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Unlocking young women's minds? Evidence from a career exploration program

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Abstract:	In contexts with rigid gender norms and low female labor force participation, young women lack information on many career options, have limited awareness of their strengths and interests, and lack professional role models. While students from affluent families can access career counseling in school or privately, students from socio-economically weaker groups lack this type of guidance. We examine whether and how a 10-hour long career guidance program that encourages secondary school students in 15 sessions to explore their strengths, interests, and career options can influence their choices regarding the continuation of skill formation and education after finishing school to facilitate their labor market entry in the future. Working with 12th graders from socio-economically disadvantaged backgrounds in 45 secondary schools (n≈6000), we will use a clustered randomized controlled trial with school-level treatment assignment to assess the impact up to 14 months after the intervention on students' career choices.
Response to Reviewers:	

Highlights for Stage 1 Registered Report
"Unlocking young women's minds? - Evidence from a career exploration program"

Registered Report Stage 1: Proposal for submission to the Journal of Development Economics

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- Many students lack career awareness and individual career counseling is costly.
- Patriarchal norms and the lack of role models exacerbate this for low-income girls.
- We examine the impact of a group-based career guidance program for 12th grade girls.
- We focus on the continuation of human capital formation and career plans.
- Our causal results have the potential to inform program design and scale-up.

Unlocking young women's minds?

Evidence from a career exploration program

Registered Report Stage 1: Proposal for submission to the Journal of Development Economics

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Abstract

In contexts with rigid gender norms and low female labor force participation, young women lack information on many career options, have limited awareness of their strengths and interests, and lack professional role models. While students from affluent families can access career counseling in school or privately, students from socio-economically weaker groups lack this type of guidance. We examine whether and how a 10-hour long career guidance program that encourages secondary school students in 15 sessions to explore their strengths, interests, and career options can influence their choices regarding the continuation of skill formation and education after finishing school to facilitate their labor market entry in the future. Working with 12th graders from socio-economically disadvantaged backgrounds in 45 secondary schools (n≈6000), we will use a clustered randomized controlled trial with school-level treatment assignment to assess the impact up to 14 months after the intervention on students' career choices. [147 words]

Keywords: female labor force participation, career choices, gender norms, women's empowerment, India (5/6)

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Planned timeline

Summer – Fall 2022	Preparation of data collection and intervention Qualitative interviews of students, program alums and facilitators
November 2022 - January 2023	Pilot project in two girls' secondary schools: Baseline survey with 414 students Implementation of career exploration program in selected classrooms in schools
February - April 2023	Post-intervention pilot survey with 459 students Analyze pilot data Share experiences and descriptive insights with partner organization Research and implementation design adjustments Obtaining approvals from local school authorities
May – August 2023	Baseline data collection in 45 schools, ca. 6000 students (ongoing)
July – October 2023	Program implementation in 22 randomly selected schools, ca. 2900 students (ongoing)
September - November 2023	Endline data collection in 45 schools, ca. 6000 students
October 2023 – June 2024	Data analysis I and research output I preparation
October - November 2024	Follow-up data collection over the phone with students of all 45 schools, ca. 6000 students
Winter 2024 - 2025	Data analysis II and research output II preparation
Spring – Summer 2025	Dissemination of results and preparation of publication of research results

* The rows marked in grey are ongoing at the time of the resubmission.

1. Introduction

Low female labor force participation (FLFP) constrains economic growth, women's economic empowerment, and agency, which are essential for women and be closely linked to the well-being of their households, and their children (Duflo, 2012). India is one such country where FLFP has been stagnating and even decreasing for the last decades, and it is currently as low as 24% (International Labour Organization, 2022). Despite the variety of opportunities in urban settings, FLFP has traditionally been lower in urban areas than rural areas and lowest for urban women who completed their secondary education but did not attain further skill formation (Fletcher et al., 2019). In contrast to many other countries where low FLFP has been linked to women exiting the labor force due to childbearing (Dex et al., 1998; Klasen, 2019), in India, most women never enter the labor force[2].

Why do women not participate in the labor force? Both demand-side and supply-side factors contribute to low FLFP. On the demand side, these include gender-based discrimination in hiring (Riach & Rich, 2006; Carlsson, 2011; Kuhn & Shen, 2013), laws restricting women's access to work in certain industries and to work at night as well as gender wage gaps (Duraisamy & Duraisamy, 2016). On the supply side, rigid gender norms restrict women's mobility (Mehta & Sai, 2021) and define women's role as caregivers and caretakers of the household (Sudarshan & Bhattacharya, 2009) potentially discouraging the continuation and completion of skill formation. Many women further lack the education and skills for the jobs that they would prefer. More than 50% of the non-working women who want to work state that they would like to work in professions for which they lack the required qualifications. (Fletcher et al., 2019).

Lack of planning for a professional future and resulting suboptimal career choices is a problem for young men and women. Making career choices when transitioning from school to further skill formation is difficult for everyone. However, the implications of suboptimal educational and career choices differ by gender, especially in contexts with rigid gender norms. While men risk taking up career paths and professions unaligned with their strengths and interests; women further risk not choosing any career path, not completing skill formation, and not entering the labor force.

Focusing on the supply-side factors, we aim to contribute to understanding how students can be supported in their choices when transitioning from secondary education to further skill formation. Career guidance has the potential to alleviate imperfect information, low aspirations, and lack of role models as market failures leading to the imperfect allocation of human capital in the labor market. We

[2] Labor force participation rates reach only 35-40% for women compared to 90% for men throughout their lifetime, according to the Consumer Pyramids Household Survey 2017-2019.

ask whether and how a low-cost and scalable career guidance program can increase the share of students who plan for a professional career and make relevant choices by taking an entrance exam and/or enrolling in a course or training. We thereby primarily focus on young women from disadvantaged socio-economic backgrounds. To ensure that demand-side frictions such as the availability of jobs and different career options are less of a concern, we work in a metropolitan city where many career options are accessible.

To identify the causal impact of the career guidance program, we use a school-level clustered randomized controlled trial working with all 12th graders in 45 secondary schools without fees[3], resulting in an approximate sample size of 6000 students. Our plans for data collection and analysis will allow us to assess the program's causal impact on young women's career plans for their professional future right after the program implementation and on their actual choices about one year later.

We assess the impact of a more scalable career exploration program (CEP) in which students play an active role, as opposed to typical career counseling programs where students get information in a one-on-one setting about a suitable career objective based on an aptitude test. Students in CEP are guided by relatable facilitators[4] to actively explore their interests, strengths, and the variety of career options and to prepare a plan of action to pursue their career objectives. CEP thereby addresses the information constraints about career options and returns to education. Further, the interactions with relatable facilitators from similar backgrounds could address the need for more exposure to career-oriented working women. Although career guidance programs can generally not lift financial constraints linked to course fees and travel costs, they can increase the interest and aspiration of young women to take up such opportunities even if they are further away or temporarily costly. CEP further aims to provide more detailed information about affordable alternatives and public institutes for pursuing their career objectives. It may also motivate students to establish norms around sharing responsibilities for household chores in their homes. Finally, in a resource-constrained context, where career counseling programs are not affordable for most students, group-based CEPs may have the potential to influence students' career-related choices and actions at scale positively.

[3] In the following, we will refer to schools without fees and schools with very low fees as low-cost schools. Low-cost schools include both government schools (that typically do not have any fees in this context) and affordable private schools where parents pay only very low fees. While our study is conducted in schools without fees, we believe that our results are equally relevant for schools with very low fees.

