



**15TH NATIONAL
CONVENTION
ON STATISTICS**

03-05 OCTOBER 2022

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Spearheaded by the Philippine Statistics Authority*



Returns to Technical and Vocational Education and Training in the Philippines

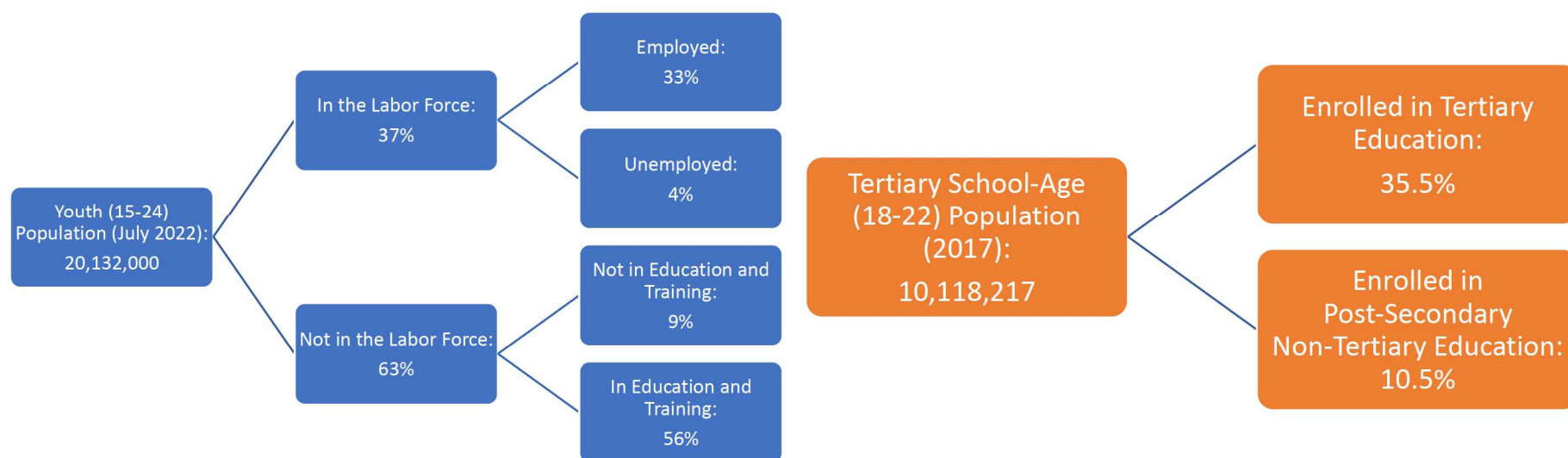
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Asian Development Bank

Education Statistics (TVET)
Crowne Plaza Manila Galleria
04 October 2022, 3:30-5:00 P.M.

Returns to Technical and Vocational Education and Training in the Philippines

Rationale: Importance of Returns to Education for Individual Decision Making



Objective and Outline

Objective: to determine the private rates of return to TVET at the upper secondary, post-secondary, and tertiary levels.

Outline:

- Section I: Methodological approach and data sources;
- Section II: Main findings from the assessment;
- Section III: Conclusion



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Methodology

1. Human Capital Earnings Function (Mincer 1974)

$$\ln Wage = \beta_1 + \beta_2 Sch + \beta_3 Exp + \beta_4 Exp^2 + X\beta + \varepsilon$$

where

- $\ln Wage$ is log hourly wage (basic pay per day / normal working hours per day)
- Sch is years of schooling (Elementary: 6, Secondary 10-12; Post-Secondary Non-tertiary: 11; Tertiary: 14 up)
- Exp is years of work experience (age-schooling-6)
- X is a vector of control variables including sex, urbanity, region, industry, occupation, class of work and nature of employment

2. Heckman selection (1979) model

- a. 1st stage: Probit model - relates the probability of participating in the labor force to sex, age, marital status, and number of children

$$P(LFP) = \Phi(\alpha_1 + \alpha_2 w_i + u_i)$$

- b. 2nd stage: wage equation plus inverse mills ratio (λ_i) derived from the first stage

$$\ln wage = \beta_1 + \beta_2 Sch + \beta_3 Exp + \beta_4 Exp^2 + X\beta + \beta_\lambda \lambda_i + \varepsilon$$

Methodology and Data

3. Returns to TVET Schooling

$$\ln wage = \beta_1 + \beta_2 TVETSch + \beta_3 Exp + \beta_4 Exp^2 + X\beta + \varepsilon$$

4. Returns to TVET by Qualification

$$\ln wage = \beta_1 + \sum_{i=2}^{i=20} \beta_i (Qualif_i * Sch) + \beta_{21} Exp + \beta_{22} Exp^2 + X\beta + \varepsilon$$

Data

- Labor Force Survey (LFS), April 2019 Round: Sample size = 117,728 representing a population of 107,856,526



