LEAD LEVERAGING EVIDENCE FOR ACCESS AND DEVELOPMENT
KREA UNIVERSITY

STATISTICAL INSTITUTE
UNITY IN DIVERSITY

IMPROVING WOMEN'S WORK OPPORTUNITIES

THE ROLE OF SKILLS IN A DIGITAL WORLD

Preliminary report on skilling study

Digital Platforms and Women's Economic Empowerment (DP-WEE)

March 2025

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Contents

1 Executive Summary

- This study aims to assess the role of both hard skills and a combination of hard skills with digital and communication skills in women's work opportunities and career progression.

- It evaluates vocational training (VT) and digital and communication skills training (VTP) programs in the beauty sector for women, which include classroom and on-the-job training components in Delhi and Bangalore.

- This report summarises the impact of skill training on women's economic and social well-being for 1,857 candidates - 679 in Delhi and 1,178 in Bangalore - over a 10 month period, using a randomized-control study design.

- Women's engagement in self-employment work more than doubled among VTP participants, highlighting the effectiveness of digital skills in fostering entrepreneurship. Women in VTP work around 7.7 more days compared to those who were not enrolled into any training program (control group).

- Women in the VTP group were more likely to be employed in the beauty sector compared to the control group. The likelihood of self-employment in the beauty sector also increased for VTP participants.

- On average, VTP participants had 44 more hours of work over 3 months in the beauty sector, compared to the control group, due to the training program.

- VTP participants saw an increase of INR 2,666 in their total income over 90 days in the beauty sector compared to the control group. Those engaged in self-employment within the beauty sector experienced an earnings boost of INR 1,918 (over the previous 90 days), indicating that digital skills provided a competitive advantage in leveraging online marketing and networking opportunities.

- Women who participated in VTP training were 45% more likely to use social media for procuring work compared to those in the control group.
- Women in the VT group were more likely to register on service-oriented platforms.
- Women in the VTP group took up employment through gig-work platforms after the training, compared to the control group. They worked nearly one additional day (0.74 days) on gig platforms compared to those in the control group.
- VTP participants reported higher life satisfaction, confidence and mobility compared to VT and control.
- The findings suggest that integrating digital skills into vocational training enhances employment in preferred sectors. Skilling institutions should consider expanding digital literacy components in skill development programs to enhance women's participation in the workforce.

2 Introduction

Despite rapid economic growth since the 1990s, declining fertility (World Bank, various years), and an increase in education of women in India over the past three decades, the workforce participation rate for women aged 25-60 in the country continues to remain low at 27% (Periodic Labor Force Survey (PLFS) 2021). In fact, it has shown a precipitous and persistent decline since 1987 in rural India (Afridi, Dinkelman and Mahajan 2018) from 55% in 1987 to 28% in 2021 (National Sample Surveys and PLFS 2021). In urban India it has remained stagnant at 25% for the last three decades (Klasen and Pieters 2015). On the other hand, male employment rates in this age group stand at 94 percent in rural and 91 percent in urban India.

Previous studies highlight the role of various factors in explaining both the decline in rural India and the stagnation in urban India - low market returns to women's work, along with lack of 'good' jobs for women vs the higher returns to home production as their education increases (Afridi, Dinkelman and Mahajan 2018; Afridi, Bishnu and Mahajan 2019), falling demand for women's labor in agriculture due to mechanization and lack of suitable alternative jobs for women which can be done near home (Afridi, Bishnu and Mahajan 2022), limited information networks (Calvo-Armengol and Jackson 2004; Mortensen and Vishwanath 1994; Afridi, Dhillon, Roy and Sanwan 2022), and restrictive social norms (Field et al. 2016a; Field et al. 2016b). One aspect that remains underexplored is the role of skills in explaining the persistent gender gap in employment.

In 2020, around 15% women and 28% men aged 18-45 had undergone formal or informal vocational training. The ITES sector formed the largest field where 27% women and 29% men underwent training. The other fields were quite distinct due to the perceived gender stereotypes in the labor market. For instance, textiles, beauty, office related clerical work and health were the top fields in which women acquired skills. Similarly for men these included, electronics, mechanical and civil engineering, and automotive. A large literature examines the effects of vocational training programs on labor market outcomes and usually finds only

modest effects (Card et al. 2010, 2018). Recent work has thus focused on bundling multiple skills so that skill complementarities can be exploited. For instance, Acevedo et al. (2020); Adhvaryu et al. (2021), Barrera-Osorio et al. (2021) and Osman and Speer (2022) focus on imparting soft skills along with hard skills.

To address the low skill acquisition by women in India, our study aims to assess the role of both hard skills and a combination of hard skills with digital and communication skills for women's work opportunities and career progression. Low awareness about digital technology and related skills which are important in the recent world to gain access to job opportunities in the labor market can constrain women's employment. For instance, the Multiple Indicator Survey in India shows that in 2021, 31% women aged 15-24 could find, download and install software in urban India, whereas 37.3% men in the same demographic group could do so.

Specifically, the study aims to provide a five-month vocational training program in the beauty sector which includes classroom and on-the-job training components. In another treatment, along with the hard skills, we additionally provide Project-Based Experiential Learning (PBEL) that incorporates digital skills as the most important component along with communication, organizational and management skills, and basic financial literacy. Our collaborating partner for providing the skills training is LabourNet, a job and skilling enterprise with an all-India presence.[1] There are 5 skill training centers in Bangalore and 2 in Delhi of LabourNet where training would be provided to only women candidates.

Our primary objective is to study the impact of the intervention on employment status, earnings, nature of work and confidence in navigating the digital world. In addition, we also aim to study the effect of the intervention on women's decision-making power and psycho-social well-being.

[1]LabourNet is a for-profit social enterprise, established in 2011 with a focus on linking unemployed individuals with work opportunities and under-employed individuals with skilling opportunities, covering 28 states and union territories and a presence in 800+ schools, 5000+ training sites and 100+ training centers currently. LabourNetâs three pronged engine integrates social and business impact by bridging the gaps in education, employment and entrepreneurship. Among the 1 million livelihoods generated by LabourNet over these years, about 45% of the beneficiaries are women.

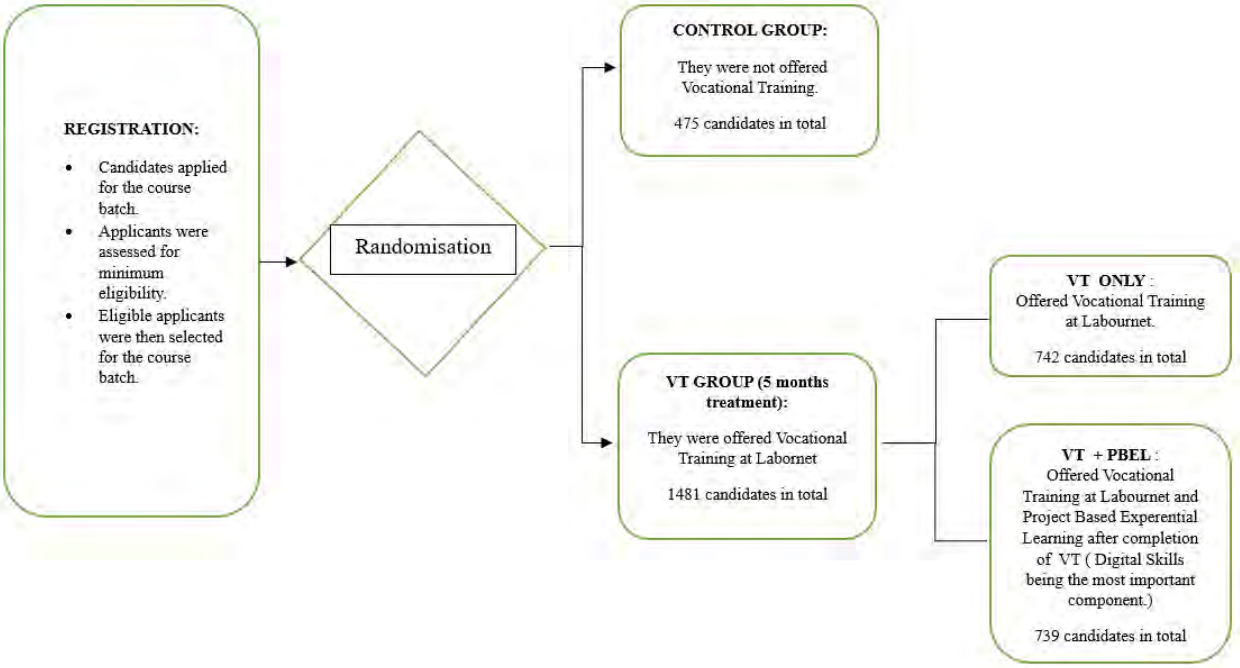
3 Study Design

We design the intervention in two cities – Delhi and Bangalore – to analyse the role of both hard skills and a combination of hard skills with digital and communication skills. We provide a vocational training program in the beauty sector which includes classroom learning and on-the-job training components. We have two treatment arms – one provides only this vocational training program and another additionally provides Project-Based Experiential Learning (PBEL) along with the vocational training program. PBEL incorporates digital skills as the most important component along with communication, organizational and management skills, basic financial literacy, and health & well-being skills.

The training was provided in collaboration with our skilling partner, Labournet Services. Labournet provides work-integrated job training to informal sector workers across sectors like manufacturing, construction, leather, beauty, data entry, tailoring, among others, across the country.

The study employs a randomized controlled trial (RCT) design. We randomize the treatment at the individual level in each batch. To recruit the trainees, our skilling partner advertised through various channels and through their alumni network about training opportunities. Interested individuals filled out a basic form that records age, education, marital status, religion, caste, address and phone number. Applicants were assessed for minimum eligibility. Thereafter, within each training batch, registered individuals were randomly split into three groups: technical skills training, technical and PBEL (mainly digital skills), or control (no training). We mobilized approximately 40 women in each training batch. Of these, 30 were offered training, and the remaining 10 formed a part of the control group. Further, out of those invited for training, half were offered only the vocational training component, and the other half were offered both vocational and PBEL (digital skills). Figure 1 illustrates the study design.

