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## Which companies hire NEET? Organisational characteristics of hiring NEET in a Norwegian full-population registry study

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### ABSTRACT

Which types of organisations hire NEET? We use longitudinal national registry data from Norway to investigate four types of organisational characteristics: (a) staff proportion with low pay and low education, (b) staff size and (c) staff proportion from groups with lower rates of work participation, and (d) private/public sector. Full-population registry data with all newly hired-employees in Norway aged 15–30 years, yielded a sample of approximately 120,000 new hires in 2018 from 22,621 organisations. Organisational characteristics were measured the previous year. After controlling for individual and organisational level variables in logistic regression models, we found that: private organisations and those predominated by staff with low income, incomplete secondary school, NEET history and immigrant background were more likely to hire new NEET the following year. Organisation size was unrelated to the likelihood of hiring NEET. This study applies an innovative method to study demand side characteristics in a full population registry study. It also contributes to disentangling which of these characteristics lose their expected effect when the dataset is large and complete enough to control for individual and organisational factors-adjusted for organisation clustering. These characteristics can guide us towards which companies can serve as gate-openers for NEET.

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NEET; employment;  
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## Introduction

Fourteen per cent of youth aged 18–24 across OECD countries are neither in employment, education, nor training (NEET) (OECD, 2020). In Europe alone, the frequency of youth fitting the NEET category comprises approximately 9.3 million, with an economic loss estimated to about 142 billion EURO a year (Eurofund, 2021). The COVID-19 pandemic has increased the risk of being NEET (Pettersen, 2021; Wall, 2021), and is likely to prevail as the NEET rate appears to increase for cohorts experiencing economic recession

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(Backman, Estrada, Nilsson, & Shannon, 2014; Bäckman & Nilsson, 2016; Mark Egan, Michael Daly, & Liam Delaney, 2015; Pilz, Schmidt-Altman, & Eswein, 2015).

Most studies on NEET focus on the *supply* (employee) side risk factors for becoming NEET, particularly individual substance use, physical and mental ill-health, poverty, criminality and school failure (M. Egan, M. Daly, & L. Delaney, 2015; Gariépy, Danna, Hawke, Henderson, & Iyer, 2021; Henderson, Hawke, Chaim, & Network, 2017). There is a lack of knowledge on what the *demand* (employer) side can contribute to NEET youth entering the labour market. Also, the promotion of labour market integration of groups with high unemployment rates has largely been treated as a social and public policy issue, rather than an issue for employers (Bredgaard & Halkjær, 2016; Ingold & Stuart, 2015; van Berkel, Ingold, McGurk, Boselie, & Bredgaard, 2017). The aim of the current study is thus to focus on the demand side, the employers hiring NEET youth, while also controlling for supply side (i.e. individual) characteristics. We therefore investigate the following research question: Which organisational characteristics at T1 (2017) facilitate whether a company hires young people at T2 (2018) who were NEET at T1? To do so, we analyse whether (a) staff proportion with low pay and low education, (b) staff size and (c) staff proportion from groups with lower rates of work participation measured at T1 (ages 15–30), can predict the organisations' hiring action at T2- in a full-population registry sample of all newly hired employees in Norway.

## NEET status and subsequent labour market participation

In the current paper we define NEET as those between 15 and 30 years, not registered in formal employment, education or vocational training for an entire year. Our choice of age range has been a compromise between broader age ranges in the NEET literature such as 15–34 years (Serracant 2014) and narrow age ranges such as 16–19 years (Ralston, Feng, Everington, & Dibben, 2016). The NEET category is used to classify youth standing outside both the educational and labour force systems (Eurofund, 2021), instead of traditional labour participation labels (e.g. unemployment) (Dorsett & Lucchino, 2014; Eurofund, 2021). Today individualised and diverse trajectories have replaced the traditional linear move directly from school to work (Furlong, 2006, 2017; Saloniemi, Salonen, Nummi, & Virtanen, 2021). The NEET concept thus enables the distinction between those dropping out of school to start work versus those marginalised from both school and employment.

The NEET concept has been criticised for its heterogeneity by encompassing young people with diverse experiences, characteristics and needs (Furlong 2006, Yates, Serracant 2014). In the current paper, we use a stricter operationalisation of NEET than several former studies regarding the time needed without education or work before youth was categorised as NEET. The NEET-state is often transient and dynamic over time but is frequently measured at a single time with survey-data. To capture longer NEET-periods and reduce the risk of 'false positives' (e.g. due to short-term breaks between jobs or educational programmes), a young person needed to be without income and education for an entire year to be categorised as NEET.

Being NEET is also associated with adverse labour market consequences. Findings indicate that NEET status has an independent effect on subsequent labour market exclusion, including long-term exclusion (Bäckman & Nilsson, 2016). While we know about the

detrimental consequences of NEET status, we know less about which types of organisations provide entry to the labour market for NEET. There is a need for longitudinal, objective data that provides information about organisations hiring NEET. Information about the possible gateways to the labour market for young vulnerable people is essential both for NEET who seek access to the labour market, but also for those supporting them towards this goal, such as teachers, social workers and employment officers.

### Shifting focus to understand where NEET find work

We shift the research focus from the supply to the demand side to understand which types of companies hire NEET. Instead of seeing unemployment as the individual's failure (Ingold & Stuart, 2015), we emphasise the active role of organisations (and employers, indirectly) in the re-integration of vulnerable groups to the labour market, i.e. 'employer engagement' (van Berkel et al., 2017). The degree to which employers engage with the inclusion of youth with NEET status and employers' motives, opportunities, and barriers for doing so will likely vary between types of organisations and industries. Differences between organisations might include workforce demand (Martin, 2004), availability of on-the-job-training (Nicolaisen, 2017), and lower training costs for employers due to governmental subsidies when hiring vulnerable groups (Nicolaisen, 2017).

