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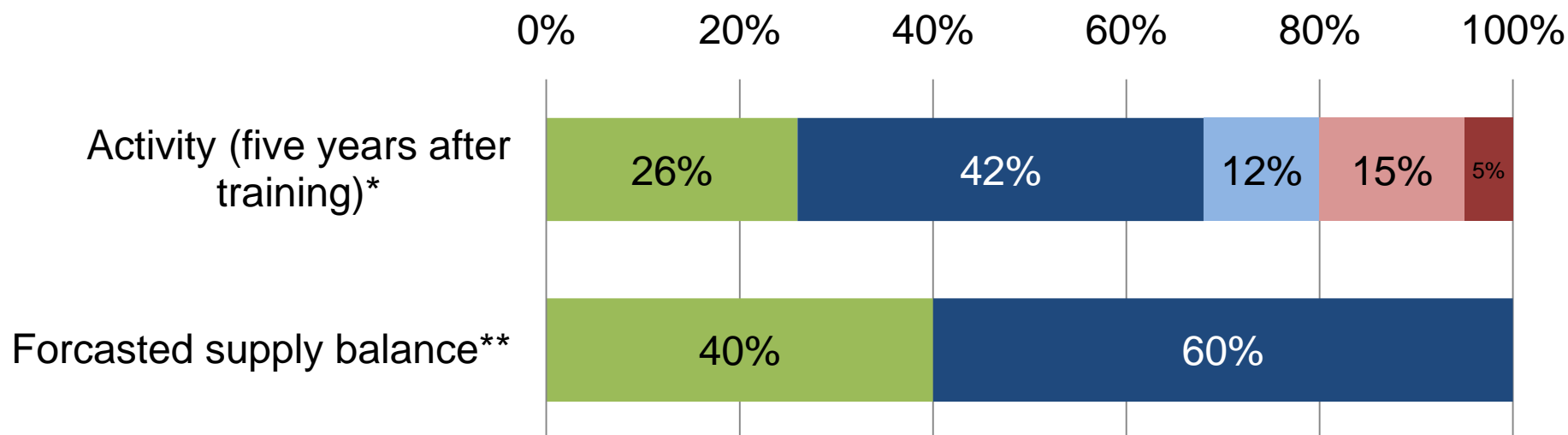
*Swiss excellence in vocational  
education and training*

# DOES IT MATTER WHERE THEY TRAIN? HEALTHCARE ASSISTANT'S TRANSITION INTO HIGHER EDUCATION

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# Background I



- Employed healthcare assistants
- Employed with tertiary-level healthcare training
- In training within healthcare
- Changed sector (employed/in training)
- Other (neither employed nor in training)

\*Source: Trede et. al., 2017

\*\*Source: Dolder & Grünig, 2016

# Background II

1. Limited Research on the transition between upper secondary VET and tertiary VET
    - Importance of individual characteristics (CH: Buchmann et. al., 2007; Schmid & Gonon, 2016; D: Hillmert & Kröhnert, 2003; Trautwein et. al., 2008)
  2. Training firm characteristics impact skill development and labour market entry (Kalleberg, 2003; Menze, 2017; Mohrenweiser & Zwick, 2015; Büchel & Neubäumer, 2001)
- Transitions might be affected by training firm characteristics

# Research Question

How do **training firm characteristics** in the healthcare sector affect apprentices' decision to enroll in a **tertiary-level education**?

