The Studentification of Low-Wage Service Work in Sweden: Who Participates?[1]

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ABSTRACT

The study examines trends in part-time employment among school students (15–20 years old) in Sweden. Using data from the Swedish Labor Force Survey (2006–2019) and population-based registries, the article analyzes developments in employment rates and work patterns. The results indicate a rapid increase in part-time work, particularly in the hospitality sector, which underscores how young student-workers have become an important source of non-standard, low-wage labor. Using zero-inflated negative binomial regression modeling, the study shows that female students and those with better grades are more likely to have jobs during school. However, students with lower parental income and education are predicted to work longer hours. Since intensive part-time work during school is associated with risks such as poor academic success and school dropout, the findings raise concerns that the patterns of part-time work among young students may perpetuate class-based inequalities.

KEYWORDS

Intersectionality / low-wage work / non-standard work / student workers / young workers

Introduction

I n the expanding private service sectors, young students have become an important category of workers that supply employers with what King and Rueda (2008) define as non-standard cheap labor, that is, low-wage work on part-time or temporary employment contracts (Berglund et al. 2021; Ilsøe 2016; Larsen & Ilsøe 2021). Practices that produce differences among groups of people are central to capital accumulation (de los Reyes 2017; Mezzadra 2018). In the case of young students, poor wages and unfavorable working conditions are normalized by distinguishing 'student' or 'youth' jobs from 'proper' work, motivated primarily by the fact that it is young people employed in the former (Yates 2017). Similar notions are echoed in labor market research, where students are perceived as 'voluntary' or 'transitional' part-time workers, thus not affected by their employment conditions in the same way as others. For example, Standing (2011, p. 59) calls them the 'grinners' of the precariat, 'happy to take casual jobs with no long-term future'. Such imaginaries have implications. First, a large category of non-standard, low-wage workers becomes unquestioned in the research literature (Doogan 2009; Howieson et al. 2012a; Smith & Patton 2013). This makes students' position in the labor market appear natural, functional, and profitable, rather than shedding light on the mechanisms that create inequality and exploitation (de los Reyes 2017).

Second, it produces a view of students as a homogenous group, thereby ignoring intersecting inequalities based on, for example, gender, class, and race. This view has been challenged by recent research on student-migrant-workers and their experiences in low-wage precarious work (e.g., Campbell et al. 2016; Maury 2021; Neilson 2009), thus underlining the need to problematize the univocal figure of the student-worker.

This paper contributes to the growing body of literature on low-wage service work and non-standard labor by focusing on the youngest students, aged 15–20 years, who are working while still in school. Researchers have argued that this cohort faces particular risks due to their young age and since they are newcomers in the labor market (Canny 2002; Hobbs et al. 2016, 2017). The site of analysis is Sweden, usually portrayed as having a labor market characterized by highly regulated wages and working conditions (Dølvik et al. 2015). However, legislative changes have produced laxer employment protection for temporary workers, thus creating peripheral segments of the labor market characterized by low pay, non-standard contracts, and precarious working conditions (Berglund et al. 2017; Rasmussen et al., 2019). At particular risk of having these jobs are young people 15–17 years of age, and students (Berglund et al. 2021). Today, Sweden belongs to a group of European countries with high employment levels of students 15–24 years of age (Eurostat 2021). Approximately 65% of all upper secondary students work, most of them during vacations, but as much as 25% work every week during the entire school year (Statistics Sweden 2018a, 2021). Despite this, the group has received scarce academic attention.

Drawing on data from the Swedish Labor Force Survey (2006–2019) with linked records from population-based registries, the main aim of this paper is to explore the trends in employment rates and the worker profiles of young students involved in part-time work while in full-time education. A first, explorative research question concerns *how employment rates among school students have developed during the studied period* (RQ1). The question is approached through an analysis of descriptive statistics, contextualized by sectoral and regulatory changes in the Swedish labor market. Since Sweden has a well-established pattern of school students doing summer jobs in, for example, the care sector (Eurostat 2021; Wadensjö 2018), the paper distinguishes between students in seasonal employment during vacations and those working part-time during the school year, focusing exclusively on the latter group.

