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ECONOMIC RETURN TO INVESTMENT IN EDUCATION AND TVET MICRO AND MACRO PERSPECTIVES

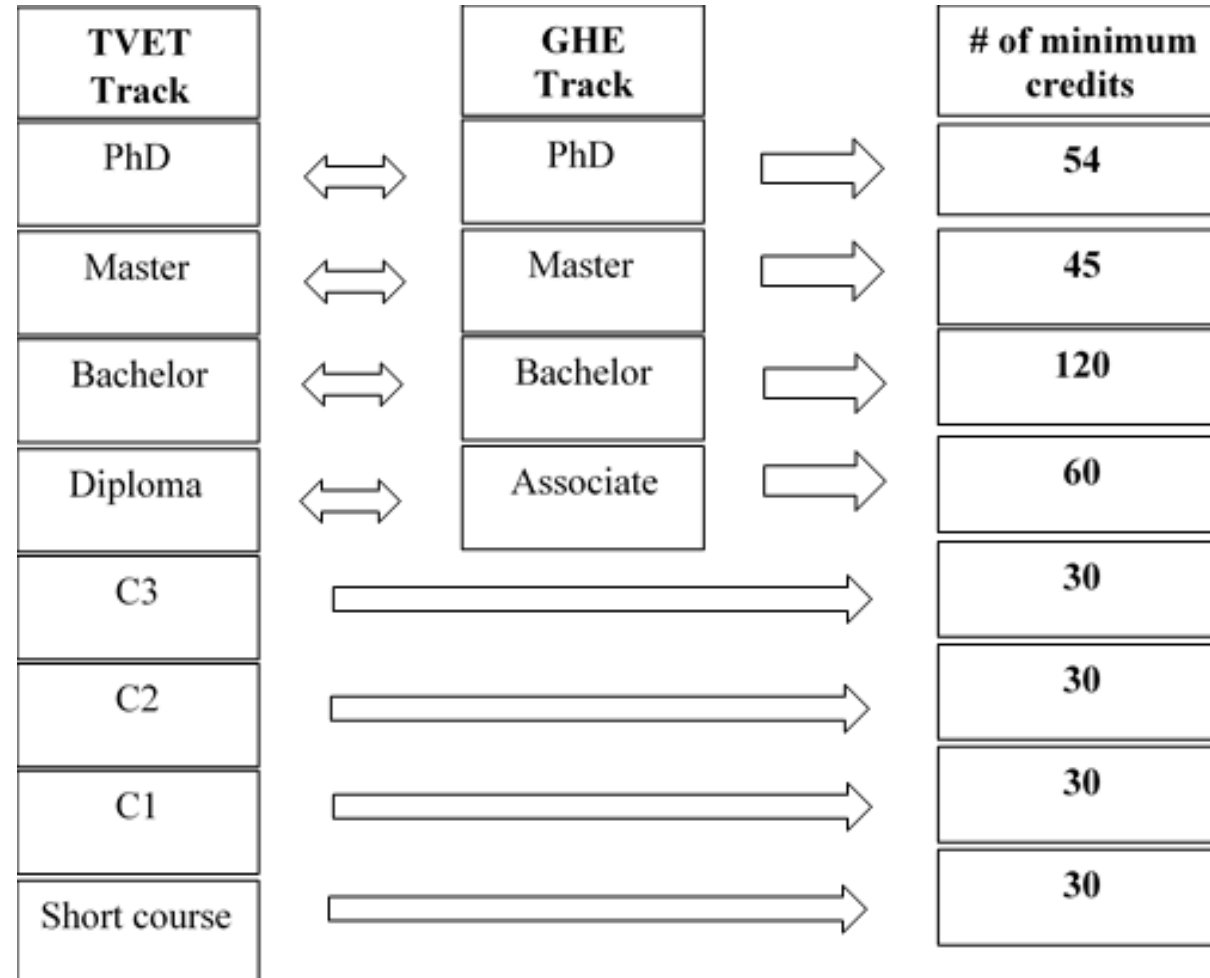


Sim Sokcheng
Research Fellow
CDRI
simsokcheng@cdri.org.kh
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EDUCATION STREAM



Source: Author's preparation.

CONSTRAINTS FACING TVET SECTOR IN CAMBODIA

1. Lack of public awareness on the importance of TVET skills (*second tier or second rank education → low enrollment rate compared to GHE*)
2. The quality of TVET education has not yet fully responded to skill demands of private sectors
3. Limited financial resources for the implementation of TVET system
4. Lack of systematic coordination among line ministries

Source: Royal Government of Cambodia. 2017. *National Policy on Technical and Vocational Education and Training (2017-2025)*. Phnom Penh: RGC.

RESEARCH OBJECTIVES AND HYPOTHESIS

To estimate the rate of return at the individual and national level, of investment in TVET

1. **At national level:** *to systematically capture the countrywide impacts (real GDP, household incomes, labor incomes, inflation) of the increased public spending on TVET and Non-TVET*
2. **At individual level:** *to quantify benefits of TVET investment on wage premium, employability and probability of landing a job of TVET graduate relative to those of a general education graduate.*

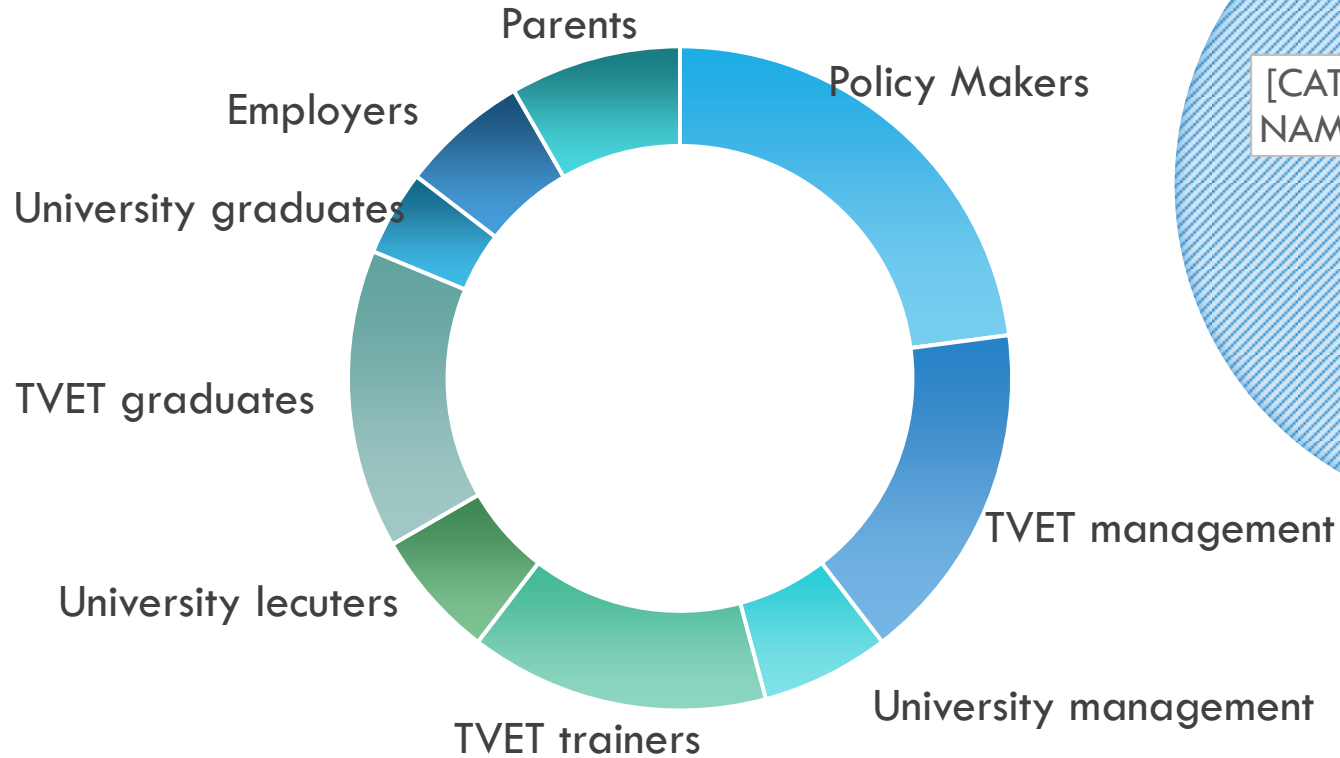
Research hypothesis: Students who graduated from technical and vocational education and training in the 2015-16 academic year earn lower wages and has lower probability of being employed after graduation than similar graduates of general higher education in the same academic year.