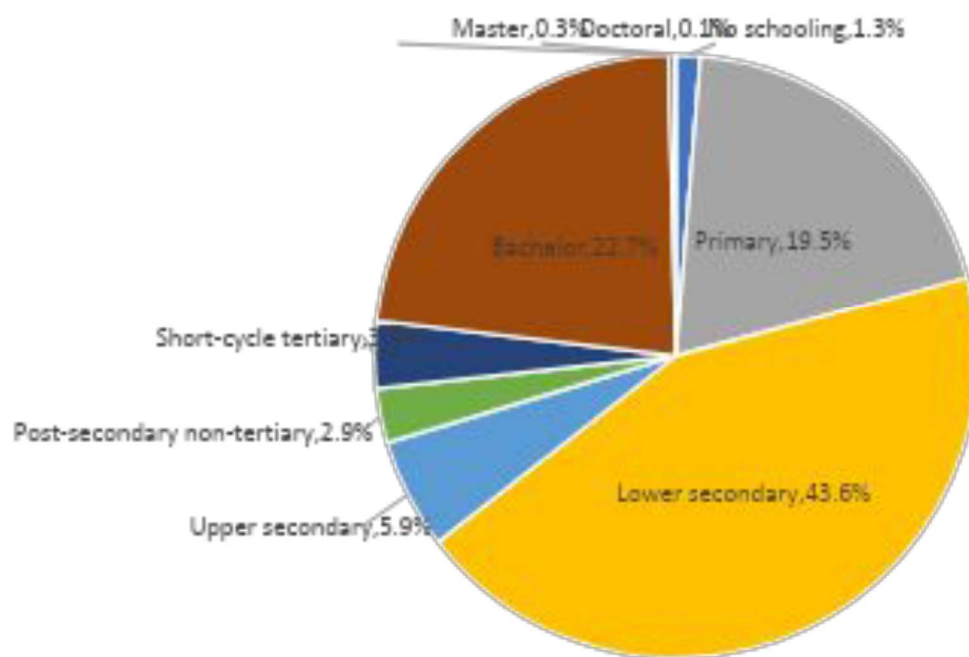
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Distribution of Labor Force by Educational Attainment



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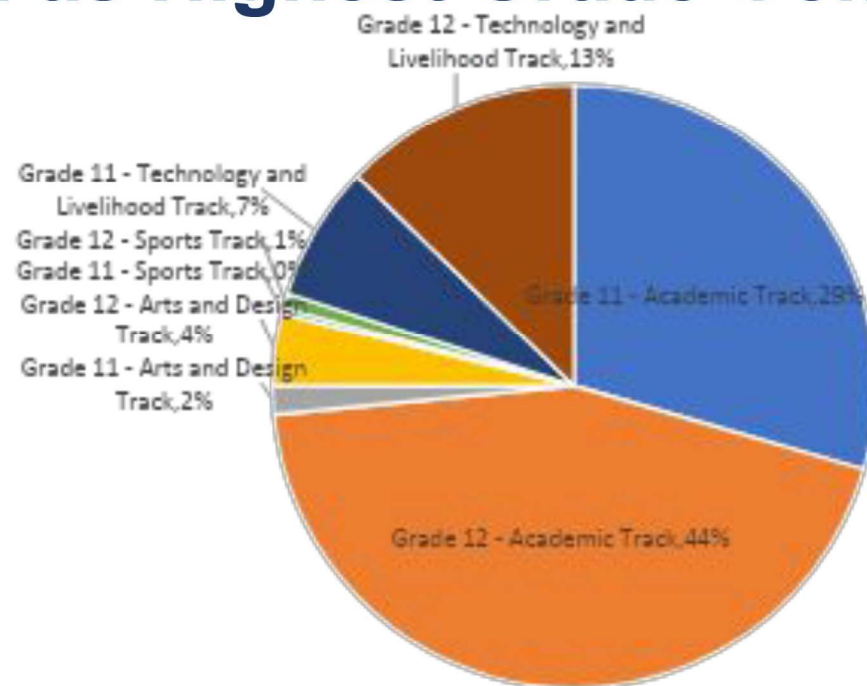
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Distribution of Labor Force with Upper Secondary Education as Highest Grade Completed



