Abstract

Purpose – To assess the drop-out rate among disadvantaged students within vocational education and training (VET). The article examines the probability of dropping out after school-based training for child welfare clients – a particularly disadvantaged group of youth. Child welfare clients' drop-out rate is compared with students from a representative sample of their peers.

Design/methodology/approach –Average marginal effects (AME) were calculated from multinomial logistic regression models. Data were from public registries (n = 10,535).

Findings – The results show that differences in observed characteristics cannot explain differences in drop-out rates between child welfare clients and the majority peers. It is argued that this drop-out rate is likely a result of employers favouring apprenticeship applicants who are similar to them or that child welfare clients lack networks, which previous research has identified as crucial in finding an apprenticeship.

Practical implications – The results suggest a need for action targeting disadvantaged youths in the transition that follows school-based training.

Originality/value – The article adds to the very scarce literature on transition from school-based learning to apprenticeships.

Introduction

The dual system of vocational education and training (VET), which combines classroom-based training and periods of apprenticeships, is often praised for effectively integrating young people into the labour market (Noelke and Horn, 2014, Beicht and Walden, 2015). In contrast, vocational secondary education has been criticized for channelling working-class children into the vocational track, and, consequently, excluding them from universities (Shavit and Müller, 2000, Protsch and Solga, 2015). Even though mechanisms of exclusion and inclusion within the VET system are often overlooked, prior research has shown that the transition from school to apprenticeship is particularly difficult, especially for disadvantaged youth (Schmidt, 2010, Brahm et al., 2014). Research on this transition is limited but previous findings show that obtaining an apprenticeship is more difficult for immigrants and students with low school performances (Helland and Støren, 2006), working-class students, and girls (Heinz et al., 1998). This article examines the probability of dropping out after school-based training for child welfare clients – a particularly disadvantaged group of youth.

Research over several decades from many countries has shown a high educational disadvantage among children in the child welfare system. Compared with the general population, child welfare clients tend to perform poorly in school (Iversen et al., 2010, McClung and Gayle, 2010, Berlin et al., 2011) and very few obtain higher educational diplomas (Cheung and Heath, 1994, Jackson and Cameron, 2011). The majority of studies in this area has focused mainly on unsuccessful recruitment of former child welfare clients to the tertiary level, but studies show that many also lack upper secondary education (Vinnerljung et al., 2005, Courtney and Dworsky, 2006).

This article builds on two earlier articles using the same data investigating child welfare clients' transitions in upper secondary school (Dæhlen, 2015a, Dæhlen, 2015b). These studies show that the educational disadvantage among child welfare clients is related to less privileged social background among these youth. However, the results in these articles show that there is an additional disadvantage for child welfare clients in the vocational track. Adjusting for school grades, parental educational level, immigrant background, and gender, child welfare clients in the vocational track have less successful educational transitions than non-child welfare clients. Furthermore, the drop-out rate is particularly high after the school-based part of the training.

It is, however, less clear what causes this difference in dropout. One explanation might be that the relatively high drop-out rate in the child welfare population reflects discrimination against this group of youth. Implicit then is the assumption that child welfare clients on

average have the same abilities as their peers, but that employers prefer apprentices without a child welfare background. Another explanation might be that child welfare clients' skills and abilities (on average) differ from those of their peers, which justifies that they are not chosen in the hiring process.

It is difficult to determine the extent to which a higher drop-out rate reflects discrimination from employers or differences in characteristics between child welfare clients and their peers, because it is difficult to include all relevant characteristics related to school drop-out. However, comparing child welfare clients' probability of transition to apprenticeship with transition to alternative educational routes makes it possible to assess whether important characteristics related to successful transition in the child welfare population are omitted in the analyses. As an alternative to the two years of apprenticeship after completing the school-based part of the vocational track, students in Norway, the setting of the present study, may decide to enrol in a one-year supplementary program, which earns them a general university admission certificate upon completion. With this as the point of departure, the probability of dropping out after the school-based training alternative to the probability of transition to apprenticeship versus alternative progression routes was examined.

These analyses were based on register data for the child welfare population that completed school-based training in four VET-programs from 2008 to 2011, and thus students who were eligible for an apprenticeship or enrolment in supplementary study. Child welfare clients' transition was compared with that of students from a representative sample of their peers in the vocational track. One of the main strengths in this article is the use of register data containing school-grades from the school-based part of VET and background characteristics such as sex, parental educational level, and immigrant background – i.e. characteristics that the above-mentioned studies have shown influence the probability of obtaining an apprenticeship. In addition, the type of VET-program and county of residence were included, in order to take any fluctuation of economic activity into account.

The Norwegian context

As other Scandinavian countries, Norway is based on a social democratic welfare model. Corresponding to this welfare model, the Norwegian educational system selects different tracks for students relatively late in their school careers (when they are about 16 years old). At this point, students have finished compulsory school education (seven years in primary school and three years in lower secondary school). No student fails compulsory school, and all students have a right to attend upper secondary school free of charge, into which almost all

students enrol. In general, about 97 per cent of the students in a given cohort enrol directly into upper secondary school (Statistics Norway, 2014). In the child welfare population, 89 per cent of the students in a given cohort proceed directly from compulsory school to upper secondary school (Dæhlen, 2015a).

Upper secondary education consists of two tracks: the academic and the vocational track. The academic track consists of three educational programs, each of which qualifies a student for further education at a university or university college after three years of study. The vocational track has nine educational programs. Sixty-six per cent of child welfare clients enrol in a vocational program, compared with 45 per cent of their peers (Dæhlen, 2015a).