Regarding worker profiles, the paper draws on intersectional approaches (de los Reyes 2017; Mulinari & Selberg 2013). The second research question aims to disentangle *how being involved in part-time work during the school year varies for differently situated students in terms of gender, age, class, migration background, and education* (RQ2). However, as Campbell and Price (2016) note, although young students are involved in work that can be defined as precarious, some factors may cushion or magnify the risks (see also Fuller & Vosko 2007). Ample research suggests that the effects of part-time work during school depend on the number of hours worked: a few hours a week may have rewarding effects, but above a certain threshold, the effects instead become increasingly negative, especially since it endangers educational achievements (see Neyt et al. 2019 for a review). Therefore, the third research question addresses *how work patterns, in terms of the number of hours worked, vary for differently situated students* (RQ3). To answer RQ2-3, I apply a zero-inflated negative binomial regression model on a pooled subsample of the Swedish Labor Force Survey (2015–2018) to uncover intersecting patterns of social divisions that correspond with young students' involvement in paid

work. Again, since many of the risks lie in the combination of work and study, seasonal employment during the summer vacations is excluded from the analysis.

The paper is structured in the following way. First, I delineate some structural changes in the labor market that produce young students as a source of non-standard, low-wage labor in the service sectors. I then introduce the Swedish context, specifically focusing on the emergence of the peripheral labor market segments. This is followed by a presentation and discussion on how intersectional approaches can be applied to analyze students' work. After that, I present data, definitions of variables, and the methods used, followed by the results and analysis. Finally, the article concludes with a discussion of the main findings.

The studentification of low-wage service work

The increasing share of students in the labor market during past decades cannot only be traced to the expansion of higher education alone but must also be understood in light of sectoral and occupational changes (Doogan 2009; Yates 2017). Previous research has identified two interlinked drivers that create a demand for young students' labor: the development of low-wage service sector employment and the proliferation of non-standard forms of work. The rise of jobs in the labor-intensive service industries, such as retail and hospitality, has long relied on youth labor (Yates 2017). Savage and colleagues (2013) even define 'emergent service workers' as a social class consisting of young workers in low-wage, private services (see also Cant 2020). Young workers are primarily attractive due to their relative cheapness: the gap between young and all-age workers has been referred to as the 'youth wage discount' (Campbell & Price 2016; Yates 2017). Indeed, when asking employers why they hire school students, several state cost-based reasons, particularly within the delivery and retail sectors (Howieson et al. 2012a). However, some research also suggests that young students are desirable because they meet the right aesthetic requirements: their youthfulness, looks, and soft skills are valuable for retail and service sector jobs (Besen-Cassino 2014; 2018; Gatta 2011; Nickson et al. 2011).

Low-wage service sectors, such as retail and hospitality, have a high prevalence of non-standard employment contracts, that is, those that deviate from full-time, open-ended jobs (Hipp et al. 2015; Larsen & Ilsøe 2021). The reason for this over-representation is twofold. First, an extension of opening hours to include evenings and weekends has occurred in these sectors, thereby generating a need for flexible, part-time labor (Huddleston 2011). Second, the industries are, as mentioned, labor-intensive. To make profit, non-standard forms of contracts are used to provide employers with numerical flexibility to cut costs and to minimize paid unproductive time at work (Hipp et al. 2015; Rubery et al. 2018). Student labor is one important way to ensure this, as students are willing to accept less popular shifts and fewer hours (Canny 2002; Howieson et al. 2012a), making them appealing as 'gap fillers' (Jany-Catrice & Lehndorff 2005). It is therefore not surprising that young students are overrepresented among non-standard workers (Berglund et al. 2021; Hipp et al. 2015; Larsen & Ilsøe 2021), especially in the low-wage services (Ilsøe 2016). This could, however, affect the labor market more generally. Students may displace unqualified workers, as the former are more willing to accept flexible scheduling and low wages (Canny 2002;

van der Meer & Wielers 2001), although such notions of 'crowding out' have been contested (Beblavý & Fabo 2015). Ilsøe (2016) also points to challenges for unions, and in effect also for labor market regulation, when specific sectors are dominated by young, transitional workers.

The Swedish context

At first glance, the drivers of student employment – the rise of jobs in private services and the proliferation of non-standard work – may seem alien in the context of the Swedish labor market. Sweden belongs to the Nordic labor market regime (Dølvik et al. 2015), characterized by high unionization rates, a strong welfare state, centralized collective bargaining systems regulating wages and working conditions, and a relatively compressed wage structure. However, there have been notable structural changes in recent decades, leading to the development of peripheral segments in the labor market characterized by low pay, non-standard contracts, and precarious working conditions (Berglund et al. 2017; Carlén & de los Reyes 2021; Davidsson 2018; Rasmussen et al. 2019). A common thread in these descriptions is the shift that occurred in the aftermath of the economic recession of the 1990s, when there was a rapid increase in fixed-term employment contracts, particularly affecting young people and women (Holmlund & Storrie 2002). The heightened levels of temporary work never recovered and have since remained above the European average and higher than in the other Nordic countries (Berglund et al. 2021; Eurostat 2019; Rasmussen et al. 2019). One explanation for this is that the high unemployment resulting from the 1990s recession upset the power balance between labor and capital, which in turn enabled political decisions that increased the use of non-standard forms of work (Alfonsson 2022; Davidsson 2018). Of particular importance to this study is the successive deregulation of fixed-term employment, where employers today can have unlimited numbers of temporary contracts without stating any specific reasons. This has led to laxer employment protection for temporary workers, comparable to that in countries such as the UK and Ireland (Berglund et al. 2017).