MACRO ANALYSIS: CGE MODELLING

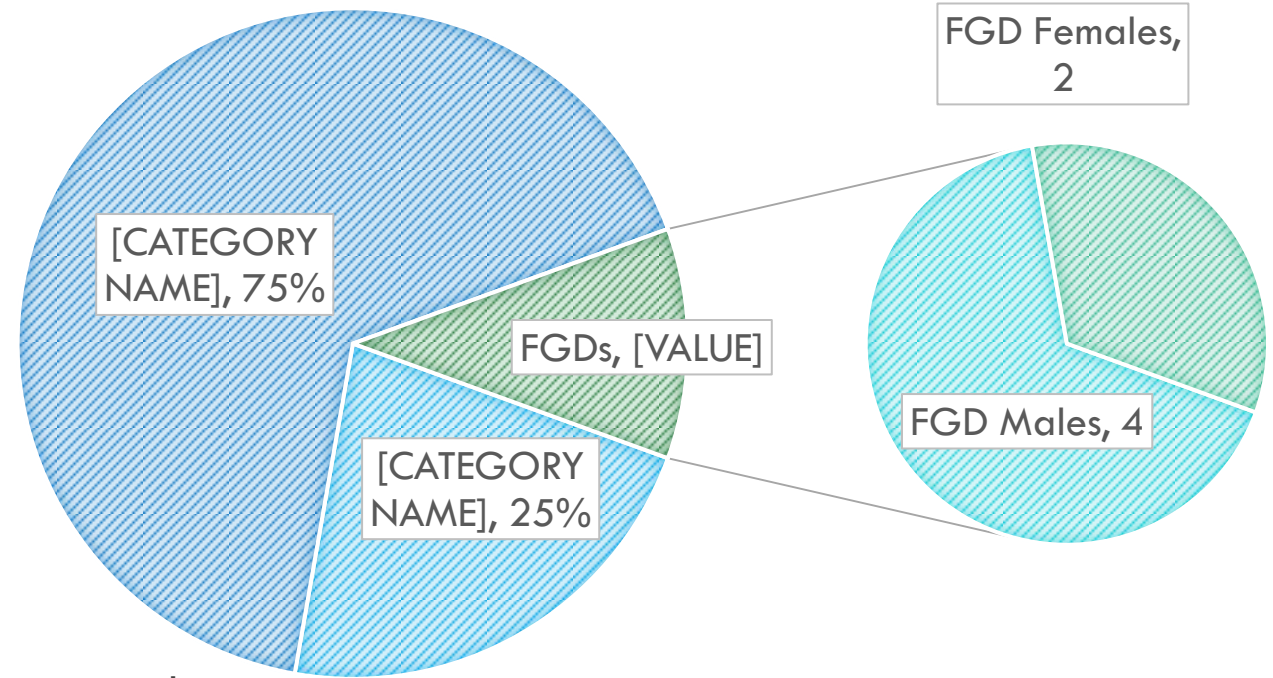
- CGE: Computable General Equilibrium
- It's a country-wide approach that could capture all the relationship between sectors (inter-link industries), agents (households, firms and the government), income/expenditure, factor markets and other significant economic variables in the economy.
- Various kinds of simulations can be made based on the theory and policy decision which could project the future effects and answer to “what if” questions.
- Scenario 1: Rest of the World transfer to RGC to spend on TVET
- Scenario 2: Rest of the World transfer to RGC to spend on Education Non-TVET

QUALITATIVE METHODS

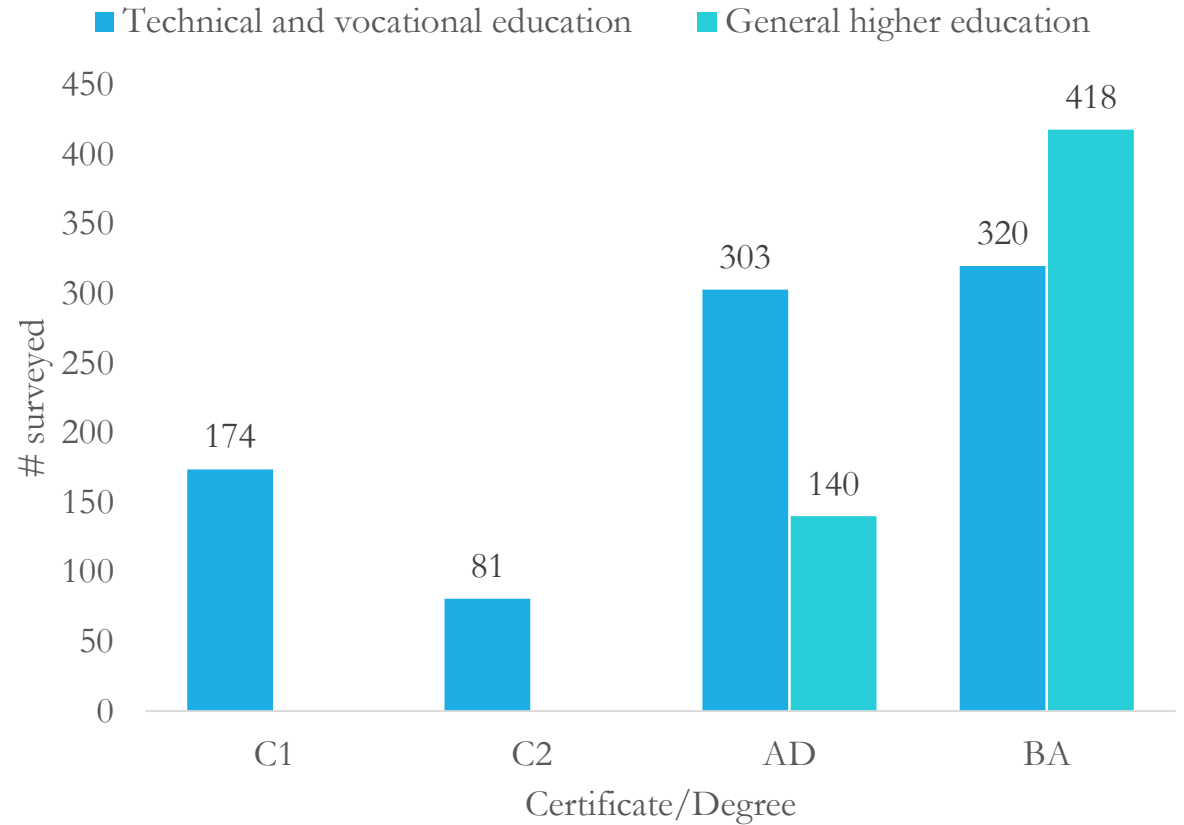
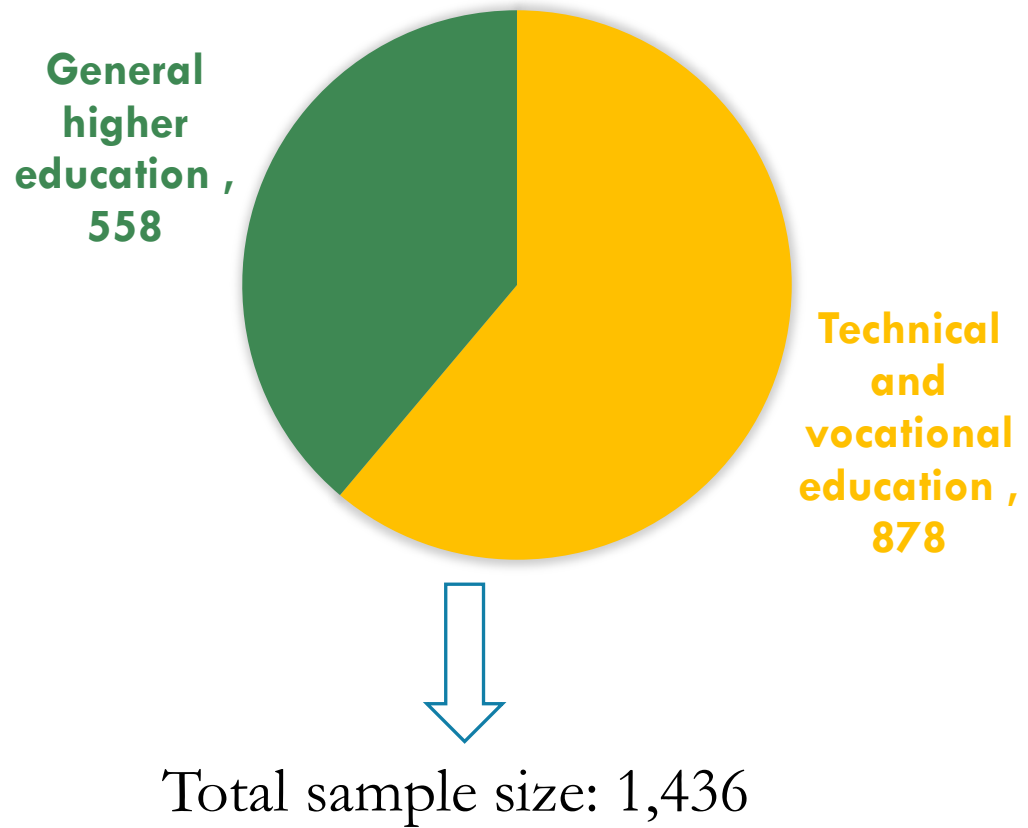
KII Participants by Categories