Figure 1: Study Design



4 Methodology and Timeline

4.1 Timeline

The intervention training was provided in batches starting in June 2023 till April 2024 with the aim of getting baseline data for approximately 1800 female respondents aged 18-40. The baseline data collection was completed in May 2024 and finally consisted of 1956 respondents - 689 women from Delhi and 1267 from Bangalore.

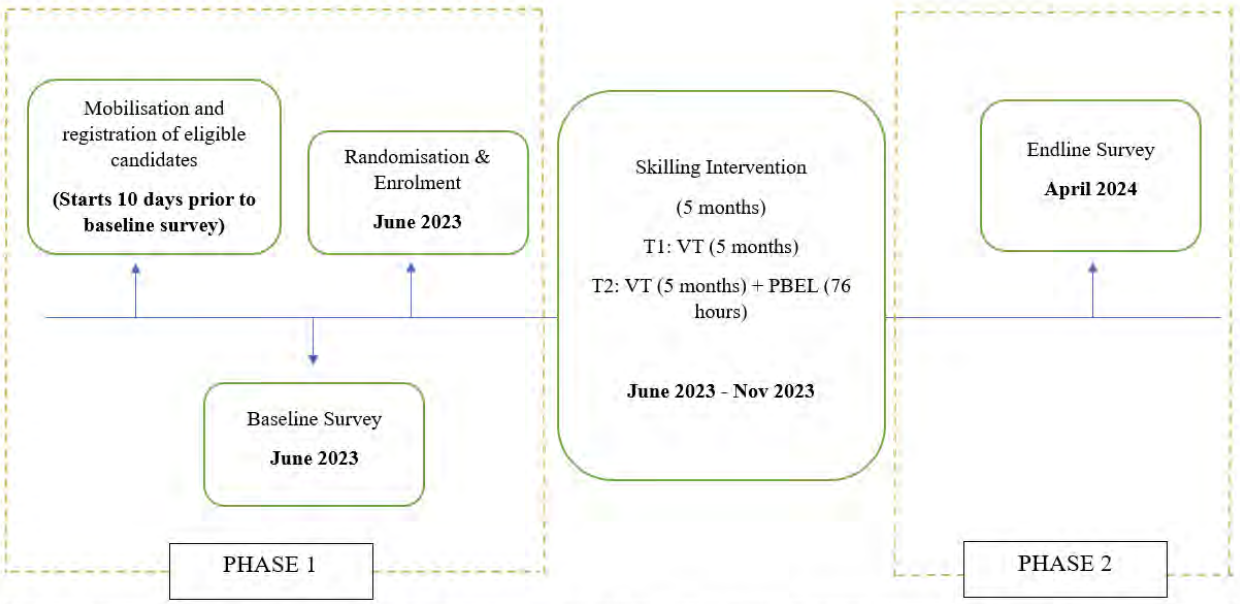
Figure 2 illustrates, for example, the planned intervention and survey timeline for a cohort or a batch formed in June 2023. The mobilisation and registration of eligible candidates start approximately 10 days prior to baseline survey, following which randomisation and enrolment of candidates assigned to the treatment groups are finalised in June 2023. The baseline survey for this batch is completed before their training begins. Candidates assigned to the treatment arms in this batch go through 5 months of intervention training through June – November, 2023. During this period, candidates assigned to VTP also finish the additional 76 hours of PBEL course. The endline survey for a batch is conducted approximately 10 months after the batch in which the candidates were mobilised. In this case, the endline surveys started in April 2024 – 10 months after June 2023.

4.2 Methodology

We analyze how our training programs affected women's employment, the number of days and hours they worked, and their earnings, both in general and within the beauty sector. We compare these outcomes between the control group and those who participated in VT, as well as between the control group and those in the VTP program. Additionally, we assess whether there are differences in these outcomes between the two treatment groups.

Since participants were randomly assigned to different groups, we can be confident that any differences in outcomes are due to the training programs rather than other factors. This eliminates the risk of selection bias and ensures a fair comparison.

Figure 2: Timeline



The above figure provides an illustrative example using the cohorts starting in June 2023. We mobilized and enrolled candidates across multiple batches from June 2023 – April 2024 across the two cities of Delhi and Bangalore. Delhi had two training centers while Bangalore had four training centers where the training was conducted. The endline survey was conducted approximately 9 months after the training started for each batch.

To get more precise estimates, we also use a statistical technique called instrumental variable estimation. This approach accounts for the fact that not all women who were assigned to the training programs completed them. Our results, therefore, reflect the actual impact of training on those who completed it.

We also take into account factors that might influence employment outcomes, such as differences between training centers, seasonal variations in job availability, and individual characteristics. Specifically, we control for household characteristics like wealth, caste, religion, whether a woman is the head of the household, and the education level of the household head. We also consider personal factors such as marital status, education level, age, mobile and internet usage, and previous participation in training programs. By accounting for these factors, we ensure that our results provide a clear and accurate picture of the impact of the training programs.

The coefficients in our estimates measure the impact of skill training, that is, how much the training affected key outcomes such as employment probability, hours worked, earnings,

and other outcomes. These coefficients indicate the average difference in the outcome (e.g., employment probability, days worked, earnings) between individuals in the VT/VTP group and those in the control group after accounting for baseline characteristics.

For instance, a positive value of the coefficient means that the training program increased the likelihood of employment or work hours compared to the control group. For example, if the coefficient for VTP on employment probability is 4, it means that women in the VTP group were 4 percentage points more likely to be employed than those in the control group.[2]

[2]Our impact estimates are interpreted as follows. Suppose the training program increases the probability of employment by 4 percentage points, it could imply that the control group has 8% of women working in the beauty sector and the training group has 12% of women working in the beauty sector. Thus the difference in employment between the two groups is 4 percentage points (12% – 8%), i.e. women in the training group were 4 percentage points more likely to work in the beauty sector than those in the control group.

5 Sample and Data

A total of 1,956 women applicants were recruited, with 742 randomly assigned to VT, 739 to VTP (treatment), and 475 to the control group which was not enrolled into a training program by LN. Randomization of applicants into the three groups ensured that the key demographic and socio-economic characteristics of the participants were similar and comparable (on average) between each of the three groups (Table 1). Asset score is an index of assets owned by the candidate's household. About 30% of candidates were SC/ST (column 4 of Table 1), more than 47% were OBC and 87% were Hindu. About 15% of candidates belonged to female headed households. The average age of the candidate was 24.3 years and over 45% had completed 12th class. 42.7% report being married. Less than 9% had any previous skill training. Employment rates were low at 16.5%. Eyeballing the averages across the three groups shows that the women in these groups had similar or comparable characteristics at baseline and before randomization into treatment and control groups.[3]

Our study is conducted across 5 centres in Bangalore and 2 centres in Delhi for the hard skills in the beauty sector only. The location of these centres is given in Figures 3 and 4, respectively.

The training center details, along with addresses, are provided in Table 2 for Bangalore and Table 3 for Delhi.

[3]Our findings reported in Section 7 are based on a sample of 1,857 (of these women).

Table 1: **Household and individual characteristics (at baseline)**

	(1) Control		(2) VT		(3) VTP		(4) Total	
	N	**Mean**	**N**	**Mean**	**N**	**Mean**	**N**	**Mean**
Household assets score	475	0.016	742	0.036	739	-0.047	1956	0.000
ST and SC	475	0.318	742	0.310	739	0.299	1956	0.308
OBC	475	0.455	742	0.466	739	0.490	1956	0.472
Hindu	475	0.882	742	0.881	739	0.850	1956	0.870
Female head of HH	475	0.135	742	0.150	739	0.156	1956	0.148
HH head: 12th Pass/diploma	475	0.149	742	0.158	739	0.156	1956	0.155
HH head: graduate & above/diploma	475	0.143	742	0.159	739	0.120	1956	0.141
Number of under-5 children in HH	475	0.225	742	0.256	739	0.280	1956	0.258
Age of eligible women	475	24.453	742	24.299	739	24.318	1956	24.344
12th Pass/diploma	475	0.457	742	0.468	739	0.448	1956	0.458
Graduate & above/diploma	475	0.208	742	0.218	739	0.199	1956	0.209
Currently married	475	0.425	742	0.414	739	0.441	1956	0.427
Mobile phone/internet usage intensity (hours per day)	475	3.034	742	3.137	739	2.974	1956	3.051
Previous skilling	475	0.091	742	0.077	739	0.091	1956	0.085
Currently employed	475	0.179	742	0.146	739	0.175	1956	0.165
Hours worked (90 days)	475	66.244	742	50.692	739	58.670	1956	57.483
Earnings (90 days) (INR)	475	4262.540	742	3340.746	739	3923.473	1956	3784.758

Notes: This table presents the average baseline household and candidate characteristics in the control group (C) in **column 1**, the vocational training (VT) group in **column 2**, the vocation training along with project based digital learning group (VTP) in **column 3**, and average baseline characteristics of full sample in **column 4**. For each group (and full sample) we report the sample size (N) and average (Mean or Proportion) characteristics at baseline – Household (HH) asset ownership, caste (proportion SC, ST or OBC), religion (proportion Hindu), number of children in the household, and household head demographics are measured for the household; and age (years), education (proportion 12th pass or graduate), marital status (proportion currently married), phone/internet usage, previous skilling, current employment status, total hours worked (previous 90 days) and total earnings (previous 90 days) in INR are calculated for the individual candidate at the time of baseline survey. The calculation of hours and earnings is unconditional on employment i.e., for our calculation, we have assigned 0 hours worked and 0 earnings for those who were unemployed in the previous 90 days.