# Theoretical Strands

*Career decisions after IVET*

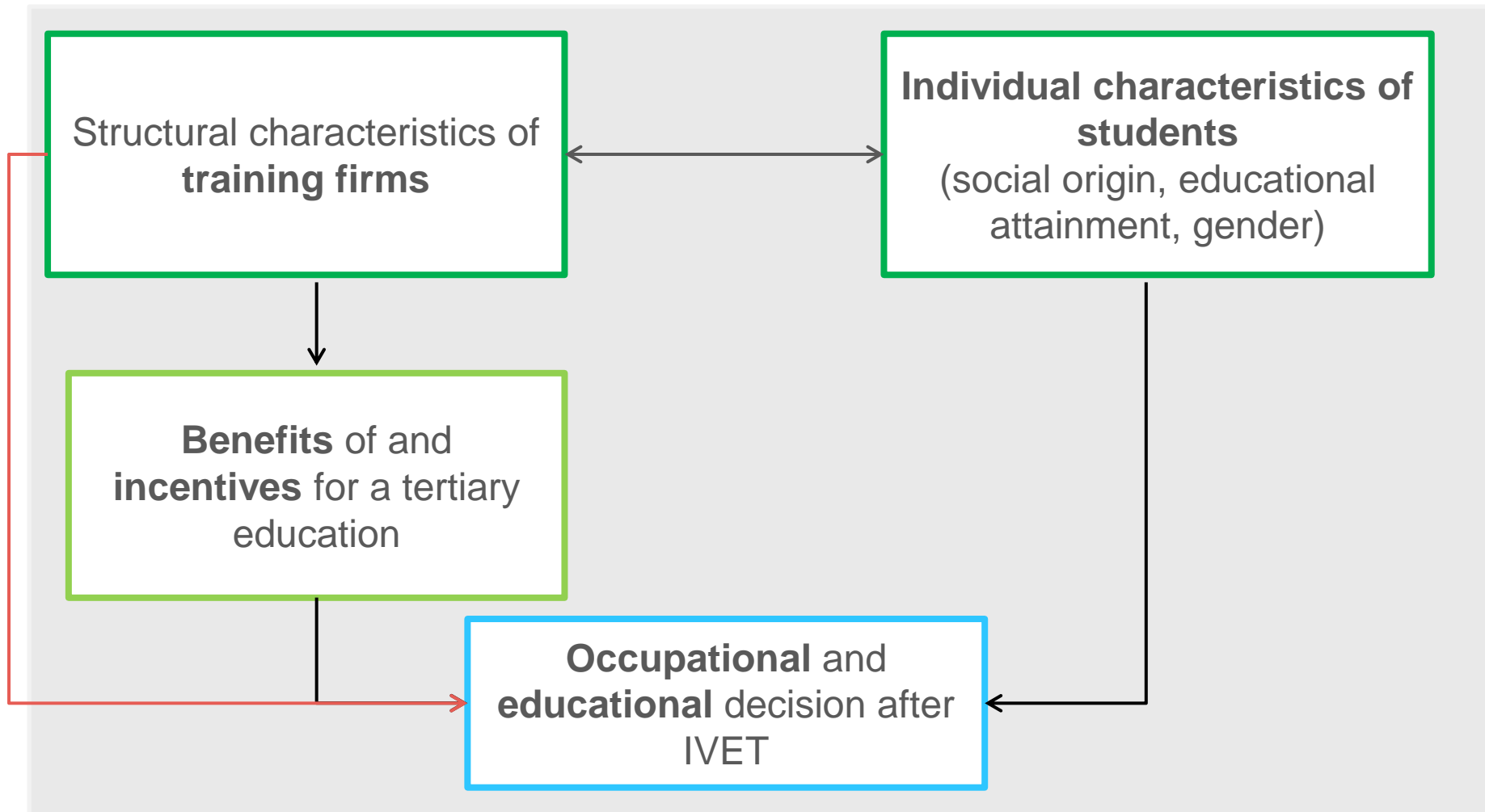
## **Institutional perspective (training firm)**

1. *Segmentation of labour market*: structural differences of firms (financial and technical resources, qualification level of the staff) impact working conditions (Sengenberger, 1987; Kalleberg, 2003).
  - Work satisfaction (Aiken et al., 2011)
  - Individual opportunities for advancement/further education (Preisendörfer, 1987; Tolbert et al., 1980)



## **Individual perspective**

1. *Human Capital theory*: lower returns of education for women and for people with lower social / financial resources causes lower participation in education (Becker 1982)
2. *Rational Choice Theory*: Cost and benefits of education are different according to gender and class position (Boudon 1974)

# Theoretical Model



# Focus: Healthcare sector

- Healthcare assistant: 3<sup>rd</sup> most frequently chosen (upper-secondary level) training occupation in Switzerland
  - Segmentation:
    -  acute care institutions (hospitals)
    -  long-term care institutions (nursing homes)
- The two segments differ in terms of structural characteristics (Stevens, 2001; Jaccard et al., 2009)
- Qualification level of the staff
  - Possible career paths
  - Financial and technical resources
  - Satisfaction with training