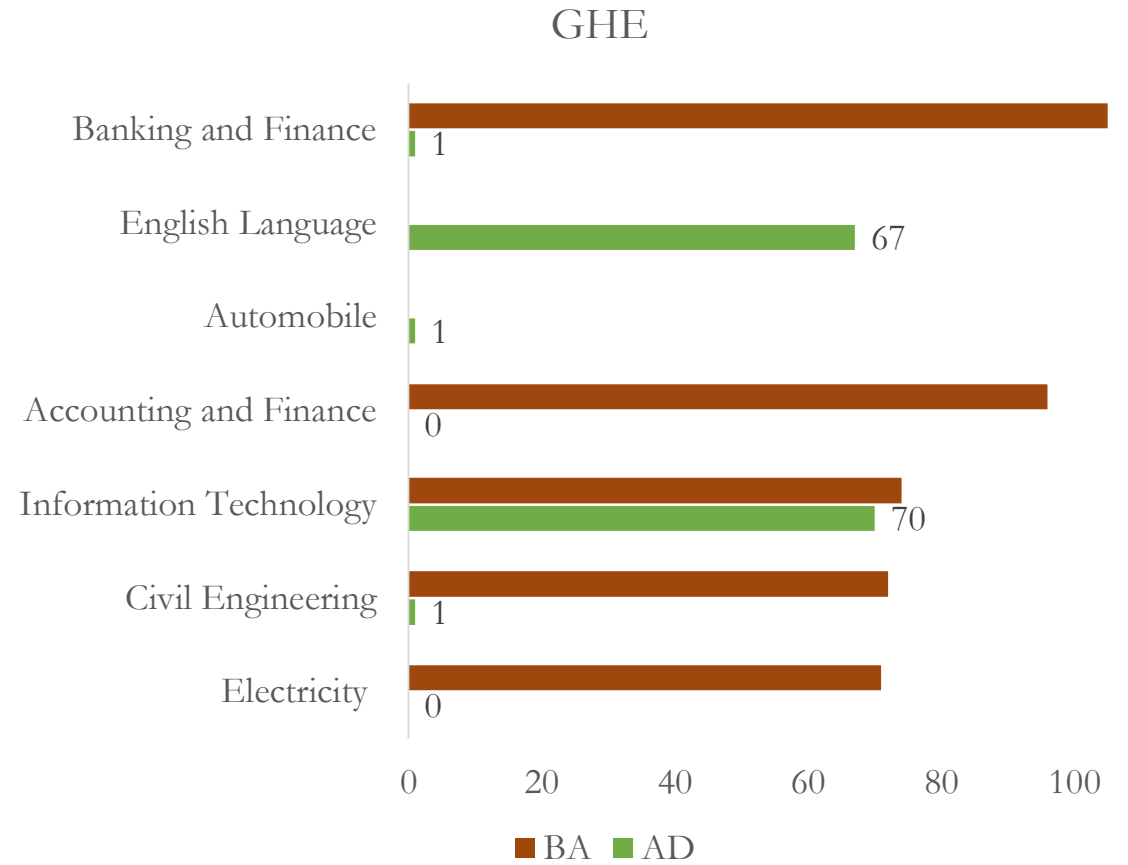
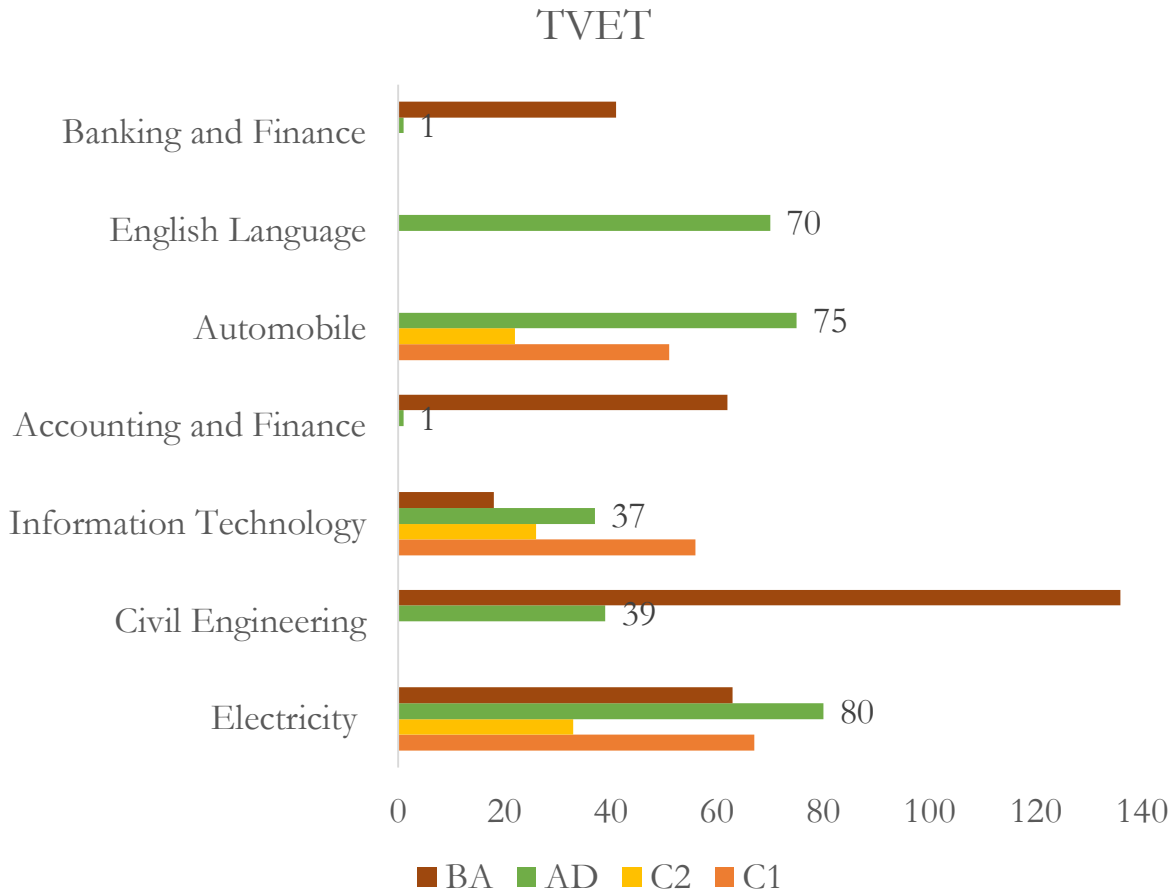
Research Participants



