

Feature Article

IMPACT EVALUATION OF WORKFORCE SINGAPORE'S PLACE-AND-TRAIN CAREER CONVERSION PROGRAMME

OVERVIEW

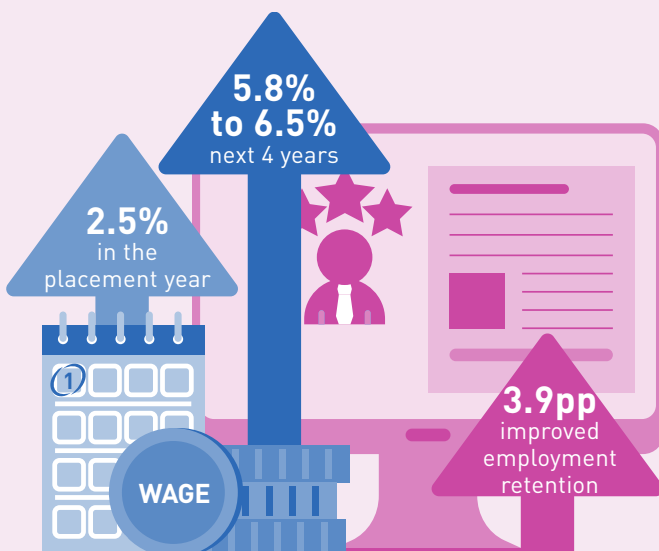
Workforce Singapore's (WSG) Place-and-Train Career Conversion Programme (PnT CCP) is a placement-centric programme that aims to address structural mismatches in the labour market. It provides salary support for employers to hire jobseekers and put them through on-the-job or industry-recognised training to take on new growth job roles.



FINDINGS

Finding 1:

The PnT CCP (i) increased participants' wages by 2.5% in the year of placement, with the impact rising further to 5.8% to 6.5% in the subsequent four years and (ii) improved their employment retention by 3.9 percentage-points (pp), compared to their control groups.



Finding 2:

The PnT CCP had a stronger impact on non-PMET and mature workers who were found to have benefitted more from the placement and accompanying training.



POLICY TAKEAWAY

WSG's PnT CCP plays a key role in addressing skills gaps and helping workers to take on growth job opportunities. By aligning talent with industry needs through the CCPs, workers can be empowered to pivot into future-ready roles, thereby enhancing their adaptability and resilience in a fast-evolving and dynamic Singapore economy.



EXECUTIVE SUMMARY

- ▶ Workforce Singapore's (WSG) Career Conversion Programmes (CCPs) are placement-centric programmes that aim to address structural mismatches in the labour market. Under the Place-and-Train (PnT) CCP, a company hires a jobseeker and puts him/her through on-the-job training or industry-recognised training to take on a new growth job role that aligns with its business and workforce transformation needs.
- ▶ Our study evaluated the impact of the PnT CCP and found that it improved the labour market outcomes of participants. Specifically, the PnT CCP (i) increased participants' wages by 2.5 per cent in the year of placement, with the impact rising further to 5.8 per cent to 6.5 per cent in the subsequent four years, and (ii) improved their employment retention by 3.9 percentage-points, compared to their control groups. Notably, the PnT CCP had a stronger impact on non-PMET and mature workers who were found to have benefitted more from the placement and accompanying training.
- ▶ Against the backdrop of rapid technological change, these findings suggest that schemes that target structural mismatches (including WSG's PnT CCP) play a key role in addressing skills gaps and helping workers to take on growth job opportunities. By aligning talent with industry needs through the CCPs, workers can be empowered to pivot into future-ready roles, thereby enhancing their adaptability and resilience in a fast-evolving and dynamic Singapore economy.