In Sweden, approximately 16% of all workers are fixed-term employees, and these contracts are prevalent in sectors such as retail and hospitality (Berglund et al. 2021; Carlén & de los Reyes 2021). Young people aged 15–17 years and students are at particular risk of having these jobs (Berglund et al. 2021). Alfonsson (2020) defines the labor market changes during recent decades as a shift towards a flexible mode of accumulation, creating a need for fixed-term, young employees in Sweden. It should be noted that several forms of non-standard work can, and often do, overlap. Young students on fixed-term contracts are typically employed in part-time positions. However, it is the development of temporary work, rather than part-time jobs, that is most associated with the rise of labor market insecurity and non-standard jobs for young people in Sweden. Moreover, several youth payroll tax cuts have accentuated young people as a source of low-cost labor, thus widening the youth wage discount (Egebark & Kaunitz 2018). Like many other countries, the Swedish youth labor market is now characterized by non-standard jobs, and young people's extended and insecure transitions from school to work have thus become the interest of a growing number of studies (e.g., Olofsson & Wikström 2018). As little has been written about the overlap between

school and work, this article can provide added knowledge on this segment of the Swedish workforce.

Young student-workers: An intersectional approach

As Fuller and Vosko (2007) have noted, the so-called standard employment relationship is a male, white norm: patterns of temporary work have always been gendered and racialized (see also Vosko 2010). This serves as a starting point for intersectional approaches: discrimination and inequalities are not deviations from an otherwise fair order, but rather central principles that shape capital accumulation (de los Reyes 2017). Scholars such as Mulinari and Selberg (2013) therefore argue that intersectional studies of working life should place issues of exploitation, distribution, and production at the core of the analysis. Yet, as Yates (2017) notes, such perspectives have been absent in sociological accounts of youth labor, which generally fail to locate young people within capitalist relations of production and reproduction. In this paper, I draw on Mulinari and Selberg's (2013) proposal and highlight young student-workers as a figure of non-standard, low-wage labor in the Swedish labor market (Yates 2017). However, this figure is not homogenous; a key insight of intersectional theory is that social categories are differentiated and shaped by complex power relations (de los Reyes & Mulinari 2005). To address this, I explore how part-time work during the school year varies for differently situated young students in terms of gender, class, migration background, and education.

   Similarly, temporary work is not a homogenous phenomenon but varies in terms of risk and reward (Campbell & Price 2016; Fuller & Vosko 2008). For school students, researchers have found positive associations between part-time work during school and personal development, skills enhancement, and future labor market outcomes (Hensvik et al. 2023; Hobbs et al. 2007; McKechnie et al. 2010; 2014; Müller 2021; Simpson et al. 2018). Others conclude that working while studying endangers academic success, as there is substantial empirical evidence linking it with poor educational achievement, truancy, and dropout (Marsh & Kleitman 2005; McCoy & Smyth 2007; Neyt et al. 2019; Singh et al. 2007). However, most recent research suggests so-called threshold effects, meaning that potential risks or rewards are determined by the number of hours worked (Dumont et al. 2009; Monahan et al. 2011; Nagengast et al. 2014; Staff et al. 2020). Students' work patterns relate to class, gender, ethnicity, and previous academic performance (Bachman et al. 2013; Clampet-Lundqvist 2013; Howieson et al. 2012b; McCoy & Smyth 2007; Staff et al. 2020). Intensive work patterns have consistently been linked to more disadvantaged class positions. As Staff and Mortimer (2007, p. 1188) summarize: 'More advantaged youth, as gauged by their socioeconomic backgrounds and educational promise, limit their hours work during high school; their less-advantaged counterparts tend to pursue more intensive work patterns' (see also Raby et al. 2018; Staff et al. 2020). Still, this is a neglected area of research: most studies try to control for background factors when assessing the impact of work, rather than exploring how work patterns vary across social divisions among school students. The paper at hand contributes by not only investigating how holding a part-time job during school varies, but also how work patterns, in terms of hours worked, differ among young student-workers.

