education. RPL aims to make visible individuals' skills and

knowledge in order to build on and benefit from their attained learning (OECD 2005). The concept of assessing prior learning originated several decades ago. It started in Europe as a policy instrument to promote lifelong learning and broaden access to formal higher education and technical education (Andersson, Fejes, and Sandberg 2013). Many countries have since introduced prior learning assessment for different policy objectives and with varying assessment methods. Terminologies differ slightly across countries. Sometimes it is called *assessment/accreditation of prior learning* or *validation of nonformal and informal learning* (Aggarwal 2015).

Most RPL programs share one or more of the following policy objectives: (1) social justice, with a focus on broadening individuals' opportunities and empowerment; (2) economic development, in which RPL should make it possible to use existing skills of individuals more effectively in the labor market and access to vocational training; and (3) social change, with an expectation that making one's abilities visible would create a better condition for social awareness and change (Fejes and Andersson 2009). RPL has proven beneficial for industries and workers on a range of occasions. Businesses have used RPL for redundant workers transition, recognizing skilled migrant workers and skills in the workplace, and certifying skilled workers in occupations with human resource gaps (for example, care workers, nursing staff, and construction workers) (Cato 2016). Some countries have used RPL for entry points to specific industries, training programs, or universities. In Tanzania, RPL was used to identify skill gaps and training needs among workers. South Africa, where the population suffered educational discrimination, recognizes RPL certificates for admission to higher education institutions (Aggarwal 2015). Sweden used RPL to enhance quality and in-service training in the elderly care sector and fill a growing shortage of skilled assistant nurses (Fejes and Andersson 2009).

RPL typically involves multiple steps starting from initial screening, identification and collection of evidence, assessment, and determination of competencies. Assessment can take different forms. The European Center for the Development of Vocation Training identifies eight assessment methods typically used for RPL: (1) debate, (2) declarative methods, (3) interviews, (4) observation, (5) portfolio method, (6) presentation, (7) simulation, and (8) tests and examinations (Aggarwal 2015). RPL assesses skills and knowledge against occupational standards prescribed for a qualification. Therefore, national qualification frameworks and well-aligned occupational standards provide RPL initiatives with quality assurance and alignment with the overall education and training qualification system. Occupational standards need to align with competencies needed for an occupation. The broad participation of all the stakeholders in preparing the RPL system and the adequate number of well-prepared professionals supporting the assessment process is critical for ensuring RPL programs' quality and acceptance (Sava and Shah 2015). In some countries, RPL programs provide supplementary skills training opportunities to fill identified skills gaps. In Colombia, in order to fill skills gaps, the skills agency provides complimentary courses to workers who failed the assessment (Vargas 2005).

RPL is a relatively new phenomenon in most developing countries. In Nepal, the Enhanced Vocational Education and Training Project subsidized skills tests for RPL for about 28,548 workers from 2011 to 2017, of which 16,400 succeeded in obtaining certificates (World Bank 2017). Tanzania provided RPL certification to 3,694 candidates under the Vocational Educational and Training Authority (Citizen 2019). In Sri-Lanka, RPL supported 1,700 skilled workers under a development project (ILO 2017). India is an early adopter of RPL among developing nations. More than 600,000 have already been certified for RPL under the Pradhan Mantri Kaushal Vikas Yojana program of the Ministry of Skill Development and Entrepreneurship; the target is to assess and certify 4 million workers by 2020. South Africa has expanded RPL to support a population that suffered educational discrimination during the apartheid era. Most higher education institutes in South Africa now accept RPL for admission (Aggarwal 2015).

In Bangladesh, in addition to STEP, RPL was also a component of the TVET Reform Project. It assessed 50 candidates in five trades on a pilot basis in September 2013. Under the Bangladesh Skills for

Employment and Productivity Project in Bangladesh, BTEB targeted the certification of 2,500 workers through RPL (ILO 2017).

Anecdotal evidence on RPL experiences in developing countries has been mostly positive. Some participants claim to receive formal contracts and increased salaries as a result of RPL certification. However, rigorous studies on RPL assessment impacts are still lacking. Ex post research in Bangladesh in 2016 under STEP compared economic outcomes for assessment participants and nonbeneficiary respondents (who applied but were not selected to join the RPL assessment). They find that the average monthly salary income increased from Tk 6,226 before certification to Tk 13,228 after obtaining competent certification, and from Tk 6,163 to Tk 11,967 after receiving partially competent certification (DTCL 2016). Unfortunately, the research failed to collect earnings data for the nonbeneficiary group. Moreover, the assignment to the participation group was not random. It was, therefore, not possible to ensure the two groups' comparability.

Methodology

The study applied the RCT design to the ongoing RPL program of STEP. The study team and the survey firm worked closely with the project and assessment centers to adjust the RCT design and enforce all the RCT procedures.

The study first purposively selected seven RPL assessment centers from among ten RPL assessment centers operating since 2014, the early stage of the project, in close consultation with STEP officials.[2] The excluded three assessment centers did not have enough trades or applicants. Second, the study selected seven occupation areas that usually attract many applicants for RPL assessment. This selection was to ensure a sufficient number of applicants would be available to create the sample frame. The RPL assessment was on offer at three levels of NTVQF: Pre-Voc 2, Level 1, and Level 2. At the time of the study, the Level 2 assessment was too early in its operation to have a sufficient number of occupational areas and assessment participants. The study, therefore, decided to focus on Level 1, which may have a better reception in the labor market than Pre-Voc 2.

The seven assessment centers in April 2018 issued a public call for applications for the RPL assessment in June 2018 through newspapers, websites, and advertisements in the centers and local industry partner networks. Once the application deadline passed, the assessment centers conducted an initial screening of applicants as per standard procedure and then put together the eligible applicant lists. All the qualified applicants for NTVQF Level 1 in this round were our population of interest for the study. From the applicant lists, the study team randomly selected 1,114 applicants to participate in the RCT. At this point, no one knew who would be in the treatment or control group for the assessment in June 2018.

Of the 1,114 applicants interviewed for baseline data collection, the study team randomly assigned 500 applicants to the treatment group to take the RPL assessment in June 2018. Five hundred applicants in the control group were not going to be invited to the RPL assessment before the follow-up survey in January 2019. The remaining 114 were wait listed.[3] The study ranked the wait-listed applicants to fill in for the treatment group applicants. For instance, the assessment centers should first pick the person ranked first in the wait list to participate if someone in the treatment group is unavailable. The assessment centers would repeat this process if they lost more than one participant. However, by the end of end-line data collection, we could not be confident that all the assessment centers strictly followed this wait-list procedure.

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[2] Ten more assessment centers were operational at the time of the study. However, these new assessment centers were still developing their institutional capacity and, hence, were excluded from the study.

[3] Random numbers were generated using uniform distribution for all center and trade combinations for all applicants. These numbers were then sorted. Those obtaining the lowest 20 numbers were in the treatment group. The next 20 were in the control group, and others were in the waiting list, ranked according to the random number they received.

Therefore, we decided to drop the 114 wait-listed people from the sample.[4] In this analysis, we focus on the 1,000 applicants who were in the treatment or control group.

The study covered the assessment centers in five divisions of Bangladesh. Chittagong and Dhaka—the two most populous divisions—had two assessment centers in the survey. The distribution of the applicants in the sample across divisions and trades is shown in table 1.1. Electrical installation, graphic design, and sewing machine operation were the three trades with the most applicants in the sample, while welding had the least.

Table 1.1 Division and Trade of Applicants in the Sample

| | Divisions | | | | | |
Trades	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Total
1. Electrical installation	80	40	40	40	0	200
2. Plumbing	80	0	0	40	0	120
3. Graphic design	40	40	40	40	40	200
4. Information technology support	80	0	40	0	40	160
5. Sewing machine operation	40	80	40	0	40	200
6. Tailor and dressmaking	0	40	0	0	40	80
7. Welding	0	0	40	0	0	40
Total	320	200	200	120	160	1,000

Source: Original table for this publication.