### The Norwegian context for young people without former education or paid employment

Norway is characterised by low unemployment rates, and has low NEET rates compared to OECD countries, at the same time NEET in Norway tend to be more disadvantaged than in other OECD countries (Balestra & Fleischer, 2018). Strong rights for workers in permanent employment, such as strong protection against firing, makes hiring a high-risk activity for employers and could impact the hiring of NEET in a negative way (Olsen et al., 2013). Norway's Active Labour Market Policies (ALMP) with an emphasis on skills development and employer engagement is therefore important. As other Nordic countries, Norway has among the lowest levels of working poor in Europe (Alsos, Nergaard, & Van Den Heuvel, 2019), and low wage disparities (OECD, 2022). With a high share of disadvantaged NEET, distinct ALMP measures, strong rights for workers, and a generous welfare context, the Norwegian context is interesting when compared to other countries. For instance, in the Netherlands with less generous welfare, employers are subjected to stricter regulations of recruitment decisions (van Berkel 2021). In the UK, the employers are less involved in sustaining labour market policies (Hyggen & Vedeler, 2021). Despite these differences, young people in general, and across post-industrial societies, are more prone to precarious work, indicating the increased insecurity and instability of modern working life (Nielsen, Görlich, Grytnes, & Dyreborg, 2017).

While there is limited research investigating which types of employers hire NEET, there are studies investigating which organisations hire other vulnerable groups. These studies particularly focus on employees with disabilities (Erickson, von Schrader, Bruyère, & VanLooy, 2014; Houtenville & Kalargyrou, 2012; Jasper & Waldhart, 2013), and

organisations participating in active labour market policies – government programmes that intervene in the labour market to help the unemployed find work, for instance through wage subsidies (Bredgaard & Halkjær, 2016; Martin, 2004). To what extent the same types of organisations are also better at hiring NEET needs to be investigated.

### Organisational characteristics within eight hypotheses

To investigate which organisational characteristics predict whether an organisation hires a youth with NEET-status we focus on three groups of demand side characteristics of the organisation one year before the new hires: (a) proportion of staff with low-pay, and low-education, (b) staff size, (c) proportion of employees from vulnerable groups or groups with lower rates of work participation, and (d) private or public sector. We investigate these characteristics through eight hypotheses presented in this section. The analytical model is presented in Figure 1.

#### (a) Proportion of employees with low pay and low education

Studies suggest that employers hiring vulnerable groups are more likely to have a high percentage of low-paid and so-called unskilled/low-skilled workers (Bredgaard & Halkjær, 2016; Martin, 2004). Access to cheap labour is one of the proposed reasons for the overrepresentation of organisations predominated by employees with low-pay and low-education among those participating in labour market policy-programmes (Martin, 2004). Low requirements will likely also imply lower training cost and lower cost associated with wrong hires, making organisations less risk-averse of hiring a NEET youth. When seeking work, NEET can encounter a challenge in explaining ‘holes’ in their CVs consisting of periods in which no education, work or training took place. Because NEET status is more common among employees with incomplete secondary education (Ballo, Heglum, Nilsen, & Bernstrøm, 2022; Pitkänen, Remes, Moustgaard, &

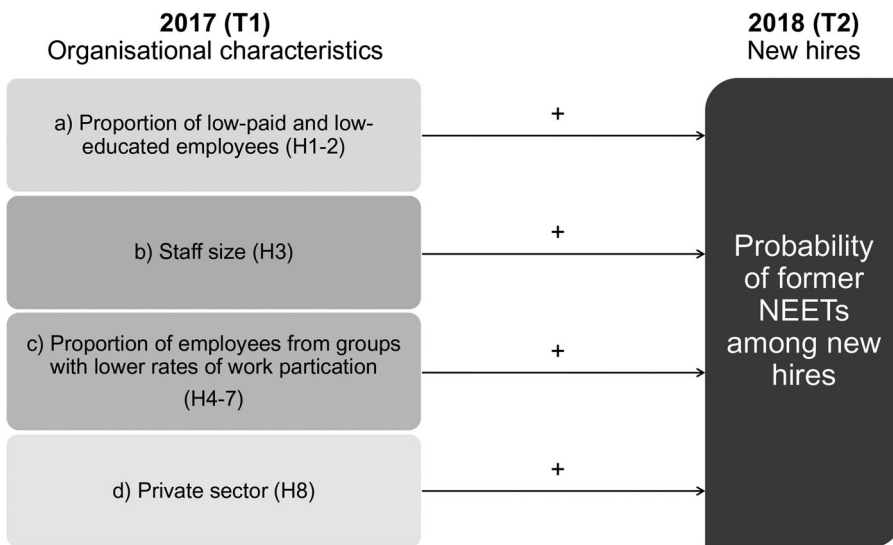


Figure 1. Analytical model.

Martikainen, 2021; Tamesberger & Bacher, 2014) – employers hiring low-skill employees are likely more familiar with candidates outside the labour market. Employers hiring low-skill employees might therefore interpret a NEET year as more common, and less as a sign of risk. However, there is a lack of longitudinal full-population studies assessing the importance of companies' salary and educational level for their probabilities of hiring NEET.