Returns to Technical and Vocational Education and Training in the Philippines



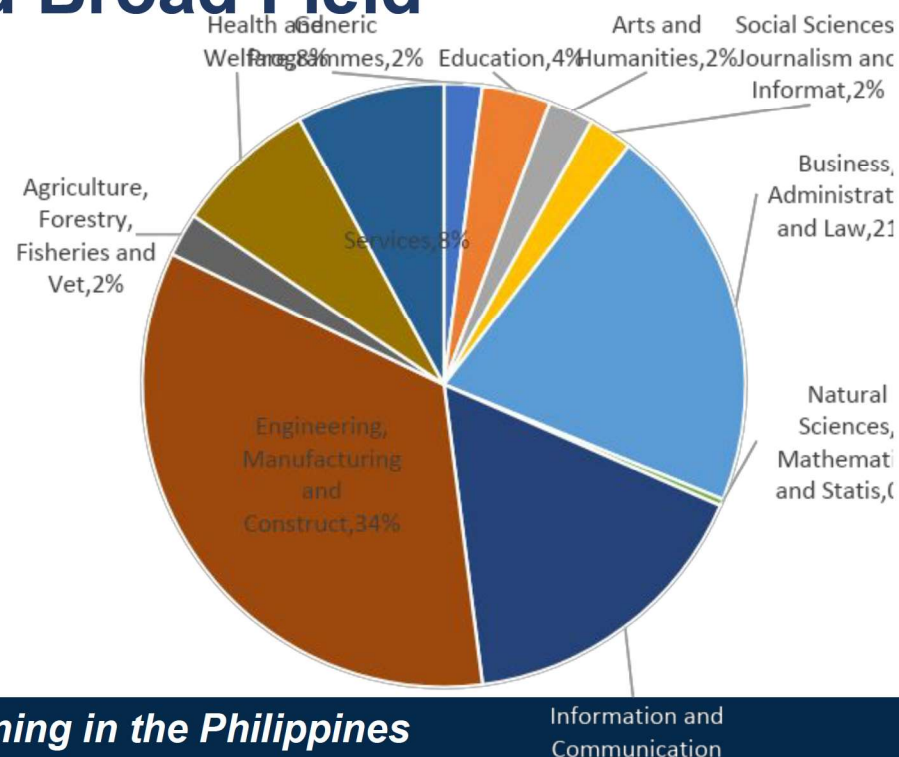
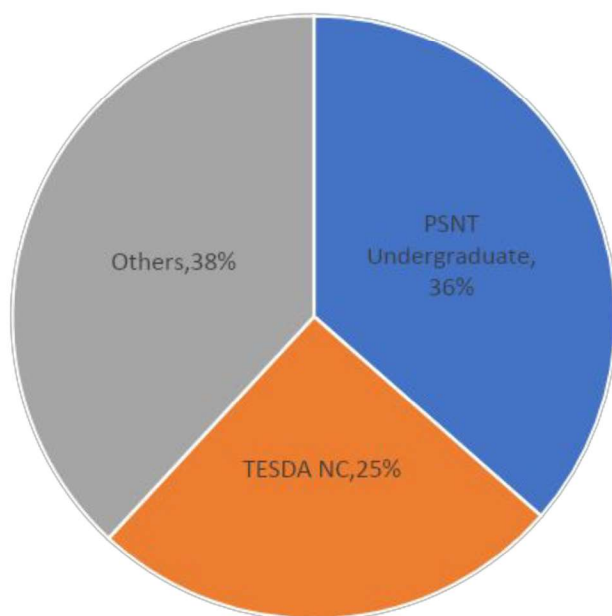
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Distribution of Labor Force with Post-Secondary Non-Tertiary Education as Highest Grade Completed, by Institution and Broad Field



Returns to Technical and Vocational Education and Training in the Philippines



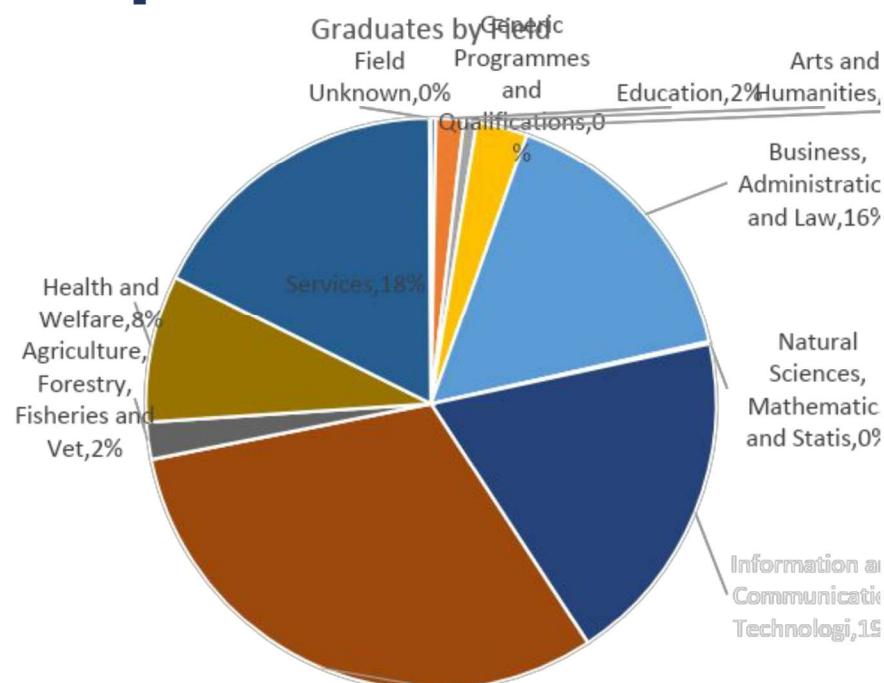
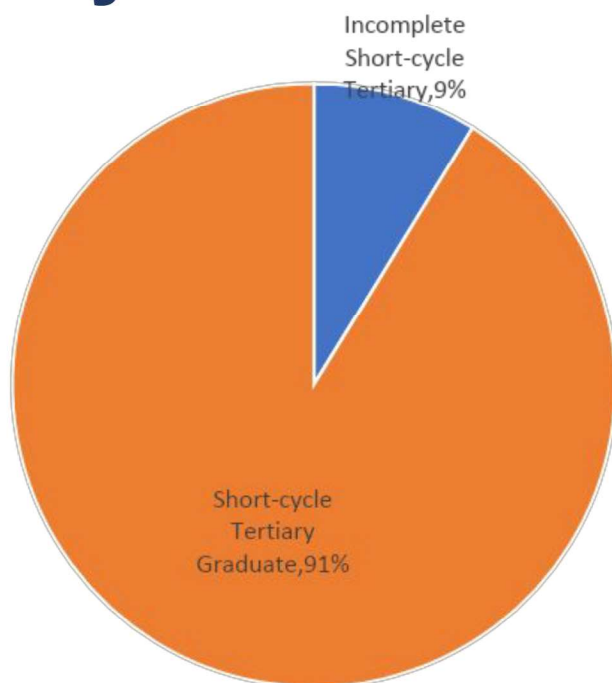
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Distribution of Labor Force with Short Cycle Tertiary Education by Completion and Field