The views expressed in this paper are solely those of the authors and do not necessarily reflect those of the Ministry of Manpower (MOM), Ministry of Trade and Industry (MTI), Workforce Singapore (WSG) or the Government of Singapore.¹

INTRODUCTION

Workforce Singapore's (WSG) Career Conversion Programmes (CCPs) are placement-centric programmes that aim to address structural mismatches in the labour market. These programmes help employers broaden their talent pool by reskilling mid-career new hires or existing employees into growth job roles with good longer-term prospects, with salary support of up to 90 per cent.² The duration of CCPs (typically spanning from three to 24 months) varies according to programme specifications and job requirements.

Under the Place-and-Train (PnT) CCP, a company hires a jobseeker and puts him/her through on-the-job training or industry-recognised training to take on a new growth job role that aligns with its business and workforce transformation needs. This study examined the impact of the PnT CCP on the key labour market outcomes (i.e., wages, employment retention) of participants.

The rest of the article is organised as follows. We first provide a brief review of the literature relating to active labour market policies (ALMPs). We then describe the data and methodology employed for our study, before reporting our findings. The final section concludes.

LITERATURE REVIEW

ALMPs are government policies aimed at assisting and incentivising individuals to actively look for work and find suitable employment. According to the Organisation for Economic Co-operation and Development (OECD), there are four main categories of ALMPs: (i) employment subsidies, (ii) self-employment/start-up support, (iii) training, and (iv) public work/public sector jobs.³ The efficacy of ALMPs has been extensively studied in the literature, with findings generally indicating positive labour market outcomes for individuals over the medium to long run.

¹ We would like to thank Ms Yong Yik Wei, Dr Kuan Ming Leong and Mr Alphonsus Gomez for their useful suggestions and comments. We are also grateful to WSG for their inputs to this study. All remaining errors belong to the authors.

² Long-term unemployed or/and mature jobseekers aged 40 and above are eligible for higher funding support of 90%.

³ See OECD (2018) for more details.

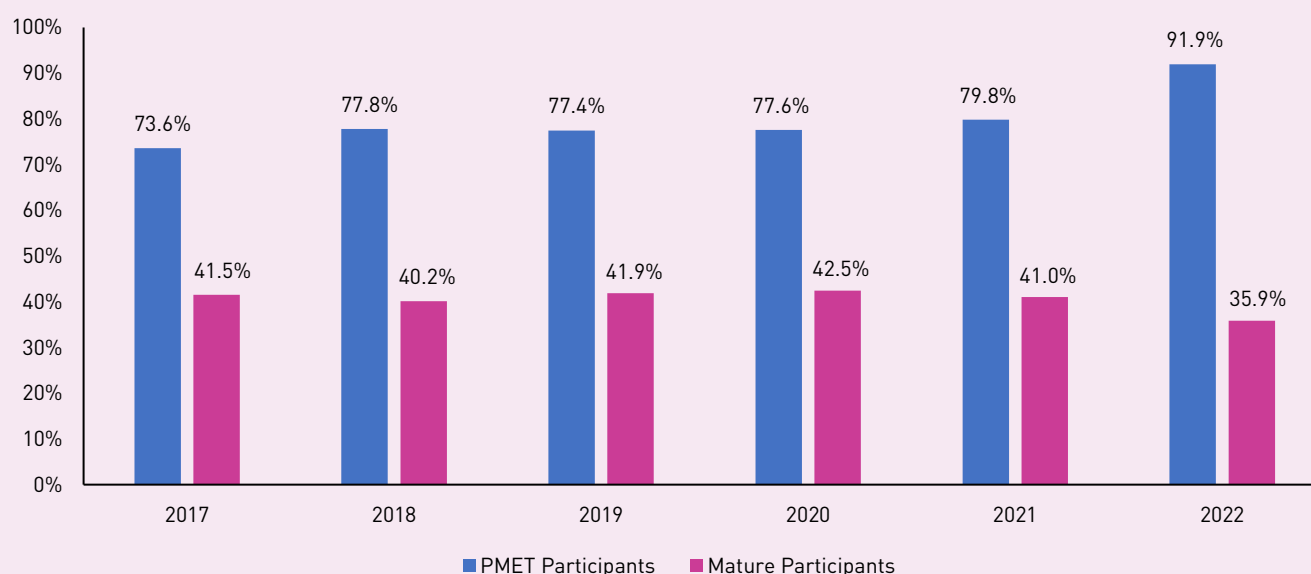
For instance, Vooren et al. (2019) examined 57 ALMP studies in OECD countries and found that training programmes had a positive impact on wages, employment probability and employment duration around six to 36 months after the start of the programme. Similarly, Card et al. (2018) found that training and retraining programmes had positive effects on wages, employment probability and employment duration around one to three years after programme completion. Estimating the impact of job placement programmes on participants with higher earnings, Autor et al. (2017) found that direct-hire placements significantly increased earnings over one to two years for half or more of all placed participants.