Figure 3: Training Centres in Bangalore

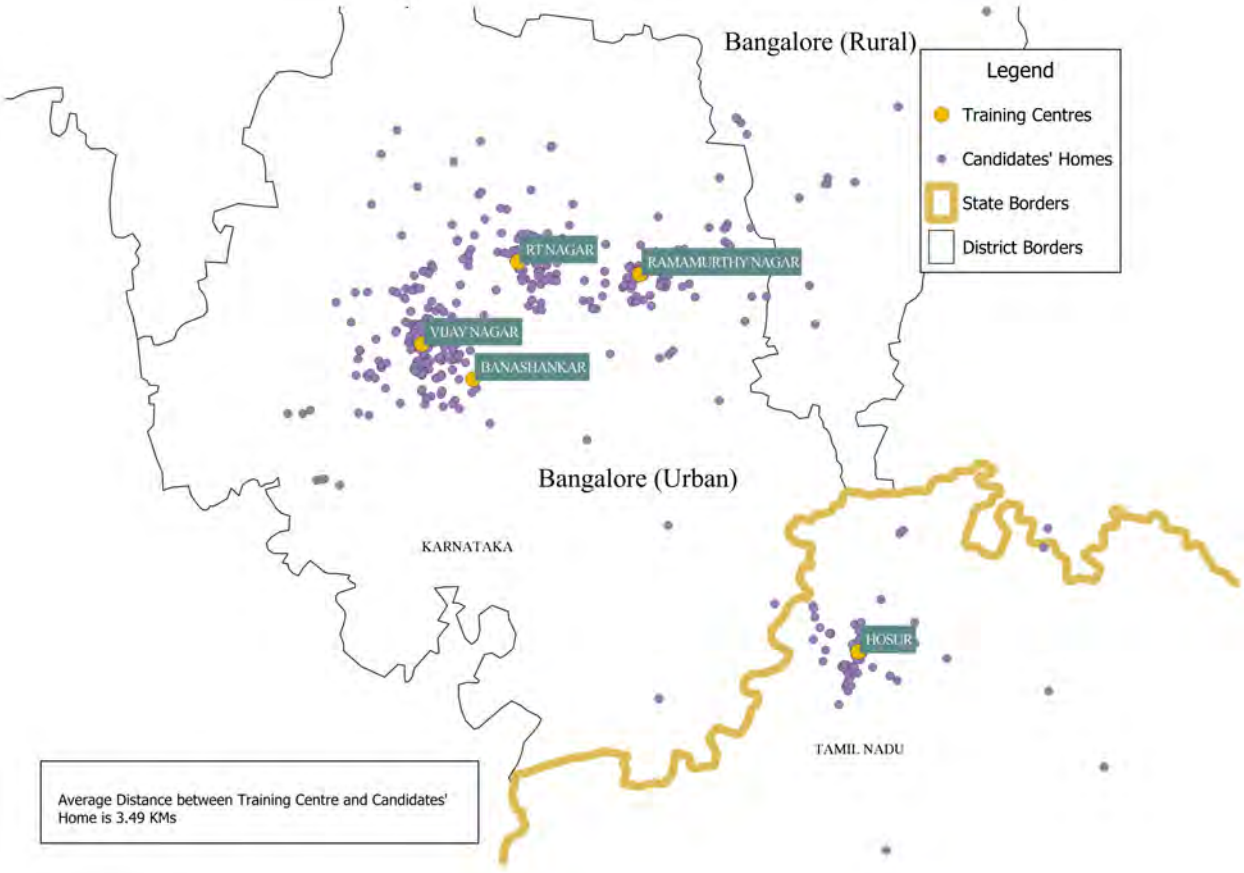


Figure 4: Training Centres in Delhi

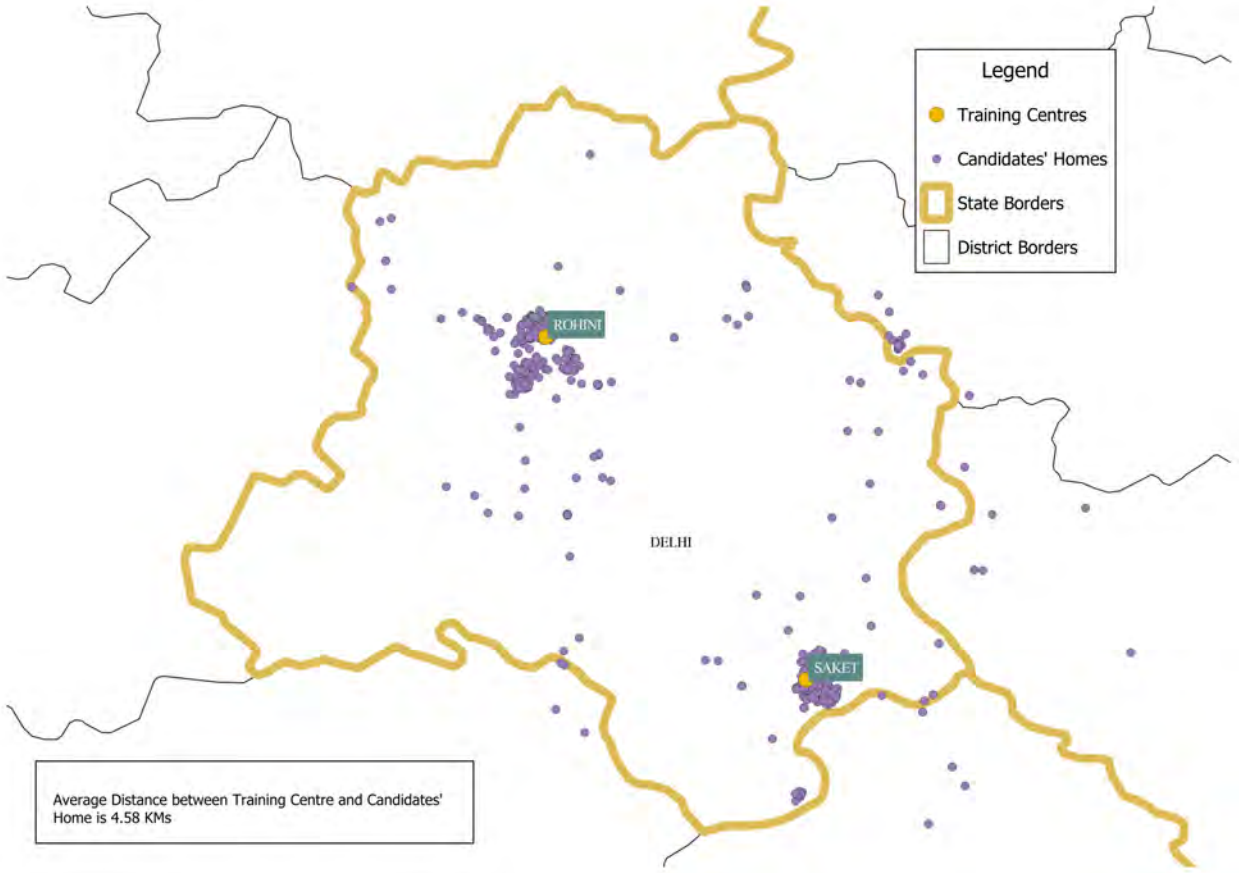


Table 2: Bangalore: Center Details

Center Name	**Centre Address**	**Mobilisation Area**
Loreal-Accenture - Vijay Nagar - 1	Madhuvans #182, 2nd main road , 2nd cross, Moodlupalya main road Canara bank colony Bangalore 560072	Vijay Nagar, Nagarbhavi, Sunkadakatte, Rajajinagar
RtNagar-Loreal-Center	#15, 2ND CROSS, Nurpatunga extn. near post office, R T Nagar Bangalore - 560032	Hebbal, Mathikere, RT Nagar, Kaval Bairasandra
Nykaa Bangalore	Plot No.67, first floor,1st cross, Khelkere mani road, Ramamurthy Nagar, Bangalore-560015.	Ramamurthy Nagar, Kalkare, ITI colony, Banaswadi, NRI colony, Ramamurthy Nagar Slum Area
HUL Hosur	No.4/10, Ramana SriNagar, NGO's Colony, Bagalur Road, Hosur, Krishnagiri District, Tamil Nadu â 635109	Zuzuwadi, Peddaelachagiri, Sipcot Ph 1, Thillai NagarKCC Nagar, Anand Nagar, Ramanashree Nagar, Avalapalli HUDCO, Thotagiri, Mookandapalli, Kothagondapalli, Muneeswara Nagar, Anna Nagar, Ramnagar, Shanthi Nagar East, Kumudepalli, Old Rayakottah HUDCO, Gokul Nagar, Mathigiri, Chittanapalli, Nallur, Bagalur, Achettipalli, Kelamangalam, Nallur Agraharam, Shoolagiri , Berigai, Belagondapalli, Kelavarapalli

Table 3: Delhi: Center Details

Center Name	**Centre Address**	**Mobilisation Area**
Loreal Rohini (Accenture)	1st Floor main market road shri laxmi sweets karala village begumpur pin code -110086	Rajiv Nagar, Jain Nagar, Hanuman Chowk, Rama Bihar, Bharat Bihar, Rohini Sector-21&22, Pooth, Budh Bihar, Kiradi, Avantika, Sarala, Kanjhwal, Sukvir Nagar, Rani Khera, Mubarkpur Daba, Tamator Colony, Shiv Bihar, Trisen Bihar, Sultanpuri, Mangolpuri, Rohini Sector–1-2-3, Vijya Bihar, Begumpur Village, Uttsav Bihar, Majari, Prem Nagar, .Nangly
Loreal Saket (Regular)	A-7 Raju park near sunder lal hospital devli road khanpur pin code -110062	Khanpur, Madangiri, Sangam Vihar, Batra, Baddarpur, Sarita Bihar, Holly Chowk, Tigiri, Chattarpur

6 Skilling Programs

6.1 Vocational Training (VT)

The Vocational Training (VT) course provided sector-specific training in beauty services, including classroom instruction and on-the-job training. The course was delivered encompassing face-to-face classes (F2F), self-learning (SL), projects, and on-the-job-training or OJT.

Table 4 gives a breakdown of the course content covered in VT along with the hours dedicated to each module. Students would typically go through training via the different delivery modes like F2F classes, self-learning and projects for around 2 months. After these 2 months, they would start their on-the-job training or OJT for the next 3 months. Appendix Figures A.1, A.2, A.3, A.4 and A.5 are some snippets of the VT curriculum taught to the candidates.

6.2 Vocational Training Plus (VTP)

In addition to VT, an additional 76 hours of Project-Based Experiential Learning (PBEL) was included, which covered digital literacy, communication, financial literacy, organisational, and business management skills.