In the current study, we therefore propose two hypotheses related to low pay and low skill:

*Hypothesis 1:* Organisations with a higher proportion of low-pay employees will be more likely to hire NEET

*Hypothesis 2:* Organisations with a high proportion of employees with incomplete secondary education will be more likely to hire NEET

#### (b) Staff size

Some studies have suggested that larger organisations are more likely to hire vulnerable groups (Hannerz, Ferm, Poulsen, Pedersen, & Andersen, 2012; Martin, 2004), and find support for more inclusive practices in larger organisations (Erickson et al., 2014). Large organisations could be better at hiring vulnerable youth due to more professional human resource departments, and due to being less vulnerable to the consequences of wrong hires. Employing people from vulnerable groups could also be a strategy to achieve better public relations, show corporate responsibility and inclusive egalitarian values (Martin, 2004; Wilson, 2019). Accordingly, larger organisations might be more willing to take the risk of hiring employees with a vulnerable background, compared to the potential gain in terms of public image. A recent systematic review however found limited evidence of this likelihood (Alves et al., 2020).

While smaller organisations may have limited resources to deal with organisational challenges in recruiting and retaining vulnerable employees (Harney & Dundon, 2006), there may be advantages associated to smaller businesses. A less professional hiring procedure may promote alternative routes into the company through informal networks (Bonoli & Hinrichs, 2012; Unger, 2002). Jakobsen and colleagues (2015) found that, while larger organisations hire more employees from vulnerable groups, vulnerable groups make up a larger proportion of employees in smaller organisations (Jakobsen, Larsen, & Jensen, 2015). According to Ingold and Stuart (2015), larger firms utilising formal recruitment methods may disadvantage those with low literacy or with a lack of recent interview experience.

It is therefore also possible that while large organisations hire more employees in *total numbers*, smaller organisations may be more likely to hire a youth who is not in education, employment, or training *per individual hire*. Based on prior studies we therefore expect:

*Hypothesis 3:* Smaller organisations will be more likely to hire NEET

#### (c) Proportion of employees from groups with lower rates of work participation

There is also some support that organisations are more likely to hire vulnerable groups or groups with lower rates of former work participation, if they already have done so in the

past (Enehaug, Spjelkavik, Falkum, & Frøyland, 2021; Unger, 2002). A possible mechanism could be that organisations that succeed in terms of work inclusion, might have acquired skills in including a diversity of workers, making them more confident in doing so in the future. An alternative mechanism could be that a positive experience from work inclusion makes employers more aware of benefits, or less risk averse, and therefore more willing to repeat work inclusion with other groups. A common explanation for employment disadvantages of vulnerable groups is statistical discrimination (Arrow, 1973, 2015) which proposes that employers base recruitment decisions on the expected (lack of) productivity of whole groups. Work inclusion competence refers to workplaces' knowledge-based and customised follow-up of employees with reduced work ability (Enehaug et al., 2021). Positive experience with hiring employees from vulnerable groups may reduce statistical discrimination and make employers less risk averse towards hiring NEET (Enehaug et al., 2021; Unger, 2002; Wilson, 2019). We therefore expect:

*Hypothesis 4: Organisations with a high proportion of former NEET will be more likely to hire NEET the following year.*

Based on the mechanisms described above, a central subsequent question is whether the hiring of one vulnerable group (in this case NEET) is more frequent in organisations with experience on hiring other groups with lower labour market participation. We therefore look at three different groups of employees with lower labour market participation; *youth in general* (OECD, 2021), *individuals with disabilities or health challenges* (Erickson et al., 2014), and those with *immigrant background* (Manhica, Berg, Almquist, Rostila, & Hjern, 2019; StatisticsNorway, 2021). In Norway, immigrants from countries outside of the European Union (EU), European Economic Federation Treaty Agreement (EFTA), North America, Australia and New Zealand have lower labour market participation, than immigrants from these areas; 55.6% compared to 69% in 2020 (StatisticsNorway, 2021).

While young people in general, immigrants, and those with disabilities or health challenges might be diverse in terms of reasons for lower labour market participation, we assess by proxy whether positive experiences and work inclusion skills transfer from one group to another. We expect:

*Hypothesis 5: Organisations with a high proportion of young employees will be more likely to hire NEET*

*Hypothesis 6: Organisations with a high proportion of employees with disabilities will be more likely to hire NEET*

*Hypothesis 7: Organisations with a high proportion of employees with immigrant background will be more likely to hire NEET*

#### (d) Private versus public sector

When reviewing international studies, we find support for public organisations being more likely to hire vulnerable groups than private ones (Bredgard&Hallkjær, 2016; Wilson, 2019). In a Swiss vignette study investigating employer characteristics, Wilson (2019) found that employers in the public sector were more lenient towards job seekers whose academic achievements are weak. This finding could be due to self-selection of egalitarian employers who actively seek and find work in the public sector, where

egalitarian values are likely to be in line with their personal orientation (Wilson, 2019). In Denmark, Bredgaard and Halkjær (2016) investigated characteristics of organisations participating in wage subsidy schemes, which entail voluntary inclusion of unemployed individuals into the firm's work force, with governmental remuneration as an exchange. They found that the organisations that were most likely to participate in wage subsidy schemes were particularly found in the public sector (Bredgaard&Halkjær, 2016). In contrast, a recent Norwegian register study identified the private sector among the top industries employing young people (16–18 year olds) without formal qualifications (Ballo et al., 2022). According to the study, the top industries hiring young people for part-time work were retail, hotels, motels, cafés, restaurants, and bars, and gas stations (Ballo et al., 2022). Considering the similarity of the sample to that of the current study, our final hypothesis is:

*Hypothesis 8:* Private organisations will be more likely to hire NEET

## Methods

### Data

We use a full population national registry data from Norway with a prospective cohort design to analyse the relationship between organisational characteristics in 2017 (T1), and NEET versus Non-NEET status (ages 15–30 at T1) in all newly hired young employees (ages 16–31 one year later at T2) in Norway the next year (N = 120,002). The data was extracted from the Norwegian research data platform microdata.no, made available by Statistics Norway and Norwegian Science Data Services. Microdata.no is a browser-based research infrastructure providing a large databank of merged official registers, and integrated Stata-like software for statistical analysis. It includes administrative, occupational, financial, educational and welfare data for the entire Norwegian population. Data protection is integrated in the microdata.no platform to ensure individual anonymity in the data (Ballo, 2019). We constructed all variables from individual records, which means that organisation level variables were aggregated using individual data of the organisations' employees. The syntax used for data extraction, recoding and analyses in this article is available from the authors upon request.

### Organisations

The sample consists of all Norwegian organisations (with a minimum of four employees) with new hires in 2018, in which price employees had an average salary of at least 0.5 Price Based Amounts (PBA), in 2017 (N = 22,621 organisations). PBA is a fixed annual amount used to calculate applicability and level of welfare benefits and pensions, adjusted annually for expected growth in wages (Ballo et al., 2022; Bäckman& Nilsson, 2016). According to the above constraints, small businesses and young entrepreneurs were thus excluded.

### Measures

#### *New hires (NEET / not NEET) 2018*

The outcome variable, and unit of analyses, in the study was all new hires of Norwegian youth (ages 16–31) in 2018 (T2). More precisely, whether the organisation for each new



hire in 2018 hired a youth with NEET-status. NEET-status was operationalised as not being registered in education or vocational training during the entire year of 2017, and with an annual income of less than 0.5 PBA. The NEET variable was dichotomised (0 = non-NEET, 1 = NEET in the age range 15–30 years in 2017 at T1).

We coded an organisation's new hires by extracting which employees were employed in a given organisation in November 2018, and not the year before (the last time employment was registered). We limited new hires to hires of employees corresponding to the age of NEET (15–30) the year before they were hired (T1). We further limited new hires to those in which a newly hired employee would earn an annual income of more than 0.5PBA (see Organisations for definition), equivalent to 50,000 NOK or 4800 euros, in line with former studies (Bäckman & Nilsson, 2016). Hires for minor jobs were thus excluded. New hires were further limited to hires of employees registered as living in Norway from 2015 to 2018 to exclude temporary and seasonal migrant workers. This was important to reduce the risk of wrongfully coding a youth as NEET, due to having worked or studied abroad.

### *Organisational characteristics*

Organisation characteristics were aggregated data based on all individuals who were registered as 'employed' in the organisation in November 2017. Among organisational characteristics, we include staff size and calculate the proportion of employees in the organisation (a proportion between 0 and 100%) who were low-paid, low-educated, former NEET, young adults, disabled, and of immigrant background. *Staff size* was categorised according to the number of employees in the organisation as small < 21, medium 21–96, and large > 96. Small organisations were the most common category and the reference group. *Low pay* was defined as the proportion of employees earning less than 60% of the median salary of all employees registered with an organisation in 2017 (Caminada, Goudswaard, Wang, & Wang, 2021). *Low education* referred to the proportion of employees with incomplete secondary school. *NEET* referred to the proportion of employees in an organisation who were registered without education or employment in 2016. *Young adults* referred to the proportion of employees under the age of 30 in an organisation. *Disability* referred to the proportion of employees in an organisation with registry records of receiving financial compensation for disability-related needs. In other words, disability in this study, is not related to compensation of lost income, but transfers that cover extra expenses incurred due to operation of assistive technology, transport, guide dog, dietary restrictions or additional wear of clothing and shoes, or long-term private care and supervision. *Immigrant background* referred to those with at least one parent born outside EU/EFTA, North America, Australia and New Zealand (0 = no, 1 = at least one parent born in other regions).

### *Individual characteristics used as control variables*

Several of the organisational characteristics are aggregated from individual employee-characteristics that are related to NEET status. For example, incomplete secondary education is associated with unskilled work, and increases the probability for NEET status (Manhica et al., 2019). For each new hire in 2018 we therefore also control for individual characteristics among those hired. Individual characteristics we control for are the newly hired employees' incomplete secondary school (0 = no, 1 = yes), gender (0 = male, 1 =

female), age (0 = 30 years or more, 1 = less than 30 years), having a disability/health challenge (0 = no, 1 = yes/has received basic or attendance benefits), and immigrant background (0 = no, 1 = at least one parent born outside EU/EFTA, North-America, Australia and New Zealand). Collinearity analyses showed that these variables were sufficiently independent to be included separately in the multivariate model.

## Analyses

We used logistic regression, as the outcome variable was dichotomous (whether each new hire of a young employee was previously NEET 1 = yes 0 = no). Point estimates are reported as average marginal effects, interpreted as percentage point changes in the dependent variable, and comparable across models (Mood, 2010). By using each new hire in 2018 as the unit of analyses (e.g. rather than the organisation) we utilise the full variation in the data. To adjust for potential correlation of the residuals within organisations, we estimated all models with cluster-robust standard errors. This specification allowed the residuals to be correlated within organisations but required residuals of different organisations to be uncorrelated. Robust estimations produce more conservative standard errors, but do not impact point estimates (Baum, 2006).