[4] The facilitators are from similar socio-economic backgrounds, and many of them participated in the CEP themselves when they were students in schools without fees. Currently, they are typically pursuing higher education and work part-time as facilitators next to their studies.

We provide CEP to students from economically weaker sections of society where the constraints are stronger than relatively richer sections that can address these constraints. From our prior data collections with students in the same setting, imperfect information and lack of role models appear to be linked to students (and their siblings) being the first ones to face the opportunity to pursue further skill formation. Schools cannot compensate for the lack of support from home with a limited capacity to provide career guidance to students. Insufficient information further interacts with parental and societal expectations, according to which only certain occupations are suitable. These barriers to making interest- and strength-aligned career choices apply to young women and men. Still, they are harder to overcome for young women as rigid gender norms limit their mobility and assign primary responsibility for domestic responsibilities to women. As such, in our pilot survey of 412 female adolescents from four secondary schools, 35% of the students want to become a teacher or a civil servant, which are the most accepted professions for women, and 60% report that in the last two years, no woman in their household has worked outside the house indicating that FLFP is rare in the families of the students in our target group.

The relevance of alleviating information constraints for women's choices has been documented in the existing literature. Exposure to information on working opportunities has been shown to increase investments in education, marriage and childbearing age, and female labor force participation (Jensen 2010; Jensen 2012; Heath & Mobarak 2015). More specifically focused on the impact of career guidance, research has shown that it can be particularly effective when provided at a time when students make their first career choice (Perdix et al. 2012) and when provided to more disadvantaged students (Bettinger & Evans, 2019; Carlana et al. 2022). Research from the US shows that more time needs to be devoted to students by career guidance counselors (Avery et al., 2014; Lee & Ekstrom, 1987; McDonough, 2005), that students who need career guidance the most are the least likely to seek and receive it (Zafar, 2019; Lee & Ekstrom, 1987)

This corresponds to the situation we observe in urban India, where most schools with high fees provide career counseling sessions to students. Governments are also working on implementing career guidance in public schools, but human resources are limited. Highly qualified counselors typically work in several schools and guide 6th-12th grade students on various topics, leaving little time for career-focused interactions. As access to career guidance is likely to influence educational and career choices and future labor market outcomes, examining potential low-cost approaches to support students from disadvantaged backgrounds appears crucial.

With this study, we make four important contributions to the existing research:

First, we focus on career exploration instead of only providing information or providing expensive career counseling. CEP actively engages the students, has relatively low costs, and is scalable, reaching many more students in the future, which is particularly important for resource-constrained contexts.

Second, we focus on a context with rigid gender norms and strong parental/societal expectations, which may make it harder for young individuals to pursue careers according to their interests and skills. Understanding the impact of a CEP on young, educated women in the Indian context is essential as, overall, the share of skilled laborers in society is only 21.2% (Baumann 2021), especially young, educated women's potential remains unused. While the government is implementing various measures to change this under the program "Skilling India", reaping benefits from investments in education and training will be more likely if young women are also motivated to join the labor force.

Third, existing studies tend to limit the impact evaluation of related programs either to choices within secondary schools, such as completion of secondary school or high school tracks (Loyalka et al. 2016; Gehrke et al. 2023, Carlana et al. 2022), or within college such as the choice of a major (Baker et al. 2018) or short-term and self-reported career readiness (Arulmani et al. 2003). In contrast, our study will track students transitioning from secondary to higher education to examine how the CEP supports their career choices.

Fourth, we contribute to the growing literature on aspirations shaped by individual experience and socially determined (Genicot & Ray 2017, 2020). As Genicot and Ray (2020) frame it, "[p]references are deeply molded by the society in which individuals reside" (p. 716). The so-called "cognitive neighborhood" influences individuals' objectives based on which they make future choices (Genicot & Ray, 2020). While aspirations can fuel individual growth, unrealistic aspirations can backfire and lead to frustration. The program examined here considers this and aims to encourage students to have realistic aspirations and make attainable plans while considering financial and other constraints.

Beyond our contribution to the existing literature, the results from this study are relevant for policymaking in urban India and beyond as state governments plan to expand career guidance in government schools, potentially in collaboration with NGOs to complement the work of highly qualified school counselors. Understanding whether and how scalable career programs work can feed into future career guidance design at scale.

2. Background

The context we are working in is a very large metropolitan area in Northern India with a population of many million. Representative data from the National Family Health Survey (NFHS) for the same context from 2016 shows that our target population's average age to get married is 21.8 years, and the average age to have the first child is 23.1 years. Among women between 18 and 30 years of age, only 46% complete secondary education, and 66% of those who completed secondary education continue to higher education. Finally, only 20% of those who continued to higher education ended up working (International Institute for Population Sciences 2017). National Sample Survey data from 2012 shows that out of the urban women between 18 and 30, 64% of the women who have completed at least secondary education are not in any form of education, training, or employment, and only 8% of the women who have completed secondary education opt for vocational education. However, the data show that having received any form of vocational training is associated with a 20 percentage points lower likelihood of being unemployed and a 26 percentage points lower likelihood of being a housewife (National Sample Survey Organization 2013). The willingness to work is 23 percentage points higher for women who received any form of vocational training than for women who only completed secondary education.

In our pilot data from students from similar schools and areas (n=412), 60% of the girls report that in their household in the last two years, no woman has worked outside the home. Further, 73% of the girls report that their mother is a housewife, 8% report that their mother works in a family-owned business or is self-employed, and 17% report that their mother works outside the home for wages. 25% of the mothers of the students in our sample do not have any formal education, and 76% of the mothers have a lower education than their daughters, who were in the 11^{th} grade at the time of the survey. Fathers have relatively higher levels of education than the mothers of our respondents, with 9% not having completed any formal education and 63% having a lower education than their daughters. Relatedly, 28% of our respondents in the pilot are the most educated in their families, and in another 50% of households, their brother or sister is the most educated.

Despite our focus on a relatively young and educated population in a very large city, we observe that about 30% of the respondents agree with conservative statements on gender norms, such as that preference should be given to men when jobs are scarce and that a woman's most important role is to take care of the house.

3. Research Design

We conduct a school-level clustered randomized controlled trial in collaboration with the local school authorities and NGO Alohomora Education Foundation. This established and formalized collaboration

enables us to work with 45 schools in total – the number of schools needed according to our power calculations (see below)[5]. We initially conduct baseline surveys of all present 12th graders from 45 secondary schools. For 22 randomly selected schools in the treatment group, the CEP will be implemented with typically two or three weekly sessions lasting about 40-45 minutes. Once the program is completed, we conduct the endline survey in schools and contact the students again after one year for a follow-up survey.

School-level randomization minimizes the probability and extent of spill-over effects (Muralidharan, 2017). School principals, teachers, and students are unaware of the study's objectives and the research-specific assignments into treatment and control groups. We implement this by informing school principals and teachers only about what will happen in their school and our broader motivation for data collection to assess the need for career guidance in low-cost schools. Given that school-specific activities happen frequently in this context, we expect any spill-over effect to be unlikely and small. Suppose principals, teachers, and students from schools in the treatment group share their experiences with principals, teachers, and students in schools in the control group. In that case, this will only lead to an attenuation bias for the measured impact, as hearing about the experiences of other students from other schools will have a much weaker impact than participating themselves.