The VET-training starts with two-years of school-based training, and usually finish with in-service training in a training establishment as an apprentice, or with a one-year supplementary program, which qualifies for further education at the tertiary level.[i] Students who have successfully completed the school-based training are qualified to start as an apprentice or in the supplementary study. Students who do not complete the apprenticeship or the supplementary study are not given vocational competence or qualifications for higher education (i.e. they are dropouts). The Norwegian educational system provides alternative routes in upper secondary school for students with particular school-related problems (both child welfare clients and other youth), but these students were excluded from the analyses in this study. The basic model of the educational system after compulsory schooling is shown in Figure 1.

Figure 1 about here

In general, the drop-out rate in VET is highest after the school-based training. About 50 per cent of the vocational students remain in vocational training at the start of their third year (path 1), about 25 per cent switch to supplementary study (path 2), and 25 per cent drop out (path 0) (Vibe et al., 2012). While the drop-out rate from apprenticeships is low, it is about 40 per cent in the supplementary study (Markussen and Gloppen, 2012).

Training agencies can be helpful in finding apprenticeships and distributing them. It is, however, the individual employer who makes the final decision on admitting applicants for apprenticeships.

The number of available apprenticeships, as well as the students' preferences for becoming an apprentice, differs across the four vocational programs that are included in the present study. In 2008, about seven in ten students in Technical and Industrial Production,

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Building and Construction, and Electricity and Electronics applied for an apprenticeship, whereas six in ten students in Restaurant and Food did the same. In general, about two in three students who apply for an apprenticeship obtain one (Vibe et al., 2011).

During upper secondary education, students can apply for financial support, which may be given as grants and/or loans, depending on their parents' income and assets. This aid is available to all students who qualify; it is not targeted at child welfare clients. Child welfare clients who live in foster homes or institutions are eligible for grants/loans according to specific rules.

Consistent with the social democratic welfare model, the child welfare system has a strong focus on assistance at home and family support (Hetland et al., 2015). Eighty-three per cent of child welfare assistance is given as in-home assistance, whereas 17 per cent of the recipients receive care measures (i.e., are placed in a foster home or an institution based on the issue of a care order). In the present study, child welfare clients comprise both youth with in-home assistance and care measures. Child welfare clients' transition from school-based training are compared to their peers' transition. However, only students (both with and without child welfare experiences) who have completed the two years of school-based vocational education are included in this article.

Previous research and hypotheses

The large numbers of dropouts in upper secondary school have received considerable attention among researchers, policymakers and educators for many years. It is widely recognized that early school leavers are more likely to be unemployed, become welfare recipients and be socially excluded (Freeman and Simonsen, 2015, Bäckman et al., 2011, Brekke, 2014). Consequently, dropping out of school increases welfare needs and reduces tax revenue, in addition to causing educational deficiencies for those who do not complete upper secondary school, which can limit their economic and social well-being throughout their adult lives (Rumberger, 1987, Rumberger, 2011, De Ridder et al., 2012). Thus, researchers and policymakers want to know what causes students to drop out of school and what may be done to prevent it.

Generally, the bulk of drop-out research has emphasized that drop-out and graduation rates vary widely among various populations of students, and that dropping out of school is the result of a long process of failure and disengagement that starts in early childhood (for a review see Dupéré et al., 2015). Mainly, this research has shown that drop-out rates are higher for boys, members of ethnic and language minorities, and young people with lower socio-

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economic status (e.g. Lamb and Markussen, 2011). These characteristics are overrepresented in the child welfare population: child welfare assistance is given somewhat more to boys than girls (Backe-Hansen et al., 2014), child welfare clients are more likely to come from families with low educational levels or otherwise low social class background (Berridge, 2007), and in Norway as in many other countries, the number of child welfare clients with an immigrant background is increasing (Kalve and Dyrhaug, 2011). Hence, the first hypothesis is:

H1: Child welfare clients have a higher probability of dropping out than students without a child welfare background.

Implicit in this expectation is that the difference in drop-out between child welfare clients and non-child welfare clients will reduce or even disappear after controlling for background characteristics such as sex, parental educational level, immigrant background, and grades. It is reasonable to assume that child welfare clients exhibit a great variability and diversity in behaviours, interests, and abilities due to the different actuating factors that have caused the need for child welfare assistance. Furthermore, a recent study has shown that child welfare clients with poor school grades have more complex problems than their peers (Björkenstam et al., 2016). Consequently, it seems reasonable to assume that child welfare clients with poor grades have a higher drop-out rate compared to their peers with poor grades. In addition, the assumed heterogeneity within the child welfare population might also differ by other characteristics related to low educational success. Consequently, it is likely that the drop-out rate within the child welfare population is highest in the most disadvantaged strata (among child welfare clients with low grades, low parental educational level, and non-western background).

Furthermore, sociological transition research has revealed that prestigious routes in VET are overrepresented by students from higher social classes (Protsch and Solga, 2015, Breen and Jonsson, 2000). This has also been shown in Norway, where the one-year supplementary program, which qualifies for entry into higher education, recruits students with relatively good grades and high motivation for education (Markussen and Gloppen, 2012).

Consequently, it is assumed that transition to apprenticeship and transition to supplementary study are related to grades and background characteristics. Furthermore, it is assumed that these factors are of greater importance among child welfare clients compared with non-child welfare clients in the transition both to apprenticeship and supplementary study. Thus, the two next hypotheses read:

H2a: Grades and background characteristics are of greater importance for the probability of obtaining apprenticeship for child welfare clients than non-child welfare clients.

H2b: Grades and background characteristics are of greater importance for the probability of enrolling into the supplementary study for child welfare clients than non-child welfare clients.