We conducted three sets of analyses: a set of bivariate regressions separately analysing the relationship between each organisational characteristic and NEET status (Model set1), the same analyses as in model set1 with control for individual characteristics (Model set2), and a full multivariate model including all organisational characteristics and individual control variables in the same model (Model 3).

Conducting the analyses at the level of each new hire implies that a larger organisation conducting multiple hires has a proportionately greater impact on the results than a smaller organisation conducting only one or a few new hires. We thus avoid the results being dominated by many small organisations, representing a smaller proportion of new hires. To stress test the robustness of the findings we have also repeated the last analyses (Model 3) aggregated at the organisational level, results are presented in the appendix. All results remained significant and in the same direction, except for proportion of young employees – which became statistically insignificant.

## Results

In the results we included 22,621 organisations, hiring 120,002 young people who were aged 15–30 years at T1. In approximately 5 percent of the new hires, the organisation hired a young person who was NEET the previous year (N = 5615).

The characteristics of the organisations in our sample are shown in Table 1. The second column shows the average values of each organisation characteristic included in the analyses. On average, organisations have 29 percent of their employees in low-pay positions. In the low end-percentile, 25 percent of the organisations have 7 percent or fewer employees in low-pay positions, while in the high end-percentile, 25 percent of the organisations have 48 percent or more of their employees in low-pay positions. For characteristics specific to organisations hiring NEETS, please see Table 3.

Furthermore, an average organisation in the dataset has 28 percent of its employees with incomplete upper secondary school, 5 percent of employees with NEET status in

**Table 1.** Organisational characteristics of sample including 22,621 companies and all newly hired-employees in Norway aged 15–30.

	Average per organisation	Percentile		
		25%	50%	75%
Proportion of employees with low pay	29%	7%	22%	48%
Proportion of employees with incomplete secondary school	28%	10%	25%	42%
Staff size	19	6	9	19
Proportion of employees with former NEET-status	5%	0%	0%	0%
Proportion of employees with age under 30	27%	7%	21%	42%
Proportion of employees with disability benefits	1%	0%	0%	0%
Proportion of employees with immigrant background	8%	0%	0%	9%
Proportion of organisations in private and public sector	80% private and 20% public			

2016, 27 percent aged under 30 years, 1 percent with disabilities and 8 percent with immigrant background. The average organisation has 19 employees. Three of the variables have a skewed distribution: (i) Proportion of employees with former NEET-status and (ii) employees with immigrant background have an average of respectively 5 and 8 percent, while both have a median of 0. These results show that a small number of organisations have a large proportion of these employees. Further, (iii) organisational size is skewed: organisations have an average of 19 employees and a median of 9 employees. In terms of private/public sector, 80 percent of the organisations in the sample are private, while the remaining 20 percent are public.

The characteristics of the youths hired are shown in [Table 2](#). Compared to non-NEET, NEET were more likely to have incomplete secondary education (54% compared to 24%), be male (53% compared to 43%), have non-immigrant background (16% compared to 11%), and be older. Employed NEET were less likely to have a disability than non-NEET (1% compared to 2%).

The relationship between organisational characteristics, and whether the organisation for each new hire in 2018 hired a NEET or not is shown in [Table 3](#). The table consist of three sets of estimations: Model set 1: bivariate regressions; Model set 2: the same set of analyses as Model set 1, but controlled for individual characteristics, and Model 3: one multivariate analysis controlling for both individual and organisational characteristics.

Results of the bivariate regressions show that when hiring a young employee, an organisation is more likely to hire a NEET if the organisation has a higher proportion of employees with low pay (hypothesis 1) and incomplete secondary education (hypothesis

**Table 2.** Characteristics of newly employed young adults according to NEET status the previous year.

	Not NEET in 2017 (T1)		NEET in 2017 (T1)	
	N	Percent	N	Percent
Total	114,937	100%	5615	100%
Incomplete secondary education	27,090	24%	3015	54%
Disability	1732	2%	83	1%
Immigrant background	12,277	11%	892	16%
Male	49,568	43%	2964	53%
Age				
16–19	17,871	16%	1438	1%
20–23	38,513	34%	40,548	39%
24–27	33,651	29%	34,747	34%
28–31	24,899	22%	25,945	25%

**Table 3.** Probability of hiring NEET according to organisational characteristics: bivariate regression models (Model set 1), controlling for individual characteristics (Model set 2), and controlling for both individual and organisational characteristics in a multivariate model (Model 3). All models are estimated with cluster-robust standard errors to adjust for correlation within organisations.