A survey firm, SRG Bangladesh, hired to collect data for this study, interviewed all 1,114 applicants face-to-face from May 7 to May 30, 2018, for the baseline data collection before grouping them into the treatment and control groups. They submitted the cleaned baseline dataset to the study team in June 2018. In January 2019, seven months after the RPL assessment, the survey firm conducted an end-line survey through face-to-face interviews. They successfully interviewed 1,097 applicants (98 percent response rate) and submitted the cleaned end-line dataset to the study team in March 2019.

Only after the end-line data collection, the project started to invite the control group participants for RPL certification. The understanding was that the project would prioritize control group applicants when the RPL Level 1 assessment resumed.

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[4] Fifty-one of the 114 applicants (45 percent) had participated in the assessments. Since some ranked lower in the waiting list have been assessed, bypassing the higher ranked applicants in some instances, we are not confident that the wait-listed applicants who were assessed are similar to those not assessed during baseline. We are worried that training providers used other criteria to select the trainees from the waiting list. As a result, we drop wait-listed observations in the analysis.

2 Baseline and End-Line Survey Outcomes

Baseline Survey Outcomes

Baseline Characteristics

This chapter goes over the baseline and end-line characteristics of applicants in the treatment and control groups. It serves at least two primary purposes. One is to establish the comparability of the treatment and control groups. If they are not significantly different from each other on observable characteristics, we can reasonably assert that these two groups are similar in both observable and unobservable characteristics. Second, we analyze the overall characteristics of our sample.

A descriptive analysis of baseline characteristics is shown in table 2.1. It is reassuring to see that the control and treatment groups are very similar in all the variables. None of the differences between treatment and control groups were statistically significant; hence the two groups are comparable across all the employment- and earnings-related characteristics and socioeconomic backgrounds. They are also not different in their attitude toward work and confidence in their capability and future career.[5] On average, the applicants appear confident that they have adequate technical and soft skills for their work and believe that they can achieve their career aspirations in the future.

Table 2.1 Balance of Baseline Characteristics in Treatment and Control Groups

Variables	All (n = 1000) Mean	Treatment (n = 500) Mean	Control (n = 500) Mean	Difference (T - C)
Employment and earnings status				
Employed	0.63	0.62	0.63	-0.01
Wage employed	0.48	0.47	0.49	-0.02
Self-employed	0.15	0.15	0.15	0.00
Unemployed	0.08	0.08	0.08	0.00
Studying or unavailable for work	0.30	0.31	0.29	0.02
Current wage earning (monthly)	9,970	10,283	9,670	613
Confidence and aspirations: opinion on a scale of 1–10				
Mastered the technical skills needed for my work	8.42	8.43	8.40	0.04
Have adequate soft skills	8.64	8.67	8.61	0.06
Can achieve career aspirations	9.20	9.17	9.22	-0.05
Confident I can work through challenges	9.08	9.05	9.11	-0.06
Willing to take risks for achieving better at work	9.12	9.09	9.14	-0.05
In the long run, hard work brings a better life	9.78	9.79	9.76	0.03
Socioeconomic background				
Female	0.33	0.33	0.32	0.01
Age (in years)	25.20	25.22	25.18	0.04
Education: primary education	0.28	0.28	0.28	0.00
Secondary education	0.29	0.28	0.29	-0.01
Higher secondary education	0.28	0.27	0.30	-0.03
Degree or above	0.15	0.16	0.13	0.03
Ever attended any vocational training	0.39	0.40	0.38	0.02
Have a prior certificate for the skill	0.23	0.22	0.23	-0.01
Ever worked before	0.83	0.82	0.84	-0.02

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[5] The survey asked six questions related to motivation and aspirations on a scale of 1 to 10 (1 = fully disagree; 10 = fully agree). The questions are in table 2.1.

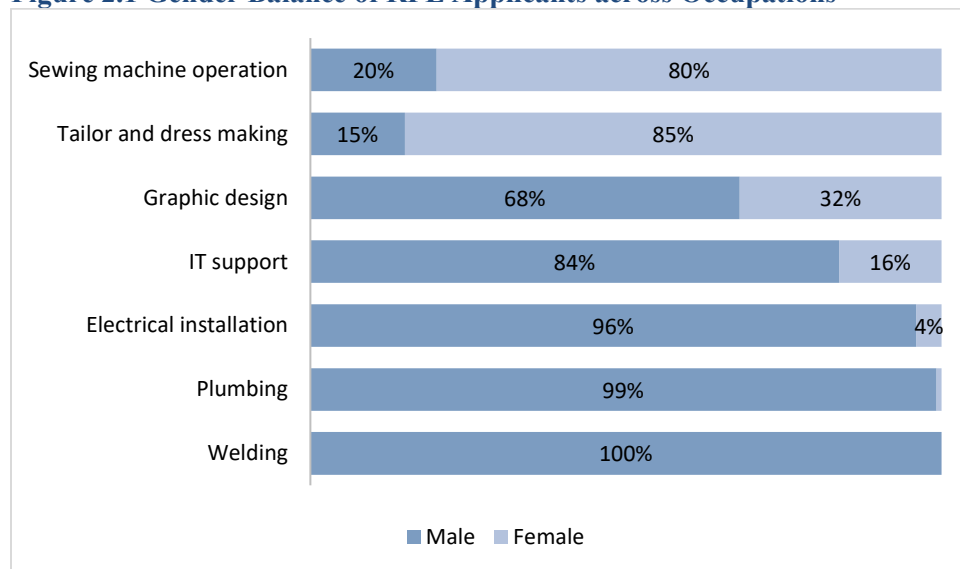|				
Area of residence: metropolitan	0.64	0.63	0.64	-0.01
Urban/semiurban	0.19	0.19	0.19	0.00
Rural	0.17	0.18	0.17	0.01
Living in the same area where they were born	0.63	0.64	0.61	0.03
Number of members in the household	5.25	5.26	5.25	0.01
Years of education by the applicant's father	7.16	7.10	7.21	-0.12
Years of education by the applicant's mother	5.65	5.54	5.75	-0.21
Not married	0.69	0.69	0.68	0.01

Source: Original table for this publication.

The applicants are predominantly youths with some work experience and modest educational background. The applicants' average age is around 25 years, and more than two-thirds are unmarried. More than 80 percent have at least some work experience. Females are a minority. Only a third of the applicants are female. Only around 40 percent have higher secondary or degree qualifications. Nearly 40 percent have attended at least one vocational training—mostly short-courses—which is more than the national average, although only around 20 percent have a skills certificate. Recognition of prior learning (RPL) applicants mainly come from urban areas, most likely because of the assessment centers' locations and available occupations for assessment. More than 80 percent of the applicants are living in either metropolitan areas or urban areas.

The average level of education in the sample translates roughly into 10 years of schooling. This education level could be because the RPL applicants must have the ability of basic literacy and numeracy. This requirement may have precluded some more disadvantaged workers from the assessment opportunities. According to Human Development Index estimate, Bangladesh's average years of schooling in 2018 are 11.4 years (UNDP 2020). The RPL program still caters to the relatively less well-educated segment of the population.

Most occupations have skewed gender balances among the applicants (see figure 2.1), aligned with societal norms about occupational gender segregation. The vast majority of female applicants are in sewing machine operation and tailoring and dressmaking, while graphic design and it support attracted some female applicants. Very few or no females are in Electrical Installation, Plumbing, And Welding. Most of the male applicants are in electrical installation, plumbing, graphic design, and IT support. Only a handful are in sewing machine operation and tailoring and dressmaking.