Returns to Technical and Vocational Education and Training in the Philippines

Engineering,
Manufacturing



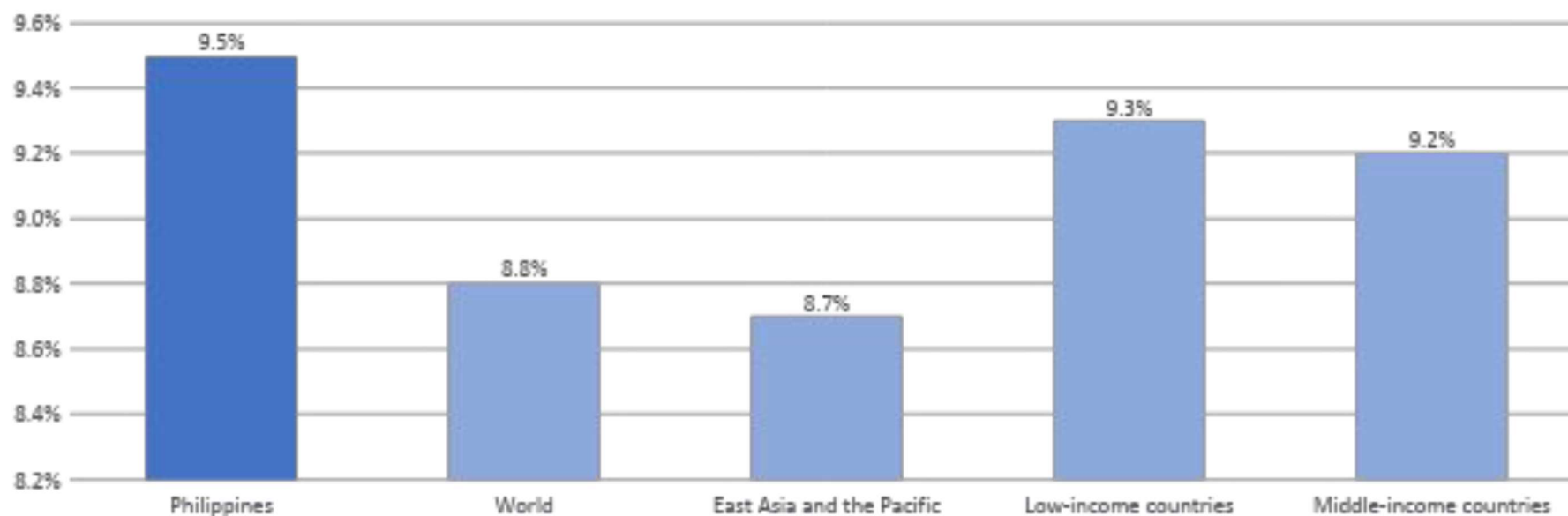
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Results: Mincerian in comparative context



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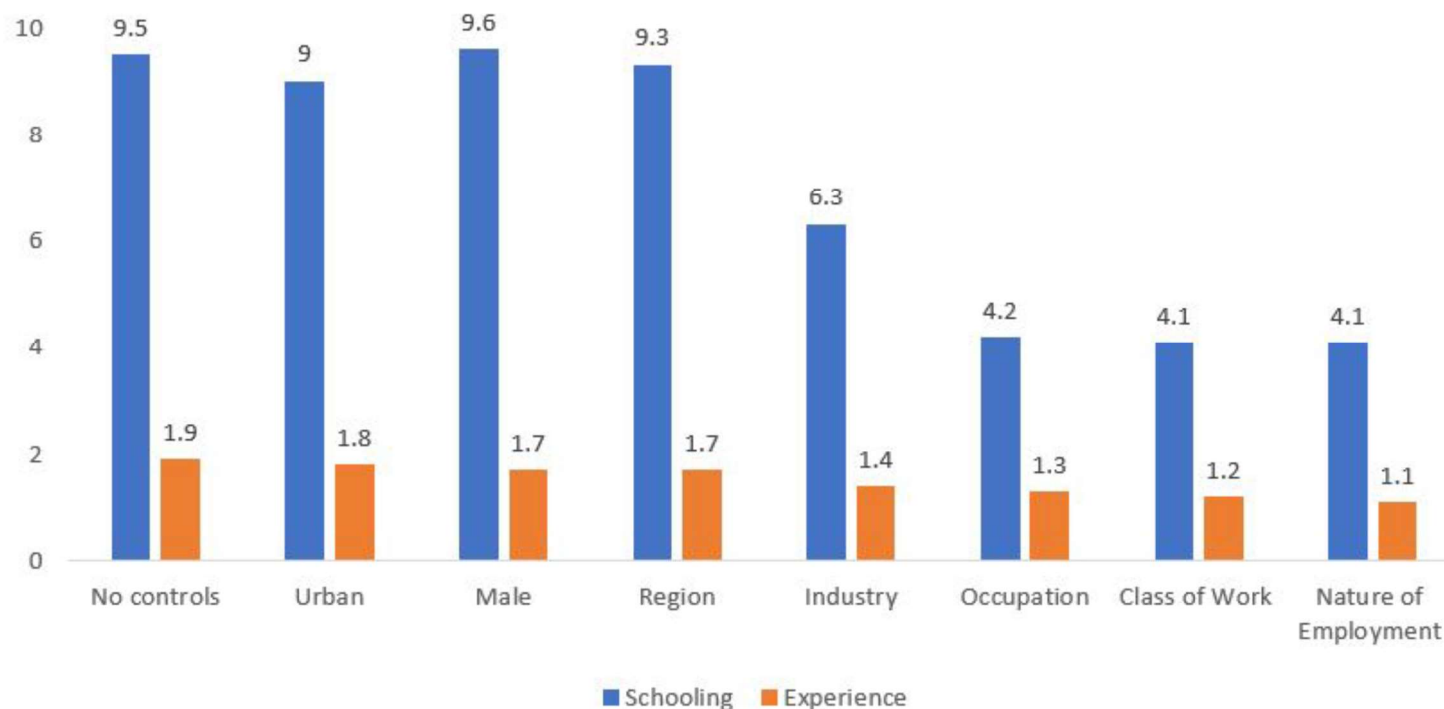
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Returns to Schooling with stepwise addition of controls