Theory of change

Table 1 shows our theory of change for the impact of the CEP on students' career intentions and choices. As highlighted in the introduction, we focus on imperfect information, low aspirations and lack of role models as market failures leading to suboptimal labor supply and imperfect allocation of human capital in the labor market. The underlying problems (see first row of Theory of Change) that we aim to address are that students typically lack awareness of their interests and strengths, implying that they may choose careers that are not aligned with their interests. Given that there is very little provision for career guidance in low-cost schools, students choose careers with imperfect information, especially from socio-economically disadvantaged households. Typically, these students are also at risk of starting to work at an early age due to financial constraints and not being fully aware of the returns to education. At the same time, parents and society influence students by pushing them in one direction or another, with certain occupations being well respected and desired, such as working as a teacher or a civil servant, and others degraded. Further, strong social norms restrict women's career choices defining women as primarily responsible for domestic responsibilities and discouraging young women from pursuing a career objective. They tend to lack inspiration and aspirations for a career

[5] We have received the relevant official approvals from the competent authorities.

objective due to a lack of role models and may set up their priors accepting the prime responsibility for the household.

CEP will address these problems with a variety of **inputs**. As visualized in the second row, facilitators leading the CEP sessions address these problems in various ways. In the initial sessions, the facilitators encourage students to identify their interests and strengths and understand the value of human capital formation while exploring various career options, often in small groups. Students are encouraged to consider existing constraints while making plans, and the facilitators support students in preparing an action plan, communicating the plans with their parents, and identifying supporters in their surroundings. At the end of the CEP, students present their plans of action for pursuing a chosen career. All sessions take place in a classroom setup during school hours and are led by relatable facilitators, typically college or vocational training students of the same gender.

As **outputs**, we expect that students know more about their strengths, interests, and constraints, are more aware of returns to education, have more information about different career options, discuss their insights and plans with their peers, consider the facilitators as mentors, and share their plans with their parents or other supporters in their surroundings.

These outputs will occur if our underlying **assumptions** are correct: We assume that students want to know more about themselves, career options, and returns of education, that students value sharing insights and plans with peers, that students can relate to their facilitators, and that students can speak to their parents and/or other people around them about their career plans.

These outputs are then expected to translate into short-term and medium-term **outcomes** to be measured right after the program when students are still in school and about one year later when most students are expected to have made some career choices. In the **short term**, we expect the outputs to enable students to plan to enroll in a course/training, take an entrance exam, and work in the future. Further, we expect that students who participated in the program are more likely to believe in inter-generational mobility. For the **medium term**, we would then expect that students' intentions lead to actual behavioral change, with students who participated in the program being more likely to enroll in a course/training, take an entrance exam, and complete shorter courses for skill formation (such as English or computer courses).

Behind our causal chain from outputs to outcomes, we see **five potential mechanisms** that may jointly explain the changes in outcomes due to the program that we plan to disentangle and test empirically:

Students are more likely to make choices for their professional careers because …

i. CEP provides the students with information on career options that they were previously lacking.
ii. CEP encourages students to have higher aspirations than before.
iii. CEP encourages students to discuss career plans with their peers.
iv. CEP encourages students to get support from their parents and other people around them.
v. CEP facilitators act as mentors and role models for the students.

Given the importance of understanding how the CEP improves young women's career choices, potentially enabling better use of their potential in the labor market, we describe in more detail how we plan to test for these mechanisms empirically in the analysis section.

If these medium-term outcomes occur, we expect to observe **long-term impacts** (beyond the current research project timeline) showing that the CEP can support students in completing their skill formation, joining the labor force, working in a profession of interest, and being economically more empowered (see Table 1).

Table 1: Theory of Change

Supply side reasons for misallocation of human capital, mismatch between jobs and interests/strengths and lack of entry of young women in the labor market

Students face these problems:

- Lack of awareness of own strengths and interests
- Imperfect information on career options and returns to education
- Resource constraints
- Low aspirations influenced by societal expectations and rigid norms
- Lack of role models

If facilitators do this:

- Encourage self-recognition – strengths, interests
- Inform about returns to education
- Career exploration in a classroom set-up
- Are relatable and from similar economic backgrounds
- Encourage communication with parents and identifying supporters

Assumptions:

- Students want to know more about themselves, career options and returns to education.
- Students value sharing insights and plans with peers.
- Students can relate to their facilitators.
- Students can speak to parents and other people around them about their career plans.

Then students can do this:

- Know their strengths, interests and constraints
- Be more aware of returns to education/training
- Have more information about career options
- Discuss insights among peers
- See facilitators as mentors
- Share career plans with parents and identify supporters.

Potential mechanisms behind the expected causal changes in short-term and medium-term outcomes:
(1) obtaining information, (2) raising aspirations, (3) peer effect, (4) family/community, (5) facilitator effect,

In the short-term, It leads to students …

- planning to …
  - enroll in a course/training.
  - take an entrance exam.
  - work in the future.
- believing in inter-generational mobility.

In the medium-term, it additionally leads to students …

- enrolling in a course or a training.
- taking an entrance exam.
- completing shorter courses for skill formation (e. g. English or computer courses).

Resulting in, students … (impact beyond the research project timeline):

- completing skill formation in tertiary education / vocational training.
- joining the labor force and working in a profession of interest.
- being economically empowered.

Outcome variables

We will use our endline and follow-up survey data to measure the outcomes described in our theory of change. For the outcomes, using the endline data, we will examine whether young women in the treatment group compared to young women in the control group are more likely to indicate that they are currently making plans for their professional future, report to select their future profession based on their interests, plan to enroll in a course or training program to pursue their career objective, prepare for competitive entrance exams for college admission or certain work sectors such as banking, and believe that one can have a secure future even if one is from a poor family.

The follow-up survey will then allow us to capture whether young women make career choices, and we will examine whether young women from the treatment group are more likely to take an entrance exam and enroll in a college course or a professional training program.

Primary and secondary outcome variables

It is important to consider the timing of the surveys when categorizing the outcome variables into primary and secondary outcome variables and linking these to specific hypotheses. While the endline survey will take place right after the program implementation when students are still in school, and the follow-up survey will be conducted when students are about five months out of school, actual choices instead of self-reported intentions can only be examined with the follow-up survey data and not with the endline survey data. As we are primarily interested in measuring revealed preferences as opposed to self-reported intentions of students, our primary outcome variables will stem from the follow-up survey, and our secondary outcome variables from both the follow-up and endline survey.

Starting with our **primary outcomes, the revealed preferences**, the follow-up surveys will allow us to measure whether students in the treatment group pursue their career objectives and take action accordingly in the intermediate run.

We hypothesize that the CEP increases the probability in the medium term that a student …

H1: … enrolls in a course or skill formation.

H2: … takes a competitive exam for admission or jobs in certain sectors.

H3: … completes a skilling program (for shorter courses).

H4: … works for pay outside the home.

Continuing with our **secondary outcomes – the self-reported intentions**, we hypothesize that in the short run, the CEP increases the probability that a student …

H5: … plans to enroll in a course or training.

H6: … plans to take an entrance exam.

H7: … plans to work outside the home for pay.

H8: … reports to select a future profession based on interests.

H9: … believes in inter-generational mobility.

We will further explore whether the career exploration program impacts behavioral measures such as self-efficacy and external locus of control. While we expect that the provision of the career guidance program increases self-efficacy and reduces external locus of control in the long-term, how these variables are affected in the short- and medium-term remains an empirical question of particular relevance if the revealed preferences in H1 to H3, such as enrollment, taking a competitive exam or completing a shorter course are impacted by the program.

In the table below, we illustrate how we link our hypotheses to the different outcome variables stated in our hypotheses and theory of change and how we use survey questions for measurement.