# Working conditions during training

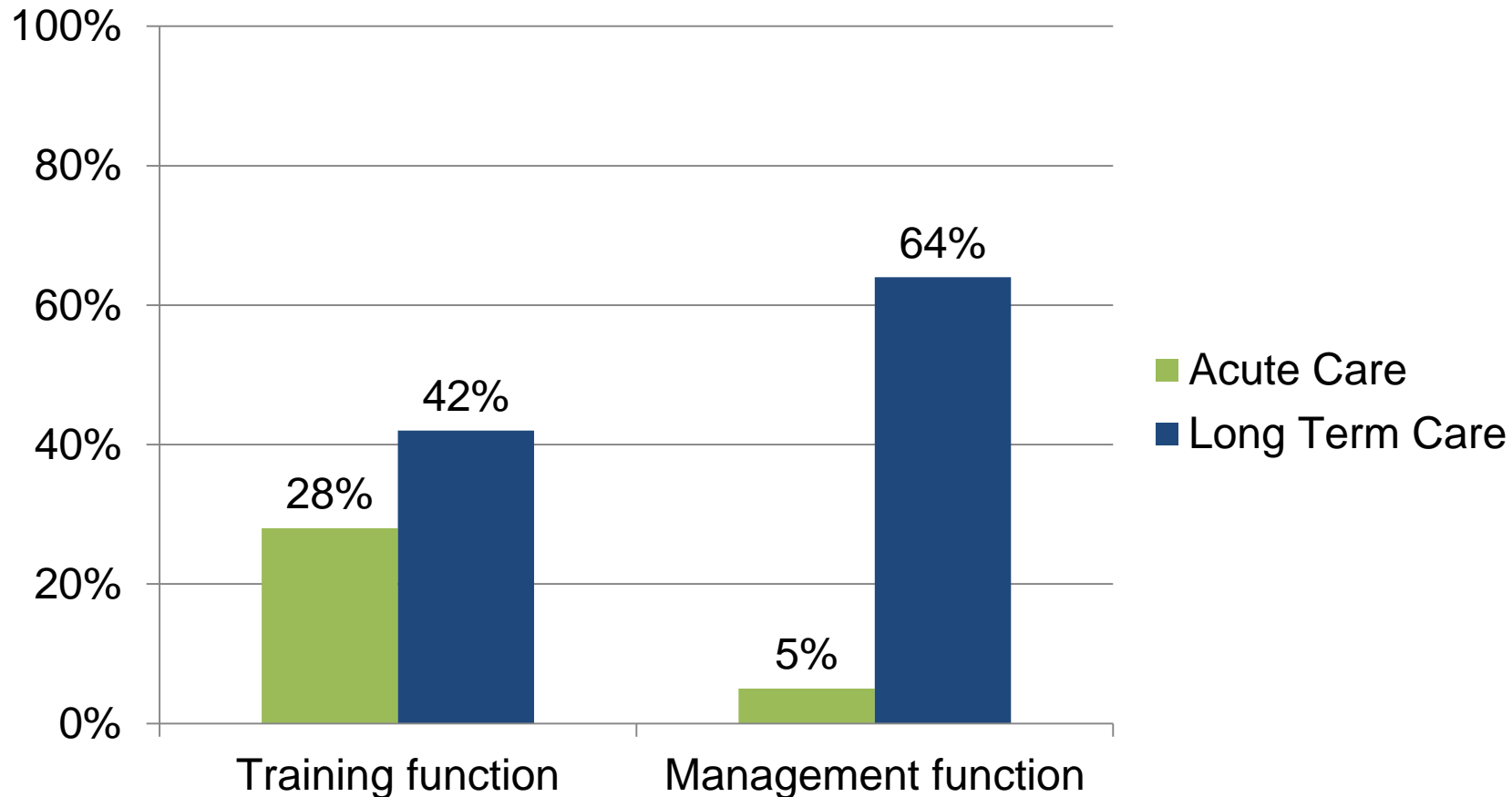


Healthcare Assistants' working conditions in their last year of training

N = 1 325; Scale: 1 = Not at all agree, 6 = Fully agree; Source: Trede & Schweri 2012