The details on the PBEL course are as follows (in decreasing order of hours dedicated to the module):

1. Digital skills (28 hours): Students would acquire proficiency in using technology, focusing on mobile devices, social media, and digital safety, making them capable of developing a digital portfolio to showcase their competencies.

2. Communication skills (21.5 hours): Students would learn effective communication skills required to excel at the workplace, including verbal, non-verbal and written communication techniques, especially focused on providing exceptional customer service

Table 4: VT course content

Module Name	**F2F (Hrs)**	**SL (Hrs)**	**Projects (Hrs)**	**Total**
Introduction to the course*	1	0.03	0	1.03
Introduction to industry and job role	5	0.5	2	7.5
Health and safety at workplace	6	0.5	2	8.5
Maintaining the work area	4	0.5	2	6.5
Manicure services	8	1	2	11
Pedicure services	8	1	2	11
Depilation services - bleaching	4	0.03	0	4.03
Depilation services - threading	12	1	2	15
Depilation services - waxing	8	1	2	11
Skin anatomy	4	1	0	5
Basic skin care treatments	8	1	0	9
Skin care treatments - facials	12	1	2	15
Body massage services	12	1	2	15
Basic hair care treatments	12	0.03	0	12.03
Introduction to hair styling	8	0.5	0	8.5
Simple mehendi designs	8	0.5	2	10.5
Basic saree draping	8	0.5	2	10.5
Basic makeup services - products and tools	4	0.5	2	6.5
Basic makeup services - client prep	4	0.25	0	4.25
Basic makeup services - application	8	0.5	2	10.5
Basic makeup services - clean up and aftercare	4	0.25	0	4.25
Reflection, feedback and learning	2	0	0	2
Total	**150**	**13**	**26**	**189**

Notes: F2F - Face to Face; SL - Self-learning
*The session on *Introduction to the course* is conducted virtually. The rest of the sessions are F2F.

through productive communication strategies.

3. Organizational skills (11 hours): Designed to enhance students' organizational skills along with professionalism, this module focused on goal setting, professional behaviour and conduct, and work ethics.

4. Financial literacy skills (6.5 hours): Students would learn about savings, budgeting, and personal finance management under this module.

5. Management skills (4.5 hours): Under this module, students would learn techniques for prioritising tasks, setting goals, planning and scheduling, delegating, and managing interruptions and distractions.

6. Health and well-being skills (4.5 hours): This module focuses on teaching students how to present themselves professionally and maintain good personal care habits.

Table 5 gives a breakdown of hours devoted to each module of the VTP course content. Appendix Figures A.6, A.7, A.8, and A.9 are some snippets of the PBEL curriculum.

Table 5: VTP course content (in addition to VT content in Table 4)

Module Name	**F2F (Hrs)**	**SL (Hrs)**	**Projects (Hrs)**	**Total**
Digital Skills for Lifelong Learning	2	0.5	2	4.5
Being Digitally Smart - Know your Phone	4	0.5	2	6.5
Being Digitally Smart - Social Media Presence	4	0.5	2	6.5
Digital Safety	2	0.5	0	2.5
Portfolio Building for Digilocker	8	0	0	8
Communication Skills	6	0.5	2	8.5
Body Language	2	0.5	2	4.5
Customer Service	6	0.5	2	8.5
Professional Behaviour and Conduct	4	0.5	2	6.5
Work Ethics	2	0.5	2	4.5
Time Management	2	0.5	2	4.5
Personal Finance - Savings and Budgets	4	0.5	2	6.5
Personal Grooming and Hygeine	2	0.5	2	4.5
Total	48	6	22	76

7 Initial Findings

7.1 Impact on overall employment

Figure 5 shows the probability of current employment in self-employed work along with the total number of days worked in the last 90 days in **any sector**.

- Women's engagement in self-employment work has increased by 9.9 percentage points (pp) among VTP participants, highlighting the effectiveness of digital skills in fostering entrepreneurship. At baseline (before training), 7.4% of VTP participants were self-employed as opposed to 13.7% now (after training). Among those in the control group, 6.4% at baseline and 9.5% at endline reported self-employment. Although the probability of self-employment has increased in both groups, the increase was 9.9 pp higher in the VTP group after taking into account respondents' individual characteristics such as age, education, and household characteristics such as caste and religion.

- The number of days worked is found to be positive and significant for the VTP group. Women in VTP are working around 7.7 days more compared to the control group.

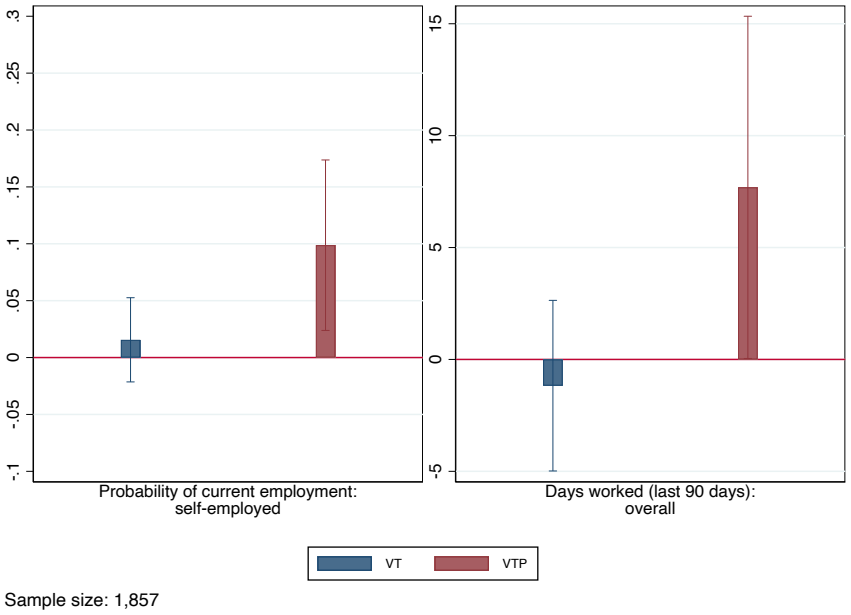
- Though the coefficient is negative for the VT group, the difference between VT and VTP group is statistically significant.

7.2 Impact on employment in beauty sector

Figure 6 shows the probability of currently employed in any work for pay or profit, currently employed in salaried work, daily wage-based work (casual & piece-rate work), and self-employed work in **preferred/beauty sector**.

- Women in the VTP group were 9.3 percentage points (pp) more likely to be employed in the beauty sector compared to the control group. At baseline (before training), only 1.9% of VTP participants reported employment in the beauty sector, which increased

Figure 5: **Probability of being self-employed & number of days worked in the last 90 days (overall)**



Note: The bars represent the difference in mean values for each treatment group relative to control group for outcomes– probability of self-employment and number of days worked in the last 90 days in any work. The lines represent statistical confidence intervals.

to 11.6% at endline (after training). In contrast, among those in the control group, the proportion employed in the beauty sector rose from 2.2% at baseline to 8.2% at endline. Hence, while probability of employment increased in both groups, the increase was 9.3 pp higher in the VTP group (taking into account age, education, and other household characteristics of the candidates).

- The likelihood of self-employment in the beauty sector also increased by 9.3 pp for VTP participants. Less than 1% of VTP participants had reported self-employment in beauty sector before training compared to 6.8% after training. 1.1% and 3.8% of women in the control group were involved in self-employed work in the beauty sector at baseline and endline, respectively. As discussed previously, although the increase in likelihood is also seen in both the groups, the increase is 9.3 pp higher for VTP participants, adjusting for the respondents' individual and household characteristics.

We also look into other primary employment outcomes– total hours worked and total earnings in the last 90 days. Figure 7 presents the impact on total hours worked in the last 90 days for beauty sector.

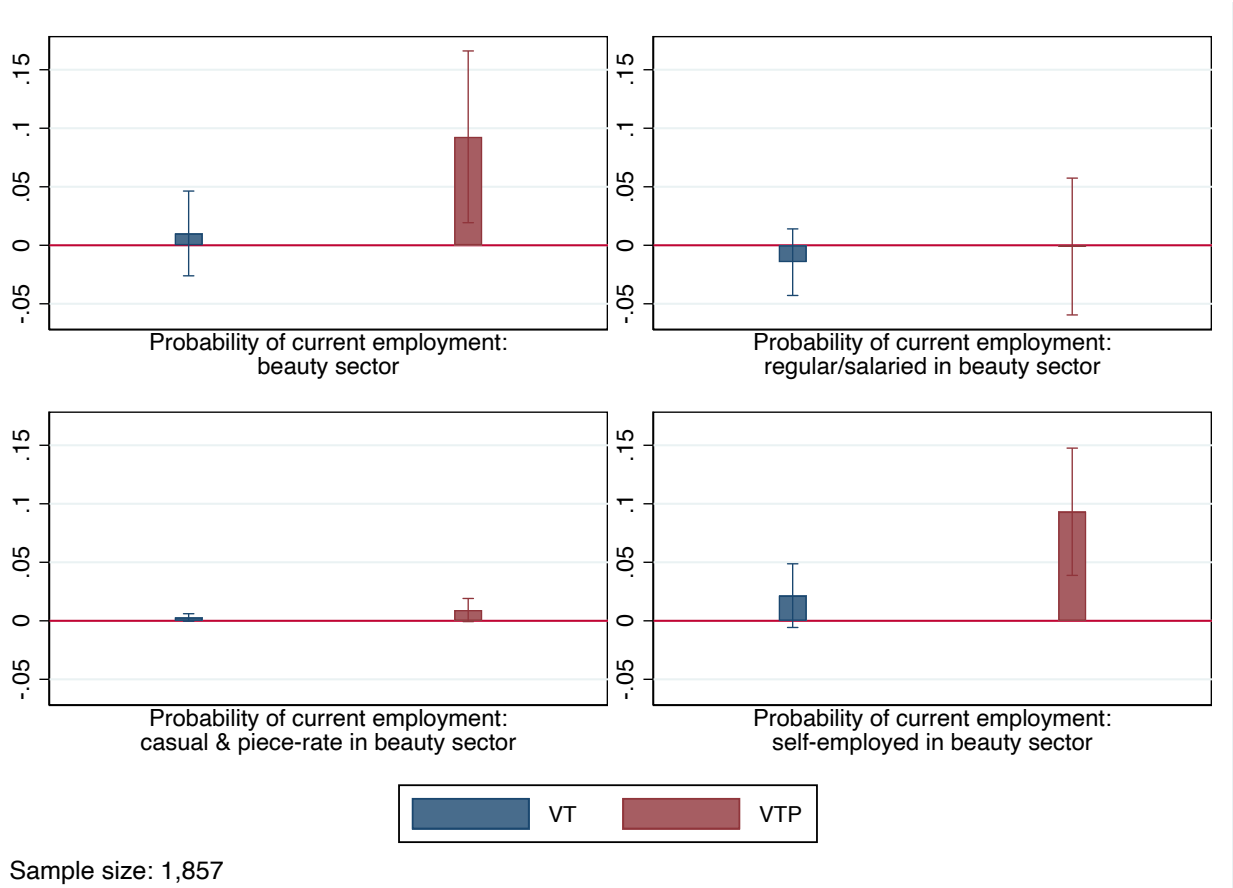
- The total number of hours worked in the beauty sector over the last 90 days increased significantly for VTP participants. On average, they worked 44 more hours compared to the control group.