DATA AND SUMMARY STATISTICS

This study merged two key data sources: (i) data on participants placed in WSG's PnT CCP from 2017 to 2022 and (ii) an individual-level administrative dataset containing information on the demographic characteristics, employment history and wages of all resident employees in Singapore.⁴ We excluded participants with less than three months of employment records in the company they were placed in given that the typical PnT CCP duration exceeded three months. Consequently, our final sample comprised over 17,900 PnT participants placed between 2017 and 2022.

Most PnT participants were (i) placed in Professional, Manager, Executive and Technician (PMET) roles and (ii) under 40 years of age (i.e., non-mature workers) (Exhibit 1). In particular, the share of PnT participants placed in PMET roles ranged from 74 per cent to 92 per cent between 2017 and 2022. Across the years, the share of mature workers remained relatively stable at around 40 per cent.

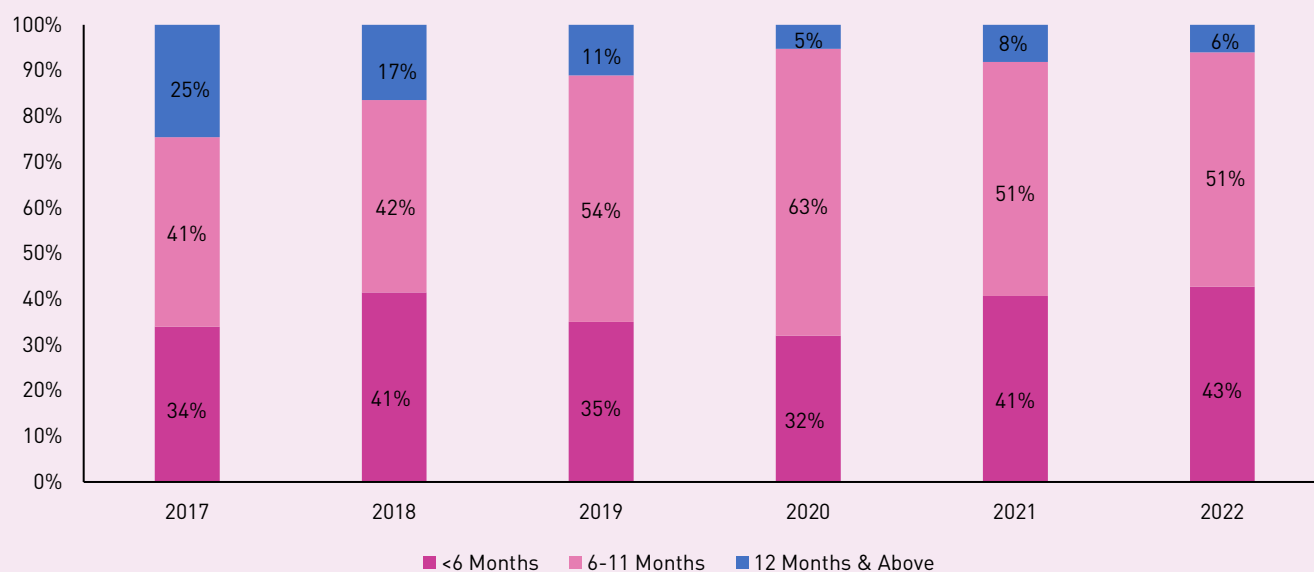
Exhibit 1: Share of PMET and Mature Participants by Cohort, 2017-2022