The VET-students' preference for becoming an apprentice and the availability of apprenticeships differ between educational programs/trades. Less is known about child welfare clients' choices of educational programs/trades. If child welfare clients are overrepresented in trades with relatively small opportunities and/or low interest for apprenticeship, this may cause a higher drop-out rate and/or a higher probability of enrolling into the supplementary study. Consequently, it is necessary to control for type of educational program.

Data and method

The data come from public registers of Statistics Norway and comprise all child welfare clients who received assistance during at least one year from 1990 to 2009. Originally, the data set includes a representative sample of the majority population. However, only child welfare clients and their comparison peers who completed the school-based part of the vocational track in the period 2008 to 2011 in Technical and Industrial Production, Building and Construction, Electricity and Electronics, and Restaurant and Food processing were included. In addition, students older than 23 years were excluded in the analyses. [ii] Consequently, students on the academic track, students on other vocational programs, students that have dropped out of school or students who have failed to complete the two years of school-based training, were excluded from the analyses. Four thousand six hundred nineteen child welfare clients completed the school-based part of the vocational track during this period, whereas the comparison sample comprised 5,916 peers.

Dependent variables

One dependent variable with three outcomes was constructed: 0 = dropped out after school-based training, 1 = obtained an apprenticeship and 2 = participated in the supplementary study program. For each school year, the data set includes a six-digit number for each student (assigned in October). These numbers contain information about the type of education and

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whether the student was in a program for a trade certificate or in the supplementary study program. If information was missing about educational activity in the October following the completion of school-based training, any educational information from the next October (almost 1.5 year after completing school-based training) was used to prevent the recording of false drop outs due to delayed apprenticeship agreements or delayed enrolment/registration in the supplementary study program. Consequently, students with no information about education in the first and next school year after completing school-based training were treated as drop outs (value 0).

Independent variables

Child welfare clients. Child welfare clients comprise all youth in child welfare services who received child welfare support in the home or out-of-home (i.e., living in foster homes and/or institutions). Eighty-two per cent of the child welfare clients in this study had in-home assistance, whereas 18 per cent received care measures.[iii]

Comparison sample. The comparison sample was randomly selected from the same birth cohorts without child welfare experiences.

Sex. Sex was dummy coded, based on 0 = girl and 1 = boy.

Parental education level. Parental education was the highest level attained by either parent. Four dummy variables were constructed, with 0 = lower secondary school (or less), 1 = upper secondary school (academic or vocational), 2 = higher education and 3 = unknown parental education level.

Non-western country background. Students with two parents originating from non-western countries or with one parent originating from a non-western country and one parent from a western country outside of Norway were categorized as having a non-western country background. There were very few students with two parents from western countries outside of Norway (68 students), and they were categorized as Norwegians.

Grades. The grade variable was determined by the students' grades in the three subjects common for all vocational students in the second year of school: Norwegian, English, and a subject called In-depth Study. The latter subject is trade specific and involves more practical training than Norwegian and English. Grades are assigned on a six-point scale from 1 = lowest to 6 = highest. A grade variable was constructed by measuring the means of the three grades. If grade information was missing for some subjects, mean grades were constructed from the remaining grades. However, students were more likely to receive higher grades in the In-depth Study course. To prevent any bias if one or two grades were missing,

the three grades were converted to z-scores before the mean grade was constructed. About seven per cent of the students (10 per cent in the child welfare population and three per cent in the comparison sample, respectively) had no information about grades in any of the three subjects, and they were not included in the analyses.

Educational programs. Students who have completed the school-based part in the four vocational programs in the period 2008 – 2011 were included in the analyses. For each educational program, a dummy variable was constructed (four dummy variables in total).

In addition, the county in which students lived (in total 19 counties) and the year the school-based training was completed (2008, 2009, 2010 or 2011) were included to control for any differences in the availability of apprenticeships between counties and/or year. These results are not presented in the tables, but are available upon request.

Statistical methods

Table 1 presents descriptive statistics. In examining transition from the second school year to the next year, multinomial logistic regression models were estimated separately for the child welfare clients and the comparison sample (Table 2). Average marginal effects (AME) were calculated from multinomial logistic regression models.Wald tests were conducted to determine whether the estimates were statistically different from zero. T-tests were conducted to determine whether the difference in estimates for child welfare clients and comparison sample were statistically different from zero.

Results

Descriptive statistics

Figure 2 shows the proportion of dropouts, apprentices, and students in the supplementary study by educational programs in the child welfare population and in the comparison sample. In both groups, the drop-out rate was highest among students in Technical and Industrial Production (TIP) and significant highest in the child welfare population. About 50 per cent of child welfare clients who completed Technical and Industrial Production dropped out compared with 30 per cent of their peers without child welfare experiences. The proportion of apprenticeships was lowest in Technical and Industrial Production. The drop-out rate was lowest among students in Electricity and Electronics (EE) – 14 per cent and six percent in child welfare population and comparison sample, respectively. Students in Electricity and Electronics started relatively often in the supplementary study and particularly so in the child welfare population.

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Figure 2 about here.

Furthermore, the lowest proportion of apprentices in both groups was among students who completed the school-based training in Technical and Industrial Production. In the three remaining educational programs, Building and Construction (BC), Restaurant and Food processing (RF), and Electricity and Electronics, the difference between the shares with apprenticeships was relatively small. However, the share of students with apprenticeships was lower in the child welfare population compared with their peers. The highest proportion of students in the supplementary study had completed Electricity and Electronics. In the comparison sample, relatively many from Restaurant and Food processing started in the supplementary study.