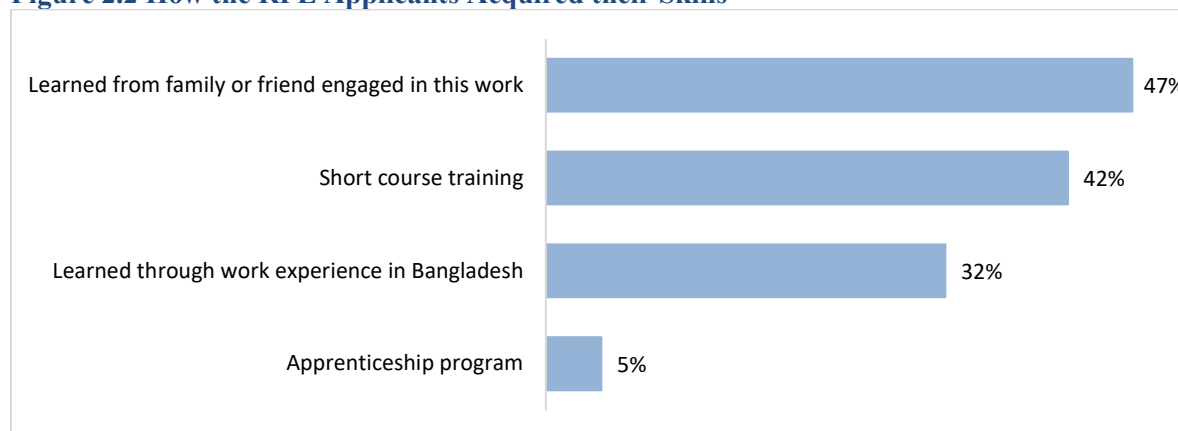**Figure 2.1 Gender Balance of RPL Applicants across Occupations**

Occupation	Male	Female
Sewing machine operation	20%	80%
Tailor and dress making	15%	85%
Graphic design	68%	32%
IT support	84%	16%
Electrical installation	96%	4%
Plumbing	99%	
Welding	100%	

■ Male   ■ Female

Source: Original figure for this publication.
Note: IT = information technology.

Sources of Skills Acquisition

The baseline survey asked the applicants how they had gained their skills for the occupations for which they have applied for RPL certification. The responses are shown in figure 2.2. Both formal and informal ways of skilling seem to have played vital roles. Many respondents cited that they acquired the skills through short-course training programs (42 percent), which constitutes a more formal off-the-job training opportunity. Simultaneously, many applicants also indicated they have learned their skills informally from family members and friends engaged in the same work (47 percent) or learned it on the job through their work experience in Bangladesh (32 percent). Those constitute a more informal training opportunity that is widely available in Bangladesh. This finding is generally consistent with the assumption of the RPL program of the Skills and Training Enhancement Project (STEP) that many workers who want to have their skills assessed acquired their skills through these informal modes of skilling opportunities (figure 2.2).

Figure 2.2 How the RPL Applicants Acquired their Skills

| Source	Percent
Learned from family or friend engaged in this work	47%
Short course training	42%
Learned through work experience in Bangladesh	32%
Apprenticeship program	5%

Source: Original figure for this publication.
Note: The sum of responses exceeds 100 percent as the question was multiple choice.

Reasons and Motivations for Applying for RPL Assessment

The baseline survey also asked all the applicants about the main reasons behind their applying for RPL assessment and how much they would agree to different opinion statements about RPL assessment and certification. Most of them (66 percent) indicated that they need the certificate to find better jobs (figure 2.3). Another 14 percent said that they need the certificate for seeking promotion with their current employer. Most of the applicants demonstrated very high expectations of the RPL certificate to help them get better jobs, improve future earning, and boost reputation among peers and clients (figure 2.4). It is clear from these responses that the applicants hold a high expectation about the potential power of the RPL certificate to signal their skills levels and improve their job prospects and quality. Supposing the RPL certificates live up to these high expectations, they can then bring tremendous benefits to employed and unemployed workers alike, especially in a country like Bangladesh, where there are a high job market churn and a growing private industry sector. Employees are continually looking for and moving into better employment opportunities.

Figure 2.3 Primary Reasons for Applying for RPL Assessment
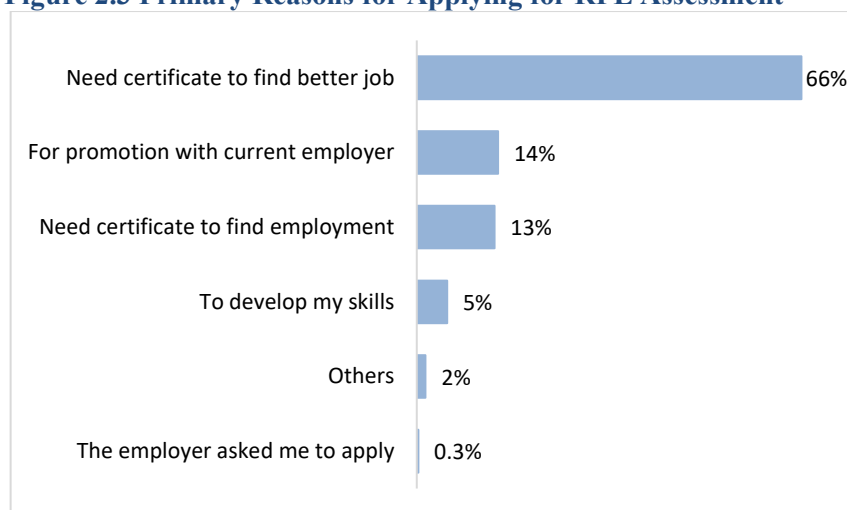
Source: Original figure for this publication.

Figure 2.4 Opinions on RPL Assessment and Certification

Note: 1 = fully disagree with the statement, 10 = fully agree with the statement

End-Line Survey

End-Line Data Collection

The end-line survey was in January of 2019, about seven months after the assessment. The survey firm once again tracked all the respondents for face-to-face interviews. The attrition of the sample was insignificant: only 1.7 percent, as the firm could not survey only 17 of the 1,000 respondents. The most common reason given for attrition was that the participants' phones were switched off or they did not answer the calls (table 2.2). Four applicants were now abroad, and three declined to interview during the end-line survey. Of these 17 applicants, 10 were in the control group and 7 in the treatment group. The difference in attrition rates between control and treatment groups is not statistically significant.

Table 2.2 Reasons for Attrition

Reasons	Frequency	Percent
Phone switched off or not answered	9	52.9%
Abroad	4	23.5%
Declined to interview	3	17.6%
Sick	1	5.9%
Total	**17**	**100.0%**

Source: Original table for this publication.

Contamination of the control group was also insignificant. In the end-line interview, the respondents answered whether they participated in the RPL assessments conducted by any organization. Their responses by treatment status are in table 2.3. Of the 408 respondents who had participated in the RPL assessment, only one was from the control group. All others were from the treatment group, who were eligible to participate in the RPL assessment. Therefore, the contamination of the control group was negligible.

Table 2.3 Actual Participation in RPL, by Treatment Category

	Participated	Not participated	Total
Treatment	407	86	493
Control	1	489	490
Total	**408**	**575**	**983**

Source: Original table for this publication.

On the other hand, a sizeable number, 86 (17.4 percent) of 493 applicants in the treatment group did not participate in the RPL assessment. Actual participation in the assessment was entirely voluntary, even if they are in the treatment group. Some seem to have changed their mind between the application and assessment. A probit analysis (data not shown) shows that nonparticipation of the treated does not seem to correlate with age, gender, years of education, or trade in any significant way. However, it is impossible to preclude the possibility that some unobservable characteristics affect the willingness for assessment participation. For instance, those who are less confident about their skills may be more likely to opt out of the assessment for fear of not passing the examination.

Given the low control group contamination and such possibilities of bias, the study focuses on the *intention to treat* (ITT) analysis. The assignment to the treatment group, not the actual participation, serves as a binary treatment status. One may argue that this might underestimate the impact size due to the treatment

group's sizeable nonparticipation. Hence, the results may be somewhat conservative estimates of the RPL assessment impact.