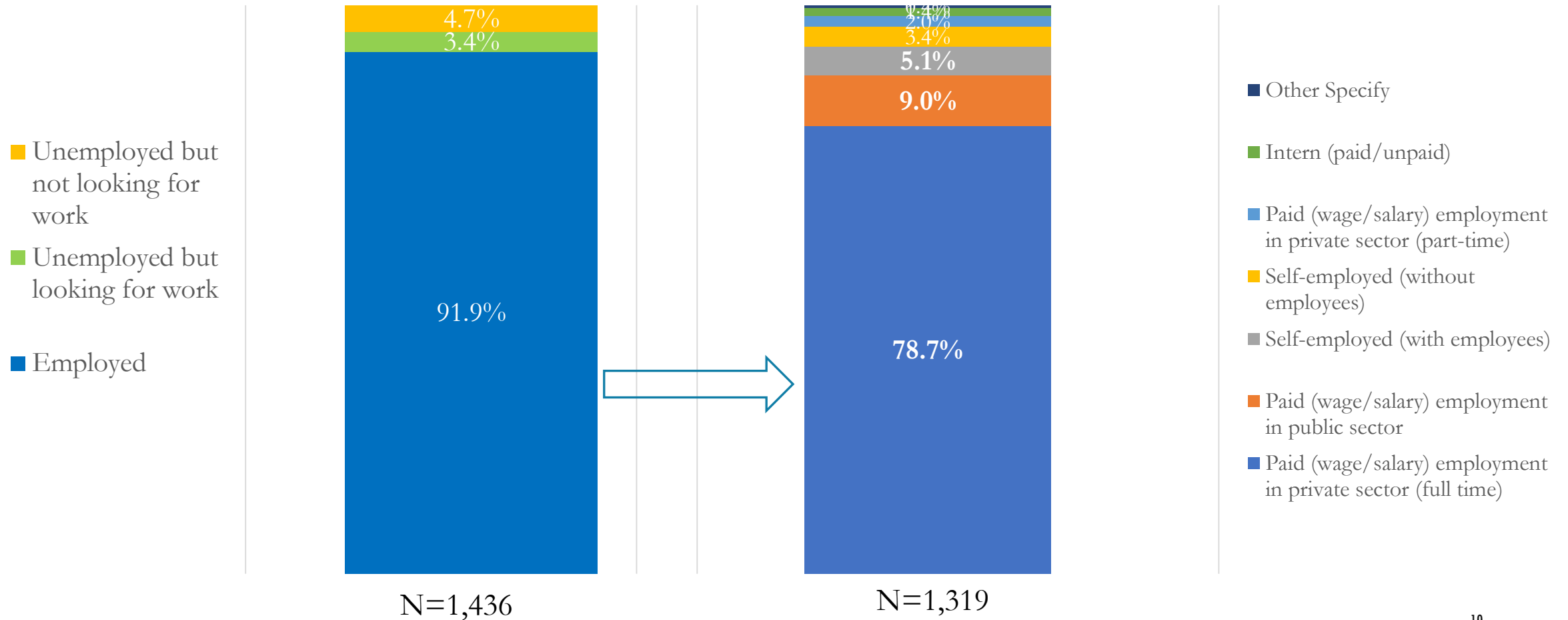
MICRO ANALYSIS: SAMPLE SIZE



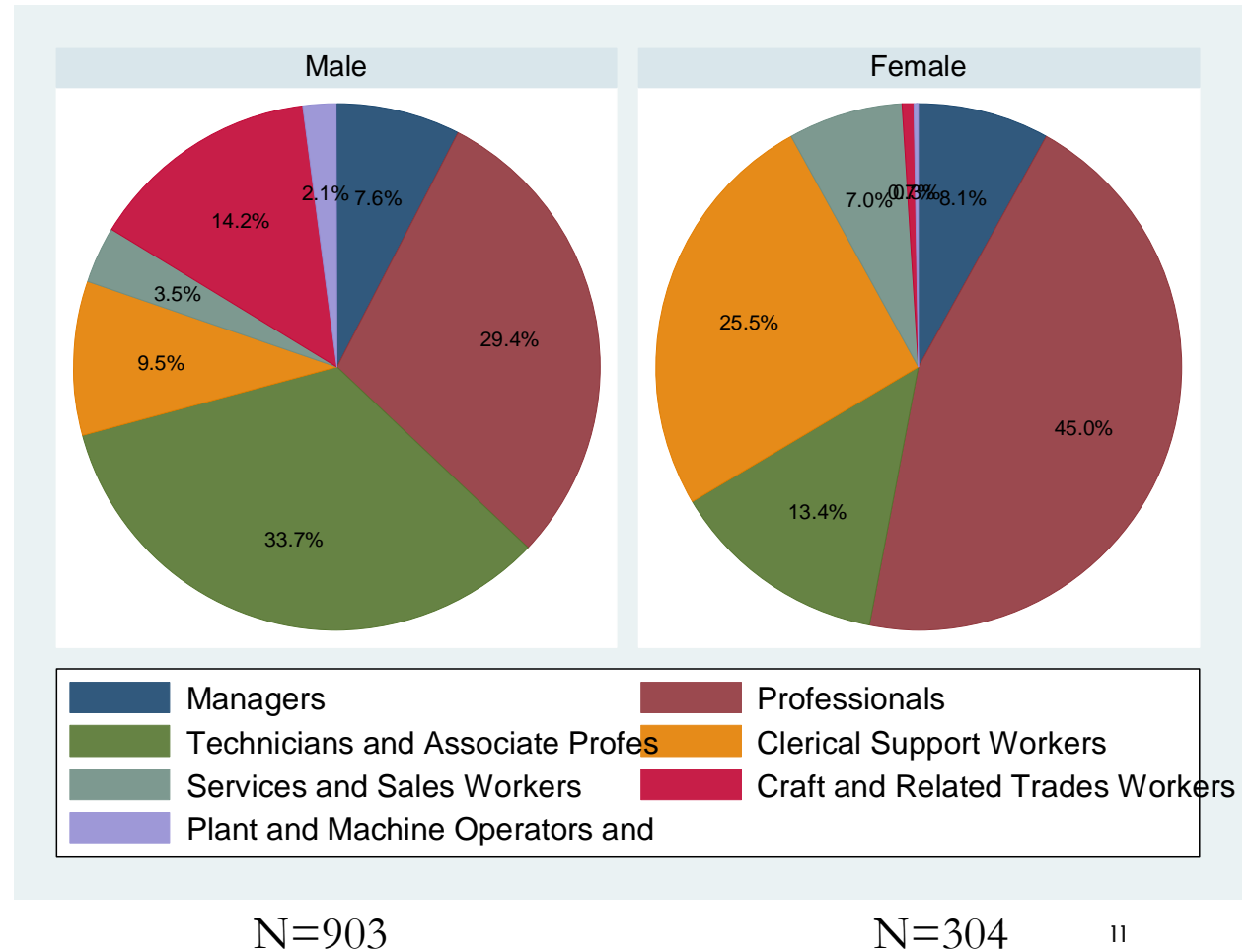
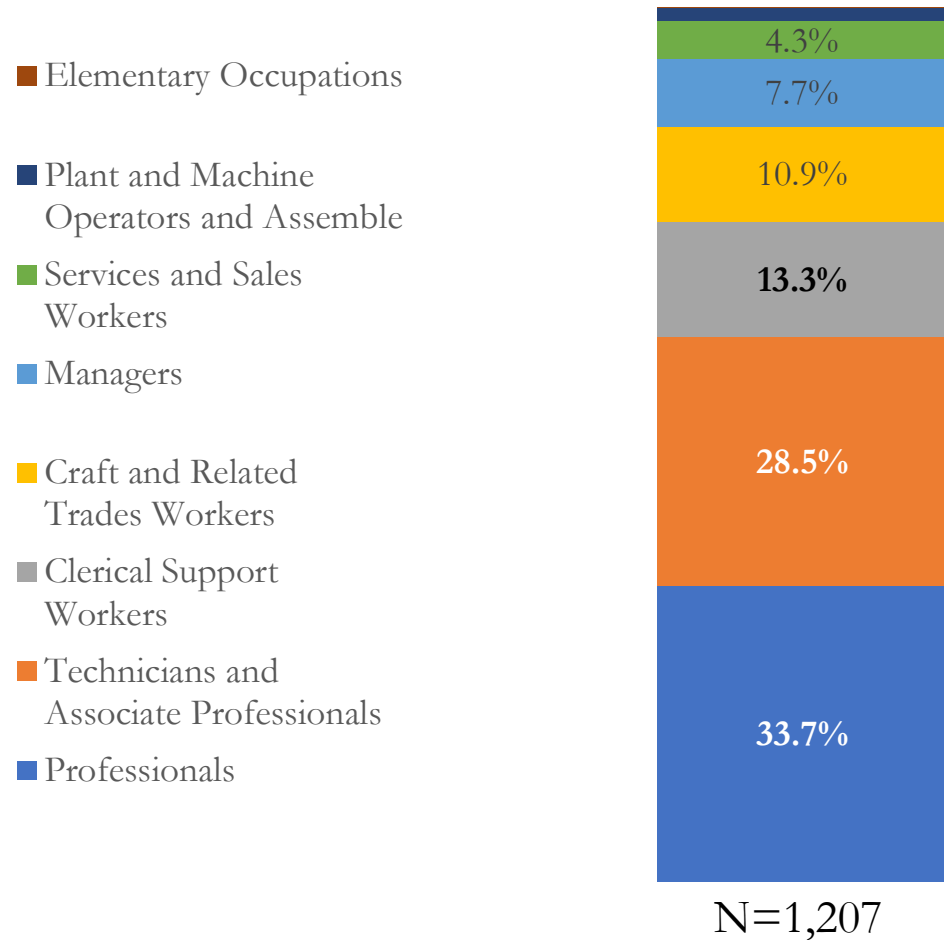
SAMPLE SIZE BY DEGREE AND MAJOR



SAMPLE EMPLOYMENT PROFILE



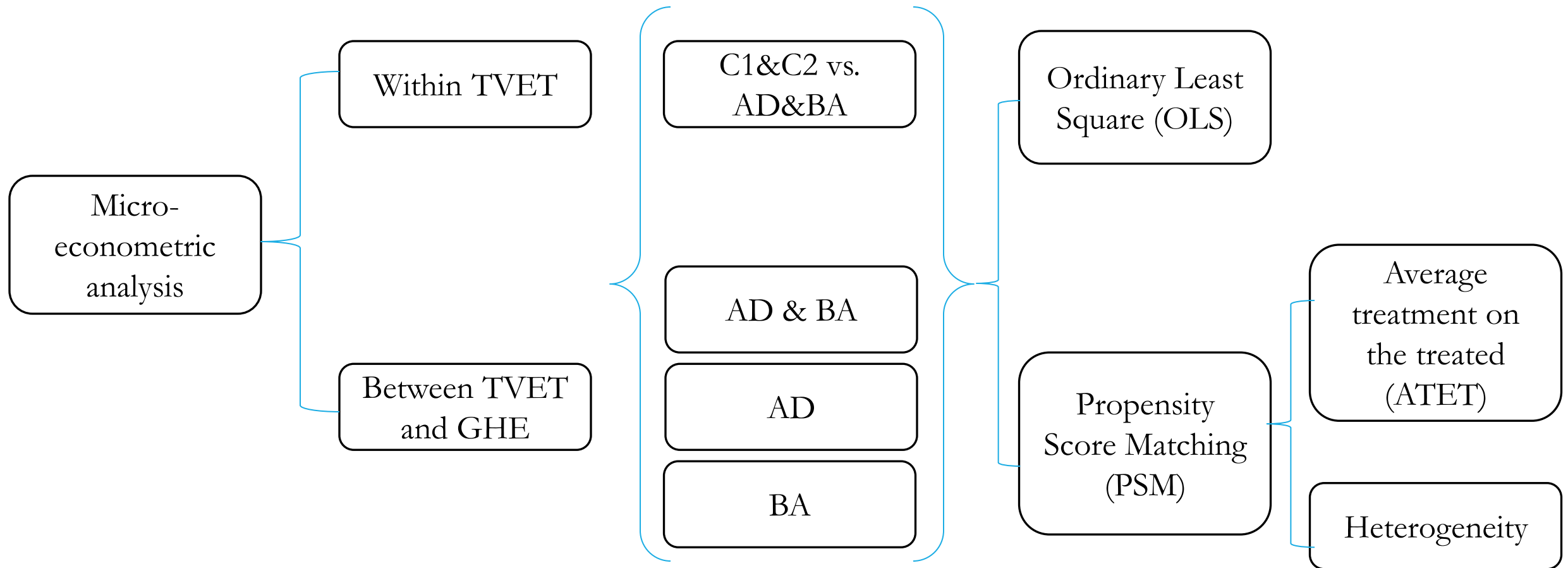
SAMPLE EMPLOYMENT PROFILE (WAGE EMPLOYMENT)