Table 2: Hypotheses, primary outcome variables, and measurement

Hypo-theses	Outcome variable	Survey question	Variable coding	Variable type	Survey
H1	Has enrolled in a course	What are you currently doing? Answer options: 1) I am enrolled in a course or training 2) Working outside the home 3) Helping in the household 4) Preparing to get married 5) Preparing for job qualifying exams 6) Other	Equal to 1 if respondent selected “I am enrolled in a course or training” and 0 otherwise	Binary	Follow-up
H2	Has taken a competitive exam	Have you ever taken a competitive exam? Answer options: 1) Yes 2) No	Equal to 1 if respondent selected “Yes” and 0 otherwise	Binary	Follow-up
H3	Has completed a short skilling course	Have you completed any course in the last 3 months? Answer options: 1) Yes 2) No	Equal to 1 if respondent selected “No” and 0 otherwise	Binary	Follow-up

Hypo-theses	Outcome variable	Survey question	Variable coding	Variable type	Survey
H4	Works for pay outside the house	Are you currently working for pay outside the house? Answer options: 1) Yes 2) No	Equal to 1 if respondent selected "Yes" and 0 otherwise	Binary	Follow-up

Table 3: Hypotheses, secondary outcome variables, and measurement

Hypo-theses	Outcome variable	Survey question	Variable coding	Variable type	Survey
H5	Plans to enroll in a course	What are you planning to do after 12th? (select one) Answer options: 1) No plans2) Course or training 3) Work to earn money 4) Help in the household 5) Get married 5) Prepare for exam for further studies 6) Prepare for job qualifying exam 7) Other Other than <<previously selected plan>> do you have any other plans? Yes No What else are you planning to do after 12th? Same answer options except for the previously chosen one	Equal to 1 if respondent selected "Enroll for a course" as first or second plan and 0 otherwise.	Binary	Endline
H6	Plans to take a competitive exam		Equal to 1 if respondent selected "prepare for admission or job qualifying exam" as first or second plan and 0 otherwise.	Binary	Endline
H7	Plans to work for pay in the future	In the future, do you see yourself working to earn money? Answer options: 1) No 2) Rather no 3) Rather yes 4) Yes	Equal to 1 if respondent selected "Yes" or "Rather yes" and 0 otherwise	Binary	Endline
H8	Selects future profession based on interest	Which factor is the most important for you when choosing the work you would want to do?	Equal to 1 if respondent selects "of my interest" as primary or secondary criterion and 0 otherwise.	Binary	Endline Follow-up survey

Hypo-theses	Outcome variable	Survey question	Variable coding	Variable type	Survey
		In your opinion, what is the most important criterion to consider while choosing your job or profession? (select one) Answer options: 1) Easy to get a job 2) Of my interest 3) Nearby 4) Stable 5) Well-paid 6) What my parents/in-laws would like 7) What my friends say 8) I am good at it 9) I know a lot about it 10) A job in which I can grow professionally Apart from <<previously selected criterion>>, do you find any other factor important? Answer options: 1) Yes 2) No Which other factor do you find important to choose the work you would want to do? Same answer options as above (except for the previously chosen one)			
H9	Believes one can have a secure future even if one is from a poor family	Sameera/Sameer is very poor. Her/his father is a labourer. Therefore, it would be very difficult for her to get well-paid work. [Randomly selected, 50% of students in a school, will see this statement with Sameera and 50% will see this statement about Sameer.] Answer options: 1) Strongly agree 2) Agree, 3) Disagree 4) Strongly disagree	Equal to 1 if respondent strongly agrees or agrees.	Binary	Endline

Table 4: Exploratory variables

Outcome variables	Survey question	Variable coding	Variable type	Survey
external locus of control	To what extent do you agree or disagree with the following sentences. 1) Whether at school or in my private life: What I do is determined by others. 2) Fate often gets in the way of my plans Answer options: 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree	Score of external locus of control is the unweighted mean of items 1 and 2.	Continuous	Endline Follow-up
self-efficacy	I can rely on my own abilities in difficult situations. Answer options: 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree	Equal to 1 if student agrees or strongly agrees to the statement and 0 otherwise.	Continuous	Endline Follow-up

Potential unintended impacts

Individuals experience satisfaction when aspirations are met and disappointment otherwise, as theorized by Genicot and Ray (2017, 2020). As existing research has shown theoretically and empirically, having too high aspirations can demotivate individuals and make them worse off (Genicot and Ray 2017, 2020; McKenzie et al. 2022, Janzen et al. 2017, Bloem 2021, Ross 2019). Our pilot data suggests that this does not seem to happen with the CEP. For instance, we observe that individuals in the treatment group are more likely to state that they aim to complete a bachelor's than individuals in the control group. However, their probability of stating that they aim to complete a master's is indistinguishable from the control group. The CEP is designed to support students in making realistic plans for their future, considering their constraints. Given the importance of understanding any negative effects which could be prevented in the future, we are going to empirically test for this type of discouragement effect using the variables self-efficacy and external locus of control in the endline surveys as well as self-reported overall satisfaction with life in the endline and follow-up survey to assess any potential unintended effects on the well-being of the students.

Beyond this potential negative effect on student's well-being, our follow-up survey is also designed to collect data on potential backlash at home that students may experience when they choose to pursue their career objectives and how such choices may affect their relationships with their close family

members or their expectations regarding their personal life including expectations related to marriage.[6]

Identification strategy

Methodologically, we exploit the school—level random assignment to treatment and control groups. We examine the intention to treat impact of the intervention by comparing students in schools assigned to participate in the CEP with those who were not. Given the random assignment to the treatment and control group, only the treatment can explain the differences in the outcome variables, excluding any other confounders.

Intervention

We collaborate with the local school authorities for school access and a local NGO, Alohomora Education Foundation, for the intervention. Based on this collaboration, official approval from local authorities was issued for carrying out the project in 45 secondary schools through the Inclusion Economics India Centre research organization and the non-government organization Alohomora Education Foundation (AEF). AEF has offered CEPs to 11th and 12th graders for the last seven years. The career exploration program consists of 15 sessions, each lasting 40-45 minutes, and will be implemented in the classrooms during school hours. Considering the school calendar and all other school activities, suitable timings will be agreed upon with the head teachers. The program aims to guide and encourage students to identify their strengths, interests, and talents; consider their barriers and constraints; identify people who can support them; identify suitable careers; and make plans to pursue a career path. The program is designed to set realistic expectations based on constraints, for example, financial constraints, academic ability, or regulations[7] specific to the education system in India. The facilitators encourage students in a structured manner to consider the situation they are living in and the financial constraints they are facing. Facilitators are also trained to be transparent about the competitiveness of specific career paths, such as becoming civil servants. The facilitators motivate students to have a backup plan if they choose very competitive or risky career paths.

Facilitators are a few years older than the participating students, typically enrolled in tertiary education, but from a similar community as the participating students. This helps the students to relate to the facilitators. In addition to the in-person meetings, facilitators will also use WhatsApp groups to

[6] One challenge related to asking students about their relationships with their parents is that almost all students in our pilots always answered questions very positively about their families related to a very strong social norm in India that one is not supposed to say anything negative about close family members. As such, more than 90% of the students in our pilot sample reported that their family would support them with their career choices independent of which career they choose despite of being mostly from households in which no woman incl. sisters and sisters-in-law have worked in the last two years.

[7] For instance, students in 11th and 12th grade study in one of three streams (Arts, Commerce, Science) which determines which courses in college they can enroll in.

interact with the students and for the students to interact with each other. Further, facilitators will have bilateral conversations with the students. AEF provides online materials on various career paths for all participating students, and students create their own personal and password-protected profiles in one of the first sessions. In the appendix, we summarize the program activities and content.