	Model set 1				Model set 2				Model 3			
	Average marginal effects. (95% CI)				Average marginal effects. (95% CI)				Average marginal effects. (95% CI)			
Proportion of employees with low pay	0,07	***	(0,06	0,07)	0,04	***	(0,03	0,04)	0,04	***	(0,03	0,05)
Proportion of employees with incomplete secondary school	0,10	***	(0,09	0,11)	0,04	***	( 0,03	0,05)	0,01	*	( 0,00	0,02)
Staff size:												
<21 employees	ref				ref				ref			
21–96 employees	–0,01	***	(–0,02	–0,01)	–0,01	***	(–0,01	–0,00)	0,00		(–0,00	0,00)
> 96 employees	–0,03	***	(–0,04	–0,03)	–0,02	***	(–0,02	–0,01)	–0,00		(–0,01	0,00)
Proportion of employees with:												
Former NEET-status	0,09	***	(0,08	0,11)	0,06	***	(0,05	0,07)	0,04	***	(0,02	0,05)
Age under 30	0,05	***	(0,04	0,05)	0,02	***	(0,01	0,02)	–0,03	***	(–0,04	–0,02)
Disability benefits	0,05		(–0,00	0,10)	0,05	*	(0,01	0,10)	0,03		(–0,01	0,07)
Immigrant background	0,05	***	(0,04	0,06)	0,03	***	(0,01	0,04)	0,01	*	(0,00	0,02)
Private sector	<b>0,04</b>	***	<b>(0,03</b>	<b>0,04)</b>	<b>0,02</b>	***	<b>(0,01</b>	<b>0,03)</b>	<b>0,01</b>	***	<b>(0,00</b>	<b>0,00)</b>

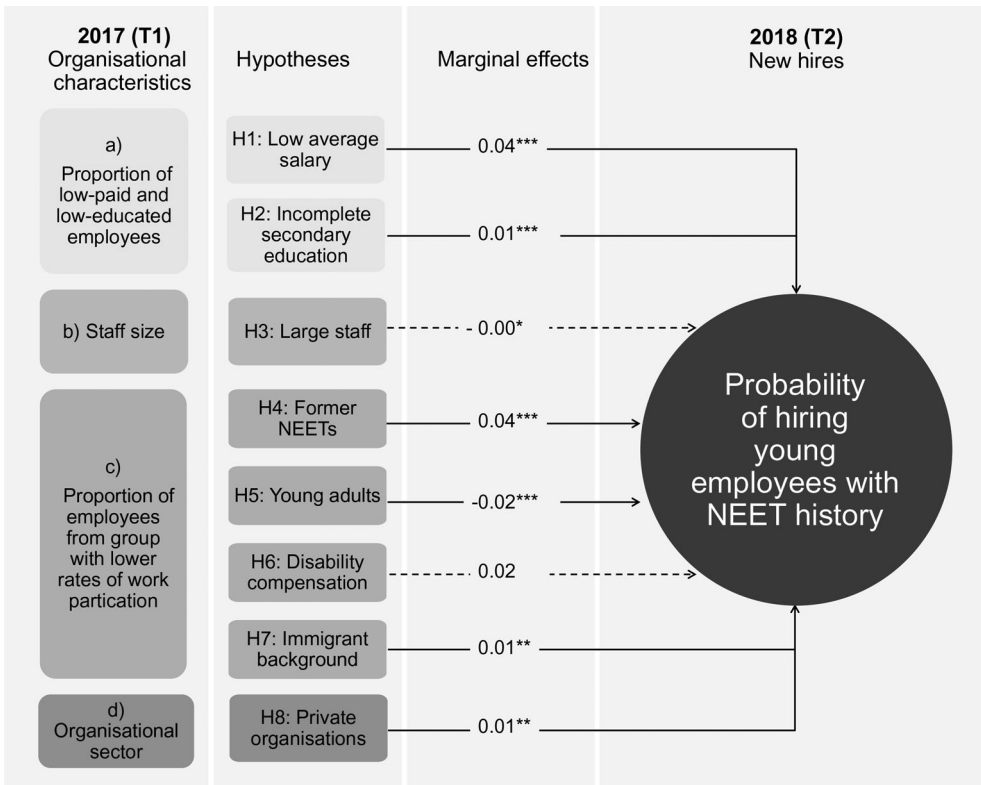
Notes: Bivariate regression models (Model set 1; N: 120,003–120,552), control for individual characteristics (Model set 2; N: 120,002–120,551): incomplete upper secondary school, age, disability, immigrant background, and control both for individual and organisational characteristics in the multivariate model (Model 3; N: 120,096). \*\*\*  $p < 0.001$ ; \*\*  $p < 0.01$ ; \*  $p < 0.05$

2). These results remain significant after controlling for individual and organisational characteristics (Model set 2 and model 3) – supporting hypotheses 1 and 2.

In terms of staff size (hypothesis 3), we examined the likelihood of small organisations hiring NEET when hiring a young employee compared to middle-sized and large organisations. We find a significantly lower likelihood of large and middle-sized organisations hiring NEET compared to small organisations in Model sets 1 and 2. However, when controlling for other organisational characteristics in Model 3, the organisation’s size is no longer significantly related to hiring NEET. Hypothesis 3 is thus not supported.

Model set 1 (bivariate regression models) and Model set 2 (controlling for individual characteristics) support that an organisation is more likely to hire a NEET if it has a higher proportion of employees with former NEET-status (hypothesis 4), aged under 30 (hypothesis 5), disability (hypothesis 6), and immigrant background (hypothesis 7). When controlling for other organisational characteristics (Model 3) only proportion of NEET hires and immigrant background remain significant in the expected direction. Thus, hypotheses 4 and 7 are supported.

Finally, we see that private organisations have a significantly higher likelihood of hiring a NEET compared to public organisations. This association is significant in all models, supporting hypothesis 8.



**Figure 2.** Model 3 results after controlling for individual and organisational characteristics. Full arrows indicate statistically significant results.

Figure 2 shows results from the full model (Model 3) for each of the hypotheses. Marginal effects refer to changes in percentage point in the probability that a new hire is a NEET. For example, in hypothesis 1, when the proportion of employees with low pay changes from 0 to 100%, the probability that a new hire is a NEET increases 4 percentage points.