Table 1 shows the descriptive statistics for the child welfare population and the comparison sample. The results show that the drop-out rate was higher in the child welfare population than in the comparison sample. Although 37 per cent of the child welfare clients dropped out of school, only 18 per cent of the comparison sample did. Furthermore, the child welfare clients obtained a smaller percentage of apprenticeships than the comparison sample. Forty-eight per cent of the child welfare clients were registered as apprentices, whereas 65 per cent of the comparison sample was apprenticed. However, the higher drop-out rate in the child welfare population was less associated with lower enrolment in the supplementary study program. About one in six participated in the supplementary study (15 per cent and 16 per cent in the child welfare population and comparison sample, respectively).[iv]

Table 1 about here

Among the child welfare clients, 15 per cent of the students who completed the school-based part were girls, whereas the figure was 10 per cent for the comparison sample. About one in four child welfare clients originated in families with lower secondary education as the highest education level, whereas this was true for one in ten students in the general sample. The percentage of children from families in which the parents had a higher education level was 29 per cent in the comparison sample and 18 per cent in the child welfare population, indicating the importance of adjusting for parental education level in analyses. The share of students from families with upper secondary school as their highest education was 55 per cent in the child welfare population and 60 per cent in the comparison sample.

There were fewer students with a non-western country background in the comparison sample than in the child welfare group. In addition, the students in the comparison sample received higher grades.

The distribution of completed school-based training differed by educational programs and to some extent between the child welfare clients and the general sample. Child welfare clients completed the school-based training in Electricity and Electronics relatively rarely.

The results up to this point show that child welfare clients had a higher drop-out rate than their general population peers as assumed in hypothesis H1. Furthermore, the child welfare clients were over-represented among those with characteristics related to drop-out, such as low parental education, low school grades, and an immigrant background. However, there were more girls in the child welfare population compared with the comparison sample.

Drop out, obtaining an apprenticeship or enrolment into the supplementary study
Table 2 reports the average marginal effects (AME) for background variables, grades, and educational programs on the probability of transition to apprenticeship or supplementary study relative to dropping out of school, adjusting for county and school-years. The analyses were estimated separately for child welfare clients and non-child welfare clients.

Table 2 about here

The second question raised in this article was whether grades and background characteristics were of greater importance for the probability of obtaining apprenticeship for child welfare clients than for non-child welfare clients. In addition, it was argued for the necessity of controlling for educational programs. The answer is given in the first column within the two student groups. The results show that grades are positively related to obtaining an apprenticeship relative to dropping out, and, as hypothesized, the effect of grades are of somewhat greater importance for child welfare clients than non-welfare clients. A standard deviation increase in grades (z-scores[v]) implies 13 percentage points higher probability among the child welfare clients. In the comparison sample, this change increases the probability with 11 percentage points. The difference in impact of grades between child welfare clients and non-child welfare clients is statistically significant. This implies that the difference between child welfare clients and the majority peers in the probability of obtaining an apprenticeship is greater the poorer the grades, and that the difference between the two student groups decreases if they have good grades.

There is a positive male effect on obtaining an apprenticeship – 13 percentage points and 11 percentage points higher for boys compared to girls in the child welfare population and in the comparison sample, respectively. The male difference in the two student groups is not statistically different from zero.

Perhaps surprisingly, there is no statistically significant effect of different parental educational level on the probability of obtaining apprenticeships in the child welfare population and in the comparison sample.

For students with a non-western background, there is a negative effect on the probability of becoming an apprentice. This effect is somewhat higher in the comparison sample compared with the child welfare population (12 percentage points and seven percentage points, respectively), but the difference is not statistically significant.

Furthermore, there is a positive effect of being trained in Building and Construction, Electricity and Electronics, and Restaurant and Food processing compared with Technical and Industrial production on the probability of being apprenticed. The positive effect is stronger in the child welfare population than in the comparison sample, and statistically significant from each other in Building and Construction, and Restaurant and Food processing.

Consequently, the results give only partly support to the hypothesis H2a. Good grades are of greater importance on the probability of becoming apprentice among child welfare clients compared with their peers. However, the effect of other background characteristics are more or less identical.

The next question concerns the effect of grades and background characteristics on the probability of enrolment into the supplementary study, relative to dropping out of school. Turning to the second column within the two student groups, the results show a rather small effect of grades on the transition to the supplementary study. An increase in grades (one standard deviation) entails two percentage points higher probability of starting in the supplementary study – among youth both with and without child welfare experiences.

Boys, in contrast to girls, have a significant negative probability of starting in the supplementary study. Boys are about four percentage points less likely than girls to make this transition in both the child welfare population and in the comparison sample.

Furthermore, the results show a positive effect of originating from a family with higher education compared with originating from a family with lower secondary school on the probability of enrolment into the supplementary study. The results show that this effect is somewhat higher in the comparison sample compared with the child welfare population, but the difference is not statistically significant from zero.

Students of non-western origin have a higher probability of starting in the supplementary study compared with ethnic majority students.

Moreover, there is a positive effect of being trained in Building and Construction, Electricity and Electronics, and Restaurant and Food processing compared with Technical and Industrial production on the probability of starting in the supplementary study. The positive effect is significantly stronger in the child welfare population than in the comparison sample in Electricity and Electronics.

Consequently, these results do not give support to the hypothesis H2b. Grades, sex, parental educational level, and non-western background are of equal importance for the probability of enrolling into the supplementary study.

The transition probabilities by educational program are elaborated in figure 3. Transition rates to apprenticeships, supplementary study, and no-transition for child welfare clients and comparison peers in the four educational programs were estimated. The rates are estimated for the boys with average mean grades, originating from families with lower secondary school, and with a western background.