Data and method

Data

This study is based on microdata from the Swedish Labor Force Survey (LFS) spanning 2006–2019. The survey uses a panel design and builds on a stratified random sample of approximately 20,000 respondents every month, aged 15–75 years. My sample comprises individuals in upper secondary education (aged 15–20 years). Students only working on summer holidays have been excluded to avoid measuring seasonal employment. For descriptive analyses and graphs, sample weights are applied to account for sampling procedure and non-response rates (Statistics Sweden 2018b) and to transform the sample into population figures.

For the regression models, I use the LFS as a cross-section; thus, only individuals from the first rotational group are selected to ensure independent observations. To obtain a sufficiently large subsample, I use pooled data from 2015 to 2018. The rationale for pooling assumes that the outcome is not heavily influenced by the time variable, which is why only the most recent years have been selected. The LFS provides information on work and studies, but lacks certain demographic variables of importance, such as family background, household characteristics, and previous educational attainments. For this reason, the records have been linked to Swedish population-level registry data. The final sample consists of 3748 individuals: 601 school students with a part-time job (16 %) and 3147 without (84 %).

There have been concerns that the LFS underestimates non-standard workers (Larsen & Ilsøe 2021), and the survey suffers from large non-response rates regarding young people and students (Statistics Sweden 2018b). More generally, official data may fail to capture the full extent of school students' part-time work, as these data often exclude the informal labor market (Hodgson & Spours 2001). Nonetheless, the LFS remains Sweden's most comprehensive survey on working hours and employment forms today. According to Statistics Sweden's analysis (2018b), the overall estimates of levels and changes are considered useable, and some possible bias can be mitigated through weighting. Generally, the figures I present in this paper estimate lower levels of part-time work compared to those derived from income registries.

Variable definitions

Dependent variable

The dependent variable is *the number of hours (actually) worked per week* from the LFS. This measures the self-reported number of hours worked in the main occupation and any secondary employment. The variable ranges from 0 to 70 and is strongly skewed, as 84% of the school students are without a part-time job and thus have a value of 0.

Independent variables

Sex is included as a binary variable based on how it is reported in the official registries. *Age* ranges from 15 to 20 years and has been mean-centered. *Migration background*

distinguishes between individuals with both parents born in Sweden and those born outside of Sweden and/or with two foreign-born parents. To capture differences related to factors such as discrimination and racialization, the latter category includes only students with origins in the *global south* (Latin America, Asia, and Africa), while those with parents born in the *global north* are included in the reference category (see also Behtoui et al. 2020).

I use several measures to capture family and household characteristics. Two variables indicate the class background of the school students: *parents' educational level* and *income*. For education, the value is determined by the parent with the highest level of education and categorized as (1) *compulsory school or less*, (2) *upper secondary school*, or (3) *higher education*. Parents' income is a standardized measure of the total earnings. Additional dummy variables indicate if a parent in the household is *unemployed* or receives *social benefits*. Furthermore, I use a dichotomous variable, *family type*, to distinguish between school students who live with both parents and those who live in single-parent households or alone.

Two variables relate to educational differences. *Grades from the final year of compulsory school* are used as a proxy to control for educational achievements, as they correlate with academic success in upper secondary school (Gubbels et al. 2019; Plenty et al., 2018). This measurement is the sum of 16 different subject grades and ranges between 0 and 320, standardized for the analysis. The dummy variable *educational program* is included to differentiate between students in higher education preparatory programs (HEP) and vocational education and training (VET).[1]

We know that academic success, type of educational program, and disparities in labor market outcomes between children with a migration background and native-born Swedes all exhibit gendered patterns. Various interactions with the sex variable have therefore been tested. Based on their contribution to the overall model fit, two terms have been included in the final model: the interaction between *sex and migration background*, and *sex and educational program*.

In addition to individual-level predictors, I include *years* as fixed effects to control for time trends from 2015 to 2018. To account for variation based on geographical context, *local labor market units* are added as fixed effects, using Statistics Sweden's classification (Statistics Sweden 2022).[2]

Statistical approach

The dependent variable, the number of hours worked per week, exhibits more zeros than expected for a count distribution, with 84% of the sample being students without a part-time job. Therefore, I will use a zero-inflated (ZI) regression model. This mixture model combines two parts fitted simultaneously: a model for binary data (typically a logit) and a model for count data. The logistic part predicts excess zeros, indicating the likelihood of being a non-worker during the school year. This model component will be used to analyze RQ2: how participation in part-time work during the school year varies among differently situated students. The second part of the ZI model estimates the count process, that is, if a school student is a worker, which variables influence the number of hours worked per week? This component will be used to answer RQ3: how work patterns, in terms of the number of hours worked, vary for differently situated students.