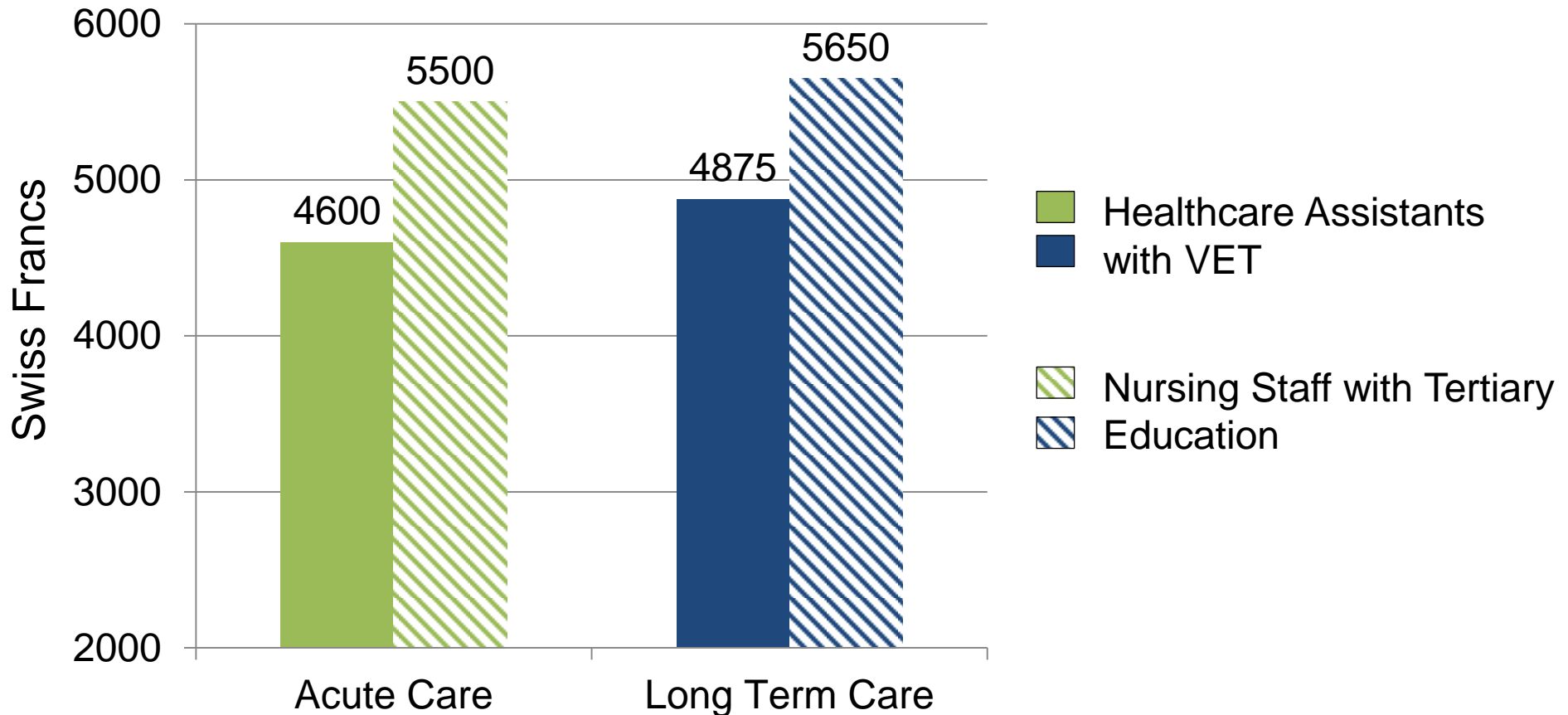


# Responsibilities of employed healthcare assistants





Responsibilities of healthcare assistants with VET in acute and longterm care five years after training  
N = 144; Source: Trede, et al., 2017

# Salaries in acute and long term care



Salaries of healthcare assistants with a VET degree and nursing staff with a higher education degree in acute and longterm care five years after training. N = 411; Source: Trede, et al., 2017

# Overview - Healthcare sector

Structural Characteristics		
Financial resources, technology	+	-
Educational level of the staff	+	-
Career possibilities	+	-
Demand for tertiary qualified nurses	+	-
Hierarchical structure of positions	+	-
Responsibilities as a healthcare assistant	-	+
Wage as a healthcare assistant	-	+
Wage difference between secondary and tertiary education	+	-

# Structural influences on individual decisions

- Working and training conditions offered by hospitals lead to
  - Higher satisfaction and less stress during training
  - more possibilities for career advancement, more responsibilities and higher salary gains with tertiary level training (i.e. higher benefits of tertiary education)
- As a result, incentives and motivation for transition into higher education will be higher in **hospitals** compared to **nursing homes**