To evaluate the robustness of the regression results, a range of sensitivity analyses were performed on model 3: (1) stratifying by gender; (2) stratifying by age, (3) aggregating model 3 to the organisational level, and (4) Extending the NEET definition from one to two years without education or employment. The results of the sensitivity analyses are available in the supplementary material (Appendix A). Across analyses all results remained significant and in the same direction apart from a few exceptions. When stratified by gender proportion of employees with low education was only significant among men. Also, private sector and immigrant background were only significant among women. When stratified by age, proportion of employees with low education and immigrant background was only significant in the lower age group. When the NEET definition was extended from one to two years, immigrant background was no longer significant. There were some variations in effect sizes. Overall, however, the main findings were robust across the analyses.

## Discussion

The current register-based study aimed to examine which demand side characteristics predict the probability of organisations hiring NEET among their new-hires. Thus, it contributes to a shift in NEET research from its overemphasis on supply-side (employee) characteristics towards demand-side (employer) characteristics. We examined four categories of demand side, organisational characteristics: (a) staff salary and educational level, (b) organisational size, (c) proportion of staff from vulnerable groups in terms of lower rates of work participation, and (d) private/public sector.

Four important findings emerge. First, organisations with a higher proportion of low-paid and low-educated (i.e. incomplete secondary education) employees are more likely to hire NEET. This relationship also prevails after controlling for employees' own educational level. This finding is in line with prior studies emphasising that organisations hiring vulnerable groups are more likely to have a high percentage of low-paid and unskilled/low-educated workers (Bredgaard & Halkjær, 2016; Martin, 2004). A higher demand for cheap labour, less skill requirements, and lower cost associated with potential wrong hires may explain why organisations predominated by low-paid and low-skilled workers are more likely to hire NEET.

Second, staff size is unrelated to the probability of hiring NEET. Bivariate models of organisation size (Model set 1 and 2) indicate that smaller organisations are more likely to hire NEET than larger organisations. This finding is in line with hypothesis 3 and with studies that not only take into account the total number of hires (for example, by taking into account the likelihood of hiring NEET per hiring process) (Bonoli & Hinrichs, 2012; Ingold & Stuart, 2015; Jakobsen et al., 2015; Unger, 2002). However, when controlling for the other organisational characteristics included in the multivariate model (Model 3), the association between organisation size and probability of hiring NEET dissipates. This suggests that it is not the staff size per se that explains the probability

of hiring NEET, but rather other characteristics of the organisation, such as the proportion of employees with low salaries and the proportion of employees without formal education.

Third, we find that organisations are more likely to hire young employees with NEET history if they already have done so in the past. This corresponds to analyses by Bredgaard and Hallkjær (2016) who find that organisations vary in terms of their engagement with workplace inclusion. Employers in some organisations are more motivated than others, and many of the most proactive ones were motivated by personal experiences (Bredgaard & Halkjær, 2016; Enehaug et al., 2021). Positive experiences from work inclusion might increase employers' awareness of benefits or decrease risk aversiveness (Bredgaard & Halkjær, 2016; Enehaug et al., 2021; Lindsay, Cagliostro, Albarico, Mortaji, & Karon, 2018). On the other hand, there might be organisational qualities, other than those investigated in the current study, that increase their likelihood of hiring NEET multiple years in a row. For example, they may offer less attractive jobs, giving the organisations less opportunity to be discriminant in respect to whom they hire. Having a history of NEET status could also affect the type of job obtained (Nielsen, Görlich, Grytnes, & Dyreborg, 2017). For instance, youth in general are more prone to precarious work, particularly former NEET (Nielsen et al., 2017). Compared to peers with no NEET history, former NEET at ages 16–19 tend to still occupy lower occupational positions (such as industrial cleaning process occupations, kitchen, and catering assistants) even 20 years later (Ralston, Feng, Everington, & Dibben, 2016).

Our findings do not support all hypotheses proposing that organisations hiring one vulnerable group (in this case NEET) were likely to hire other groups with lower labour market participation. After controlling for other organisational characteristics there was only one other vulnerable group included in the study in which its proportion in the organisation was related to hiring NEET: employees with immigrant background. Hypotheses related to the remaining groups were only partially supported- that is, they were partially supported in model sets 1 and 2, but not supported in the full model (Model 3).

Finally, our fourth finding supports those private organisations are more likely to hire earlier NEET than those in the public sector. The expectation that public organisations are more inclined to hire vulnerable groups due to governmental incentives (Bredgaard & Halkjær, 2016), egalitarian values (Wilson, 2019) or to achieve positive public relations (Martin, 2004), was therefore not supported in the current study. Rather, organisations in the Norwegian private sector have been identified as the most likely industries to hire youth with NEET-status (Ballo et al., 2022). These industries include retail, restaurants, cafés, hotels, motels and gas stations, and do not require long formal education. Compared to private organisations, those in the public sector must comply to governmental requirements when ranging and recruiting candidates to increase transparency. Perhaps, lower requirements to follow governmental recruitment rules, could lend private organisations more flexibility to choose an applicant with little formal education and work experience as their number one candidate.

As seen in Figure 2, significant marginal effects range from 0.01 to 0.04, and may seem negligible. However, marginal effects refer to changes, in percentage points, in the probability that a new hire is a NEET. For example, in hypothesis 1, when the proportion of staff with low pay changes from 0 to 100%, the probability that a new hire is NEET increases 4 percentage points. This seemingly modest change has tangible implications in terms of

the number of hires with NEET history, since NEET history is a rare population outcome. Approximately 5% of newly hired youth were NEET the year before, a difference of only two percentage can thus represent a large relative increase from 4 to 6%.