Discrete count distributions are usually modeled with Poisson or negative binomial (NB) regression. Since my dependent variable is over-dispersed, the NB is a better option. Overall, the model selection process has been guided by the framework proposed by Perumean-Chaney and colleagues (2013) (see also Fávero et al. 2021). Analyses were conducted using R Statistical Software (v. 4.1.1; R Core Team 2021). Regression modeling was performed using the pscl package (v 1.5.5; Jackman 2020; Zeileis et al. 2008). The full code script is available upon request from the author.

Some variables included missing data: grades from compulsory school (approximately 5%) and parents' educational level (approximately 2%). Additionally, missing values were more common among school students with migration backgrounds. To address this, I conducted multivariate imputation by chained equations. Moreover, I excluded two outliers with high leverage, as they singlehandedly changed the estimate of the income variable: individuals whose parents' income is more than 10 standard deviations from the mean (11 and 15, respectively). For transparency, I have noted where and how the imputation and the exclusion of outliers have affected the model estimates.

Results

Trends and characteristics in school students' work

In the following section, I explore some general trends in *the development of employment rates among school students* (RQ1). In recent years, there has been growth in employment among upper-secondary school students (Figure 1). In 2006, 13.5% of all school students engaged in part-time work (excluding summer jobs). This number declined slightly in the years following the 2008 economic recession but then began to increase rapidly again. In 2019, the employment figure had risen to 19%. It should be noted that Sweden experienced economic growth between 2015 and 2020, during which employment levels generally rose. However, the increase in employment rates among school students was faster than that of the general working population and that of young people 20–24 years of age (Olofsson 2018; Statistics Sweden 2023a). Nevertheless, it is comparable to the trends in labor force participation among students in higher education (see Appendix: Figure 1), albeit starting from lower initial levels.

The time trends in employment are markedly gendered; Figure 1 shows that female school students have consistently had higher rates than their male counterparts throughout the period, reflecting patterns found in Swedish and European reports (Beblavý & Fabo 2015; Statistics Sweden 2021). However, the gap has widened from a 4% difference in employment rates in 2006 to an 8% difference in 2019. By 2019, 23% of all girls were employed compared to 15% of boys. The rapid growth in school students' employment rates is thus primarily driven by young girls working part-time to a greater extent.

It is important to note that these numbers are noticeably lower than statistics derived from the register of gross pay based on administrative sources. To illustrate, Statistics Sweden (2021) estimated that approximately 28% of female school students and 19% of males were employed in 2019. Therefore, caution is warranted when interpreting the results here, as the LFS figures are likely understated. However, the overall trend is clear: there has been substantial growth in school students' labor market participation, with this increase being particularly notable among female students.

Figure 1 Employment rates among Swedish upper secondary students (age 15–20 years) by sex. Weighted LFS data.
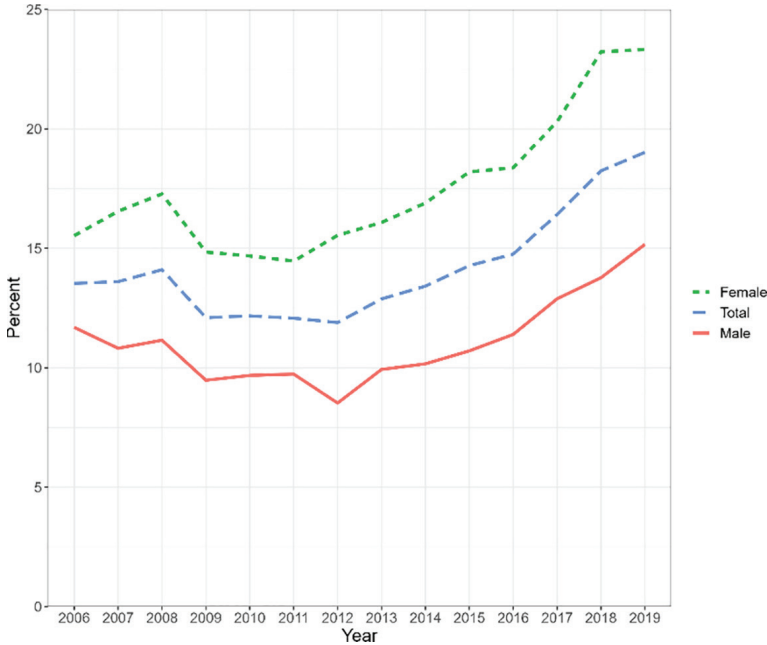

Figure 2 illustrates the five biggest industry sectors employing school students, by year. The most salient development is the growing proportion of school students working in the hospitality industries (hotels and restaurants). In 2006, 15% of employed students worked in this sector, compared to 25% in 2019. This points to the increasing importance of the hospitality sector as a major employer for this group of workers. If we shift focus to the retail sector, the trend is less consistent: despite some fluctuations, the percentage of students employed in this industry remained approximately the same in 2019 as in 2006 (around 21%). However, we can conclude that nearly 50% of employed school students held jobs in either the hospitality or retail industry in 2019, highlighting that young students are becoming a growing source of labor in low-wage services.