## Hypothesis

*Young people who trained in hospitals enter tertiary education more often than young people who trained in nursing homes*



# Data



- **Longitudinal survey**
  - Population: Healthcare assistant apprentices who completed their 3 years training in 2011 (only regular apprenticeship)
    - 2010: one year before completion of apprenticeship training (n=2089)
    - 2012: one year after completion (n=1043)
    - 2016: five year after completion (n=920)
- Allows observing **transition into tertiary education**
  - *Short-term*: within **one year** after completion of the apprenticeship
  - *Medium term*: within **five years** after completion of the apprenticeship
- **Sample restrictions**
  - Age: 15-18 at start of VET
  - Training in acute (n = 416) or long-term care (n= 443)

# Identification and Methods

- Assignment of apprentices to training firms is **non-random**
  - Possible **selection bias**
  - Logistische Regression und Matching
- **Propensity score matching [PSM]**
  - Compare outcomes of treated individuals with outcomes of similar individuals in the pool of non-treated
    - **Treatment** = training in acute care institutions (hospitals)
    - **Controls, non-treated** = training in long term institutions (nursing homes)
  - Similarity based on the **propensity of score** = probability of training in a acute care institutions given observable characteristics

# Selection into treatment?

		
<b>Age</b>	16.4	16.7*
<b>Born in CH</b>	93%	91%
<b>Female</b>	94%	94%
<b>Romandie</b>	7%	13%*
<b>Compulsory school type</b>		
Lower level ("Realschule")	22%	36%*
Middle level ("Sekundarschule")	70%	58%*
Higher level ("Gymnasium")	7%	5%
<b>Gap Year (Schooling)</b>	17%	28%*
<b>Gap Year (Internship)</b>	13%	25%*
<b>Number of books at home (more than 5 shelves)</b>	30%	29%

		
<b>Parents' education level</b>		
Compulsory school	3%	6%
Basic VET	45%	54%*
Baccalaureate	13%	9%
Higher VET (Höhere Fachschule)	20%	17%
University	19%	14%
<b>Parents' professional position</b>		
Unemployed	2%	4%
Employed	27%	34%*
Employed with management functions	49%	40%
Independent without employees	10%	12%
Independent with employees	12%	10%
<b>N (full information)</b>	416	443

Note: Short-term sample, restricted to 15-18 y.o. \* t-test  $p < 0.05$

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# Estimation of the propensity score

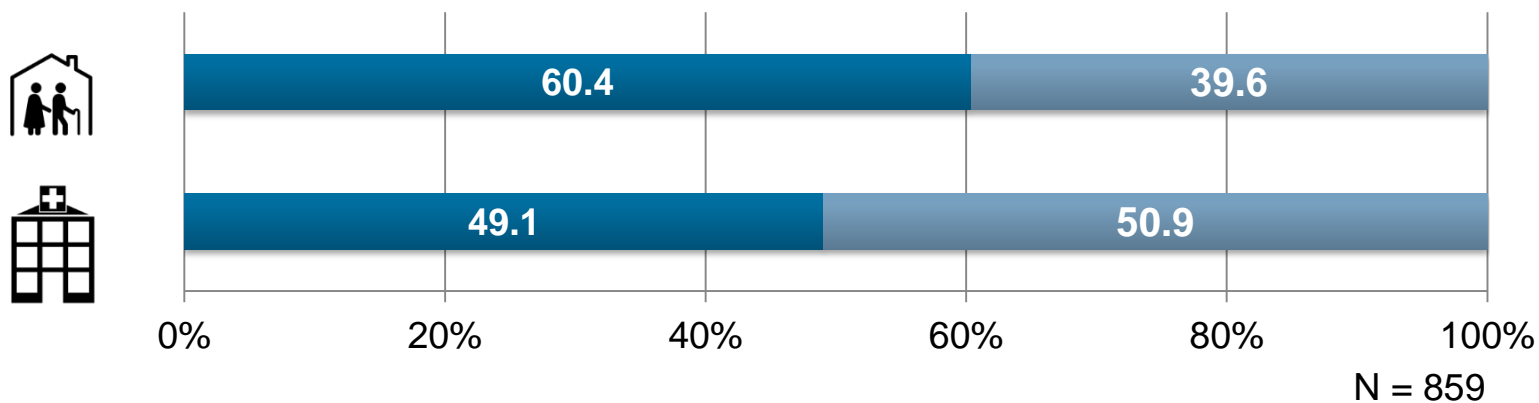
- Logit model
- Dependent variable: training in acute care institution
- Independent variables:
  - Variables that simultaneously influence treatment and outcome (CIA)
  - Variables that are unaffected by treatment