RPL Certification Results

The RPL program of STEP assesses applicants' skills against the competencies spelled out in the NTVQF and issues official Bangladesh Technical Education Board–accredited certificates based on the assessment results. There are two types of certificates that the RPL participants would receive. One is the Statement of Competency (SoC), which is for those who have passed all the assessment modules (units of competencies). The other is the Statement of Achievement (SoA), which is for those who are competent in some but not all units of competencies. The SoA states the units the participants have passed. The participants can reapply for assessment only for the failed units later (STEP 2016). Table 2.4 provides a summary of the certificates the applicants have received. Of the 408 participants, about two-thirds received the SoC, while one-third received the SoA. There does not appear to be a statistically significant correlation between years of education and obtaining the SoC.[6]

Table 2.4 Certificate Type Awarded to RPL Participants

Certificate	Number	Percent
Statement of competency	274	67
Statement of achievement	134	33
Total	408	100

Source: Original table for this publication.

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[6] Accordingly to STEP officials working on RPL assessment, employers are not distinguishing what was different between SoC and SoA and may consider them the same.

3 Findings on Impacts of the RPL Program

Overall Outcomes

First, we provide descriptive statistics of outcome variables at the end-line by treatment status in table 3.1. On most outcome variables, the mean is similar in the treatment and control groups. The exceptions are on variables indicating whether the person is employed, especially on the variable of being wage employed, and the extent to which the respondents agree on the statement, "I believe that in the long run, hard work brings a better life." Both variables are significant at the 5 percent significance level. Unconditional on other characteristics, the treatment group applicants are most likely to be employed at the end-line. They are more likely to agree to the statement on hard work bringing a better life, suggesting that the Recognition of Prior Learning (RPL) program certification may have motivated them to work harder.

Table 3.1 Comparison of End-line Characteristics between Treatment and Control Groups

Outcome variables	All (n = 983) Mean	Treatment (n =4 93) Mean	Control (n = 490) Mean	Difference (T - C)
Employment and earnings status				
Employed	0.61	0.65	0.58	0.07**
Wage employed	0.43	0.46	0.39	0.07**
Self-employed	0.19	0.19	0.18	0.00
Unemployed	0.07	0.07	0.07	0.00
Studying or unavailable for work	0.31	0.28	0.35	-0.07**
Current wage earnings (monthly)	11,436	11,551	11,303	248
Expected earning in five years	31,742	32,422	31,059	1,363*
Confidence and aspirations: opinion on a scale of 1–10				
Mastered the technical skills needed for my work	8.70	8.69	8.72	-0.03
Have adequate soft skills	8.94	8.96	8.92	0.04
Can achieve career aspirations	9.25	9.27	9.22	0.06
Confident I can work through challenges	9.24	9.28	9.19	0.09
Willing to take risks for achieving better at work	9.25	9.25	9.25	0.00
In the long run, hard work brings a better life	9.64	9.69	9.58	0.11**

Source: Original table for this publication.
*** p<0.01, ** p<0.05, * p<0.1.

Impact on Economic Outcomes

We consider next the regression analyses for key outcomes of interest. Since the randomization was largely followed, we use a simple regression specification to estimate the program impact:

$$Y_1 = \beta_0 + \beta_1\, T + \gamma X + u \ (1), \tag{3.1}$$

where Y_1 is the outcome of interest (employment status and earnings) at the end-line; T is a binary variable that specifies whether the person is in a treatment group; X is a set of individual-level characteristics such as age, gender, and level of education; u is the error term; and β_0, β_1, and γ are the coefficients to be estimated. The coefficient β_1 in the equation is of particular interest. If there is indeed a positive impact of the RPL assessment, the estimate for β_1 should be statistically significantly positive. As discussed earlier, the study tries to estimate *intention to treat* (ITT) effects; therefore, T = 1 if the person is in the treatment group regardless of actual participation in the RPL assessment. In some cases where feasible, the study also attempts to estimate the *treatment on the treated* effects using the instrumental variable (IV) approach.

Employment Outcomes

The first outcome variable to analyze is whether the person is employed or not, including those in wage and self-employment. Estimates from the five models are in table 3.2. All models, except for model 5, provide the ITT estimates using probit regressions. Model 1 takes only treatment status as an explanatory variable, while model 2 includes other explanatory variables such as gender, age, education level, and the division of residence. Further, model 3 looks at an interaction term between gender and treatment status. Previous employment status is the obvious predictor of current employment status. Therefore, model 4 adds the baseline survey's employment status as an additional variable. Finally, model 5 uses the IV approach using an IV probit regression to estimate the *treatment on the treated* effect.

Table 3.2 Impact of RPL on Whether the Person Is Employed or Not

	Models				
	(1)	(2)	(3)	(4)	(5)
	Treatment	Standard	With gender	With baseline	Instrumental
Variables	only		interaction	employment	variable
In treatment	0.182**	0.236***	0.038	0.333***	0.410***
	(2.24)	(2.58)	(0.35)	(1.48)	(3.40)
In treatment * female (Interaction term)			0.596***		
			(2.97)		
Female		-0.749***	-1.060***	-0.598***	-0.595***
		(-7.13)	(-7.23)	(-5.22)	(-5.17)
Age		0.095***	0.097***	0.070***	0.071***
		(8.29)	(8.43)	(6.35)	(6.37)
Living in a metropolitan area		0.005	-0.010	0.033	0.038
		(0.04)	(-0.08)	(0.28)	(0.32)
Education: (base primary school)					
Secondary school		-0.330**	-0.336**	-0.288**	-0.288**
		(-2.45)	(-2.49)	(-2.03)	(-2.02)
Higher secondary school		-0.846***	-0.854***	-0.612***	-0.621***
		(-6.43)	(-6.48)	(-4.30)	(-4.35)
Degree or above		-0.614***	-0.614***	-0.471***	-0.483***
		(-3.76)	(-3.71)	(-2.73)	(-2.80)
Employed at baseline				1.258***	1.267***
				(11.50)	(11.52)
Observations	983	983	983	983	983

Source: Original table for this publication.
Note: Y = 1 when the person is employed, including wage and self-employment; otherwise, Y = 0 (see equation 3.1). z-statistics in parentheses. The estimates are also controlled for geographical divisions of respondents. Model 5 is an IV probit regression using the instrumental variable to estimate a *treatment on the treated* effect.
*** p<0.01, ** p<0.05, * p<0.1.

The estimates show that those in the treatment group are more likely to be employed. The estimates are statistically significant. The estimated effects are even larger when the regressions include employment status at the baseline (model 4) or use the IV approach (model 5). Interestingly, model 3 with gender interaction terms shows the effect of RPL on employment is likely to be much more significant for females. With the gender interaction term, the statistical significance of the treatment on males vanishes, while females' treatment effect is positive and statistically significant. This finding suggests that females are likely to benefit more than male participants from the RPL program, offsetting some disadvantages for females on employment. Overall, other things remaining the same, females are less likely to be employed. There is also a positive correlation between age and the likelihood of employment. The employment rate is not different between those receiving SoC and SoA certificates (details not shown), consistent with the project's observations about the employers' lack of distinction between the two certificates.

The study also estimated the average marginal effects[7] based on the same set of binary regression models to give more intuitively understandable estimates. Table 3.3 shows the estimated change in the probability of being employed for a unit change in the key variables. The models without the gender interaction term (models 1, 2, and 4) indicate that being in the treatment group would increase the chance of employment by around 7 to 8 percentage points. The IV model (model 5) shows a slightly larger effect of nearly 10 percentage points. These are by no means insignificant employment probability improvements, since only about 60 percent of the sampled applicants were in employment at the baseline. Finally, the gender interaction term in model 4 shows a very positive impact of treatment on female employment—nearly an 18 percentage point increase in employment probability for the female treatment group compared to the male control group. Nevertheless, being female is associated with about a 22 percentage point decrease in employment likelihood, practically overriding the effect of RPL vis-à-vis their male counterparts. Being employed at the baseline would improve employment probability by 39 percentage points, which is not surprising.