- This effect was primarily driven by an increase in self-employed hours (21 hours) in the beauty sector for VTP participants.

Figure 8 shows the results for total earnings over the last 90 days for the beauty sector.

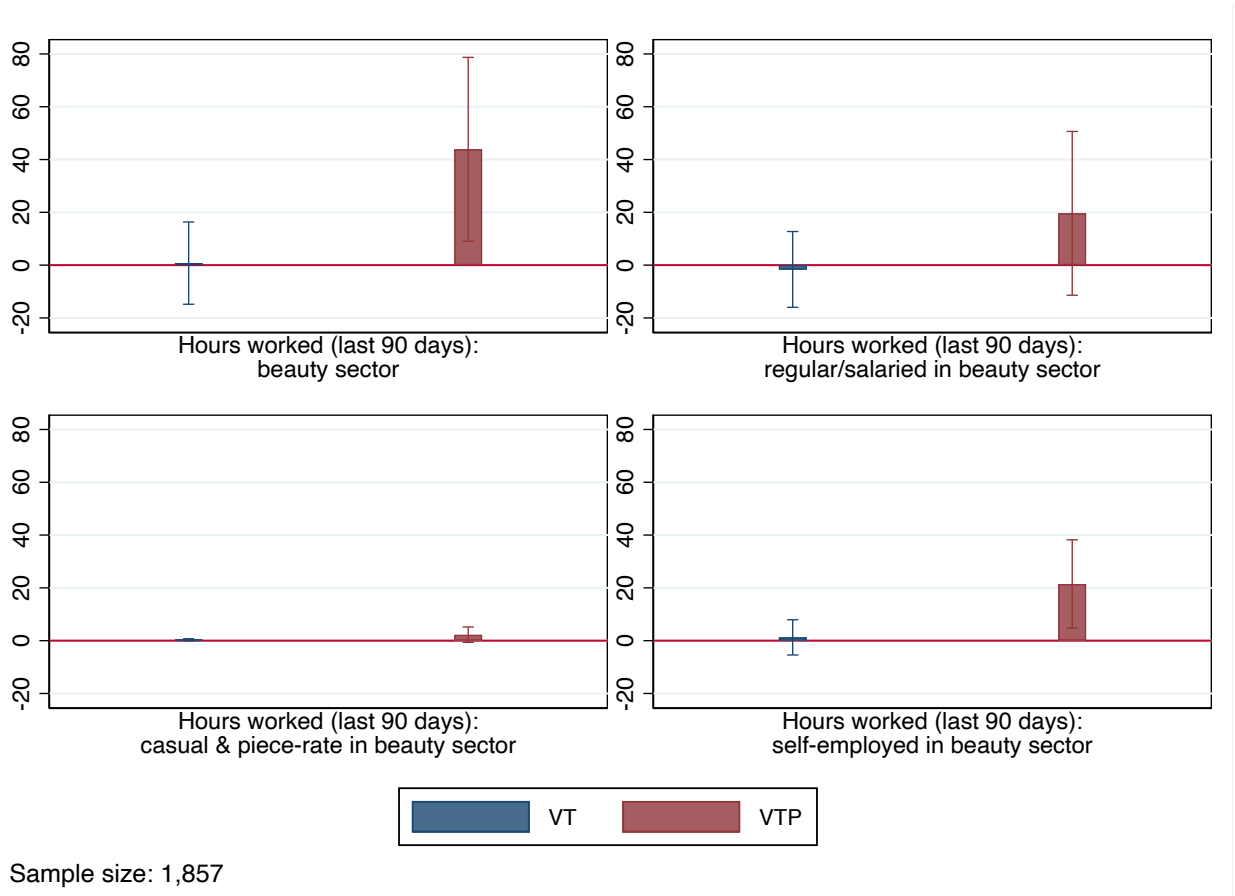
- VTP participants saw an increase of INR 2,666 in their total income over 90 days in the beauty sector compared to the control group.

Figure 6: **Employment in the beauty sector**



Note: The bars represent the difference in mean values for each treatment group relative to control group for outcomes– probability of current employment in any work for pay or profit in beauty sector, and that of current employment in salaried work, casual & piece-rate or daily wage-based work, and self-employed work in beauty sector. The lines represent statistical confidence intervals.

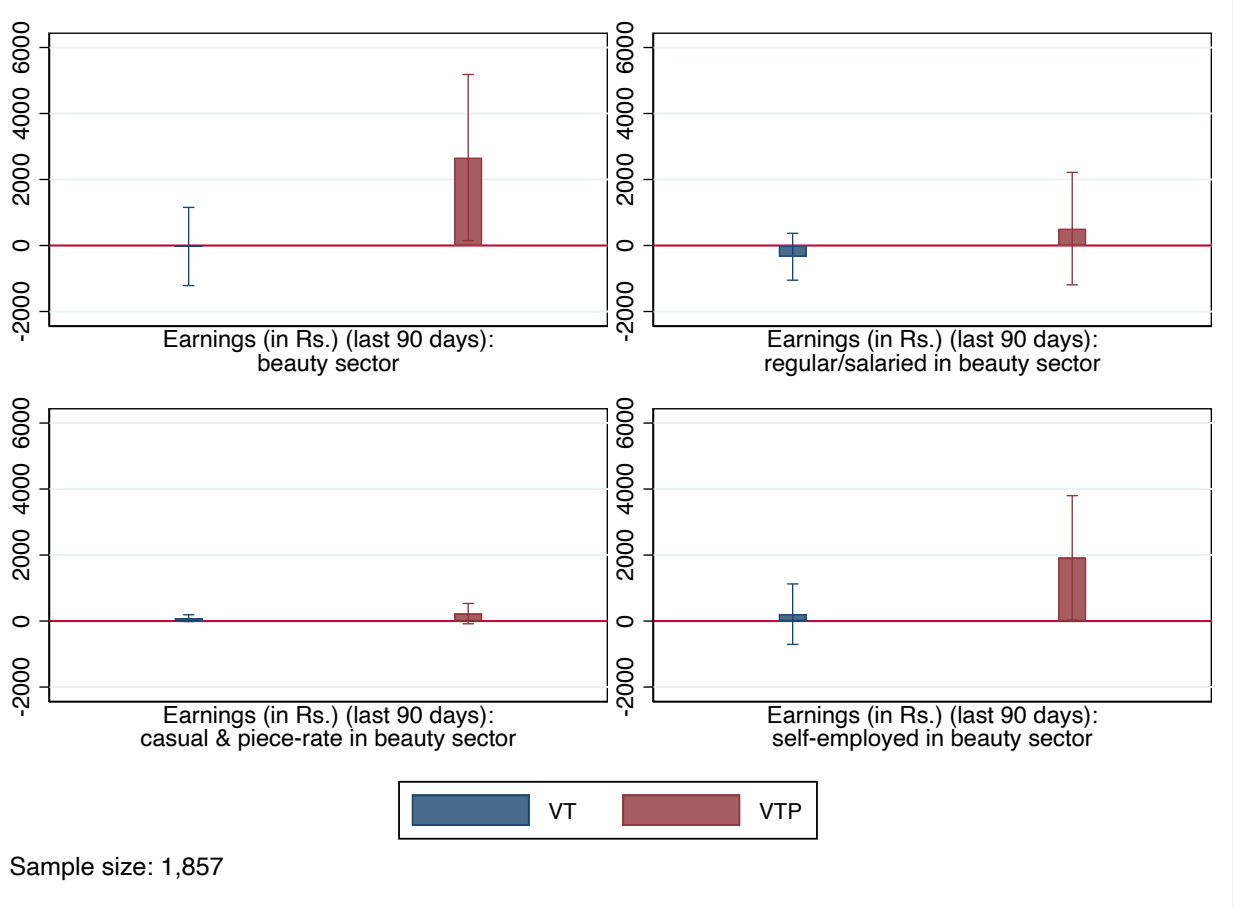
Figure 7: **Hours worked in last 90 days (Beauty Sector)**



Note: The bars represent the difference in mean values for each treatment group relative to control group for outcomes– hours worked in the last 90 days in beauty sector and hours worked in the last 90 days in regular/salaried work, casual & piece-rate work or daily wage-based work, and self-employed work in beauty sector. The lines represent statistical confidence intervals.

- Those engaged in self-employment within the beauty sector experienced an earnings boost of INR 1,918, indicating that digital skills provided a competitive advantage in leveraging online marketing and networking opportunities.

Figure 8: **Earnings in last 90 days (Beauty Sector)**



Note: The bars represent the difference in mean values for each treatment group relative to control group for outcomes– earnings realised in the last 90 days in beauty sector and earnings realised in the last 90 days in regular/salaried work, casual & piece-rate work or daily wage-based work, and self-employed work in beauty sector. The lines represent statistical confidence intervals.

7.3 Impact on employment and work through gig platforms and social media

Figure 9 shows the probability of using social media and gig platforms for work, the likelihood of being registered on service-oriented platforms, and the number of days worked through gig platforms over the reference period of the last 90 days.