Source: MOM

Between 2017 and 2022, most PnT participants enrolled in programmes that lasted six to 11 months (41-63 per cent) or less than six months (32-43 per cent) (Exhibit 2). Programmes with a duration of 12 months or more had fewer participants. Over the period, the share of participants enrolled in longer programmes fell as WSG sharpened its focus towards shorter programmes that could more nimbly support businesses' hiring and reskilling needs.

⁴ We used data from 2014 to 2023 from the individual-level administrative dataset to match PnT CCP participants with a control group of non-participants based on pre-placement characteristics, as well as to track their outcomes over time. More details can be found in the 'Methodology' section.

Exhibit 2: Share of PnT Participants with Different Training Durations by Cohort, 2017-2022

Source: MOM

METHODOLOGY

To estimate the causal impact of the PnT CCP, we combined matching methods with a difference-in-differences (DiD) regression analysis. This multi-step approach allowed us to compare the wage and employment retention outcomes of two groups of individuals: a “treated” group that participated in the PnT CCP and an observably-similar “control” group that did not participate in the PnT CCP.

First, to study the impact of the PnT CCP on wage outcomes, we used Coarsened Exact Matching (CEM) to find a group of non-participants who was similar in observable characteristics to each cohort of PnT participants. The matched characteristics included age, gender, firm size, sector of employment, and employment history (i.e., wages and number of months worked over the past three years) in the year prior to each cohort’s placement in the programme.⁵ The CEM technique enabled the construction of matched control groups that were comparable to the PnT participants.

Second, after matching, we performed the following DiD regression, separately for each cohort, to study the impact of the PnT CCP on the wage outcomes of participants:

$$Y_{it} = \alpha_i + \delta_t + \sum_{t=c-3}^{c+6} \beta_t Treated_i \times year_t + X_{it} + \varepsilon_{it}$$

Where:

- Y_{it} represents the log mean monthly wage for individual i in calendar year t ;
- $Treated_i$ is a dummy variable taking the value of 1 if individual i is treated (i.e., a PnT participant);
- $year_t$ are the dummies from year $c-3$ (three years before placement) to $c+6$ (up to six years after placement) for cohort c ;
- α_i are the individual fixed effects;
- δ_t are the time fixed effects;
- X_{it} are the time-varying covariates (e.g., age, number of months worked, firm size and sector of employment); and
- ε_{it} is the regression error term.

5 For each cohort, the CEM algorithm was implemented using data in the year before each cohort’s placement (e.g., for the 2019 cohort, data from 2018 was used to identify a suitable non-participant group).

The pre-treatment coefficients β_{c-3} and β_{c-2} were used to test for pre-treatment trends and should be small and/or not statistically significant to support the parallel trends assumption.⁶ The post-treatment coefficients $\beta_c, \dots, \beta_{c+6}$ indicated the impact of the programme on wages in the year of treatment up to six years post-treatment.

Third, to examine the effect on employment retention from the start of placement, we identified a control group of individuals who had similarly begun a new job at around the same time as the PnT participants were placed in the programme. Specifically, we matched all PnT participants to non-participants based on the month and year of the latter's first instance of a job switch within the period studied (i.e., 2017 to 2022), in addition to the characteristics used in the earlier CEM matching.

Fourth, we performed a probit regression to compare the probability of remaining in employment for the PnT participants and their matched counterparts. We estimated the probability of remaining in employment (i.e., β_m) in each month after placement or upon taking on a new job (i.e., starting from three to 24 months⁷ after placement or taking on a new job) using the following probit regression:

$$\Pr(Y_{im}) = \beta_m \text{Treated}_i + X_i + \varepsilon_i$$

Where:

- Y_{im} is a dummy variable for whether individual i remains in employment m months after placement / taking on a new job;
- Treated_i is the dummy variable taking the value of 1 if individual i is treated (i.e., a PnT participant);
- X_i are the individual's characteristics in the year before placement / taking on a new job (e.g., age, number of months worked, firm size and sector of employment, month-year of job switch); and
- ε_i is the regression error term.