Table 3.3 Average Marginal Effect Estimates

Variables	Models				
	(1) Treatment only	(2) Standard	(3) With gender interaction[a],*	(4) With baseline employment	(5) Instrumental variable
In treatment	0.070**	0.068***	0.175***	0.080***	0.097***
	(2.24)	(2.57)		(3.42)	(3.43)
Female		-0.225***	-0.225***	-0.153***	-0.151***
		(-7.15)	(-7.28)	(-5.05)	(-5.00)
Employed at baseline				0.391***	0.390***
				(10.81)	(10.88)
Observations	983	983	983	983	983

Source: Original table for this publication.
Note: Z-statistics in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.
[a] The treatment effect estimate in model 3 is the average marginal effect of the gender interaction term and a change in the probability of employment when female-and-treatment is compared to the base outcome of male-and-control.

Transition Analysis

Next, we take a more descriptive and dynamic look at the effects of RPL on employment through the lens of labor market transition to examine and unpack how workers in the sample moved from one employment status to another between the baseline and end-line surveys.

First, one would notice that the overall employment share has fallen by 2 percentage points by the end-line. The overall percentage of the employed was 63 percent at the baseline and 61 percent at the end-line. The decrease is sharper for the control group. Such a general decline in employment share can most likely be attributable to how the project invited and screened potential RPL applicants. The project solicited applications through public media such as newspapers and notice boards at the assessment center; however, it also conducted aggressive dissemination through local companies. Inviting applications through local companies would naturally increase the applications from employed workers.

Furthermore, when the project screened the applicants, it prioritized applicants who have work experience. This screening criterion may well have contributed to having more applicants currently working. In the end,

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[7] The average marginal effect is an effect on the probability of outcome turning 1. It is a change in the probability when a variable changes by one unit while keeping all other variables constant.

the study had likely started with a sample with a higher-than-normal employment share.[8] However, Bangladesh is a country with high job market churn (Farole and Cho 2017)—frequent staff turnover in all industries, especially in the nonagricultural sectors. Moreover, given the RPL assessment's nature, RPL applicants may be more volatile than other workers, possibly wanting certificates to change jobs. In the seven months between the baseline and end-line with a rapid job market churn, the sample's initial inflated employment share would likely have leveled off to the standard level.

The treatment and control groups seem to have experienced different job market transitions. Figure 3.1 portrays how the RPL applicants in each group changed their employment status between the baseline and end-line. First, among those employed at baseline, a total of 15 percent in the treatment group and 19 percent in the control group moved out of employment by end-line. They either moved to unemployed or unavailable status. This transition occurred in a short span of seven months. It would amount to around 30 percent of job leaving, which is significant and would explain why the overall employment share has gone down at the end-line. However, the difference between the groups does not seem substantial. Both treatment and control groups experienced a similar amount of job losses.

Figure 3.1 Job Market Transition of RPL Applicants by Treatment Status
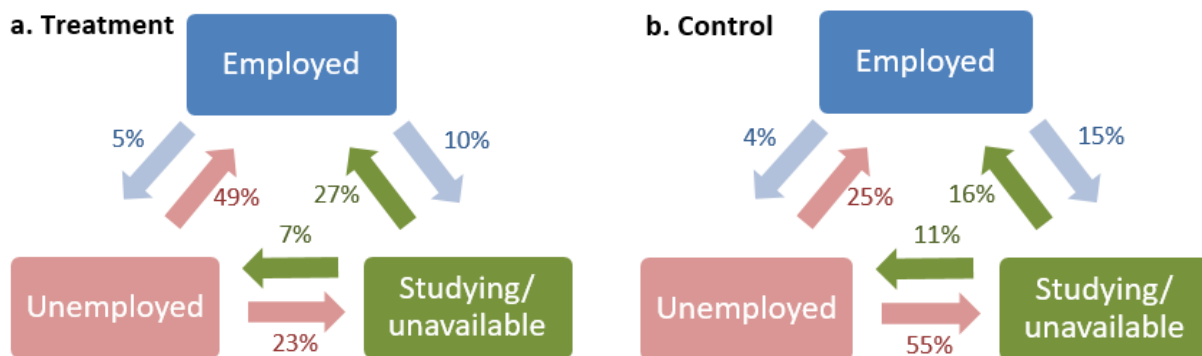
Source: Original figure for this publication.
Note: Within the "employed" category, the transitions across subcategories (full-time, part-time, and self-employed) were limited and not substantially different between the treatment and control groups.

In contrast, differences are stark for those unemployed and studying/unavailable for work at the baseline. Nearly half (49 percent) of the unemployed in the treatment group transited to employment by end-line. However, only a quarter of the unemployed in the control group moved to employed status. Interestingly, a sizeable portion (55 percent) of the unemployed in the control group moved on to studying or unavailable for work, suggesting they opted for either further skilling or gave up on working. Only 23 percent of those in the treatment group did the same. Among the applicants who were studying or unavailable at baseline, a significantly higher share of the treatment group successfully transited to employment (27 percent of the treatment and 16 percent of the control group).

This transition analysis seems to support the regression analysis findings with a more nuanced understanding of the RPL program's impacts. While the RPL assessment may have limited effects on keeping employed workers in employment, it appears to be effective in helping unemployed workers and workers in further training to find jobs. This finding is also in line with the project's expectations. RPL

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[8] Seasonal employment is unlikely to affect nonagricultural occupations in Bangladesh. RPL assessment occupations are currently only for nonagricultural manufacturing and service industries.

assessments indeed seem to increase the employability of out-of-job workers by giving them a certificate to prove their skills.

The end-line survey also asked those who became newly employed in the past six months (that is, since the baseline survey) how they found those jobs. Broadly, two job search channels are available to job seekers to find employment: formal and informal. Going through formal job search channels means searching and finding jobs through the publicly open job-posting information, traditionally in newspapers and increasingly on websites. Informal channels are through personal networks—typically family and relative networks. Using such informal job search channels is extremely common in Bangladesh, especially for micro and small companies. Naturally, formal job search channels tend to be more competitive and rely on proper documents of applicants' qualifications. Going through informal channels may give job seekers less-competitive, flexible access to jobs, but the downside is that it keeps wages lower than they would otherwise be.[9] The survey results show that recent successful job seekers in the treatment group are significantly more likely to use formal channels to find jobs than their control group counterparts (see figure 3.2). It may well be because they are more confident and competitive in the open job market thanks to their RPL certificates. Also, among the RPL participants who found new jobs in the past six months, most (81 percent) said in the interview that the RPL assessment helped them a lot to find the job. These findings concur with the notion that RPL assessments and certificates enhance workers' employability and confidence in skills, which would lead to improved employment outcomes for RPL participants.

Figure 3.2 Job Search Channels Used by RPL Applicants Recently Employed at End-line
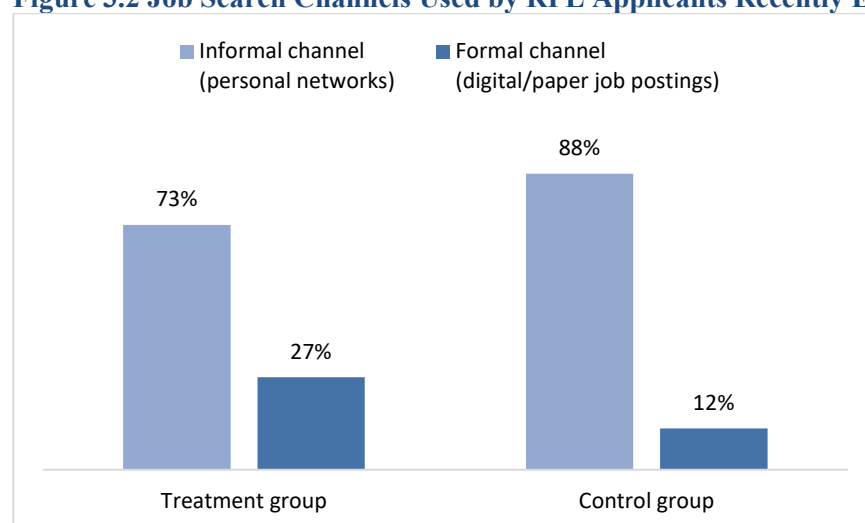
Source: Original figure for this publication.
Note: The difference is statistically significant at the 5 percent level. The number of observations with data on job search channels is 73 for the treatment group and 49 for the control group.