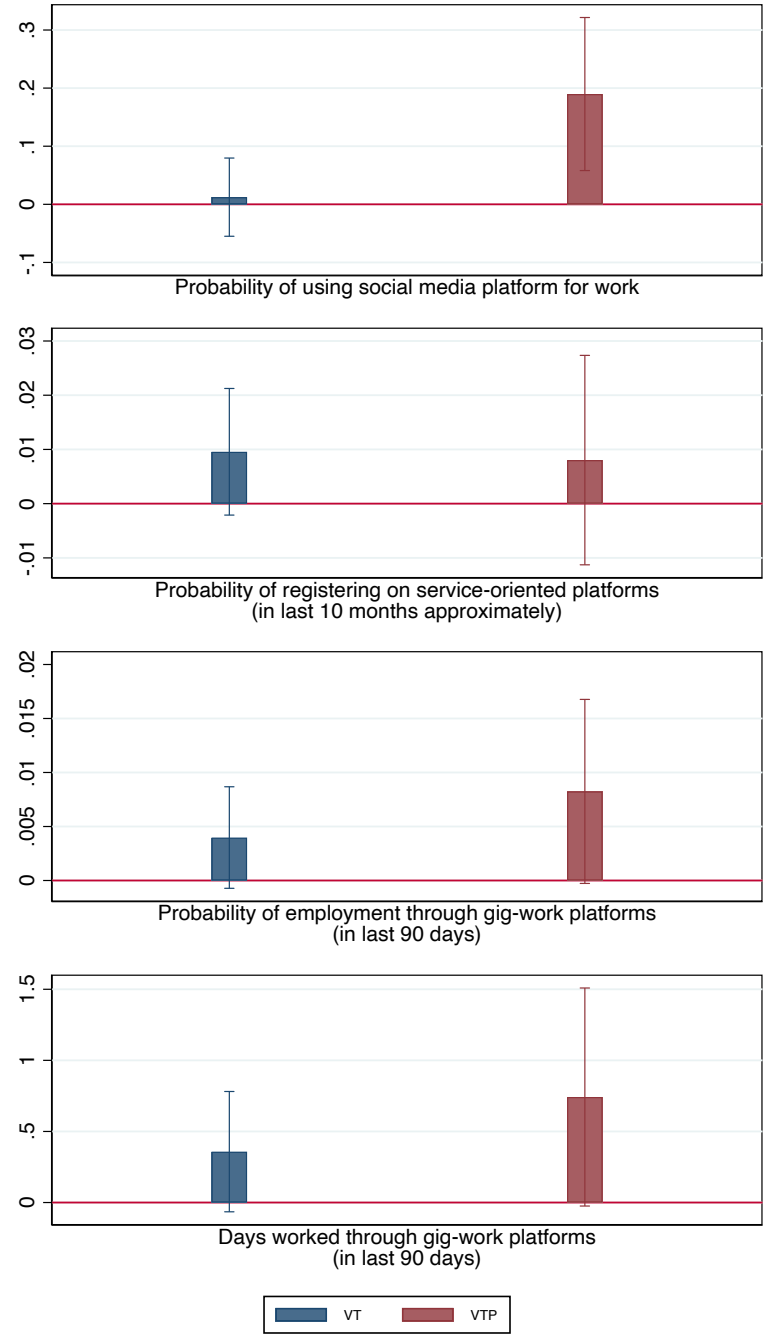
7.3.1 Social Media Platforms for Work

- The probability of using social media platforms for work-related purposes increased significantly among women in the VTP group. Women who participated in VTP training were 19.0 pp (45.2%) more likely to use social media for work compared to those in the control group.
- The VT group also showed an increase in social media use, though to a lesser extent.
- Additionally, there was a significant difference in social media usage between the VT and VTP groups, highlighting the importance of digital skills in leveraging online platforms for work.

7.3.2 Registration on Service-Oriented Platforms

- Participants in both treatment groups were more likely to register on service-oriented platforms compared to the control group, though the effects are not significant.
- Women in the VT group were 1.0 pp more likely to register, while those in the VTP group also showed a positive effect. 1.1% of those in the VT group, 0.7% of those in the VTP group, and 0.4% of those in the control group reported registration on service-oriented platforms.
- However, the difference between the two treatment arms was not statistically significant, suggesting that vocational training alone may be sufficient to encourage registration on

Figure 9: **Employment through Gig and Social Media Platforms**



Note: The bars represent the difference in mean values for each treatment group relative to control group for outcomes– probability of using social media platform for work, that of registering on service-oriented platforms (in last 10 months approximately), that of employment through gig-work platforms in the last 90 days and the number of days worked through gig-work platforms in the last 90 days. The lines represent statistical confidence intervals.

these platforms.

7.3.3 Employment and Work Through Gig Platforms

- Engagement in gig work was positively impacted by both treatment intervention. Women in the VTP and VT group, respectively, were 0.8 pp and 0.4 pp more likely to be employed through gig-work platforms compared to the control group. 0.29% of those in the VTP group, 0.28% of those in the VT group, and none in the control group reported employment through gig platforms.
- However, there was no significant difference between the two treatment groups.
- Additionally, the number of days worked through gig-work platforms also increased for both VTP and VT participants.
- Women in the VTP group worked nearly one additional day (0.74 days) on gig platforms compared to those in the control group.
- The VT group also showed a positive effect on the number of days worked (0.36 days), though this difference between VT and VTP is not significant.

These findings suggest that digital skills training in the VTP program played a crucial role in enhancing women's ability to engage in platform-based work opportunities, thereby expanding their employment options beyond traditional avenues.

7.4 Impact on psycho-social well-being

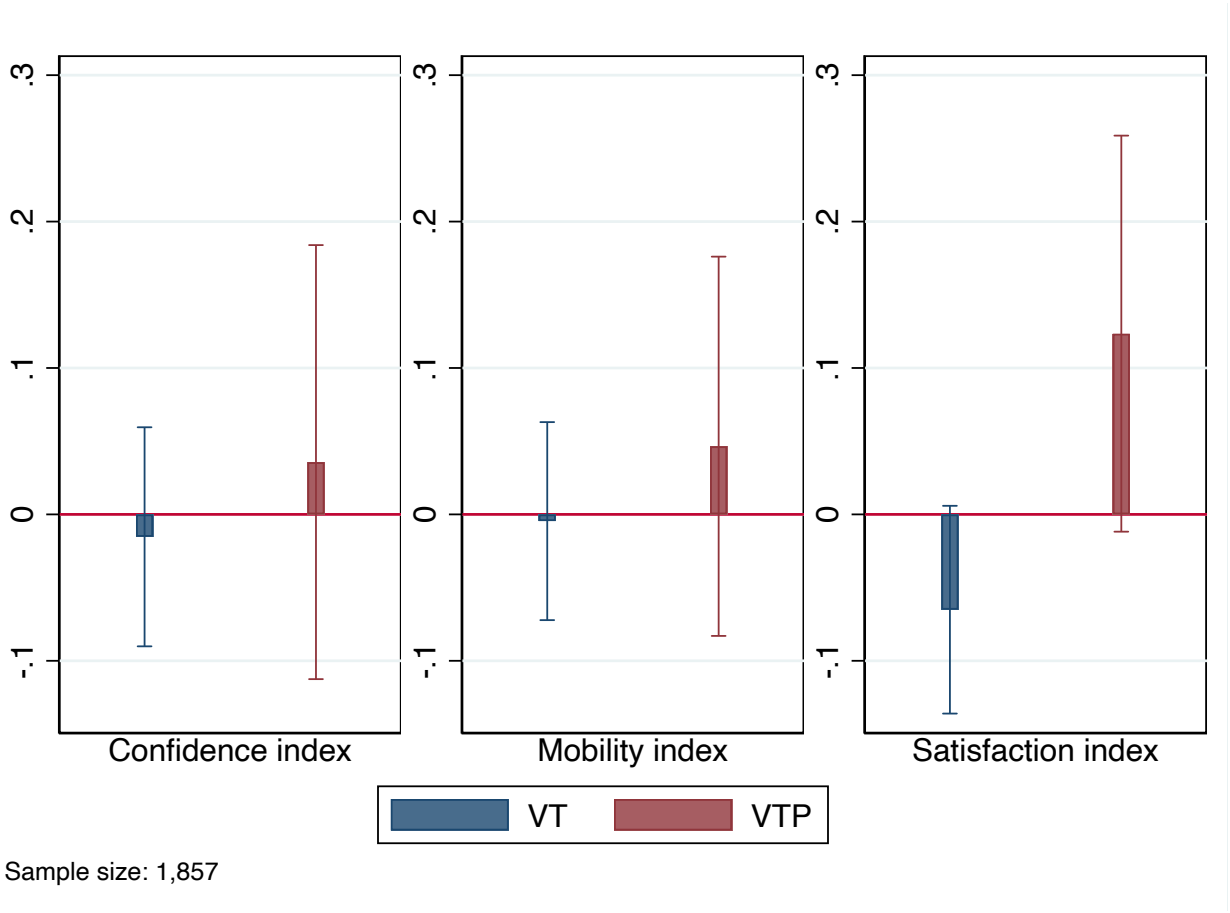
Beyond employment and earnings, we assessed the impact of vocational training on psychosocial measures such as confidence, self-efficacy, decision-making, mobility, satisfaction, job aspirations, and gender attitude. We construct indices for each measure following the methodology in Kling et al. (2007) based on the sub-components captured for each measure.

The confidence index measures the confidence of women in undertaking tasks and in their skills, and self-efficacy captures individual beliefs about their capacity to execute behaviors necessary to produce specific outcomes. The decision-making index measures women's ability to make decisions within the household. The mobility index sub-components consist of binary variables for whether a woman needs permission or can go alone to the following locations: health center, home of relatives or friends (in the neighborhood), short distance (within the city) by bus or three-wheeler, and long-distance (like outside the city) by train or bus. The satisfaction index measures women's satisfaction with education, skills, current work, financial situation, and life as a whole. Job aspirations measure expected salary, undertaking work outside the home, undertaking full-time work, and willingness to work in the next two years. For the gender attitude index, we give eight statements to the respondents, and for each statement, we code the variable to equal one if the respondent provides the attitude that is more "liberal" about gender and create an index across statements.