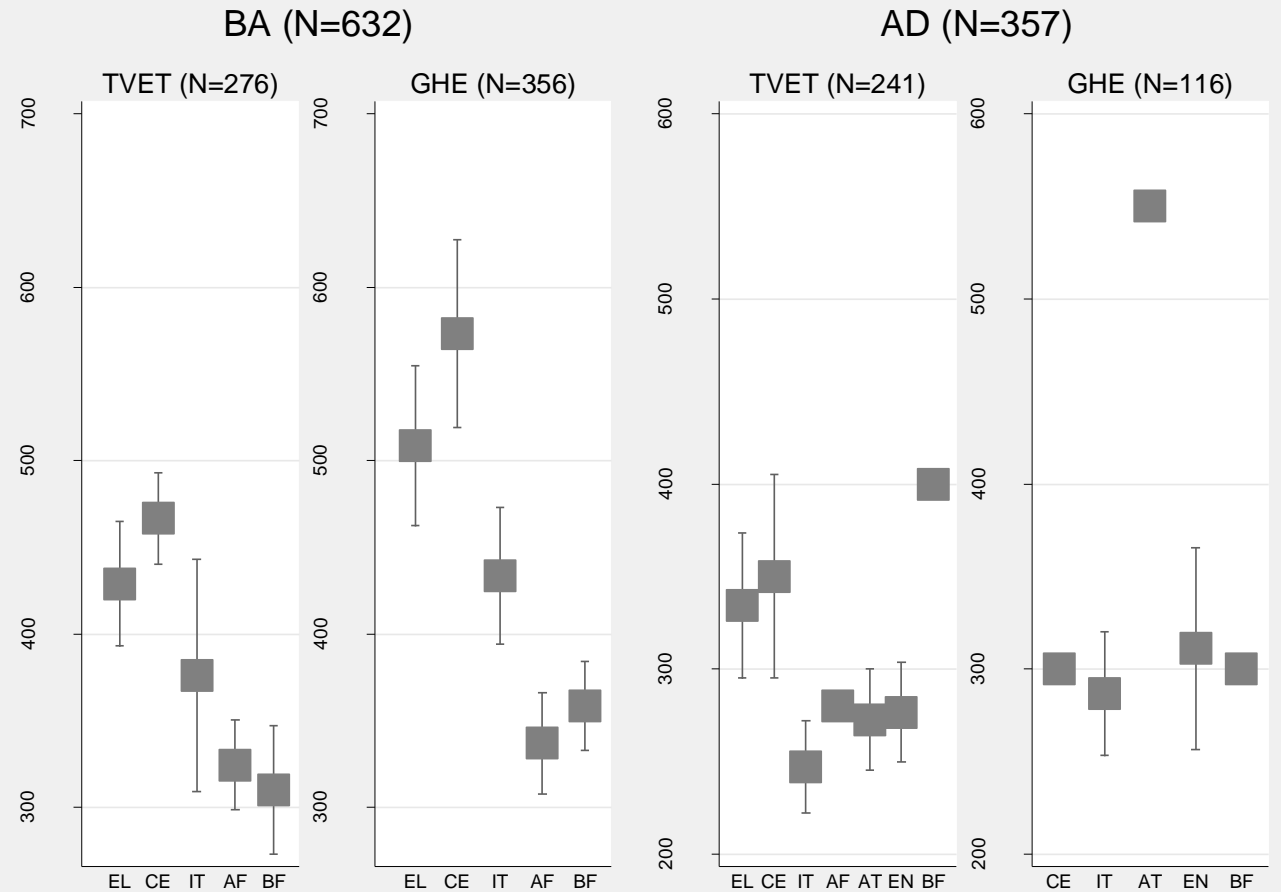
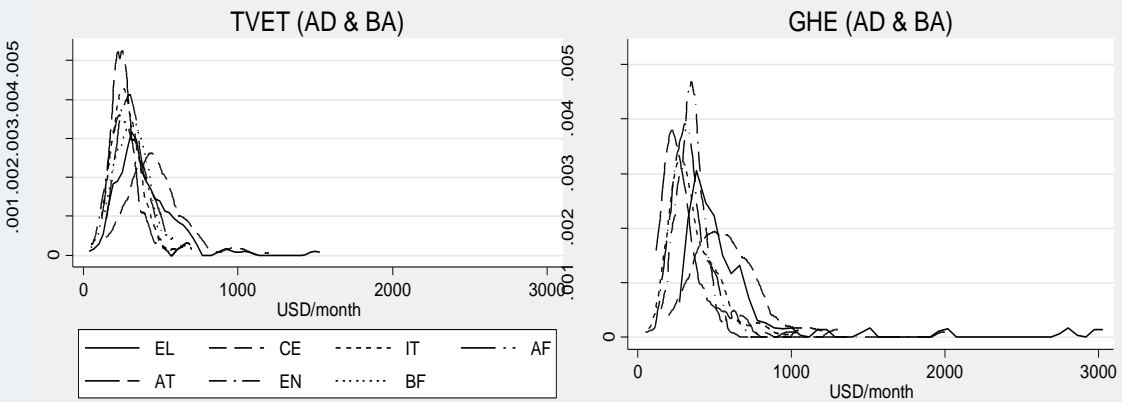
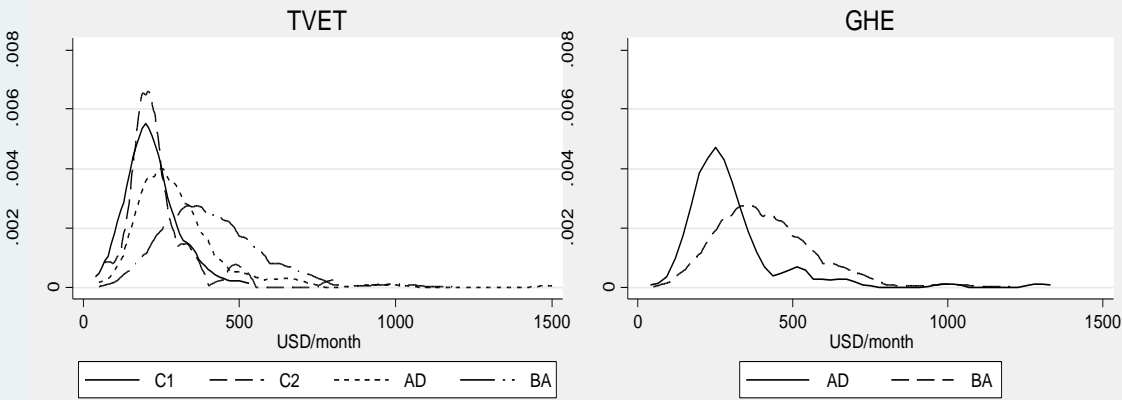
DEFINITION OF INDEPENDENT AND DEPENDENT VARIABLES

Variable	Definition	Note
TVET vs. GHE	Binary variable: 1 for graduates of TVET and 0 for those of GHE	
Monthly wage earnings	Monthly wage earnings (wage employment)	1
Monthly wage earnings per hour worked	Monthly wage earnings per hour (wage employment)	2
Hours worked past 7 days	Number of hours worked for the past 7 days	3
Hours worked past month	Number of hours worked for the past month	4
Employed immediately after graduation	Binary variable: 1 if the graduate was employed immediately after graduation	5
Employed since graduation	Binary variable: 1 if employed since graduation and 0 otherwise	6