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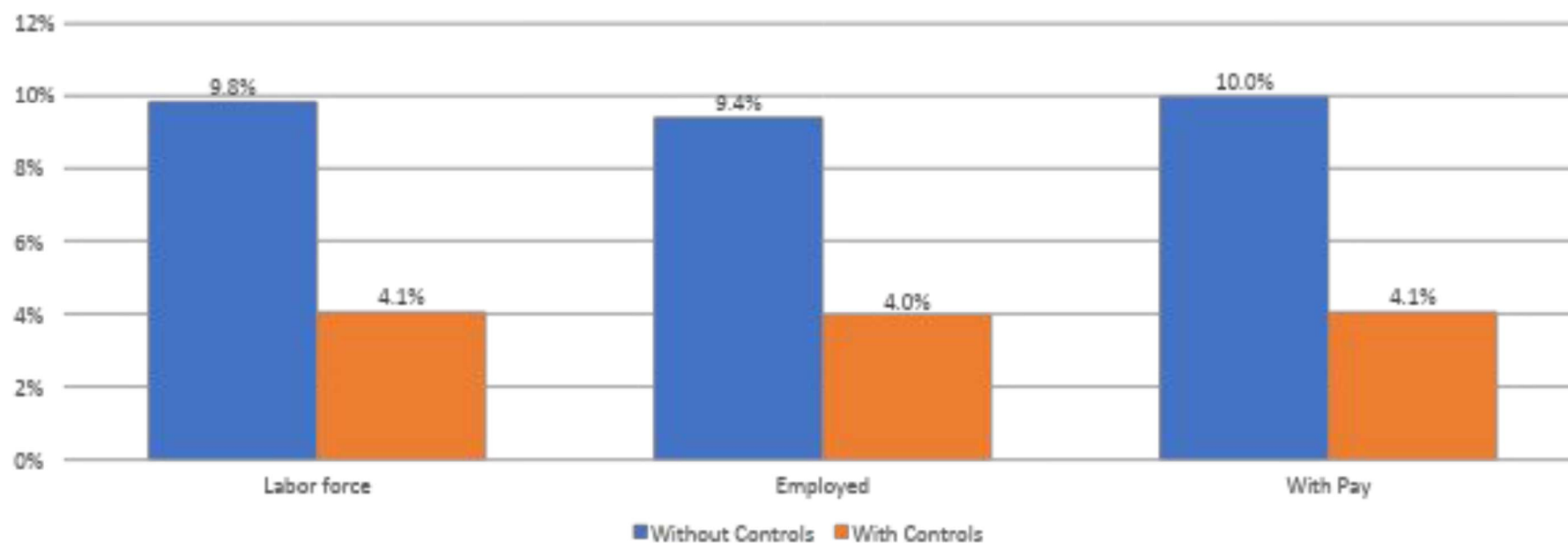
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Returns to Schooling with Selection Bias Correction