Another interesting development is the increasing participation in the sports and recreation industries: from 10% or less between 2006 and 2010 to 15% or more between 2016 and 2019. Traditionally, sports and recreational activities for children and young people in Sweden have primarily been organized by local, non-profit sports associations. However, in recent years, the market for private sports companies has experienced rapid growth, while participation in associations has declined (Karlsson 2022; Redelius & Svensson 2017). The rise in young students being employed in this sector closely aligns with the trend of commercializing sports and recreational activities. It is reasonable to assume that they have become an attractive source of non-standard, low-cost labor in this sector as well.

Figure 2 Employment rates among Swedish upper secondary students (age 15-20 years) by industry. Weighted LFS data.
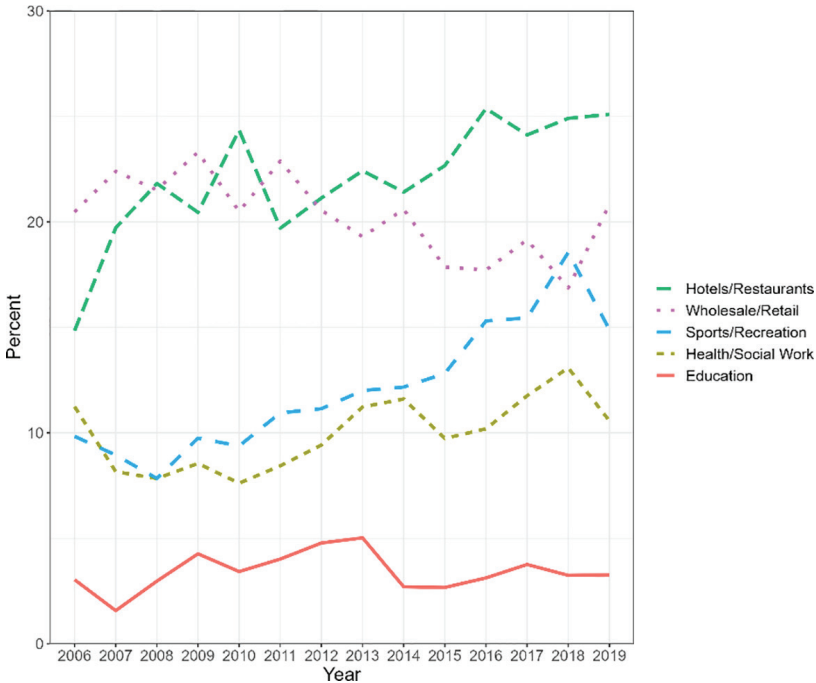
In contrast to my findings above, Statistics Sweden (2021) reports that the health and social work sector was the largest employer for school students in 2019. Furthermore, they assess that 12% of all working school students were employed within the education sector. The differences from my results are likely due to Statistics Sweden not distinguishing between seasonal employment during vacations and part-time work during the school year. Therefore, my findings suggest that there may be important differences between the sectors employing young students during the school year and those employing them during vacations.

As stated earlier, research suggests that the potential positive or negative outcomes of part-time work during school are determined by the number of hours worked. However, there is ongoing debate about where the threshold value of intensive work lies (Neyt et al. 2019). Here, I use a definition from Larsen and Ilsøe (2021) on non-standard employment to explore work patterns among school students over time: marginal part-time workers, defined as those only working 1–14 hours per week. Figure 3 presents the participation rates among school students by work intensity, showing increasing rates among marginal part-time workers (<15 hours per week) as well as intensive part-time workers (>15 hours per week). Approximately 30% of all employed school students engage in intensive part-time work, a proportion that has remained stable over the years illustrated. However, there has been slightly more pronounced growth in marginal part-time work.