Figure 3 about here

Figure 3 shows that child welfare clients have higher drop-out probabilities and lower probabilities of obtaining apprenticeship than non-child welfare clients, and that these probability differences are highest in Technical and Industrial Production. However, the figure also illustrates that the probability of enrolment into the supplementary study are comparable in the child welfare population and in the comparison sample with the exception of students in Electricity and Electronics. In this program, child welfare clients have higher probability of starting in the supplementary study compared to their peers.

To evaluate whether the difference between child welfare clients and others weakens for individuals with other characteristics than the ones forming the basis of the estimation in figure 3, a large number of supplementary estimations have been conducted. Mainly, these results show that the difference in the probability of obtaining an apprenticeship between child welfare clients and their peers is at its largest among students with the poorest grades. Due to space limitations, these results are not presented, but detailed results are available upon request.

Conclusion and discussion

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It is difficult to determine whether the difference in drop-out rates between disadvantaged youth and more privileged youth reflects discrimination from employers or differences in characteristics between the two student groups. It was argued that if the high drop-out rate in the child welfare client population was caused by disadvantaged characteristics, which usually characterise child welfare clients, we would expect relatively equal differences in the probability of transition to apprenticeship and to the alternative educational route between the two groups. In addition, it was argued that the drop-out rate within the child welfare population was highest in the most disadvantaged strata (among child welfare clients with low grades, low educational parental level, and non-western background).

The findings are as follows: First, there is a significantly higher drop-out rate in the child welfare population compared to their peers after completion of the school-based part of VET (30 per cent and 15 per cent, respectively). This result was expected based on current research.

Second, the results show that good grades improved the probability of becoming an apprentice relative to dropping out of school, and more so for child welfare clients than their peers. Being a boy and not having an immigrant background increased the probability of obtaining an apprenticeship, but not more for child welfare clients than for non-child welfare clients.

Third, grades, sex, immigrant background, and parental educational level did influence the transition to the supplementary study, but the influence of these variables were comparable for the two student groups.

Forth, child welfare clients were to some extent overrepresented in Technical and Industrial Production and Restaurant and Food processing, which were the two educational programs with the highest drop-out rate.

Finally, adjusting for grades, background characteristics, and type of educational program did not eradicate differences in the probability of dropping out of school after the school-based part of VET.

The findings in the present article make it clear that child welfare clients and non-child welfare clients have more or less equal transition rates to the supplementary study, and that the relatively high drop-out rate in the former group of students is a consequence of lower probability of obtaining apprenticeships. To some extent, the relatively low transition rate to apprenticeship is related to the unprivileged characteristics, which usually characterise child welfare clients. However, the results show that there exists an additional disadvantage in the child welfare clients' probability of obtaining an apprenticeship.

Is this additional disadvantage a result of employers' discrimination of child welfare clients? Helland and Støren (2006), in their study showing that ethnic minorities have lower probabilities of obtaining an apprenticeship, argue that employers do not (necessarily) discriminate against ethnic minorities in its strongest form, but that employers prefer majority applicants in situations where the majority and minority applicants are similar (in their study, with similar grades). Even if child welfare clients do not have an ethnic stigma (as immigrants often are assumed to have), they may share traits such as manners or lack of cultural or specific linguistic capital that Bourdieu argues young marginalized adults do (Fangen, 2010). Without the intention of favouring non-child welfare backgrounds, employers might unintentionally reject apprenticeship applications from child welfare clients.

On the other hand, recent findings show that networks play a crucial role in finding an apprenticeship and particularly the mother's networks (Roth, 2014). This kind of network is probably less of a factor for child welfare clients either because they come from socially deprived families and/or they do not live at home and lack such a network. Consequently, the lower probability of obtaining an apprenticeship may be caused by less assistance from family in finding one.

What are the implications of these findings for preventing disadvantaged students from dropping out of VET? Assuming the results can be extended to other groups of disadvantaged students, the implication is that general measures aimed at improving these students' school performance is not sufficient. Given the results in this article, it is reasonable to conclude that there is a need for additional action targeting disadvantaged youths in the transition that follows school-based training.

Acknowledgements

[i] In addition to the supplementary study as an alternative to two years of apprenticeship, youth have a right to a one year supplementary programme for general university admissions certification after achieving a trade or journeyman's certificate.

[ii] Students have a statutory right to upper secondary education within five years of completing lower secondary school, which means that students range in age from 18 to 23 years when they start their third year/apprenticeship.

[iii] I have conducted separate analyses for child welfare clients with in-home and out-of-home measures. For the most part, the latter group fared somewhat worse than the former group did by having a slightly higher drop-out rate (about two percentage points higher). The final analyses were conducted without dividing the child welfare population to simplify the presentation.

[iv] The numbers in table 1 (comparison sample) differ somewhat from results shown in Vibe et al. (2012). This difference is probably caused by Vibe et al. (2012) including students who have not passed exams in the second school year.