Finally, we performed heterogeneity analyses to examine whether there were differences in the wage outcomes of PMET compared to non-PMET PnT participants, as well as mature compared to non-mature PnT participants, following the methodology described in the first and second steps.

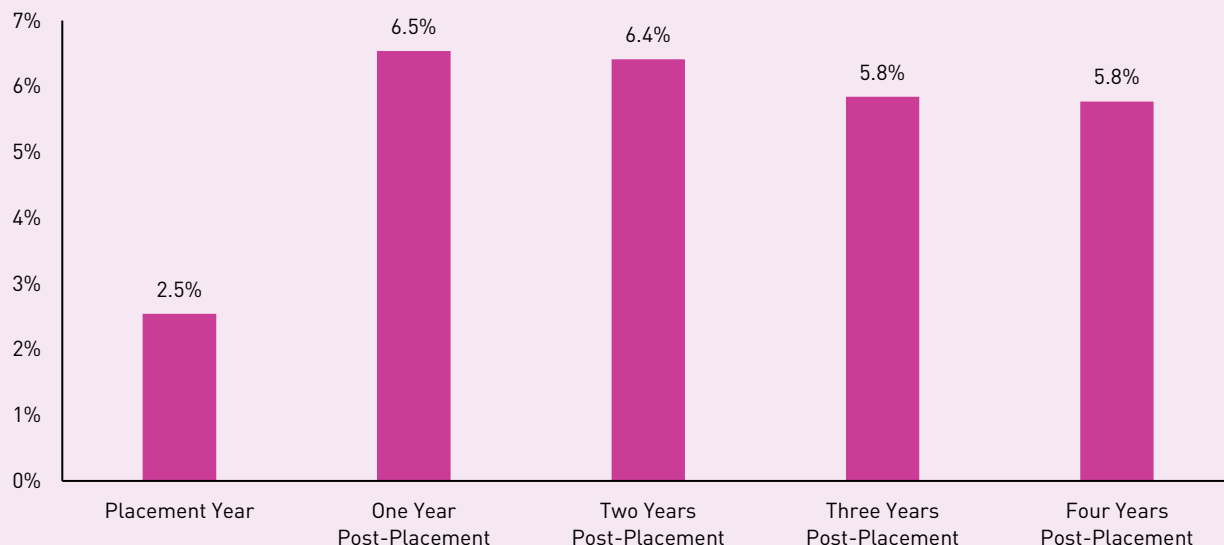
RESULTS

We found that the PnT CCP increased the wages of participants across all cohorts. Specifically, the PnT CCP raised the wages of participants by 2.5 per cent on average in the year of placement, with the impact rising further to 5.8 per cent to 6.5 per cent in the subsequent four years (Exhibit 3). These results were robust to running a stacked regression, with each cohort's dataset stacked together to form a combined dataset.

⁶ In the absence of treatment (i.e., placement in CCP), outcomes for the treatment and control groups should follow the same trend over time.

⁷ The PnT CCP typically lasts for three to 24 months, with the placement month considered as month 0. Therefore, for a training programme with a three-month duration, the first month after the training would be three months after placement.