Figure 3 Labor force participation of Swedish upper secondary students (age 15–20 years) by work intensity. Weighted LFS data.
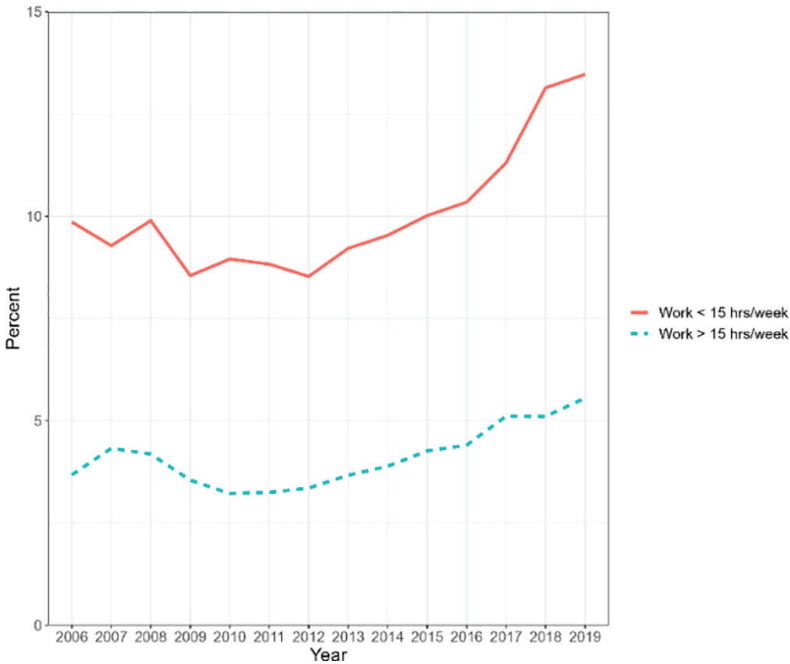

Working more or less: Distinguishing features

Most Swedish upper secondary students do not work during the school year, although the proportion of those who do is growing. As shown in Figure 4a, the majority of Swedish upper secondary school students (84%) did not work at all during 2015–2018. The average weekly hours among students with a part-time job are moderate: the median is 8 hours, indicating that half of the students with a job work 8 hours or less per week. However, as Figure 4b illustrates, there is wide variation. In Sweden, regulations regarding working hours for upper secondary students are relatively lenient: they are permitted to work a maximum of 8 hours per day and up to 40 hours per week, with night shifts prohibited. Upon turning 18 years old, which many students do during their second year of upper secondary school, there are no restrictions on working hours or night shifts. During 2015–2018, approximately one-third of working students engaged in intensive part-time work, working more than 15 hours per week. This group's weighted mean is 24.9 hours per week (SD = 10.2 hours). Thus, there is a significant proportion of Swedish school students working at levels that may pose risks to their well-being (Neyt et al. 2019).

Turning to the ZINB regression (Table 1), the two model parts are analyzed to examine *how being involved in part-time work during the school year* (RQ2) and *work patterns, in terms of the number of hours worked* (RQ3), *varies for differently situated students in terms of gender, age, class, migration background, and education.* I start with

Figure 4 Hours worked per week among all school students (a) and working school students (b).
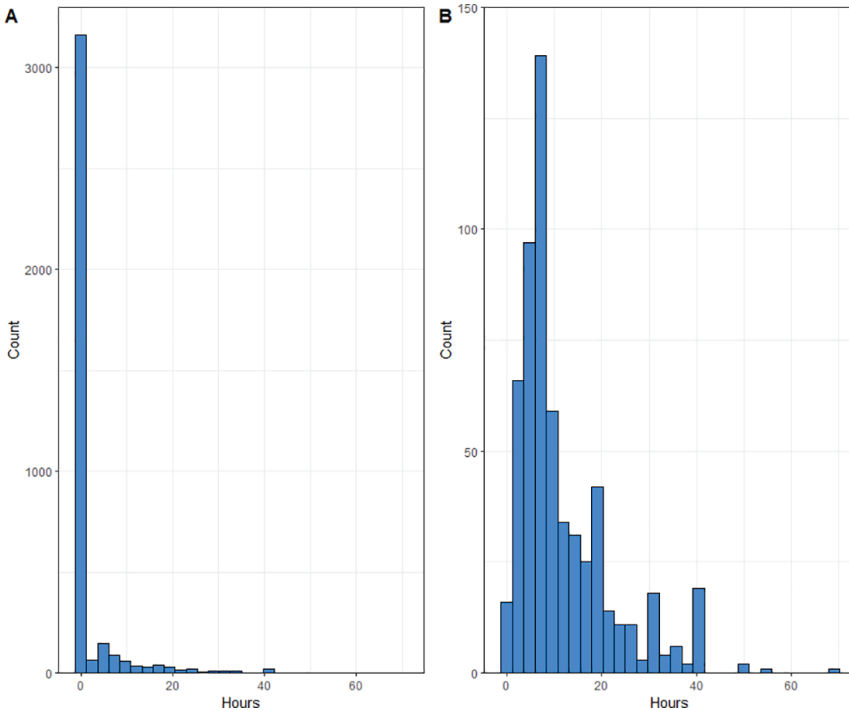
column (a), which presents the logistic component of the model, to answer RQ2. The estimates have been exponentiated and inverted; an odds ratio (OR) greater than 1 indicates that the variable is associated with a higher probability of being a worker during the school year while holding all other variables constant.