To reduce survey attrition, we collect multiple types of contact information, including phone numbers, email addresses, and social media handles from the students and contact numbers of immediate family members and close friends.

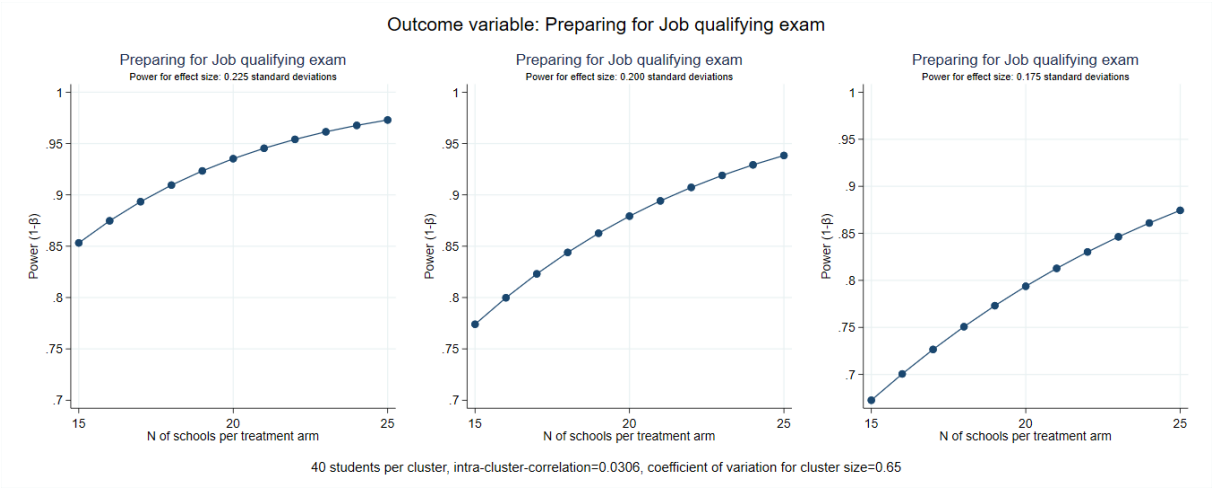
Sample and statistical power

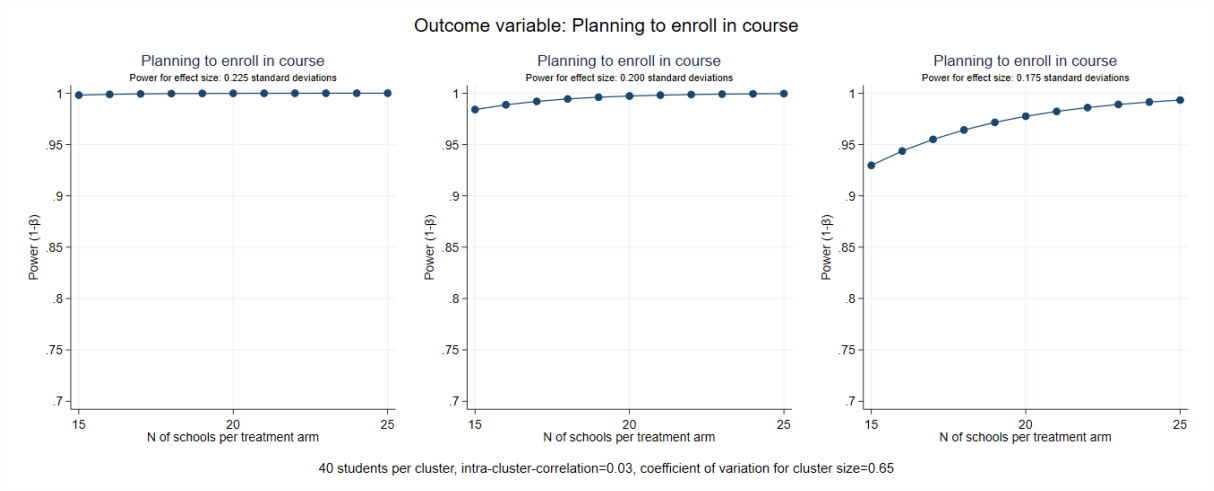
The unit of analysis is the individual student, but the treatment is assigned at the school level stratified by geographic area. Our partner organization will implement the program in 22 out of 45 schools in a classroom setting for all classrooms of 12th graders working with one classroom per program batch. In each school, we expect four to five 12th-grade classrooms with about 30-60 students each and a regular attendance rate of 75% corresponding to what has been reported on absenteeism in schools in a similar setting (Baruah 2022).

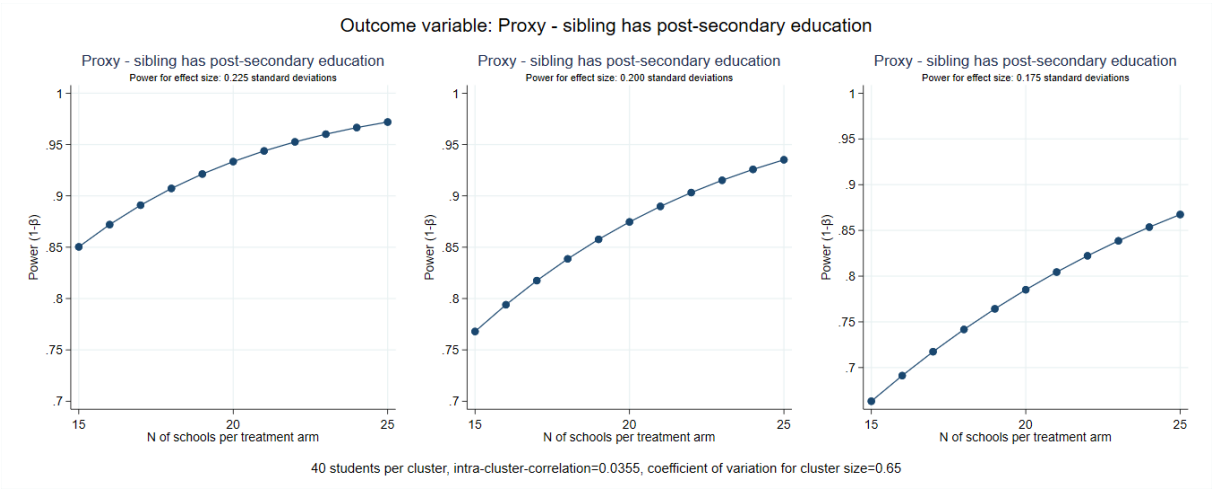
Figure 1 shows the power calculations using the pilot endline data of 11th graders in similar secondary schools (n=459) for two variables, suggesting that we need at least 20 schools each in the treatment group and the control group for a statistical power of 80% for a detectable effect size of 0.2 standard deviations. The outcome variables used here for the power calculations are the share of students currently preparing for a competitive exam and the share of students planning to enroll in a course. According to our power calculation, we would have the statistical power to detect the impact if, for instance, the share of students currently preparing for a competitive exam increases from 16% to 23% and if the share of students planning to enroll in a course increase from 84% to 89%.

For the students in our pilot survey, currently preparing for a competitive exam is the only revealed preference measure. We can approximate revealed preference by also considering the data on the siblings of the surveyed students who are from the same neighborhood and probably went to the same or a very similar school. To obtain an idea of the variation and intra-cluster correlation of revealed preferences for higher education, we code a dummy variable equal to 1 if a sibling is reported to have completed either vocational training or tertiary education and present the power calculations for such a variable below as an approximation for the students in our sample for whom we expect to observe similar variation in their revealed preferences.