[v] Z-scores are related to the mean in a group of scores. A Z-score of zero equals the mean, and 95 per cent of the scores are defined within ±1.96 standard deviations from the mean.
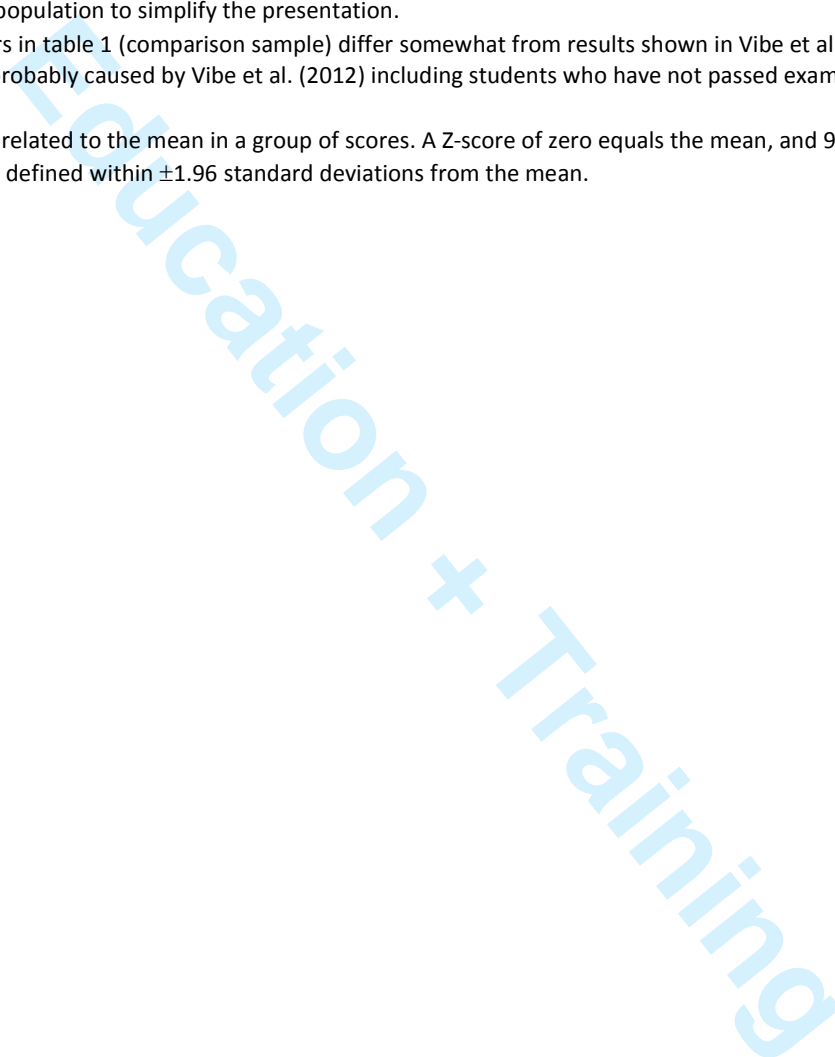
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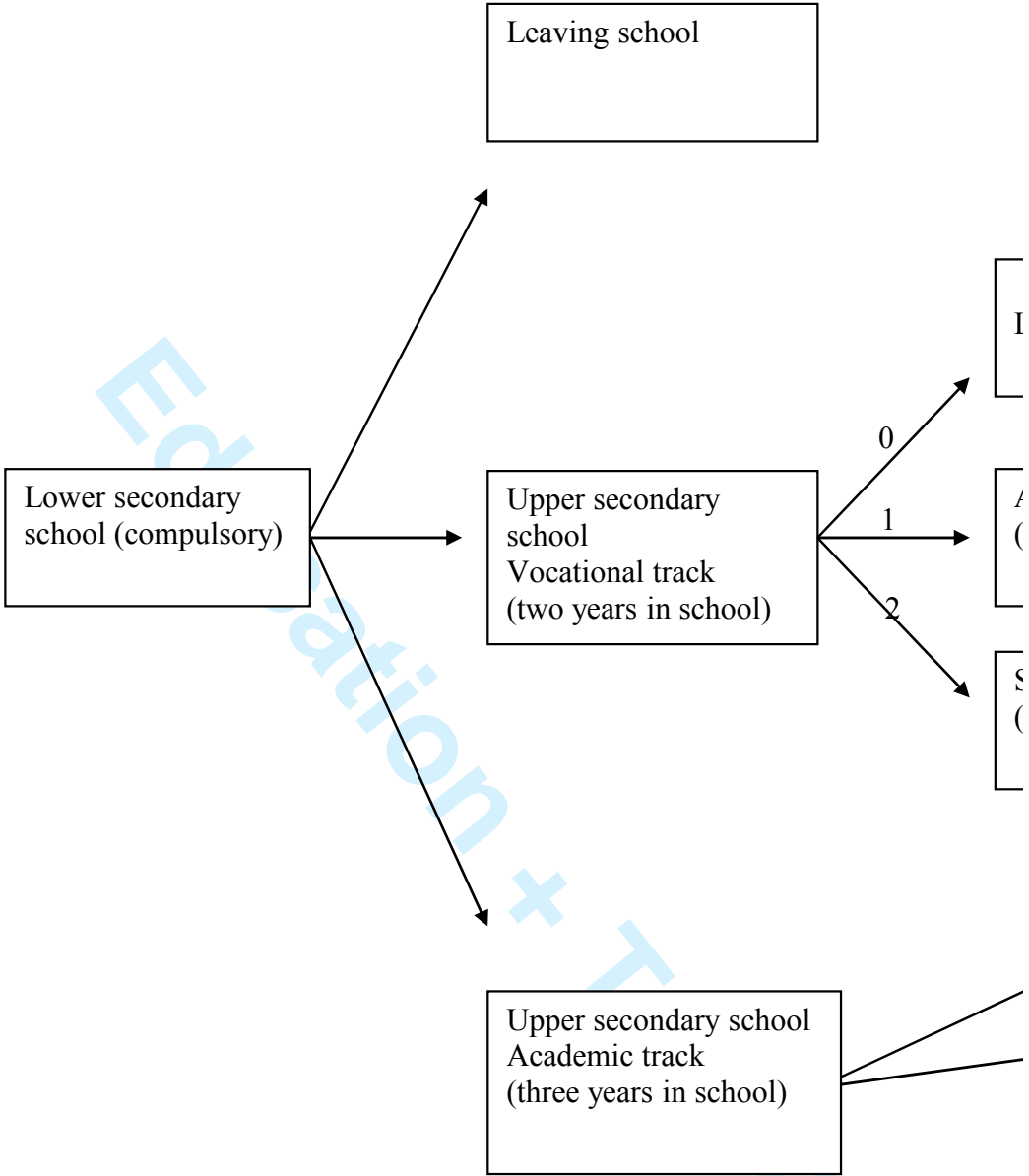41
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Leaving school