*Age, born in CH, gender, level of compulsory school, region (Romandie), Socio-economic variables (Number of books at home, parent's education and professional position), activity prior to VET diploma, if any (10th year of school, practical year)*

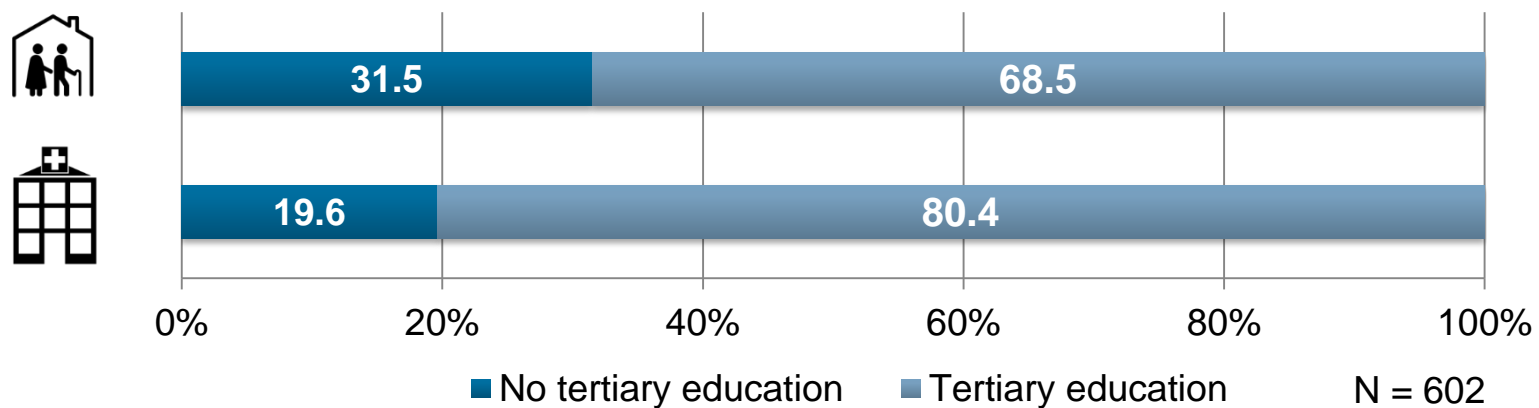


# Descriptive Results

## Short-Term (Within 1 year after VET)



## Mid-term (Within 5 years after VET)



# Multivariat Results: Average Treatment Effect

*Nearest neighbour matching with 1 Observation*

	Short Term		Mid Term	
	Logit	PSM	Logit	PSM
ATE (Acute vs Long Term Care)	0.092**	0.121**	0.056	0.071+
	(0.041)	(0.041)	(0.043)	(0.038)
Overlap Violation (N. Obs)	-	43	-	26

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

# Summary

- Short term (within 1 year): apprentices trained in acute care institutions face a **12.1 percentage points** higher probability of transition into higher education
- In the long run (within 5 years) the effect is weaker (7.1 percentage points) but still significant
- This supports our basic assumption:






- Overall, covariates are well balanced

# Conclusion & Further Research

- Allocation to a nursing home or a hospital during training matters: it influences subsequent career choices
- Risks
  1. Allocation can reinforce individual disadvantages due to differences in socio-economic background
  2. The strong differentiation between acute and long-term care can hinder career development and lead to dropouts.
- Further research
  - Given the existing and forecasted shortage of nurses (Mercay et al. 2016), future research should pay more attention to structural characteristics of training firms and their significance for further education

# Implications for Practice

## Countering Staff Shortage

- Increase **permeability** between the different healthcare sectors for healthcare assistants during (and after) training
  - without neglecting the clarity of professional roles.
- *Challenges*
  -  ➤ Present an attractive image of long-term care
  -  ➤ Provide greater incentives for staff trained at the tertiary level
  -  ➤ Create attractive career and working conditions, not only for the staff at the tertiary level but also for healthcare assistants.