## Impact on Quality of Employment

Wage Levels

Next, we examine the impact of RPL on wage levels among those who are in wage employment. In the labor economics literature, wage functions usually take academic qualification or years of schooling as one of the main influencing factors. However, that is generally limited to verifiable formal education qualifications. Another primary variable is years of work experience (or age as an alternative), usually

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[9] Graduate tracer studies in Bangladesh consistently find that wages for those who found jobs through informal channels are lower than wages for those who found work through formal channels.

associated with a gradual increment of wage levels, presumably deriving from the accumulation of tacit professional knowledge and skills. In this setup, we analyze whether having RPL certificates helps workers enhance wage levels in a similar way that having formal education qualifications does.

First, simple comparisons of wage levels across the treatment and gender categories (figure 3.3) show no statistically significant differences, albeit the treatment group consistently earning somewhat better. The difference among females is barely not statistically significant (p-value = 0.12).

Figure 3.3 Wage Level at End-line by Treatment and Gender (in Bangladeshi taka)
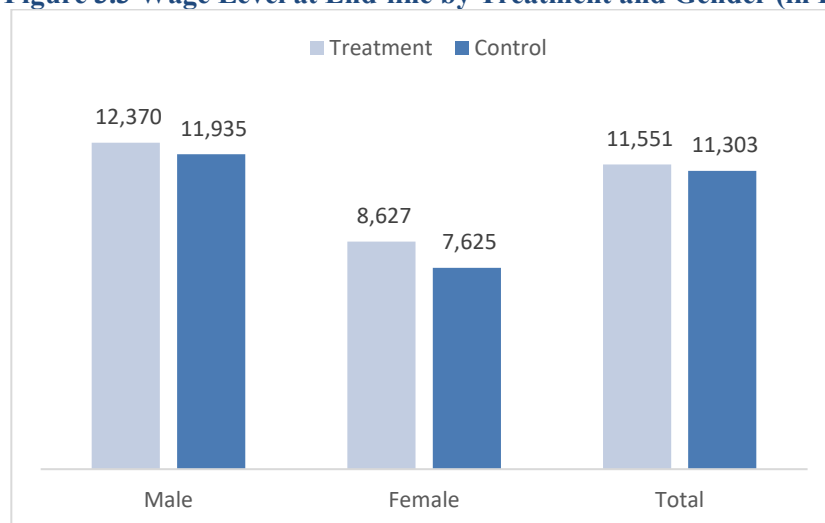
Source: Original figure for this publication.
Note: Differences are not statistically significant.

The study uses the Mincerian wage model to estimate the treatment effects after controlling for other influencing factors, including education and years of experience. The dependent variable is the log values of the monthly wage. Treatment effects are ITT effects. In addition to *ordinary least square* (OLS) regression (models 1 and 3), we also applied the Heckman regression that considers the probability of selection into wage employment (models 2 and 4) to correct the selection bias. Table 3.4 shows the estimates from the OLS and Heckman regressions. The impacts of the treatment on wages are small and not statistically significant in the standard models (models 1 and 2). As expected, those with higher levels of educational qualification or in full-time employment earn significantly larger wages. RPL certificates do not seem to supplement formal education qualifications in deciding on wage levels effectively.

Table 3.4 OLS and Heckman Regression on Wage Earnings

Variables	Models			
	(1) OLS: standard	(2) Heckman: standard	(3) OLS: gender interaction	(4) Heckman: gender interaction
In treatment	0.031	0.025	-0.006	-0.014
	(0.72)	(0.59)	(-0.14)	(-0.31)
In treatment * female (interaction term)			0.205*	0.219**
			(1.81)	(2.06)
Female	-0.431***	-0.362***	-0.561***	-0.503***
	(-6.90)	(-5.84)	(-5.89)	(-5.48)
Age	0.085***	0.078***	0.087***	0.077***
	(4.74)	(4.49)	(4.88)	(4.43)
Age2	-0.001***	-0.001***	-0.001***	-0.001***

	(-3.88)	(-3.65)	(-4.00)	(-3.70)
Living in a Metropolitan area	0.009	0.024	0.006	0.022
	(0.18)	(0.49)	(0.11)	(0.44)
Education (base = primary school)				
Secondary school	0.048	0.028	0.047	0.033
	(0.81)	(0.49)	(0.80)	(0.58)
Higher Secondary School	0.145**	0.155**	0.134*	0.173**
	(2.10)	(2.37)	(1.93)	(2.55)
Degree or above	0.311***	0.216***	0.308***	0.302***
	(4.17)	(3.34)	(4.14)	(4.18)
Type of employment (base = permanent full time)				
Temporary full time	-0.035	-0.060	-0.040	-0.050
	(-0.50)	(-0.92)	(-0.58)	(-0.76)
Part time	-0.178**	-0.126*	-0.158**	-0.115*
	(-2.48)	(-1.87)	(-2.18)	(-1.67)
Day work	-0.412**	-0.416**	-0.417**	-0.457**
	(-2.05)	(-2.15)	(-2.08)	(-2.39)
R2 /Log likelihood	0.3472	-679.5752	0.3527	-666.8276
Observations	415	978	415	978

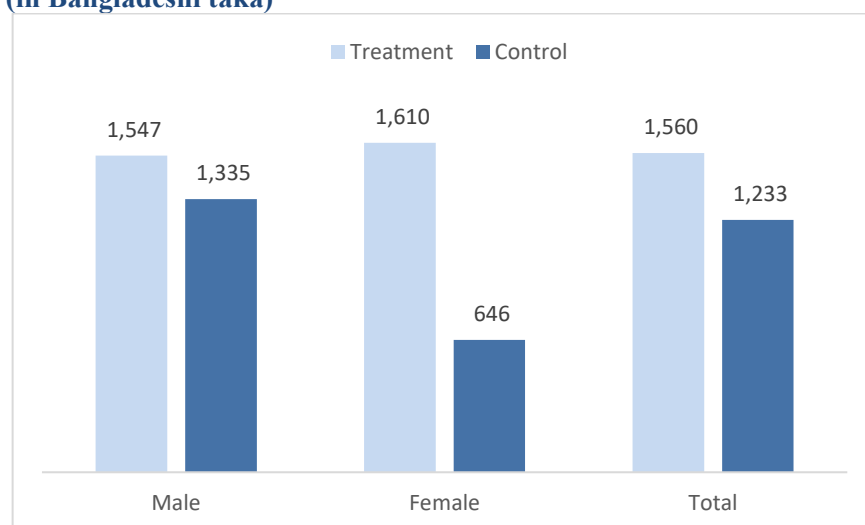*Source:* Original table for this publication.

Note: OLS = ordinary least square. Y is log value of wage-earning. t-statistics in parentheses. All the estimates are also controlled for geographical divisions of respondents and the economic sectors where the respondents are working. The sample selection for Heckman models takes the same set of variables as model 4 of the employment outcome regressions.

*** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Next, we added an interaction term of the treatment and gender to see the heterogeneity of treatment effects by gender (models 3 and 4). Both the OLS and Heckman regressions show positive and statistically significant treatment effects on females. After control for all other variables, being in the treatment group is associated with a wage level increase of approximately 20 percent for female applicants. This increase strikes us as relatively modest compared to the large decrease caused by being females in the first place. However, it appears likely that the RPL assessment plays some role in mitigating such gender-based wage discrimination and giving them better economic opportunities.