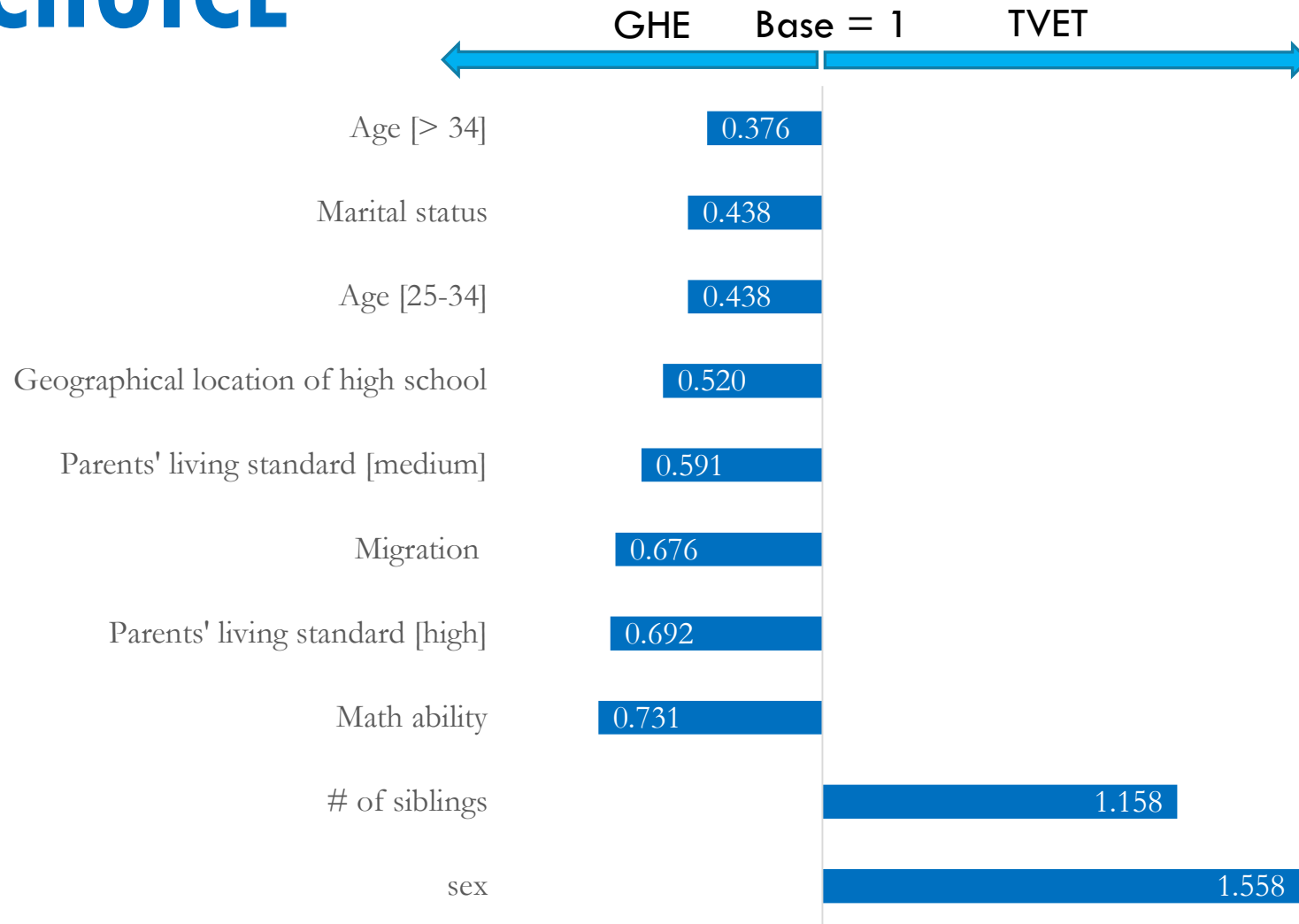
ANALYSIS PLAN



AVERAGE MONTHLY WAGE EARNINGS BY DEGREE AND MAJOR

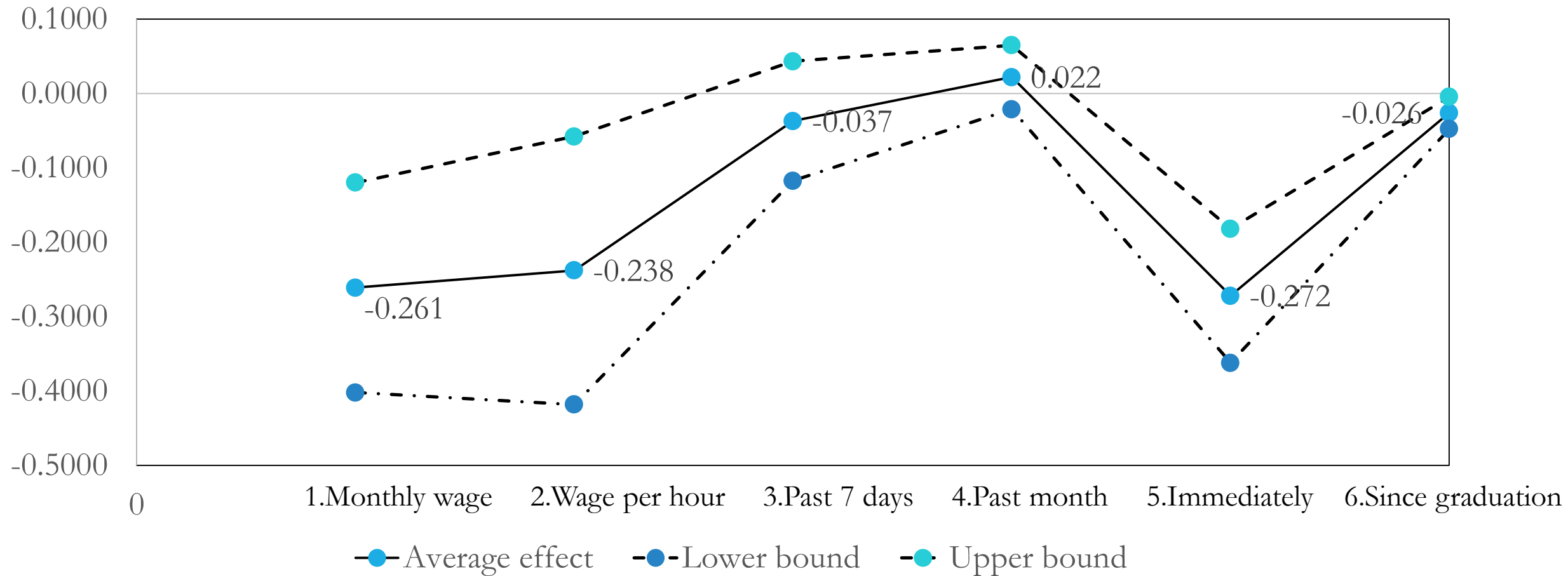


FACTORS AFFECTING EDUCATIONAL CHOICE

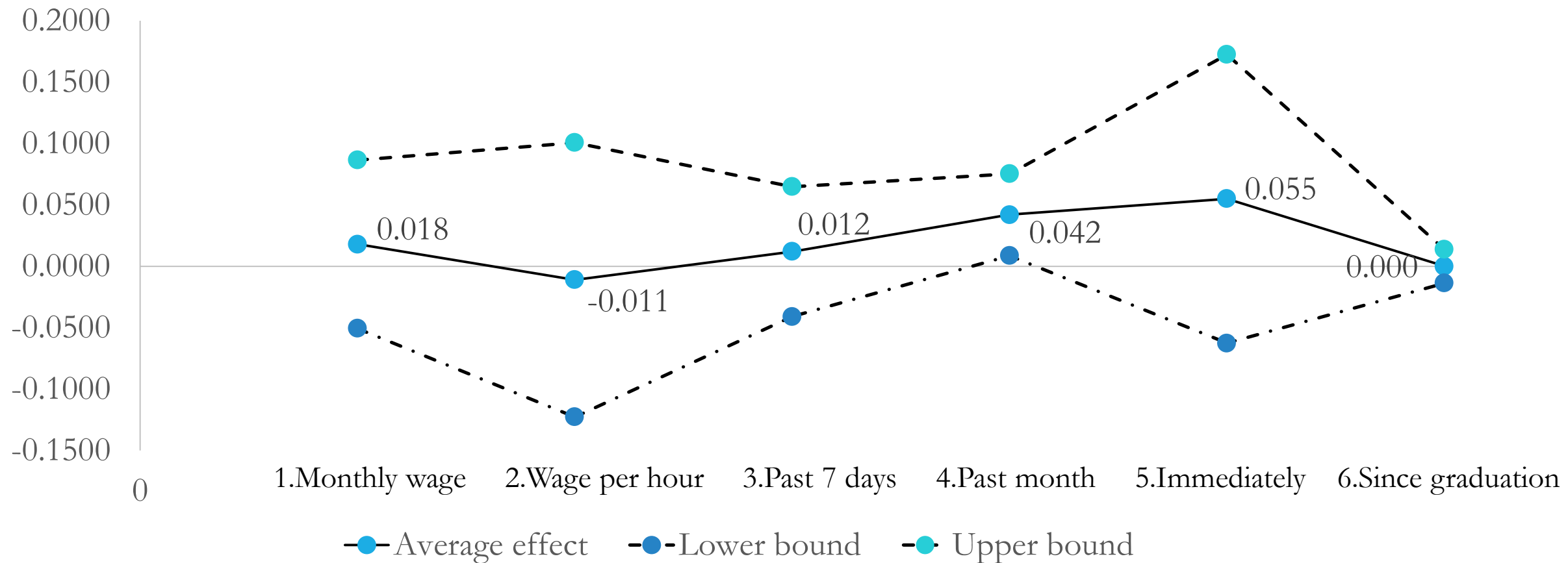


Notes: Coefficients are in odd ratio. effects of these factors are statistically significant at, at least, 10% or less confidence level. Statistically insignificant effects are not reported.