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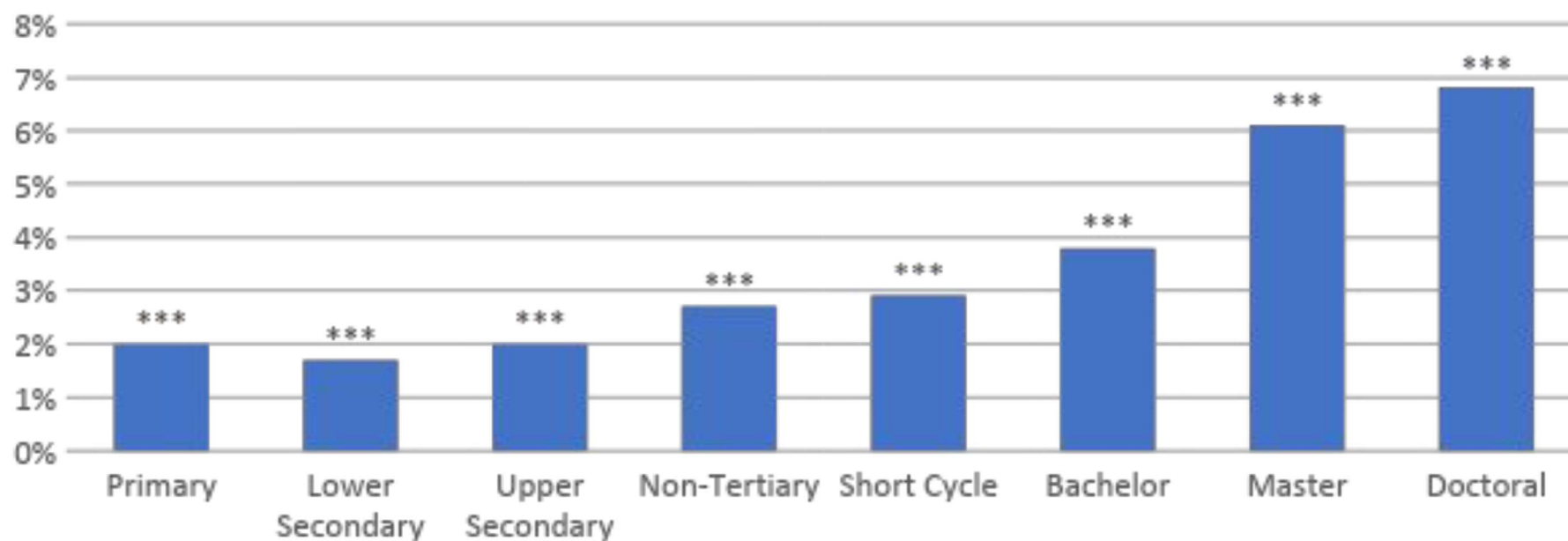
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Returns to schooling by education level



Returns to Technical and Vocational Education and Training in the Philippines



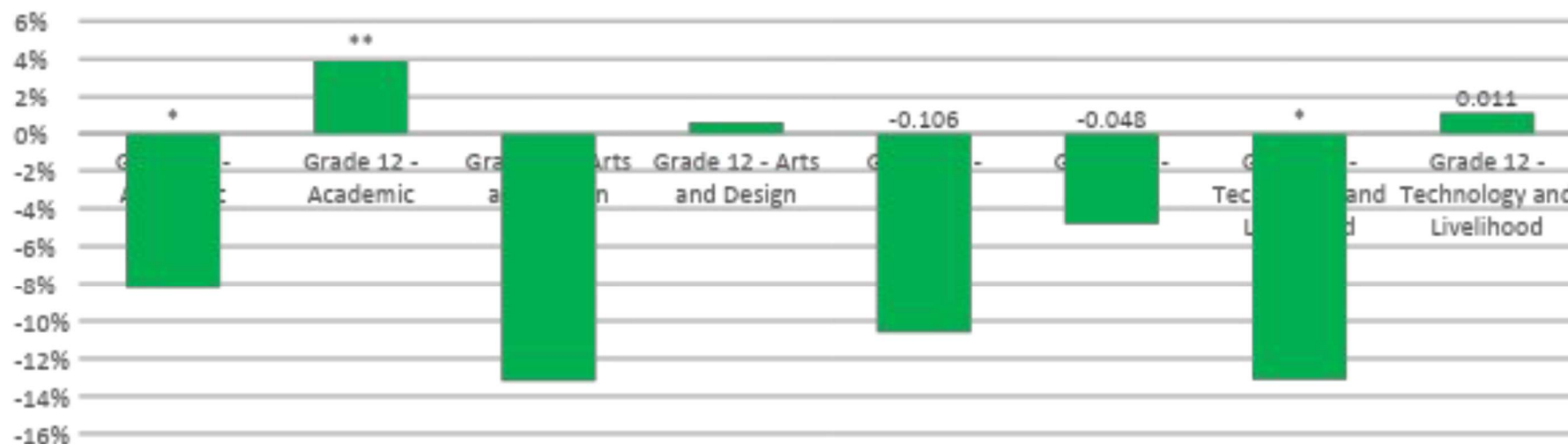
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Returns to Upper Secondary Education



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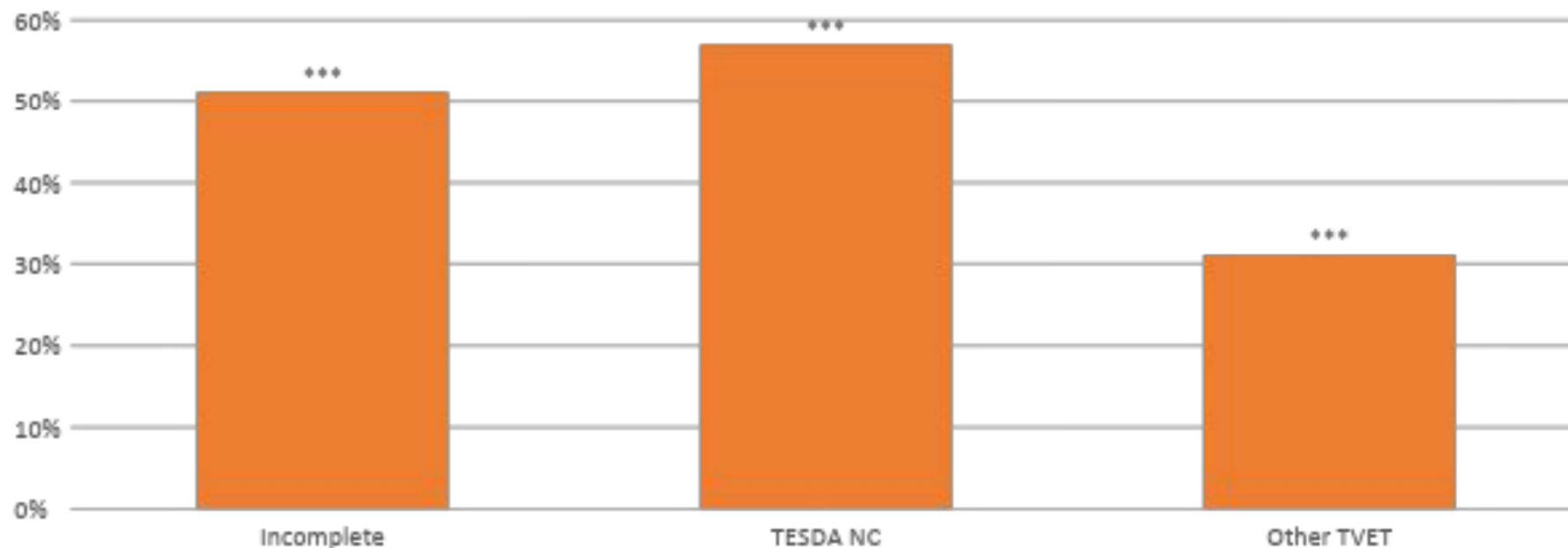
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Returns to Post-Secondary Non-Tertiary Education