Figure 1: Power calculations







4. Data

Pilot data collection

Corresponding to our timeline, we initially conducted qualitative interviews with students, CEP alumnae, and CEP facilitators. The qualitative interviews help us understand the barriers and

constraints in choosing a career from the student's point of view, how the facilitators from similar socio-economic backgrounds overcame these barriers, and how the program's alumnae benefitted from the program.

We completed a pilot project with 11th graders from two girls' secondary schools in the same city. We initially worked with classroom-level treatment assignment but subsequently decided to use school-level treatment assignment to minimize potential spill-over effects. For the pilot, in each school, two randomly selected classrooms were assigned to the treatment group and the remaining classrooms were assigned to the control group. We completed the baseline data collection in the beginning of December 2022, our partner organization implemented the CEP in randomly selected classrooms from December 2022 to the end of January, and we completed the pilot endline data collection at the beginning of February. We have used the pilot to test the survey instruments, the data collection procedures, and the practical implementation of the program. It also allowed us to obtain relevant statistics for our power calculations, such as mean values, standard deviations, and intra-cluster correlations for outcome variables.

Planned data collection

We will start the main field experiment by incorporating our insights and learnings from the pilot. The experiment will consist of a baseline, program implementation in treatment schools, an endline, and a follow-up data collection of 12th graders. The baseline and endline data collection will be conducted during school hours in a room within the school premises, a classroom, or another type of room, such as the library or a multi-purpose hall. The follow-up data collection will be conducted over the phone after the 12th graders have finished school. For the in-person surveys, including the baseline and endline, first, an instructor will briefly explain the structure of the survey, the different types of answer formats, and non-trivial questions. Afterward, the students enter their responses to survey questions on tablets themselves. Field assistants in the room help students to complete the survey and answer any question whenever needed. All students are familiar with using tablets and will start the survey by completing the informed consent.

In the baseline survey, we will collect basic socio-economic information unlikely to change over time, such as household size, number of siblings, father's and mother's employment status, household gender norms, ownership of assets, smartphone usage etc. Further, to conduct robustness checks concerning potential social desirability bias in self-reported responses, we also use statements to calculate a social desirability score using a short version of the social desirability scale following Reynolds (1982) and Crowne and Marlowe (1960).

The endline and follow-up surveys will then focus on students' career plans, career choices, and behavioral measures, including locus of control and self-efficacy, as listed above in the description of outcome variables. The variables collected in the baseline allow us to include various covariates to improve the precision of the estimates.

The assignment of schools to the treatment and the control group will be stratified at the district level. After the program implementation, we will collect the endline data right after the program completion in Fall 2023 and follow-up data in Fall 2024 when the students are just entering new courses and/or training programs.

We will have three teams conducting data collection simultaneously, each consisting of one research associate and five to six surveyors who assist the students while they respond to the survey questions on the tablets. This setup will allow us to complete each phase of data collection within 30 school days.

Variations from the intended sample size

We are not concerned about deviations from the intended sample size during the baseline or endline as these will be conducted in the classrooms and during school hours. The above-stated sample size of approximately 6000 students accounts for the usual school absence rates of 25% in the type of school we are working in. If the absence rate is exceptionally high on the day of data collection, one team will return to the school to survey students absent on the survey day. However, students will be out of school when we conduct the follow-up survey in Fall 2024. We plan to ensure high participation rates by collecting various types of contact details and by providing small monetary incentives to appreciate the students' time spent answering the survey.

Further, we will update the contact information about six months after the endline and six months before the follow-up survey. Despite these efforts, a small number of students will be unavailable during the follow-up survey due to migration for marriage or work. We will reach them over the phone and, as needed, use the other contact information they provided during the baseline and endline. Given that our target group is from underserved communities and in a very big city with many different career opportunities, we expect the probability of migration for work to be relatively low. Migration for marriage, for example, to the village of the husband or to another major city, remains a concern which is alleviated by the fact that the average age of marriage in this context is 21.8 years old. In comparison, our survey respondents will be 18-19 years old during the follow-up survey. Taking email addresses, social media handles from the students, and contact numbers of immediate family members and close friends further helps alleviate this concern.

5. Analysis

Statistical methods and models

We will start our analysis with **balance checks** comparing the baseline variables for individuals in treatment schools and control schools using the following specification with covariates X at the baseline (t=0) of respondent i from school s regressed on the treatment status that varies at the school level and district fixed effects γ_d since we stratify at the district level with standard errors clustered at the school level:

$$X_{0isd} = \alpha + \beta T_s + \gamma_d + \varepsilon_{is} \qquad (1)$$

Next, we will estimate the **intention to treat effect** regressing the outcomes of interest measured for individual i in school s on the treatment status and district fixed effects comparing those assigned to the treatment to those not assigned to the treatment. Standard errors are clustered at the school level.

$$Y_{is} = \alpha + \beta_1 T_s + \delta X_{0is} + \gamma_s + \varepsilon_{is} \qquad (2)$$

We consider the program's impact statistically significant if the p-value is smaller than 0.05 and report the result as suggestive evidence if the p-value is smaller than 0.1.

We will correct the p-values for multiple-hypothesis testing. We will empirically test for treatment effects for the four primary outcomes using the follow-up survey data. Therefore, we need to correct for multiple hypothesis testing using the Anderson q-value approach with False Discovery Rate as a testing concept which indicates the share of false null hypothesis rejections. This approach allows for clustered randomization, different types of regression estimation, and different sets of control variables. It provides the adjusted p-values using the code developed by Michael Anderson, and the methods are described in detail in Anderson (2008).

Heterogeneous effects

We will examine heterogeneous treatment effects by patriarchal gender norms, mobility, and belief in meritocracy as measured in the baseline. Below, we describe our hypotheses regarding heterogeneous

treatment effects and provide information on the variation in that variable that we consider a source of heterogeneity using our pilot data:

i. Students from families with **less rigid patriarchal gender norms** benefit more from the CEP than those with more patriarchal gender norms.

Girls who face less patriarchal gender norms at home will be better able to benefit from the CEP because it is easier for them to benefit from various opportunities which may require a certain level of mobility or interaction with the opposite gender. In our pilot data, 60 percent of the respondents reported that no woman in their family has worked outside the house in the last two years.

ii. More **mobile students** (i.e., those who go to more places on their own) benefit more from the CEP than less mobile students.

For more mobile students, it will be easier to explore and benefit from the variety of career options around them, as many career opportunities are not available in their neighborhood but require public transport. In our pilot data, 11 percent of the students cannot go to any of the places, 38 percent are allowed to go to one place without permission, 15 percent of the students are allowed to go to two places without permission, and 35% of the students are allowed to go to all three places without permissions.

iii. Students with **meritocratic beliefs** benefit more from the CEP than those who do not.

We hypothesize that students with meritocratic beliefs are more likely to put effort into pursuing a career as they believe that their effort will be rewarded. In our pilot data, 86 percent of the students believe in meritocracy, and 14 percent do not.

iv. Students who **update their beliefs** from baseline to endline on gender roles are expected to benefit more from the program.

We measure students' beliefs about gender roles by asking students to what extent they agree that preference should be given to men when jobs are scarce in the baseline and that women should only work if it is financially needed in the endline. We also elicit students' norm perception using Krupka and Weber (2013), where students are asked about their beliefs about another randomly selected student's view on these statements in the classroom. This is an incentivized task in the baseline and

endline. If the student's answer matches what the other randomly selected student in the classroom says, the student gets an additional small gift.