- **Self-Efficacy:** Self-efficacy declined for both the treatment groups - the decline for VT being significant.
- **Decision-Making:** No significant impact of VT or VTP.
- **Confidence:** No significant impact was observed on confidence levels, though VTP experienced a slight increase in confidence compared to the control group, while VT experienced a decrease. (Figure 10)
- **Job aspirations:** Job aspirations significantly declined for VT participants.
- **Mobility:** Mobility, an important indicator of women's ability to access work opportunities, increased slightly for VTP participants, though the effect is not statistically significant. (Figure 10)
- **Gender Attitudes:** No significant impact of VT or VTP.

- **Satisfaction:** VTP participants reported higher life satisfaction compared to VT and control. Although the coefficient on VTP is statistically not significant, the coefficients on both VT and VTP are statistically different between the two treatment arms. (Figure 10)

Figure 10: **Confidence, mobility and satisfaction indices**



Note: The bars represent the difference in mean values for each treatment group relative to control group for outcomes– mobility and satisfaction indices. The lines represent statistical confidence intervals.

8 Discussion and Policy Implications

The findings suggest that integrating digital skills into vocational training enhances employment in preferred sectors. Women trained under VTP were more likely to secure employment in the beauty sector, increase their working hours, and earn higher incomes. VTP participants also have higher satisfaction. Digital skills also enabled better social media engagement and higher use of gig platforms for work.

While overall employment probabilities did not change, VTP training shifted employment towards self-employed work in the beauty sector. This indicates that training should be aligned with industry demand, and complementary digital skills can improve job quality.

This study highlights the importance of integrating digital skills with vocational training to improve women's employment opportunities. While sector-specific vocational training alone did not significantly impact overall employment rates, combining it with digital skills and soft skills (VTP) led to significant improvements in job quality, hours worked, and earnings. Policymakers should consider expanding digital literacy components in skill development programs to enhance women's participation in the workforce.

A Appendix

Figure A.1: Part of **Manicure services** module of the VT curriculum.
Apart from discussing nail hand anatomy, nail diseases; manicure preparation, types and aftercare, activities like these two are used to make the learning more interactive along with testing for learning retention. The first slide asks the students to arrange the steps of a manicure in order of occurrence and the second asks them to pick the right tools necessary for a manicure from a given set of tools in the image.

Figure A.2: Part of **Depilation services - waxing** module of the VT curriculum. These two slides from the course material discuss shed light on clients with certain conditions who should not do facial waxing without consulting their physician. Apart from learning the techniques and the basic do's and don'ts of services like waxing, students are also educated on the cautions they should take while deciding on services for clients.

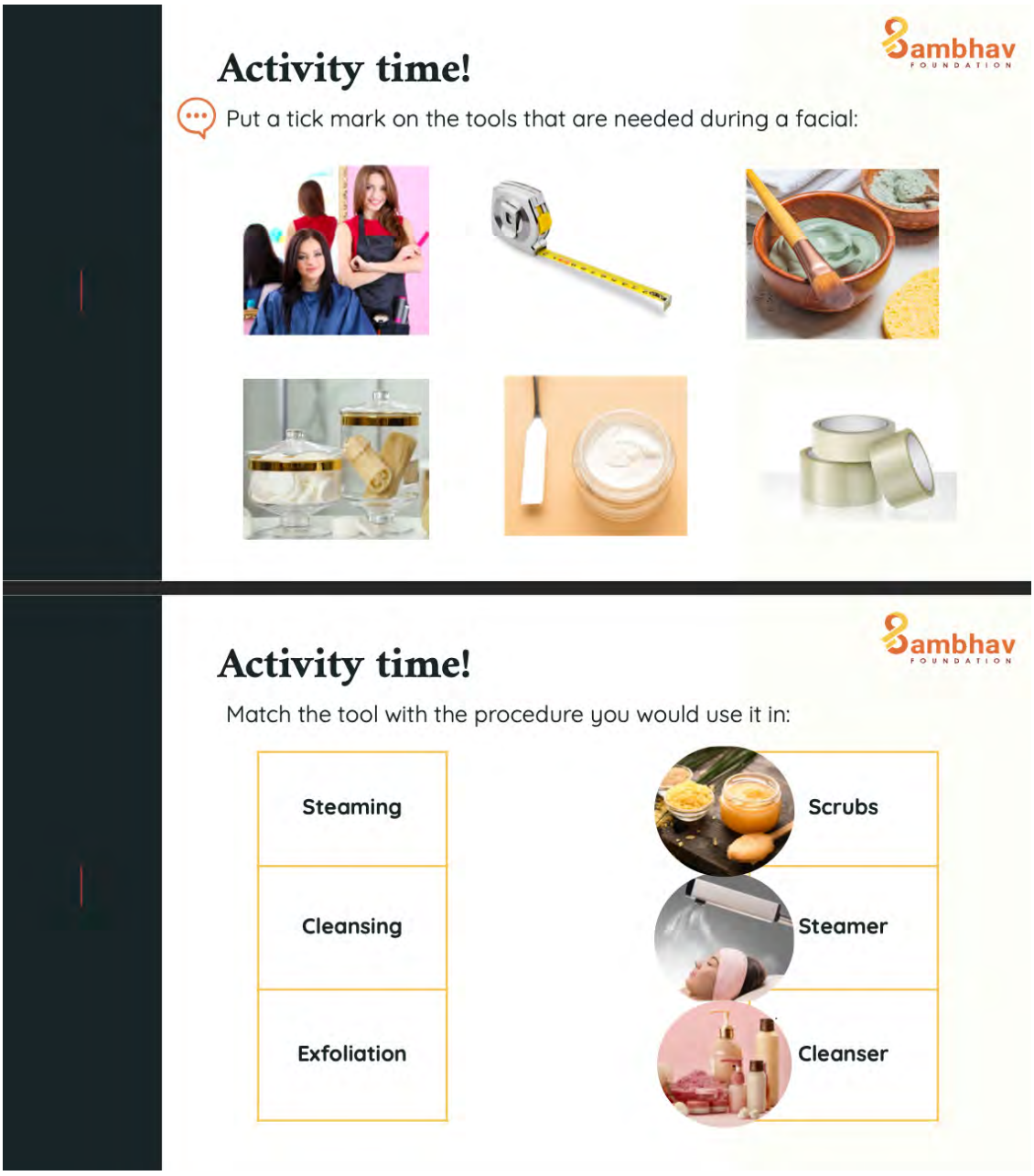


Figure A.3: Part of **Basic skin care treatments** module of the VT curriculum. Students are taught fundamentals of skincare treatments, including ways of determining skin types. Further, activities like these are used to make learning more interactive.

Figure A.4: Part of **Skin care treatments - facials** module of the VT curriculum. Apart from discussing setting up workspace for facials, and all the tools and materials necessary for the service, the students are taught techniques of facial massage according to the clients' needs.

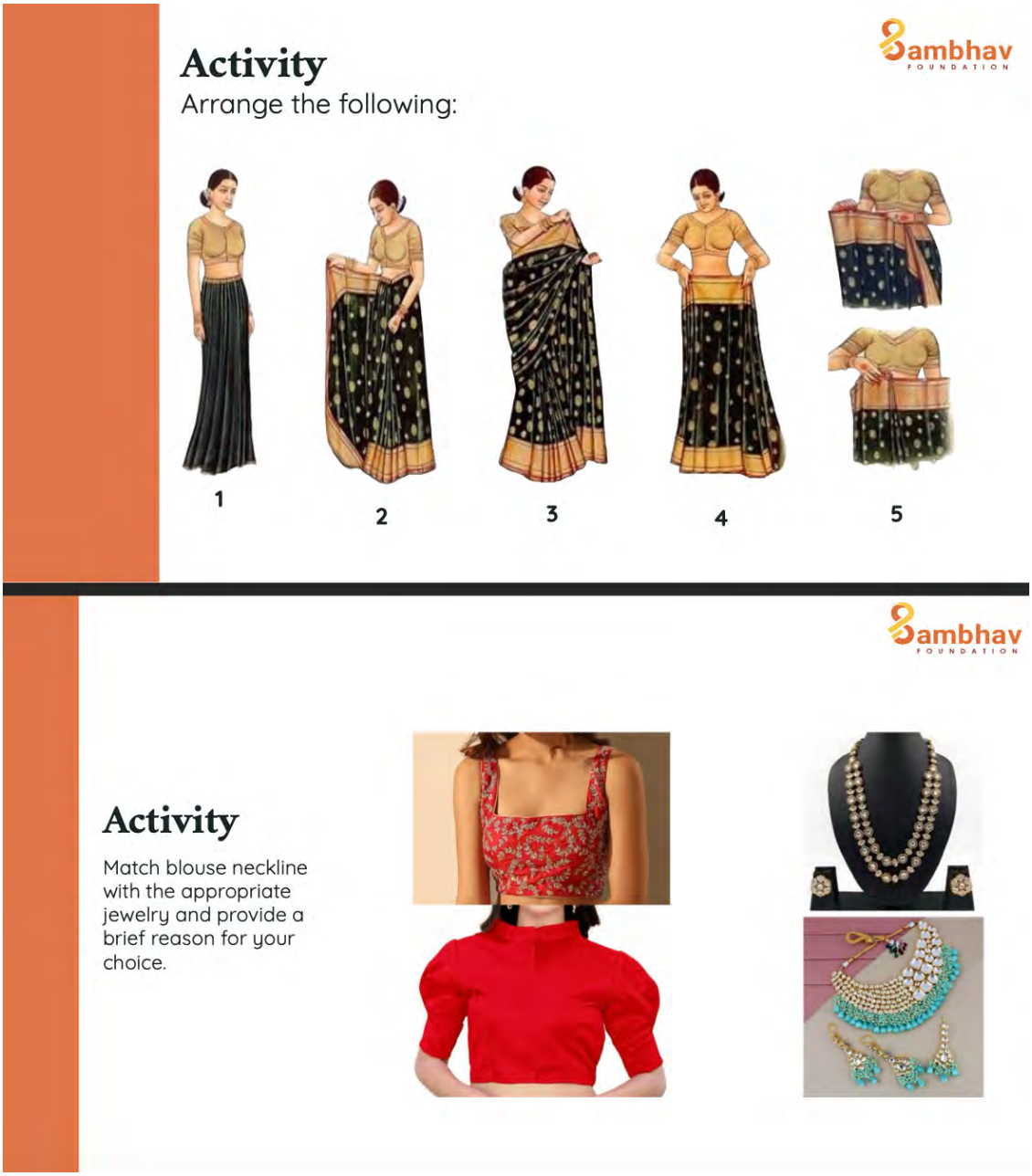


Figure A.5: Part of **Basic saree draping** module of the VT curriculum.
This module focuses on techniques to offer diverse styling services to clients - the students learn different ways of saree draping, dupatta draping and setting jewellery.
These two slides again show the interactive aspect of the course material. The first activity asks the students to correctly arrange the various stages of saree draping from start to finish. The second tests their understanding of styling jewelry.