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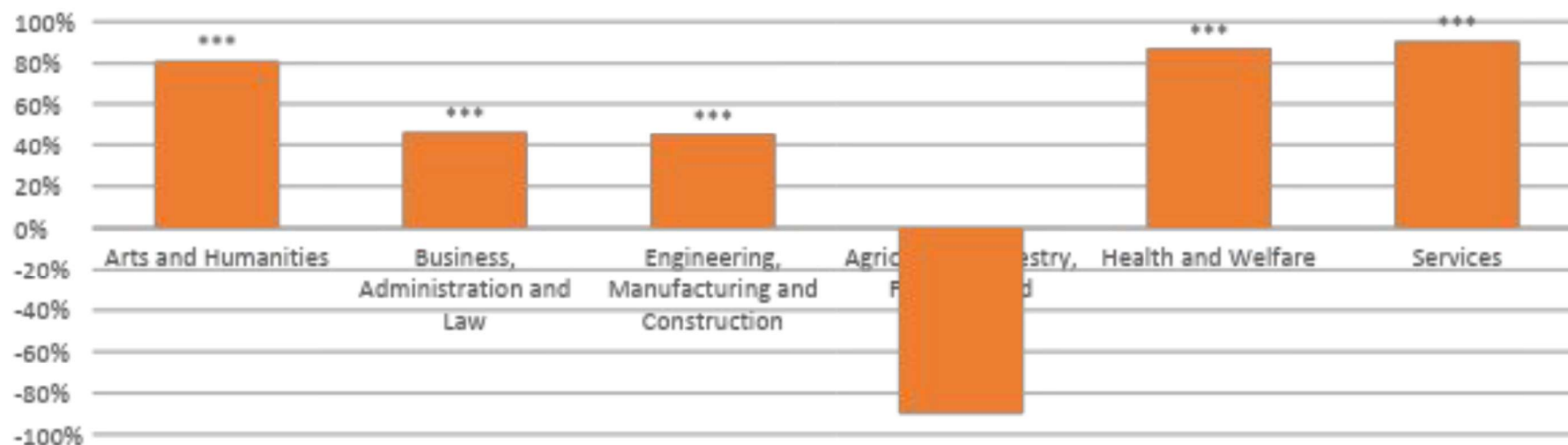
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Returns to TESDA NC by Broad Field