Exhibit 3: Average Impact of the PnT CCP on Wages by Years Post-Placement

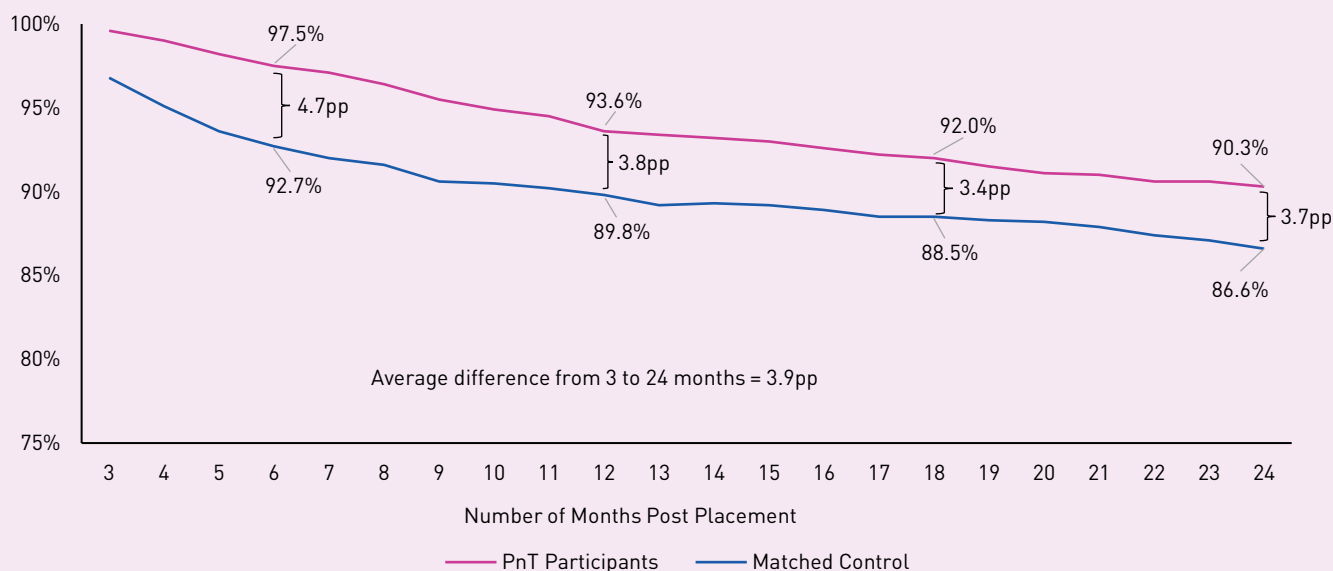


Source: Authors' estimates

Notes: The parallel trend assumption was met for all cohorts. Post-treatment coefficients for each cohort were statistically significant at the 1% level. The average wage effects for five and six years post-placement were omitted from Exhibit 3, as only at most two cohorts (i.e., 2017 and 2018) had available data to reach these points of time.

We also found that the PnT CCP improved the employment retention of participants, with a higher proportion of participants remaining in employment three to 24 months after placement compared to non-participants. On average, the retention rate for PnT participants was 3.9 percentage-points (pp) higher than that of non-participants. The difference in retention rate was the largest, at about 4.7pp, around six months after placement. Even at the 24-month mark, the employment retention rate for PnT participants (90.3 per cent) remained 3.7pp higher than that for non-participants (86.6 per cent) (Exhibit 4).

Exhibit 4: Retention Rate for PnT Participants and Non-Participants



Source: Authors' estimates

Finally, our heterogeneity analyses highlighted that the impact of the PnT CCP differed across occupational (PMET and non-PMET) and demographic (mature and non-mature) groups, even though participation in the programme benefitted all groups.

Notably, the PnT CCP had a stronger impact on non-PMET and mature (aged 40 years and above) workers, who were found to benefit more from the placement and accompanying training. In the four years post-placement, non-PMET PnT participants experienced stronger wage gains (approximately 2pp higher) than PMET PnT participants (Exhibit 5). The PnT CCP likely assisted non-PMET workers to switch into growth job roles with more potential, leading to better outcomes in wages. Similarly, mature PnT participants saw stronger wage increases (approximately 3.1pp higher) than their non-mature counterparts (Exhibit 6). The higher salary support for mature workers likely incentivised businesses to hire and train mature workers previously in lower-potential jobs, who then benefitted from a larger wage uplift in their new growth job roles.