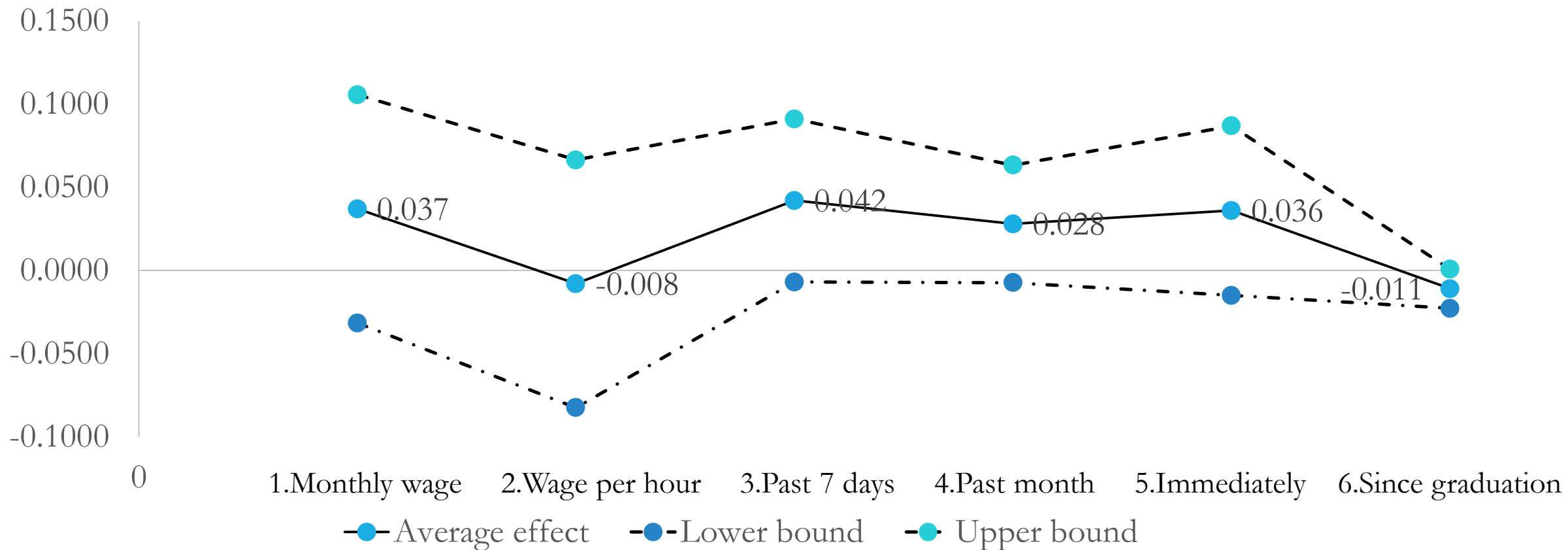
AVERAGE EFFECT OF TVET: C1&C2 VS. AD&BA



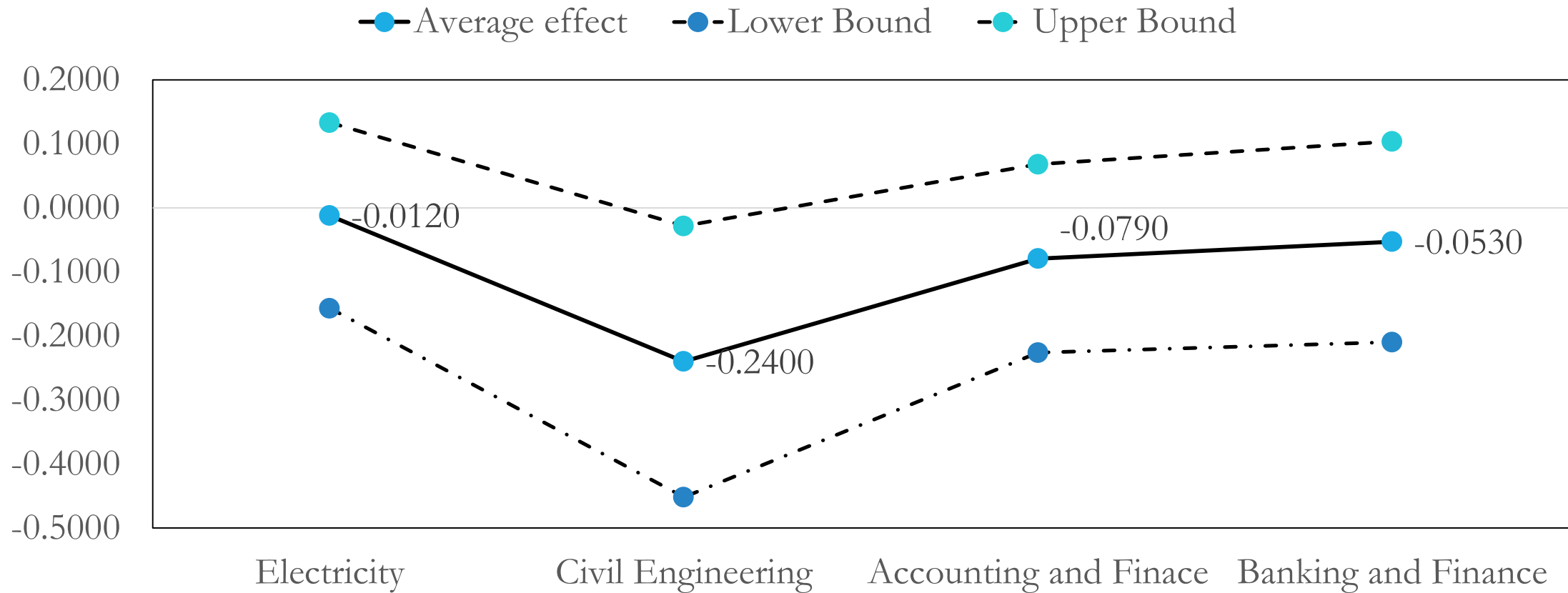
AVERAGE EFFECT OF TVET VS GHE: AD



AVERAGE EFFECT OF TVET VS GHE: BA



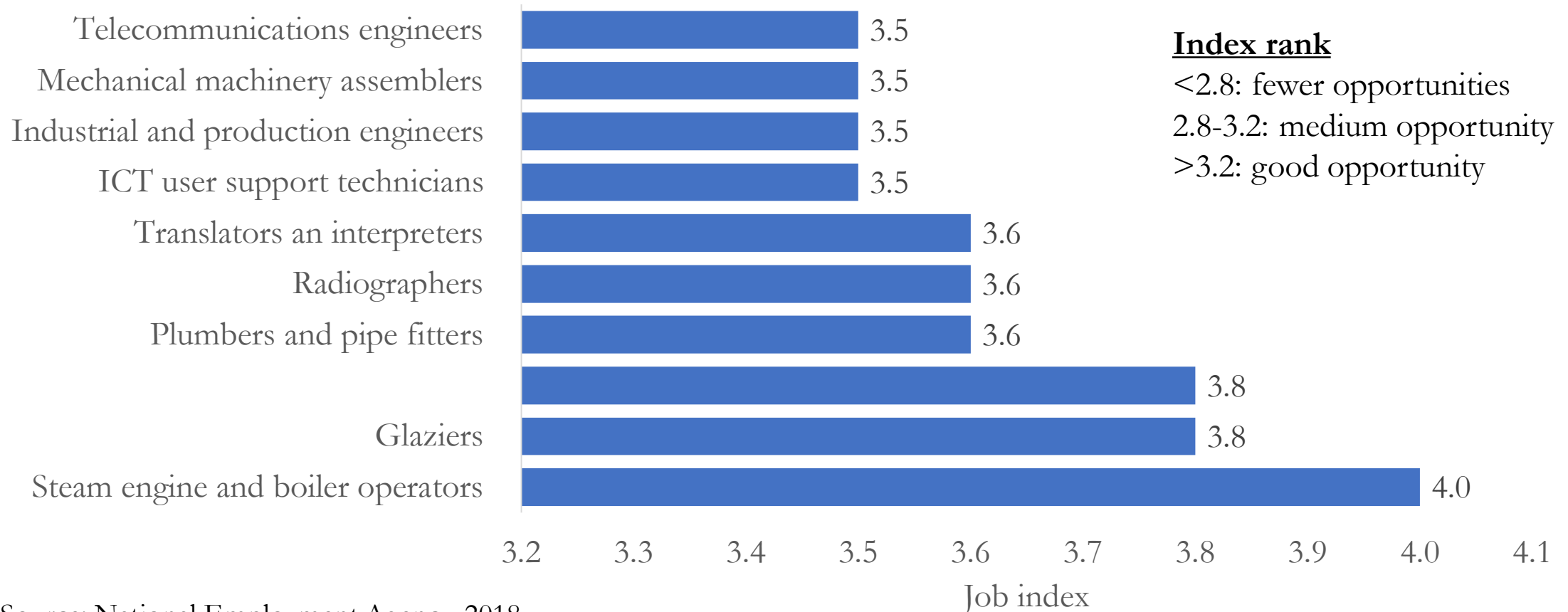
AVERAGE EFFECT OF TVET VS GHE: BA BY MAJOR