Further, we plan to examine the heterogeneous effects of the program for academically highly or low-performing students according to their recent grades in exams. We do not have any directional predictions for these heterogeneous effects but plan to explore them in our analysis.

Mechanisms

There could be different mechanisms explaining the program's effectiveness in supporting young women's continuation of skill formation and career choices, addressing the imperfect allocation of human capital in the labor market, with many young women not entering the labor market and/or choosing career paths neglecting their strengths and interests. We conduct a mediation analysis following the approach developed by Heckman, Pinto, Savelyev (2013), and Heckman and Pinto (2015) to measure the relevance of potential channels for the treatment effect.[8]

This mediation analysis enables us to decompose how much of the program impact can be attributed to different observable mechanisms called mediators. As briefly described in our theory of change, we focus on five mediators that can explain the impact on the main outcome variables. These mediators focus on information, aspirations, peer effects, family/community support, and facilitator effects as the relevant channels for the impact. With this method, we will decompose the impact into six shares, of which five will be attributed to these expected mediators, and one share will remain as the unexplained remainder of the treatment effect.

Assuming that the outcome can be expressed as a linear combination of the k=5 mediators M_i^k and a vector of baseline demographic characteristics X_{0is}, we can write the baseline equation as:

$$Y_{is}=\alpha + \beta^{residual}T_{cs} + \sum_k \theta^k M_i^k + \delta X_{0is} + \gamma_s + \varepsilon_{is} \qquad (3)$$

The effect that the mediation analysis cannot capture is captured by the coefficient $\beta^{residual}$, and the share of the treatment effect explained by combined changes in the mediators that we can observe is $1 - \beta^{residual}/\beta$. We further estimate the effects of the treatment on the respective mediators such that:

$$M_{is}^k= \alpha_o^k + \beta_1^k T_{is} + \delta_1^k X_{0is} + \gamma_{0_s} + \nu_{is} \qquad (4)$$

[8] For the here followed application of the mediation analysis, see Resnjanski et al. (forthcoming, p.24ff).

Therefore, the kth mediator's contribution to the share of the overall treatment effect is the direct effect of the mediator, θ^k, weighted by the proportion of the treatment effect on the mediator and the total treatment effect, that is:[9]

$$Share\ M_k = \theta^k \beta_1^k / \beta_1 \qquad (5)$$

The analysis will therefore allow us to understand to what extent the overall impact on career choices is driven by one of these five mechanisms, each addressing the underlying problems of the imperfect human capital allocation in the labor market:

i. **Obtaining information:** Students get the opportunity to explore different career options, understanding the value of education and the pathway to achieving their career objectives. This helps increase the likelihood of continuing education and diversifying their career options while considering financial constraints. We measure this by asking students which sector they know most about and to state up to three professions in that sector to capture their familiarity with that sector. Evidence for this mechanism would imply that CEP improves students' career choices by alleviating imperfect information on career options.

ii. **Raising aspirations:** As students explore different careers independently and jointly with their peers and are exposed to young women as facilitators a few years ahead of them who have already made relevant career choices, they may have higher educational and income aspirations. We measure this by asking students for their aspired level of education and salary expectations for their first job.

iii. **Peer effects:** Given the program implementation in the classroom, students are encouraged to discuss their career plans with their peers and explore different career options jointly. These interactions among students increase the likelihood of students attending sessions, exploring different careers, and reflecting on them. It can also foster teamwork and fill the gaps in their knowledge as students are expected to share complementary information with each other. We measure this potential peer effect in two ways. First, we explore if "talking to peers" is a relevant source of information for their choices in the future, and if talking about future is a topic of discussion among their peers. Table 5 shows the two questions and the relevant coding for these questions. Second, having elicited students' friends in the baseline, we count the number of friends who "plan to continue" (endline) or "continue" (follow-up) skill formation. Evidence for this mechanism would imply that CEP affects students' career choices through

[9] This estimated effect is an upper bound of the mediator effect, since the mediation effect relies on the assumption that the error term including any unobserved mediators are orthogonal to the included mediators.

peer effects and that students in their networks can more effectively process and use information than individual students.

iv. **Family/community support:** CEP encourages students to share their career objectives with family members and/or people in their community to identify potential supporters. This addresses the potential lack of social support in pursuing a career objective. We measure this by asking students whether they get any relevant information from a family member or someone in their community as well as whether they get support from a family member or someone in their community to achieve their professional objectives. Evidence for this mechanism would imply that CEP improves students' career choices by encouraging them to obtain support from their families and or people in their community.

v. **Facilitator effects:** The facilitators leading the CEP sessions are from similar backgrounds and schools but have already made career decisions. They may act as a role model, helping students to update their beliefs about their ability to pursue certain career paths. We ask students whether there is someone around them who inspires them whom they know personally, with one of the answer options referring to the CEP facilitator. Evidence for this mechanism would imply that CEP improves students' career choices by providing a role model.

We will collect data for these mediators during the endline and follow-up surveys with the survey questions and the coding of the variables for our analysis listed in Table 5. The variables will be included in equations (3) and (4) as described in the column "Variable coding". For the mechanisms, "raising aspirations" and "peer effects", we have defined two variables that we expect to potentially capture this mechanism, and we will measure the relevance of the hypothesized mechanism separately for each of these variables.

Table 5: Survey questions used for all the mechanisms

Mechanism	Survey question	Variable coding	Variable type	Survey
Obtaining information	Write up to three careers that you think are good for you. First career: Second career: Third career: *For each entered career, we ask then:* How informed are you about this career? Answer options: 1) Not informed 2) Little informed	We code a binary variable equal to 1 if a student indicates "completely informed" for at least one career and 0 otherwise.	Binary	Endline Follow-up

Mechanism	Survey question	Variable coding	Variable type	Survey
	3) Somewhat informed 4) Completely informed			
Raising aspirations 1	What is the highest level of education you want to finish? 1) 12th pass 2) Short skills training certificate (less than 6 months) 3) Vocational/Diploma (more than 6 months) 4) Bachelor's 5) Master's and above	We code binary variables for each option chosen and use in the regression the lowest education level ("12th pass") as reference category.	Binary	Endline Follow-up
Raising aspirations 2	What are your salary expectations for your first work or job? 1) Less than ₹10,000 per month 2) ₹10,000–₹19,999 per month 3) ₹20,000–₹29,999 per month 4) ₹30,000–₹39,999 per month 5) ₹40,000–₹49,999 per month 6) ₹50,000 per month and more	We code binary variables for each option chosen and use in the regression the lowest salary expectation ("Less than ₹10,000 per month") as reference category.	Binary	Endline Follow-up
Peer effects 1	Regarding what you would be doing after 12th, where do you get relevant information from? [Select most important and second-most important source.] 1) Internet 2) From peers/other students 3) From family members/relatives 4) From teachers in my school 5) Career guidance program in my school a few weeks ago 6) Acquaintances 7) Other What do you and your friends talk most frequently about? [select most important and second most-important]	We code a binary variable equal to 1 if respondent selects "Talking to peers" in the first question or "work or job" in the second question and 0 otherwise.	Binary	Endline