Finally, we also look at how wages changed from the baseline to end-line among those in wage employment at both points to have a more microscopic view of wage level changes over time and difference by the treatment category if any. A total of 332 applicants meet this criterion, including 275 males and 57 females. Figure 3.4 reports the descriptive summary of the wage increase among those 332 applicants by the treatment group and gender. Those in the treatment group seem to have enjoyed larger wage increases over the six months between the two surveys. The difference is particularly stark for females.

Figure 3.4: Amount of Wage Increases for Those Employed Both at Baseline and End-line Surveys (in Bangladeshi taka)
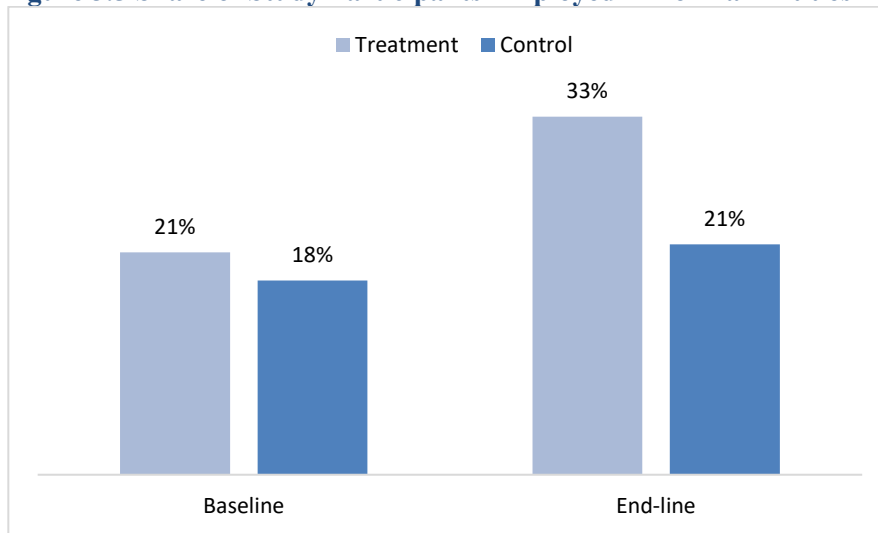

Source: Original figure for this publication.
Note: The number of observations with wage data available at baseline and end-line is 275 for male and 57 for female. Outliers (above 10,000 taka increase) were excluded since such huge increases are likely due to some drastic circumstantial changes unrelated to certificates and employment. The differences for *total* and *females* are statistically significant at the 10 percent and 5 percent levels, respectively. These wage increase data are from those who were in wage employment at both baseline and end-line points. The majority of wage-employed workers at baseline remained wage employed at end-line (75 percent and 70 percent in the treatment and control groups, respectively).

Formality of Employment

Further, the study explored whether the RPL program had any effects on the types of employers. Workers with certificates would be in a better position to apply for jobs at formal companies. The survey results seem to support this expectation (figure 3.5). At the baseline, only 21 percent and 18 percent of the wage employed participants in the treatment group and control group, respectively, were working at formally registered private companies or government entities. The rest was all in companies owned by family, friends, or other individuals: in other words, informal small and medium-sized enterprises. However, at the end-line, a significantly larger share (33 percent) of wage-employed workers in the treatment group work at formally registered private companies and government. The percentage for the control group remains constant at 21 percent at the end-line. The difference between the two groups at the end-line is large and statistically significant. Probit regression suggests (not reported here) that the RPL is associated with around a 13 percentage point increase in the likelihood of working at formal companies.

**Figure 3.5 Share of Study Participants Employed in Formal Entities**

Source: Original figure for this publication.
Note: The difference between the treatment and control groups at the end-line is statistically significant at the 1% level, and the difference at the baseline is not statistically significant. Formal entities include formally registered private firms and government entities; the shares of government entities are limited at 3 to 4 percent for all groups. The difference at the end-line remains significant after controlling for other variables such as education, gender, and age.

Not only do RPL participants work at formal companies more frequently, they tend to work at larger companies. The survey asked wage-employed respondents about the number of employees in their entities (figure 3.6). The companies where the respondents were working at the baseline had similar sizes across the two groups. However, the average size of companies for the treatment group respondents increased substantially. The size for the control group again remained more or less constant. The difference between the groups at the end-line is statistically significant.

Figure 3.6 Average Number of Employees at Entities
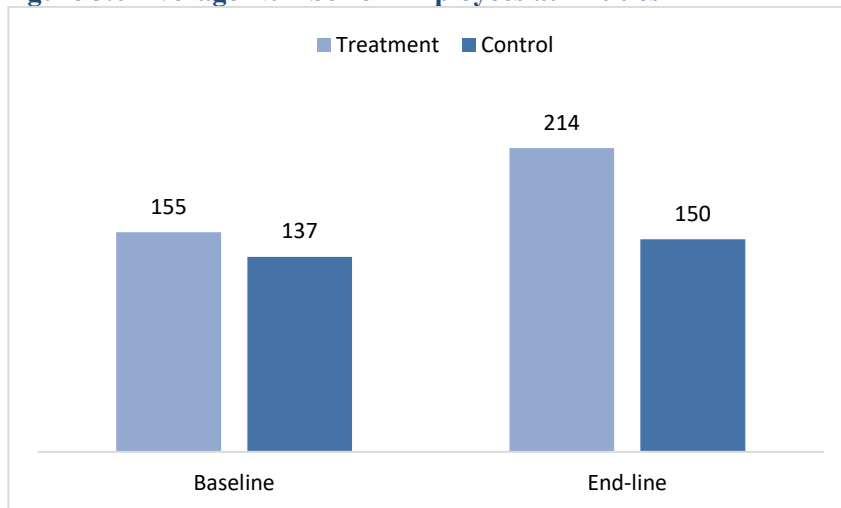
Source: Original figure for this publication.
Note: The difference at the end-line is statistically significant at the 5 percent level, and the difference at the baseline is not statistically significant.

The survey results strongly indicate that the RPL certification positively affects the formality of employment for workers by allowing them to move to more formal and larger establishments. (The survey did not ask about the presence of written job contracts.) This finding is significant in a developing country such as Bangladesh, where informal employment is the predominant form of employment.

Impact on Confidence

Participation in RPL assessments gives workers opportunities to unpack, assess, and validate their hard-earned skills. The process itself would be empowering, especially for workers without previous formal training experience, and the certificates would further boost their confidence. In the mid- to long term, armed with the official certification of their skills and renewed confidence, wage-employed workers would perhaps negotiate better pay. Self-employed workers would possibly attract more customers or charge better fees.

The survey asked respondents about their expectations on how much they will earn per month in five years. Their responses (figure 3.7) show that the treatment group workers expect more earnings in five years than their control group counterparts. The difference is more significant among male workers. The differences are statistically significant at 10 percent. Among females, the difference is narrower and not statistically significant. Also, female workers expect smaller earnings gain over time. Overall, the RPL program seems to have some modest impacts on boosting workers' confidence in their skills and job performance, hence improving expected earnings levels in the future. Effects of enhanced confidence on expected earnings are smaller for females, perhaps due to their overall disadvantage in the workplace and labor market.