Lower secondary
school (compulsory)

Upper secondary
school
Vocational track
(two years in school)

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Upper secondary school
Academic track
(three years in school)

Figure 1 Transition points after compulsory school

Leaving school

Apprenticeship
(two years of training)

Supplementary study
(one year in school)

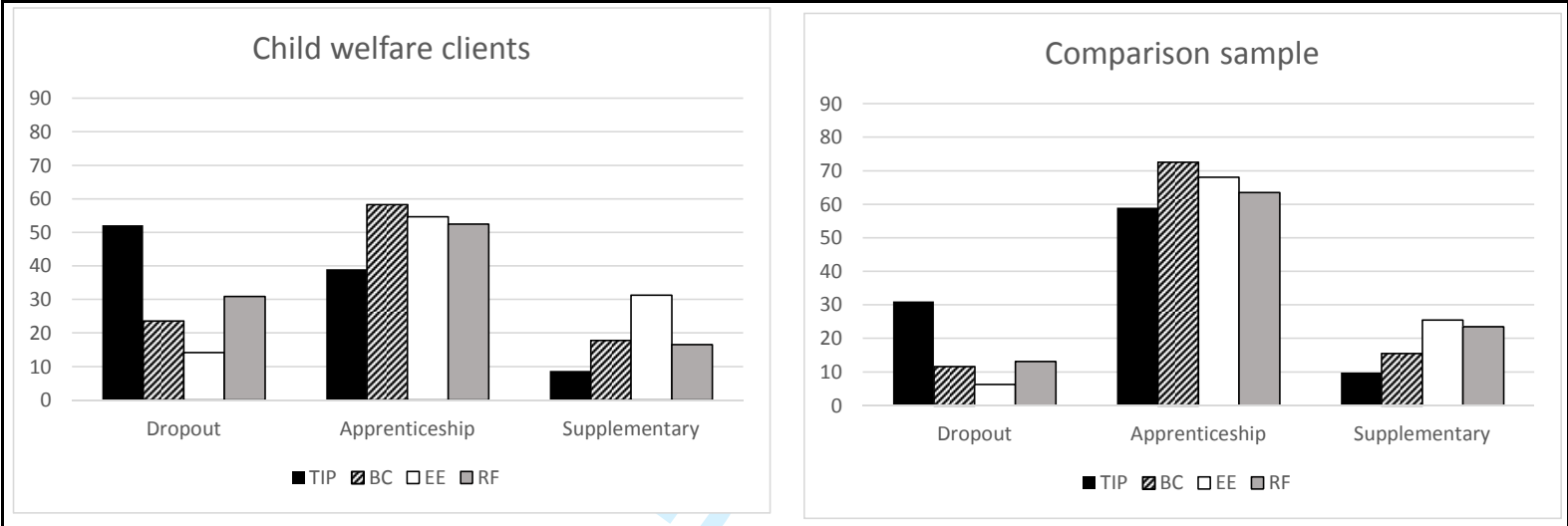Leaving school

Attending higher
education
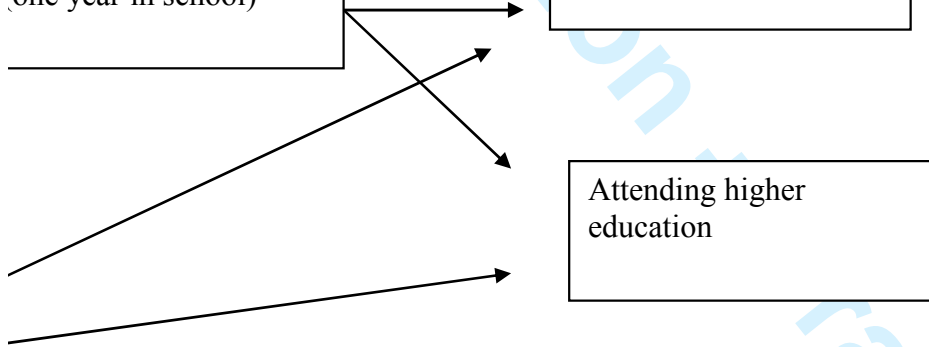
Figure 2 Dropout, apprenticeship, or supplementary study after completed school-based training among child welfare clients and students in the comparison sample on different educational programs, unadjusted results

Figure 3 Estimated probabilities of transtion to dropout, apprenticeships and supplementary study among child welfare clients and students in the comparison sample on different educational programs (from table 2, calculated for boys, originating from families with lower secondary school, western background, and with mean grades)