Figure A.6: Part of **Body Language** module of the VTP or PBEL curriculum.
This module focuses on the meaning and importance of different body language and how to use it to build a better image and communicate more effectively.
These two slides ask the students to identify the emotions the individuals in the images are experiencing based on their body language.

Figure A.7: Part of **Being Digitally Smart - Know your Phone** module of the VTP or PBEL curriculum.
This module focuses on using smartphone and downloading and using basic applications. The first slide tests the students on their understanding of battery life and the second slide asks the students to identify applications which can help them make digital payments through their smartphones.

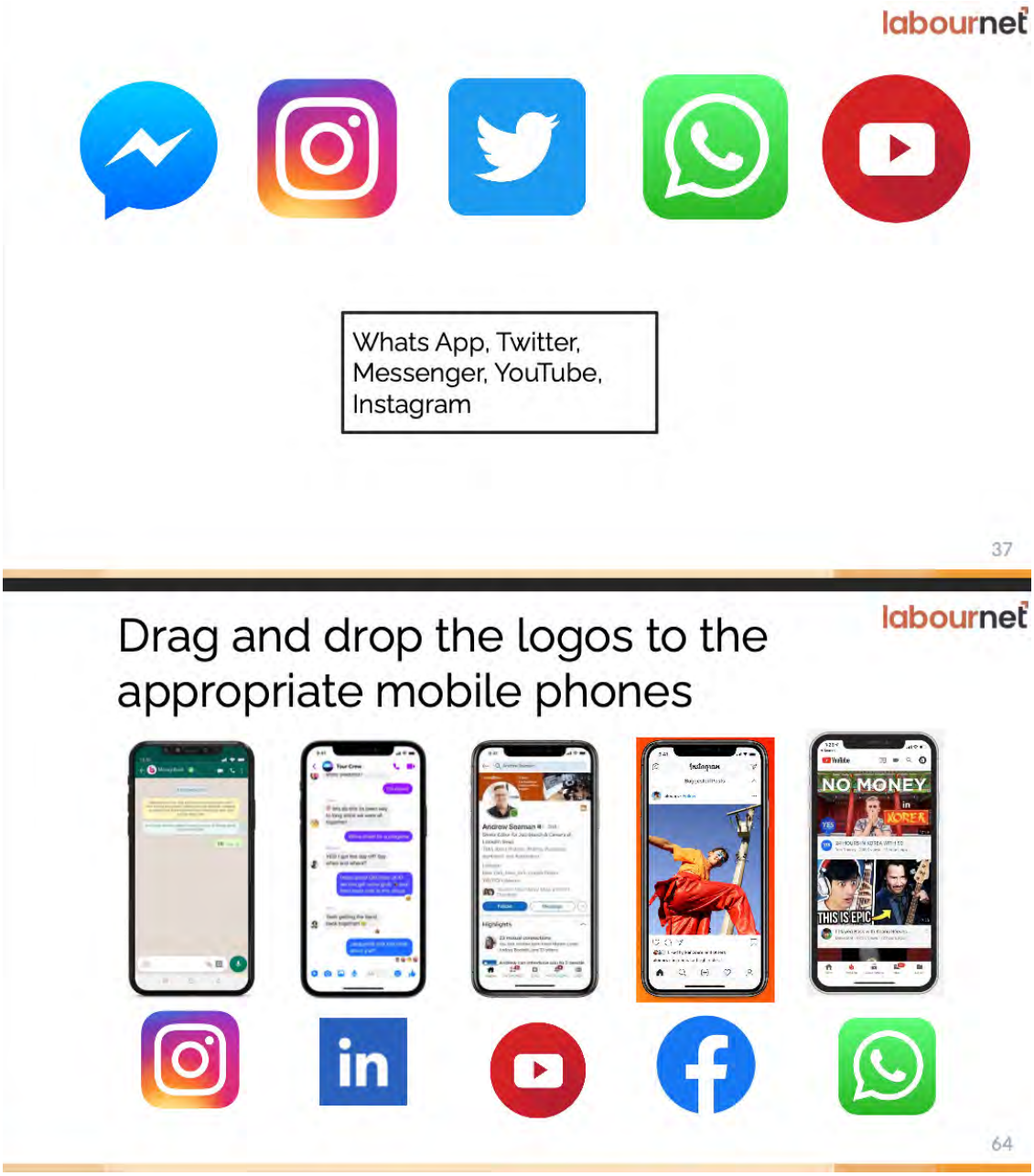


Figure A.8: Part of **Being Digitally Smart - Social Media Presence** module of the VTP or PBEL curriculum.
This module focuses on social media - its features and uses.
These two slides ask the students to identify the apps based on their logos and user interface.

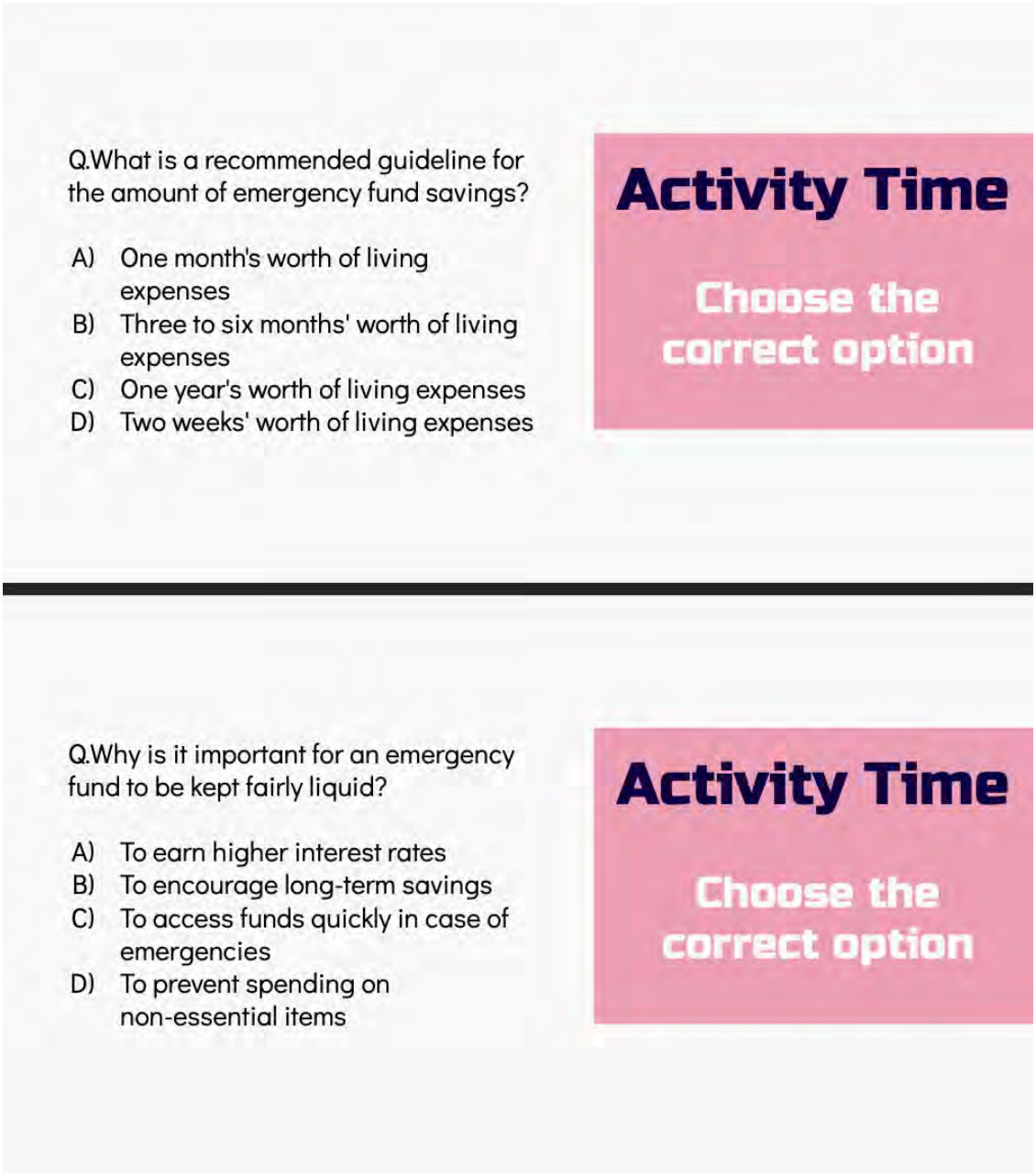


Figure A.9: Part of **Personal Finance - Savings and Budgets** module of the VTP or PBEL curriculum.
This module focuses on how to effectively budget, track spending, and build savings for better personal finance management.
These two slides test the students' understanding of important aspects of maintaining an emergency fund of savings.

Digital Platforms for Women's Economic Empowerment (DP-WEE) is a project led by Prof. Farzana Afridi, Indian Statistical Institute (ISI), supported by the Bill and Melinda Gates Foundation (BMGF), and housed at LEAD at Krea University, IFMR (Institute for Financial Management and Research) & the Center for Research on the Economics of Climate, Food, Energy and Environment (CECFEE), ISI Delhi. To learn more, please visit the website: www.digitalplatformsandwomen.ifmrlead.org