Mechanism	Survey question	Variable coding	Variable type	Survey
	1) Travel 2) Movies 3) Hobbies 4) Work or job 5) Other people 6) About school 7) Other			
Peer effects 2	Name 5 students in your grade that you talk with the most. [Select from the list of students] *Notes: This is taken from the baseline.*	We code a variable indicating the number of friends (0-5) who plan to continue (endline) or continue (follow-up) skill formation	Integer	Endline Follow-up
Family/community support	Regarding what you would be doing after 12th, where do you get relevant information from? [Select most important and second-most important source.] 1) Internet 2) From peers/other students 3) From family members/relatives 4) From teachers in my school 5) Career guidance program in my school a few weeks ago 6) Acquaintances 7) Other Is there someone in your family supporting you in what you want to do in the future? Is there someone outside your family supporting you in what you want to do in the future? Answer options for both questions: 1) No, there is no one. 2) Yes, there is a woman. 3) Yes, there is a man.	We code a binary variable equal to 1 if respondent selected "From family members/relatives" or "Acquaintances" or in the following two questions "Yes, there is a man/woman" and 0 otherwise.	Binary	Endline Follow-up

Mechanism	Survey question	Variable coding	Variable type	Survey
Facilitator effects	Is there someone around you, that inspires you whom you know personally? 1) No, there isn't anyone. 2) Yes, this person stays in my house. 3) Yes, this person is my teacher (tuition or school). 4) Yes, this person is a career counsellor visiting my school. 5) Other, please specify.	We code a binary variable equal to 1 if respondent selected "Yes, this person is a career counsellor visiting my school" and 0 otherwise	Binary	Endline

Dealing with missing values

Given our survey design, we will allow a "do not know" or a "cannot say" response when such a response is plausible and when it is needed for ethical considerations. If there is a missing value in a variable included in our regression analysis, we will drop the specific observation for that regression analysis. If the number of missing variables for specific covariates is too high, we will impute the values using predicted values from multiple imputations.

Limitations

As described above, we can only measure revealed preferences in our follow-up survey, and in the endline, we must stick to self-reported intentions. Further, our pilot data shows that many students have too high aspirations, which appears unrealistic.

Another challenge linked to the self-reporting bias is that students in our target group start with relatively high aspirations, which sometimes appear unrealistic. For instance, a very high share of students reported in our pilot data that they would be allowed to work 25 kilometers away from their homes, even though in the last two years, most also reported that no women were working outside the home. This observation of unrealistic aspirations presents a challenge in our setting.

6. Interpreting results

We design this randomized controlled trial with three objectives. First, we aim to understand the impact of the CEP on students in our target group, i.e., adolescents from disadvantaged communities living in large cities in India. The empirical analysis may shed light on how female students especially benefit from participating in such a program and investigate which groups benefit from the program and which groups remain left behind. To the best of our knowledge, this question still needs to be answered in the existing literature across development economics and education research. Second, we aim to understand how young women benefit from such a program. Third, taking both these

learnings together, we aim to understand whether specific changes need to be made in the program to improve its effectiveness in the future prior to operating at scale in the context we are working in and beyond. Apart from our partner organization Alohomora Education Foundation, we are working closely with representatives of local authorities for activities in low-cost schools interested in a scale-up of such a program once the impacts are well understood. The generated evidence here can be used to access funding for scaling up the program in the future. The local authorities are keen to understand what students do after secondary school and how they can be better supported while making career choices but, at the same time, lack the capacity to track students or implement the CEP for all students. Hence, our results will also inform philanthropic organizations to financially facilitate potential scale-up in the future.

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8. Administrative information

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Appendix

A.1 Careershala program description

The Careershala program envisions empowering young adults (15-21yrs) to pursue interest-aligned learning and career opportunities. It aims to equip students with the skills, knowledge, and mindsets and a clear plan that enables them to feel confident about working towards a career they choose. It enables students to explore career options aligned with their interests, experience them through tasks, and prepare a plan of action toward reaching their career goals.

Careershala takes a student through a **5-step process** leading them to make a choice aligned with their interests and skills.

1. **Sochna shuru karo (start to think) -** Thinking early about making a choice lets one take charge of their career pathway, giving time at hand to explore.
2. **Khul ke socho (think openly) -** Not limiting yourself to a few conventional careers, but thinking openly, for, e.g., thinking of the healthcare sector instead of just being a doctor, opens one up to a variety of options to choose from.
3. **Khud ko pehchano (understand yourself) -** Experiencing different types of work, getting feedback, and reflecting on those experiences to find which careers align more with yourself
4. **Karo jeet ki tayyari (prepare to succeed) -** Creating a plan of action to reach the chosen goal, including the research of where to go and how and steps to prepare oneself for the same
5. **Apni raah chuno (thrive in your chosen path) -** taking continuous action- reflection cycles to upskill and succeed in the work

www.careershala.co is a comprehensive virtual portal designed to provide students with a wholesome learning experience about careers. It hosts career information in the form of courses. Every course comprises of -

Career expert video – a short video of a contextual role model sharing their experience about the work done in the career, skills required on the job, and how to prepare for it

1. Career path - Broad pathway consisting of courses, internships, and jobs to reach an avg salary of Rs. 30k-40k
2. Quizzes - Every learning content is followed by a small quiz (4-5 objective questions) to check students' understanding and create an opportunity for the student to recollect their learning

3. Ghar ka challenge - A home-based activity designed to give students an experience of how the work in a career would look like. It is based on the core skills required for the job.
4. Reflection form - Set of detailed reflective questions to help students synthesize their experience of the career explored.

Apart from the 50+ career courses currently hosted on the portal, courses on introducing the concept of Careershala, creating a plan of action, and entrepreneurial skills like communicating your idea, planning your finances, navigating uncertainties, etc., are also present to help students build the necessary mindset. These videos have been taken from interviews of high-achieving personalities like Sudha Murthy, Ruma Devi, and Rohit Thakral, who are initially from financially constrained backgrounds similar to the students participating in the program.

The Careershala portal allows students to pursue independent exploration at their own pace after registration.

A.2 Details of intervention implementation

Table A1: Detailed description of intervention

Serial number	What?	Description
1	Write the name	Careershala Program by Alohomora Education Foundation
2	Describe rationale	Secondary school students lack information about the variety of career options and are influenced by parental and societal expectations. This is particularly concerning for girls who in context with rigid gender norms often do not enter the labor market. Alohomora has developed this program to inform students about available career options, encourage students to identify their interests and strengths, decide on suitable career objectives given the barriers and constraints they face, and prepare and follow a plan of action.
3	Materials	Printouts, task sheets, videos, power point presentations, games, WhatsApp groups.
4	Procedures	Step 1: Baseline survey in schools in the classrooms of 12th graders from 45 schools. Step 2: Randomly selected schools are assigned to have CEP sessions implemented. Step 3: Alohomora plans with the head teacher the schedule for the sessions. Step 5: Facilitators conduct the sessions in the classrooms of treatment group schools. In total there are 15-16 sessions. The program ends with a presentation of the plan of action by the students. Throughout the program facilitators also engage the students in WhatsApp groups, bilateral conversations and home visits.
5	Intervention provider	Facilitators - Female college students, typically pursuing correspondence studies and working part-time. - From disadvantaged communities - Similar economic background as participating students. - Trained for several weeks by AEF to carry out the facilitation in the program. - Always use positive narration, always respectful and patient with students.
6	Mode of delivery	- Group sessions – about 40 students are assigned to each group. - One facilitator leads the session, and a second facilitator supports the session in the background.

Serial number	What?	Description
7	Location	45 secondary schools in a large city in Northern India with primarily female students from socio-economically weaker sections of the society
8	Number of sessions, schedule, duration, intensity, dose	15 sessions and some tasks to complete at home during a duration of approximately 6-8 weeks with 3/2 sessions per week.
9	Was the intervention personalized or adapted?	No