Exhibit 5: Average Impact of the PnT CCP on Wages in the Four Years Post-Placement by Participants' Broad Occupation

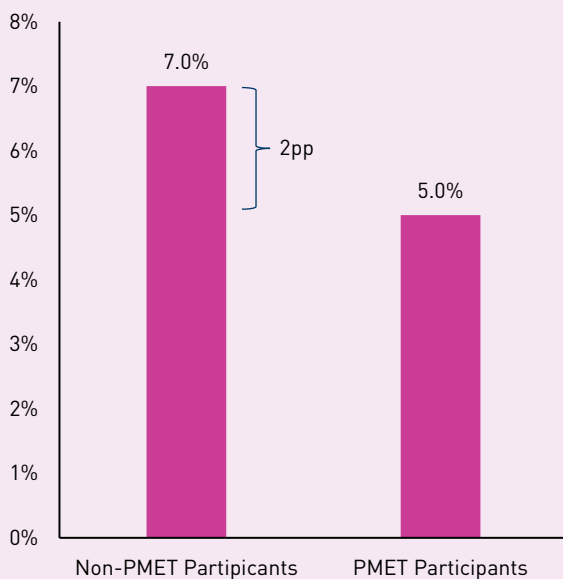
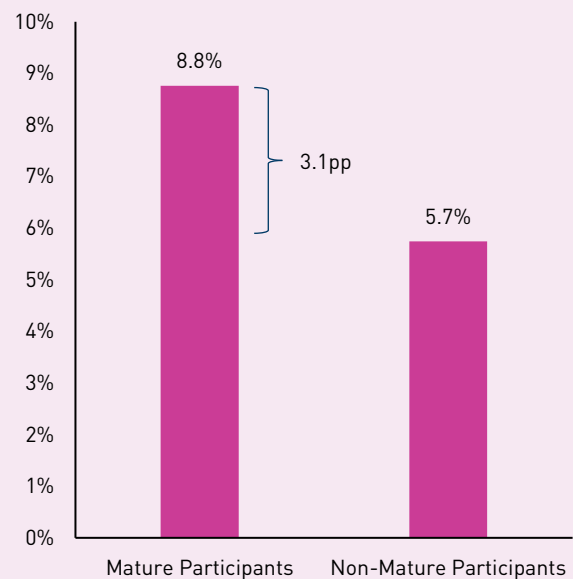


Exhibit 6: Average Impact of the PnT CCP on Wages in the Four Years Post-Placement by Participants' Age Group



Source: Authors' estimates

CONCLUSION

In summary, our study found that the PnT CCP improved participants' labour market outcomes. Reflecting the programme's effectiveness in reskilling workers for new job roles, PnT participants experienced higher wages and employment retention. In particular, the PnT CCP was found to have a stronger beneficial impact on non-PMET and mature workers. The positive outcomes of the PnT CCP underscore the significance of subsidised on-the-job training in Singapore's skills development landscape.

Against the backdrop of rapid technological change, these findings suggest that schemes that target structural mismatches (including WSG's PnT CCP) play a key role in addressing skills gaps and helping workers to take on growth job opportunities. Recognising the importance of CCPs, WSG increased the CCP salary support caps in April 2024 to keep pace with rising wages and maintain the programme's attractiveness to employers, which would in turn help more workers take up more productive job roles and create more career conversion opportunities.⁸ By aligning talent with industry needs through CCPs, workers can be empowered to pivot into future-ready roles, thereby enhancing their adaptability and resilience in a fast-evolving and dynamic Singapore economy.

⁸ From 1 April 2024, the PnT CCP supported: (i) up to 90% of monthly salary (capped at \$7,500 per month) for long-term unemployed or/and mature (40 years and above) Singapore residents, and (ii) up to 70% of monthly salary (capped at \$5,000 per month) for other Singapore residents. Previously, the monthly salary caps were \$6,000 and \$4,000 respectively.

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