Figure 3.7 Expected Earnings in Five Years (in Bangladeshi taka)
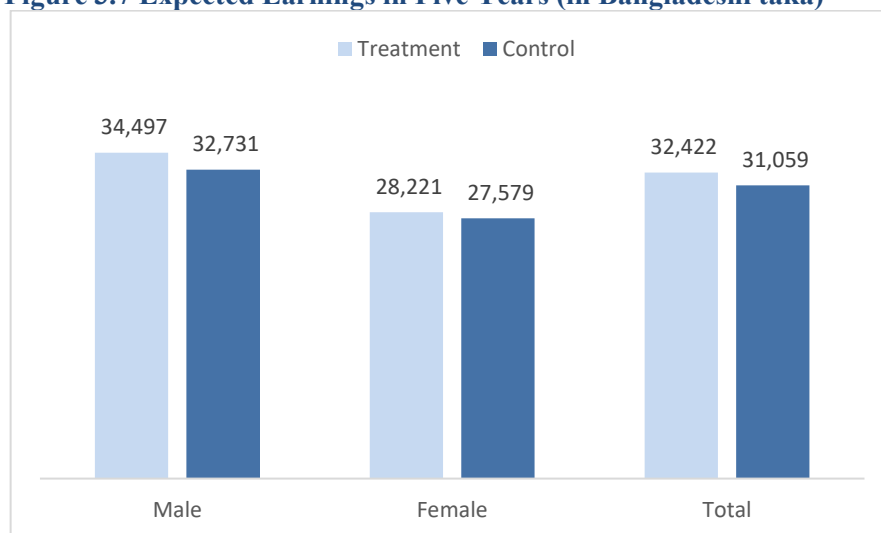
Source: Original figure for this publication.
Note: The differences in male and total categories are statistically significant at the 10 percent level.

Impact on Access to Formal Training

RPL programs have been useful in other countries in bridging qualification gaps to enhance access to formal education and training. RPL certificates serve as additional qualifications to satisfy intake criteria or reduce the length of required preparatory programs. In Bangladesh, accessing formal training programs typically requires at least a grade 8 or grade 10 (junior secondary school or secondary school) certificate. The study explored whether the take-up of formal training rises for the treatment group after RPL.

The survey results indicate that only 5 percent of all the applicants took any training in the six months before the end-line survey—only 4 percent of the treatment group and 6 percent of the control group. The difference is not statistically significant. The study could not identify any impact of RPL on access to skills training. It may be premature to expect the RPL program in Bangladesh to facilitate access to formal training programs. The legislation and regulation related to NTVQF are still inadequate to establish equivalencies across different education and training qualifications.

4 Conclusion

Our analysis suggests that the Recognition of Prior Learning (RPL) program assessment positively impacts workers' employment outcome and quality of employment, such as formality of employment and wage levels, and improves workers' confidence in skills and jobs, as measured by earnings expectations. The findings indicate that participation in RPL enhances the chance of employment by about 7 percent. The RPL appears to facilitate the transition of unemployed or not-working workers into employment and increase the chances of finding work through formal job search channels. When employed, RPL participants are more likely to work at formal and larger private companies. These findings are more or less in alignment with the assumption and expectation behind the RPL programs in the context of economic development. With better signaling of skills and knowledge by RPL certificates and enhanced confidence in their abilities, workers can be more competitive in job markets and in negotiating wages and fees.

The findings suggest that females may benefit more from RPL certificates, especially in employment outcomes and wage levels. This outcome may be because of female workers' weaker standing in wage distribution and limited choices of job opportunities, especially when they do not have formal education qualifications. RPL certificates may play a unique role in mitigating gender-based wage biases and empowering less-educated women in the workforce.

It is also noteworthy that those impacts identified by the study have occurred in a relatively short time— about six to seven months. Labor market transitions often take a few years to materialize, and wage negotiations usually happen once a year or half-year; therefore, the full impact of RPL certificates may yet emerge within the scope of this study. Participation in RPL is also a learning process for workers, helping them take stock of all the job-relevant skills and knowledge they were only tacitly aware of. Confidence and awareness created in the process would take time to translate into economic gains and concrete actions. Simultaneously, RPL's effects may still be untapped when it comes to promoting access to training opportunities. In Bangladesh, the government is yet to establish equivalencies across different qualifications, which would allow RPL certificates to fulfill an entry requirement for formal training programs. The effects of RPL can be more robust and long lived if the certificates lead to access to more and better skilling opportunities. Longer-term tracing would be necessary to evaluate the effects of RPL programs in full.

There are two possible explanations for outcomes where we do not find positive impacts or less than expected impacts. First, the end-line survey took place just seven months after the assessment. This is a short span in which to see the full effects in some outcomes, such as earnings or access to training. Wage negotiations are on the table at places of employment perhaps only once a year for those already employed. Training institutions take new students once every six months for their short-courses. The other reason could be that the RPL assessment was at National Technical and Vocational Qualifications Framework (NTVQF) Level 1 (Basic Worker, equivalent to 360 hours of required training) when NTVQF has up to Level 6 (Diploma Engineer). Employers may become more appreciative of the certificates and willing to consider higher wages if they are from higher skill levels. The project rolled out RPL assessment at Level 2 and beyond subsequently. The impacts may be more substantial for those who underwent RPL of higher-level qualifications.

Finally, the study also affirmed immense popularity and high expectations among working persons in Bangladesh about what the RPL assessments and certifications can do. Such feedback from the applicants indicates enormous demands for RPL assessment services as a tool to bridge the disparities between practical skills and knowledge that workers possess and their education certificates from formal schooling. They learn skills mostly through work experience and expect the RPL certificates to validate their skills and enhance their employability and compensation. This study's findings uphold such expectations about the RPL assessments and certifications.

The study has some limitations and suggestions for future research. First, it could only assess short-term impacts during the seven months between the baseline and end-line surveys. Some labor market outcomes due to RPL may take time to appear. There is also a possibility that RPL effects diminish over time. Second, it did not thoroughly analyze the heterogeneity of treatment effects across occupations due to a sample size limitation. Economic circumstances and business contexts may vary widely from occupation to occupation. RPL assessment may produce different outcomes across different circumstances or sectors. Further occupation-specific research and longer-term analysis will shed more light on the full effects of RPL programs. Finally, this study did not survey employers to receive their feedback on RPL. It would be useful to understand their perception of RPL and how RPL affects their view of and relation with employees.

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Appendix A: Recognition of Prior Learning Qualification Levels

The National Technical and Vocational Qualifications Framework (NTVQF) introduces the concept of prevocational levels to the skills development system in Bangladesh. These levels not only open up additional career pathways for students pursuing general education but also address the needs of underprivileged groups and individuals with low levels of education. Previously, individuals without a grade 8 or above level of education were not able to access the formal skills development system, as they did not meet the prerequisite education level. With the introduction of prevocational levels, they now have a pathway to enter formal training.

The NTVQF also includes five vocational levels as well as one diploma-level qualification, as shown in table A.1.

Table A.1: NTVQF Levels

NTVQF level	Knowledge	Skill	Responsibility	Job classification
6	Comprehensive actual and theoretical knowledge within a specific study area with an awareness of the limits of that knowledge	Specialized and restricted range of cognitive and practical skills required to provide leadership in the development of creative solutions to defined problems	Manage team(s) in workplace activities where there is unpredictable change; identify and design learning programs to develop performance of team members	Supervisor, middle level manager, subassistant engineer, etc.
5	Very broad knowledge of the underlying, concepts, principles, and processes in a specific study area	Very broad range of cognitive and practical skills required to generate solutions to specific problems in one or more study areas	Take overall responsibility for completion of tasks in work or study; apply past experiences in solving similar problems	Highly skilled worker, supervisor
4	Broad knowledge of the underlying, concepts, principles, and processes in a specific study area	Range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying the full range of methods, tools, materials, and information	Take responsibility, within reason, for completion of tasks in work or study; apply past experiences in solving similar problems	Skilled worker

3	Moderately broad knowledge in a specific study area	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools	Work or study under supervision with some autonomy	Semiskilled worker
2	Basic underpinning knowledge in a specific study area	Basic skills required to carry out simple tasks	Work or study under indirect supervision in a structured context	Medium-skilled worker
1	Elementary understanding of the underpinning knowledge in a specific study area	Limited range of skills required to carry out simple tasks	Work or study under direct supervision in a structured context.	