When interpreting our findings, the Norwegian context should be kept in mind. Characteristics of the Norwegian labour market, such as low levels of working poor (i.e. people whose incomes fall below the poverty level) and low wage disparity (Alsos et al., 2019; OECD, 2022). These characteristics make the NEET group in Norway skewed towards ill-health, and organisations hiring NEET less selective of employees to whom they can pay low salaries. Future studies should investigate the generalizability of the findings in countries with higher unemployment rates.

### *Strengths and limitations*

The main strength of this longitudinal study was its national registry dataset which enabled the simultaneous investigation of several hypotheses regarding organisations' likelihood to hire NEET to be analysed in a full population. The large dataset enabled the analysis of demand side variables (organisational level) while controlling for supply side variables (individual level). By analysing individual-level data from newly hired employees within the NEET age range, our analyses reflect the likelihood of an organisation hiring a NEET per hiring process. Therefore, results will not be inflated if the reason why larger organisations hire more NEET simply reflects more hiring in total numbers. Moreover, by controlling for individual level variables, we improve the accuracy of our results and diminish the risk of spurious associations. Cluster-robust regression estimations account for potential correlation between residuals within organisations. The large dataset also allowed us to make important distinctions across subgroups, which can be difficult, if not impossible, to detect in small datasets. In addition, NEET is not defined by crude cross-sectional measurement in this study: To be categorised as NEET, a young person needed to be without income and education for an entire year.

Still, there are some limitations that should be addressed. Firstly, the NEET concept has been criticised for its heterogeneity by encompassing young people with diverse experiences, characteristics and needs (Furlong, 2006; Serracant, 2014). The current study did not assess different subgroups within the NEET category, based on their activity. Analysing different groups within the NEET category across studies, could contribute to the disentanglement of findings from other at-risk concepts (unemployment, early parenthood, dropout, and early disability) (Tamesberger & Bacher, 2014).

Secondly, prior operationalizations of NEET have been heterogeneous in age range, from broader age ranges such as 15–34 years (Serracant, 2014) to narrow age ranges such as 16–19 years (Ralston, Feng, Everington, & Dibben, 2016). Consequently, studies about NEET may yield different results depending on their operationalisation of the concept. In the present paper we have operationalised NEET from 15 to 30 years, including NEET in very different life phases. To investigate the generalizability of our findings across age ranges we have included analyses stratified by age. The results showed that all results remained significant among the youngest populations (who were NEET between ages 15 and 21), and all but two in the oldest populations (who were NEET between ages 22 and 30).



Thirdly, the current study was limited to organisational data aggregated from individual level registry data (e.g. proportion of employees with low salary or company size) and thus important variables that could shed light on causal processes were not examined. Such variables could include organisational workplace inclusion competence, attitudes towards youth with NEET history and hiring politics.

### *Practical implications and future research*

Our study identifies demand side differences in the propensity to hire NEET, that is, private organisations and companies with high staff proportion with: low pay, incomplete secondary school, NEET history, immigrant background-as well as older staff. This knowledge is useful for employment officers within social and welfare services, who search for potential organisations for young people who have been inactive in the educational and labour market, as well as for NEET searching for work. The findings also show the importance of getting a 'foot in the door' in organisations, since former experiences with hiring NEET might lead to future hires. Still, our results do not provide information on what happens after employees with NEET history are hired. Indeed, our findings show that even after controlling for individual educational attainment, NEET are more likely to be hired in low-pay and low-education jobs.

While we in the current paper focus on NEET who find employment, it is important to also consider how the point of entry (i.e. job type) into the labour market impacts further career opportunities. Are former NEET stuck in a dead-end job or are low-entry jobs steppingstones to better positions? The answer to this question could inform former NEET as to whether they should aim for more education in order to achieve a more prosperous future or maintain their current low-paid labour market attachment.

Another important research avenue is to investigate information about specific branches and industries in organisations that hire NEET. To date, this information requires extensive data recoding in the data base we utilised in this study, but it is available in Norwegian administrative registers. Based on register data from Norway (Ballo et al., 2022), we expect branches such as retail, hotels, restaurants, catering, gas stations, to predominate the organisations hiring NEET. Future research should investigate these questions and the different longitudinal pathways of youth with a NEET history.

### **Conclusions**

This study contributes to identifying quantifiable organisational characteristics related to hiring NEET in a full population registry study. We found that private organisations and those predominated by staff with low income, incomplete secondary school, NEET history and immigrant background were more likely to hire NEET. These results were robust even after controlling for individual and organisational- level variables in logistic regression models. These characteristics can guide us towards which companies can serve as gate-openers for NEET. Despite serving as gate-openers, these organisations may take advantage of NEET youth by keeping them in low-paid jobs, stunting their careers, and exacerbating their precariousness. This potential ambiguity should be examined in future studies.

Organisation size was unrelated to hiring NEET, while private organisations tended to hire earlier NEET more often than those in the public sector. We also found that organisations predominated by staff with young employees were more likely to hire NEET in bivariate models, and even after controlling for individual variables but the impact of staff age changed direction altogether when controlling for other organisational variables in the multivariate model. This suggests that the influence of age on the probability of hiring NEET is accounted for by other organisational variables. As such, the current study contributes to nuancing the importance of these organisational characteristics as gate-openers- but not necessarily as career enhancing- to NEET in a full population study including more than five thousand NEET.

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