Returns to Technical and Vocational Education and Training in the Philippines



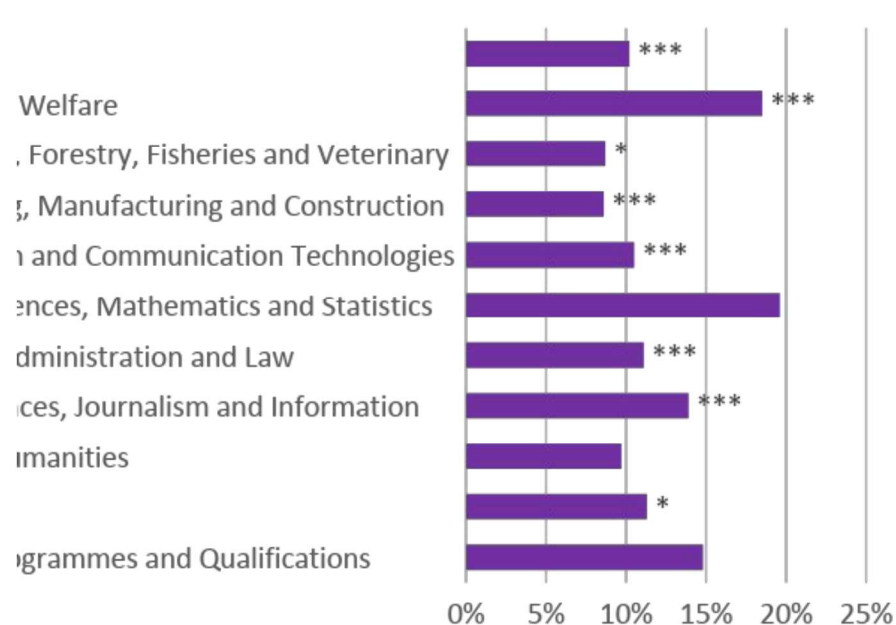
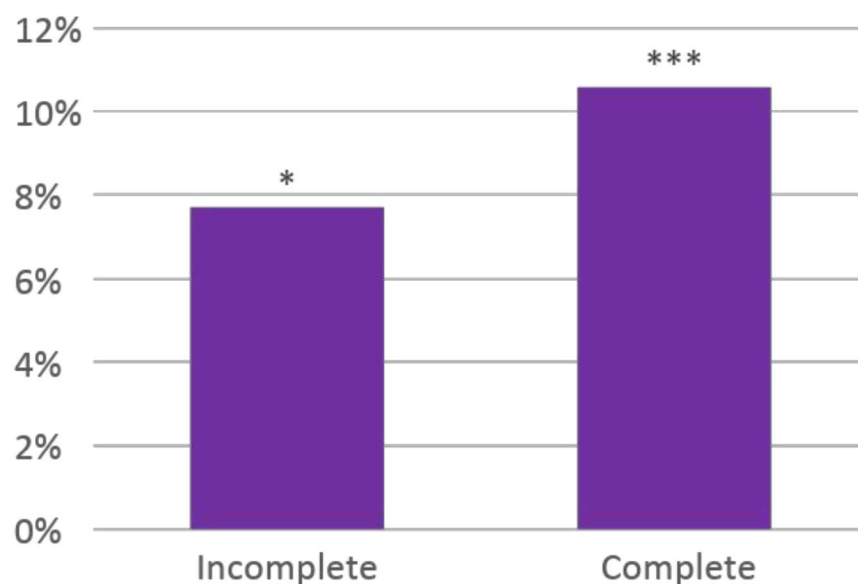
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Returns to Short-Cycle Tertiary Education



Returns to Technical and Vocational Education and Training in the Philippines



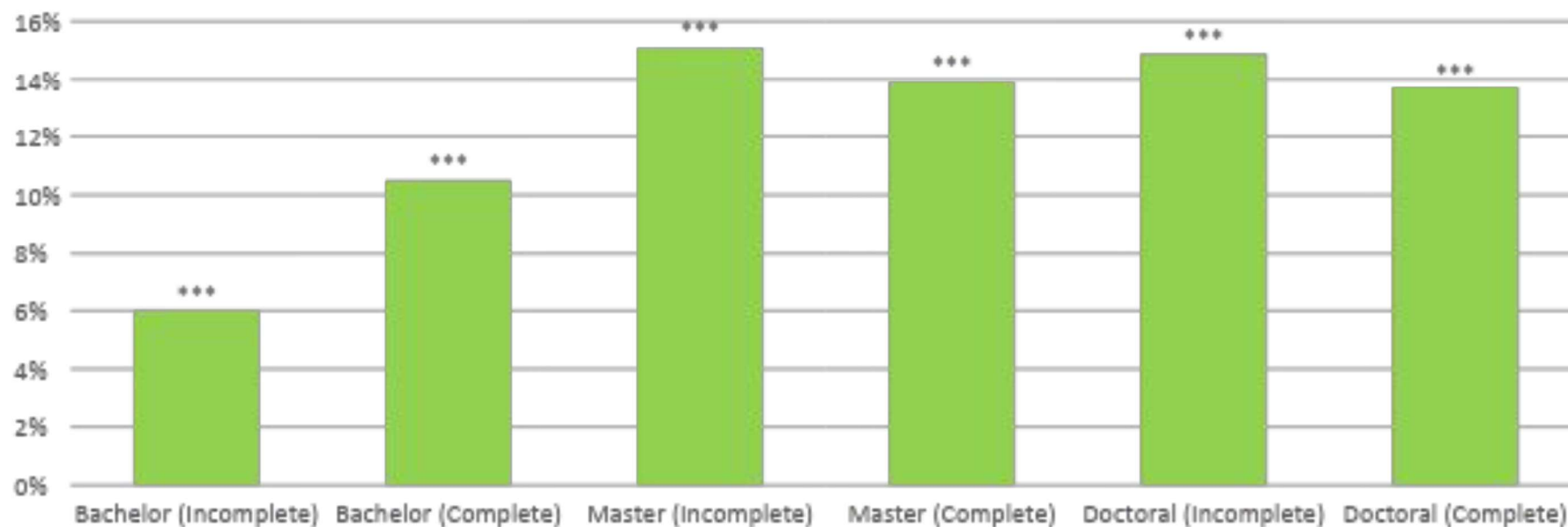
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Returns to Tertiary Education



Returns to Technical and Vocational Education and Training in the Philippines

Conclusion

1. The basic estimate of average rate of return to schooling in the Philippines is comparable to the world average and that of the region.
2. Notwithstanding the relatively high returns to schooling in the country, returns appear to be underestimated due to selection bias.
3. Returns to various levels of education are mostly positive and generally increasing.
4. Returns to TVET at the upper secondary level are not significant for completion and even negative for incomplete participation.
5. Nevertheless, there are substantial returns to TVET at post-secondary non-tertiary level.
6. Across TESDA qualifications, returns are highest for services, education and welfare and arts and humanities.
7. There are also respectable returns to short-cycle tertiary level TVET, both for completion and incomplete participation.



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Thank you!



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