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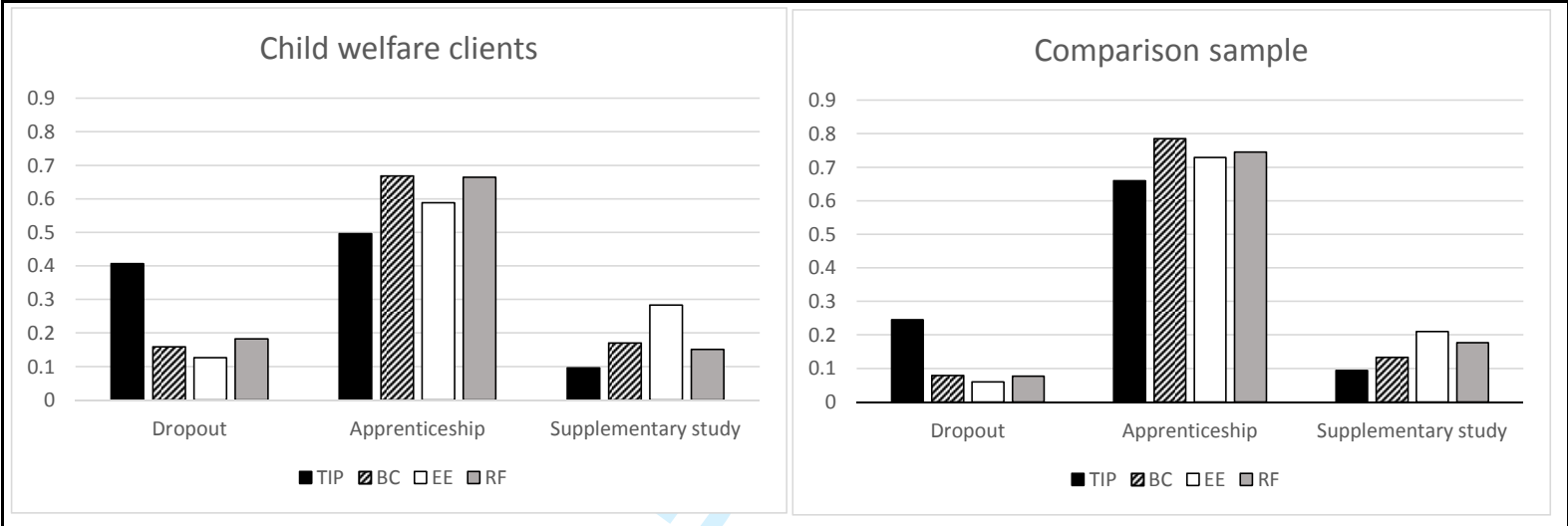30
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Table 1 Descriptive statistics for child welfare clients and the comparison sample who completed the school-based training in the 2008–2011 period.

	Child welfare clients	Comparison sample		n
Transition after school-based training				
No transition	37.1	18.2	**	2,793
Apprenticeship	47.9	65.4	**	6,077
Supplementary study	15.0	16.4		1,665
Total	100.0	100.0		
Gender				
Girls	15.2	9.9	**	1,286
Boys	84.8	90.2	**	9,249
Total	100.0	100.0		
Parental education level				
Lower secondary	25.9	10.6	**	1,824
Upper secondary	55.1	60.2	**	6,106
Higher education	17.5	28.6	**	2,500
Unknown	1.5	0.6	**	105
Total	100.0	100.0		
Non-western country background				
Yes	11.4	4.5	**	790
No	88.6	95.5	**	9,745
Total	100.0	100.0		
Grades				
Poorer grades than average	61.1	42.2	**	5,317
Better grades than average	38.9	57.8	**	5,218
Total	100.0	100.0		
Educational programs				
Technical and Industrial Production	23.5	21.2	**	4,523
Building and Construction	12.3	15.2	**	2,816
Electricity and Electronics	6.3	12.3	**	1,934
Restaurant and Food processing	7.3	5.3	**	1,262
Total	100.0	100.0		
Number of observations	4,619	5,916		10,535

Note: ** A difference in means is statistically significant from zero at 0.01 level (independent sample test

Table 2 Average marginal effects from multinomial logistic regression of the impact of sex, parental educational level, non-western background, educational programs and grades on transition from the second school year (separate analysis for child welfare clients and comparison group)

	Child welfare clients				Comparison group			
	Apprenticeships		Supplementary study		Apprenticeships		Supplementary study	
	AME	SE	AME	SE	AME	SE	AME	SE
Boys	0.128 **	0.022	-0.039 *	0.016	0.106 **	0.022	-0.043 *	0.017
Parental education level (ref: lower secondary school)								
Upper secondary school	0.021	0.017	0.004	0.012	0.013	0.020	0.015	0.015
Higher education	-0.018	0.022	0.050 **	0.016	-0.019	0.022	0.076 **	0.017
Unkown	-0.034	0.063	0.040	0.040	0.061	0.071	-0.027	0.042
Non-western countries	-0.074 **	0.025	0.112 **	0.015	-0.118 **	0.031	0.102 **	0.022
Grades (z-scores)	0.132 **[a]	0.009	0.018 **	0.007	0.105 **[a]	0.008	0.015 *	0.006
Educational programs (ref: Technical and Industrial Production)								
Building and Construction	0.177 **[a]	0.018	0.086 **	0.013	0.131 **[a]	0.015	0.050 **	0.011
Electricity and Electronics	0.113 **	0.023	0.196 **[a]	0.020	0.075 **	0.017	0.135 **[a]	0.014
Restaurant and Food processing	0.169 **[a]	0.023	0.065 **	0.017	0.089 **[a]	0.023	0.098 **	0.020
LL	-4065.859				-4623.088			
Pseudo R squared	0.124				0.117			
n	4,619				5,916			

Note: ** $P < 0.01$, * $P < 0.05$ (Wald test). [a] the difference between child welfare clients and comparison sample is statistically significant from zero at the 0.05 level (t-test). AME = average marginal effects, SE = standard errors.

Control variables for county and year of completed school-based training are not presented.

Reference category: girls originating from families with lower secondary school, western background and with mean school grades (z-scores) living in Akershus county, completed school-based training in 2008 in Technical and Industrial Production. Drop out after completing the second school year (i.e., no transition to apprenticeships or supplementary study) is the baseline category.