POSSIBLE EXPLANATIONS

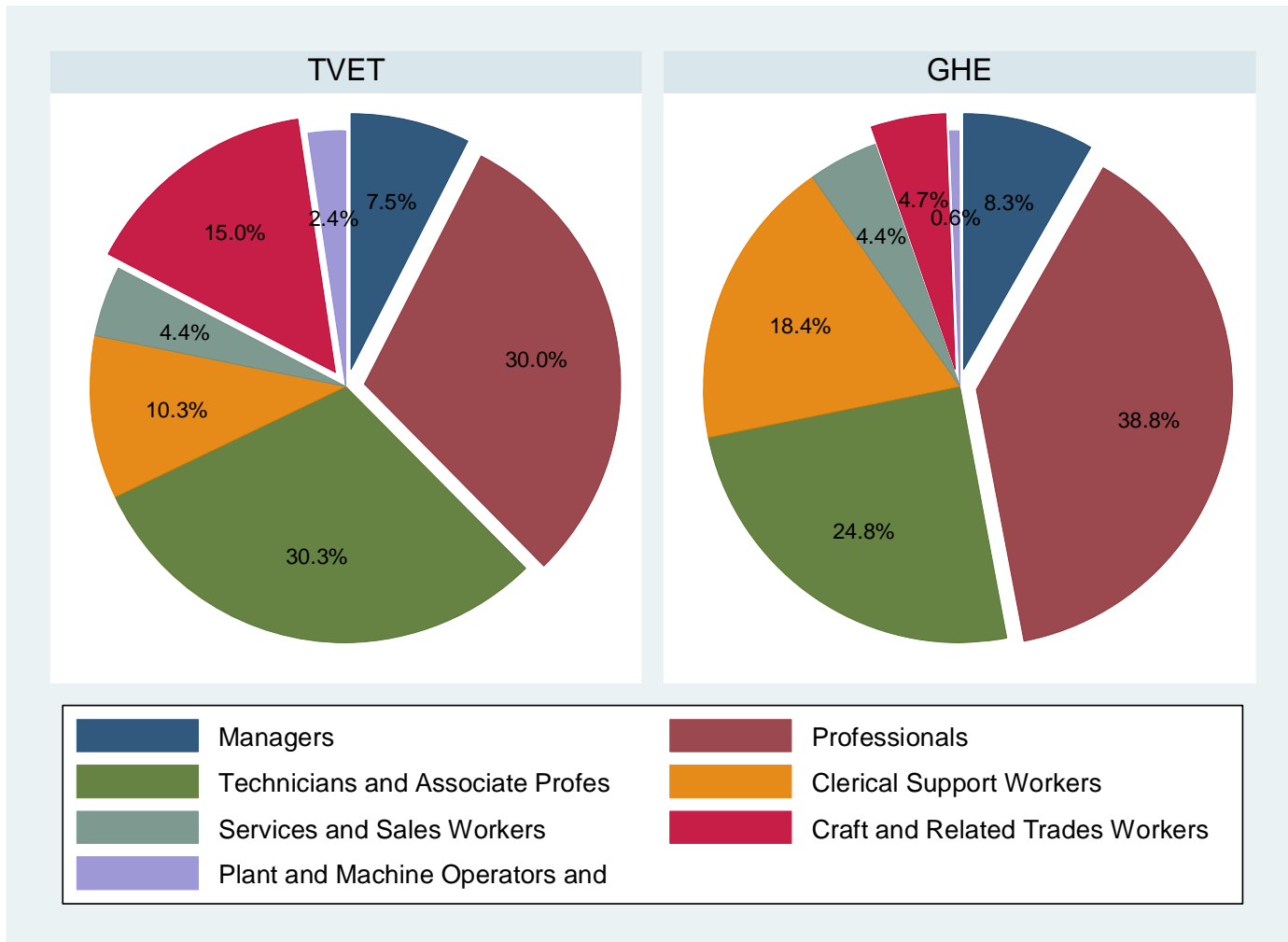
1. Growing labour market demand for technical skills
2. Over supply of university degree while jobs demanding less than a university degree is rising
3. Growing popularity of STEM jobs
4. Emphasis on strengthening technical and vocational education and training by private and public sectors

TOP 10 IN-DEMAND PROFESSIONS IN 2018



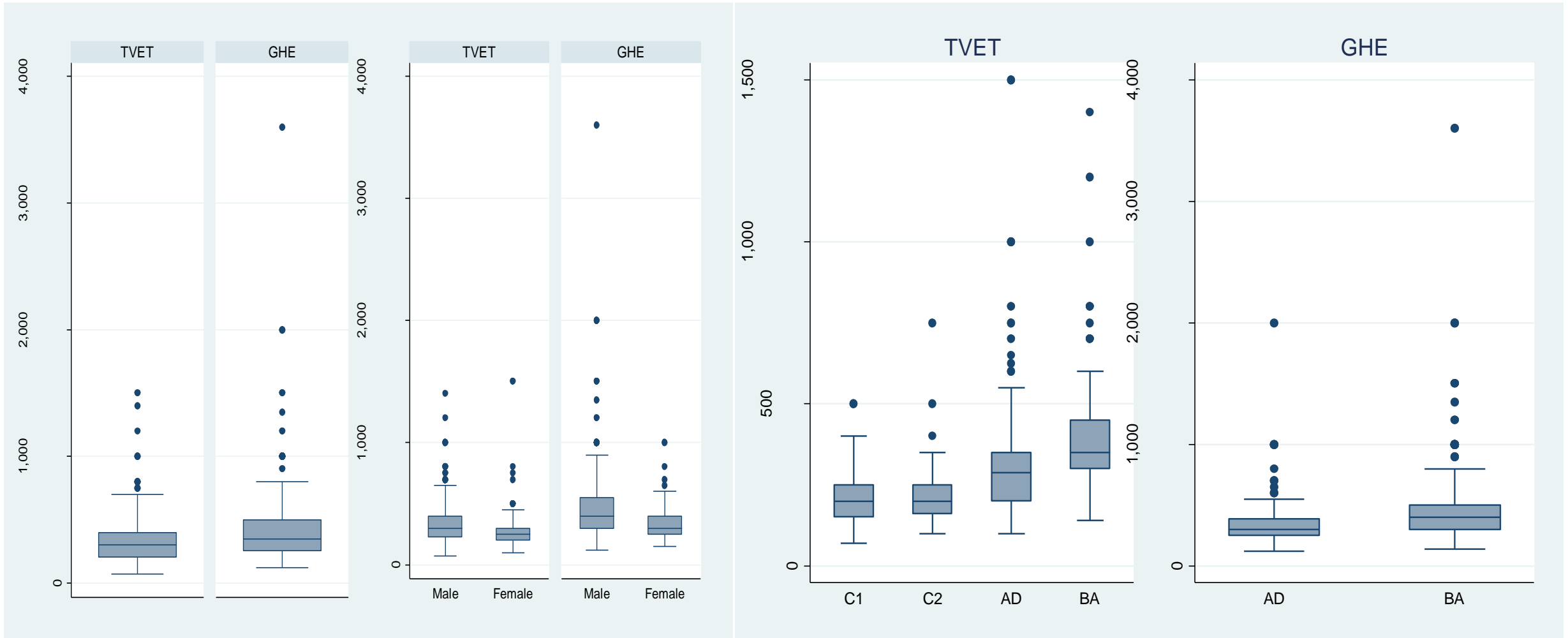
Source: National Employment Agency. 2018.
Cambodia Job Outlook 2018. Phnom Penh: NEA.

LABOR FORCE PROFILE OF GRADUATES BY LEVEL



- Labour force profile concentrates in professionals and technicians and associate professionals
- 30.7 percent of TVET graduates were technicians or associate professionals.
- The presented labour force profile partially indicates occupational segregation having GHE graduates wanting to work in white collar occupations than those of TVET.

RESERVATION WAGES



CONCLUSIONS: MACRO

The results from the two simulation scenarios in the CGE model revealed a positive impact to the economy by increasing real GDP, wage rate of labour, and household income.

Injection of fund into the economy through public spending on TVET sector produced almost the same amount of real GDP as spending on Non-TVET Education sector.

Increase government spending on Non-TVET education induces higher wage rate of labour, higher household income, which lead to increase of all sectoral price level and higher inflation in general.

Highly educated labour benefits the most from the two simulation scenarios by obtaining the highest actual income.

Household in Phnom Penh and in other urban area benefit the most from this spending by obtaining higher percentage change of their income.

CONCLUSIONS: MICRO

No significant difference of economic return between TVET and HE graduates

High probability of TVET graduates to land a job immediately after graduation relative to those of GHE

Major is crucial to determining economic benefits of TVET relative to those of GHE. Thus, TVET could be beneficial only for a specific specialization

Different students' background/capacity:

- Low socio-economic background and relatively low academic ability enrolled in TVET
- High probability of students who are good at mathematics to choose university education than TVET

Girls earn less than boys and are less likely to go to STEM major

Rural-urban earning gaps between students attending university/institution based in Phnom Penh

Lack of English competency, particularly among TVET graduates.

Graduates of C1&C2 perform relatively poor.

CONCLUSIONS: QUALITATIVE

The position of the TVET graduates in the labour market is generally promising

- Their skills are perceived to be in high demand
- Market entrance is relatively less competitive and complicated than that of University graduates
- A better chance of securing the jobs that are most suited to their graduated skills
- Internship opportunities
- However, career advancement is somewhat challenging due to their lack of necessary skills

CONCLUSIONS: QUALITATIVE 2

Incentives and motivation of TVET and university graduates to skills valuation

- Technical skills have been evidently valued, due to the growing demands for the skills and perceived entrepreneurial opportunities
- The graduates have been motivated to value skills through a number of factors such as the economic return of the technical skills, passions, childhood interests and future plans.
- Finding the right influencers like teachers, focusing on the right place: high schools and/or urban areas.

Effectiveness of TVET initiatives to promote youth employability

- Initiatives have been put in place to improve TVET graduate's employability
- However, due to key constraints such as face human resource challenges: qualification and number the implementation of initiatives seems to progress slowly, especially at the provincial level

POLICY CONSIDERATIONS

Degree and major segregation (medium to long courses)

Quality rather than quantity

Quality 12 years of education

English language competency and Girls in STEM

THANKS FOR YOUR ATTENTION

Q & A