In line with previous research, the model predicts that women are significantly more likely to be involved in paid work during the school year. The effect is substantial: men are 55% less likely to have a part-time job (OR = 0.45). However, this effect depends on the type of educational program: men in vocational education are more likely to work than their counterparts in academic preparatory programs (OR = 1.56) (see also Statistics Sweden 2021). This pattern is not observed for female students; women are generally more likely to work than men regardless of their course of study.

The effect of age is significant and positive. For each additional year of age, school students are 1.59 times more likely to become part-time workers. Conversely, young people with parents born in the global south are less likely to engage in paid work; compared to native-born students and those with parents born in the global north, they are 39% less likely to be part-time workers during the school year (OR = 0.61).

The effect of parents' income is not significant according to the model.[3] However, children with a parent on social benefits are 53% less likely to have a part-time job (OR = 0.47). This finding contradicts previous research that has emphasized the role of material needs in driving engagement in paid work during the school year (e.g., Hodgson & Spours 2001; see also Raby et al. 2018). According to this model, economic hardship is not associated with school students engaging in paid work per se.

Table 1 ZINB regression of dependent variable: 'Hours (actually) worked per week'

Variables	a) Logistic part		b) Negative binomial part	
	OR	**CI**	**IRR**	**CI**
Constant	0.26***	0.24–0.29	12.50***	10.09–15.48
Sex: Male	0.45***	0.41–0.51	1.12	0.94–1.34
Age (mean-centered)	1.59***	1.37–1.85	1.13***	1.06–1.21
Migration background: Global south	0.61*	0.48–0.81	0.99	0.73–1.33
Parents' income (standardized)	1.10	0.97–1.25	0.87**	0.80–0.95
Parents' education: Compulsory School	1.37	0.81–4.35	0.78	0.56–1.08
Parents' education: Higher education	0.85	0.71–1.03	0.86*	0.74–1.00
Parent on social benefits	0.47**	0.37–0.64	0.78	0.50–1.20
Unemployed parent	1.01	0.72–1.70	1.22	0.92–1.61
Family type: Living with both parents	1.05	0.86–1.37	1.07	0.92–1.25
Grades (standardized)	1.45***	1.22–1.82	0.94	0.86–1.04
Educational program: VET	1.06	0.80–1.59	0.96	0.77–1.18
Interaction: Male Global south*	1.32	0.75–5.26	0.58*	0.38–0.89
Interaction: Male VET*	1.56*	0.95–4.17	1.20	0.90–1.60
Year fixed effects	Yes		Yes	
Local labor market fixed effects	Yes		Yes	
Observations	3746			
Theta	2.115			
Log Likelihood	–3467.04			
Pseudo-R²/Pseudo-R² adjusted	0.712/0.707			

Note: Coefficients represent odds ratios (ORs) and incidence rate ratios (IRRs). Confidence intervals (CIs) are given in parentheses.
*p, **p, ***$p < 0.001$.

Previous studies have debated whether low-achieving students tend to opt out of school and choose to work instead (Neyt et al. 2019). However, this argument finds no support in the model: grades from compulsory school have a significant positive effect. For an increase of one standard deviation in grades, a young student is approximately 1.45 times more likely to be a part-time worker. In other words, high-achieving students are more likely to engage in paid work during the school year. Given that the grade variable had many missing values (approximately 5%), it is important to note that this effect remains robust even in the model version without imputed values.

The three variables with the most powerful impact are age, gender, and grades. That older students are more likely to work than younger ones may be a less surprising finding compared to the differences in gender and educational achievement. To illustrate, Figure 5 plots some predictions from the logistic part of the model. While holding all other variables constant, the figure visualizes differences between men and women in their predicted probability of working during school at three different grade levels: low (–1.5 standard deviations from the mean), average, and high (+1.5 standard deviations

from the mean). The patterns are evident, showing differences in the likelihood of working ranging from 6% for men with low grades from compulsory school to 27% for high-achieving girls. However, it should be noted that the graph does not illustrate an interaction effect: female students are more likely to work than male ones regardless of previous academic achievements. The impact of grades is consistent across groups, with those having high grades from compulsory school predicted to be twice as likely to be in paid work compared to those with low grades.

Figure 5 Probability (%) to have a part-time job during school.
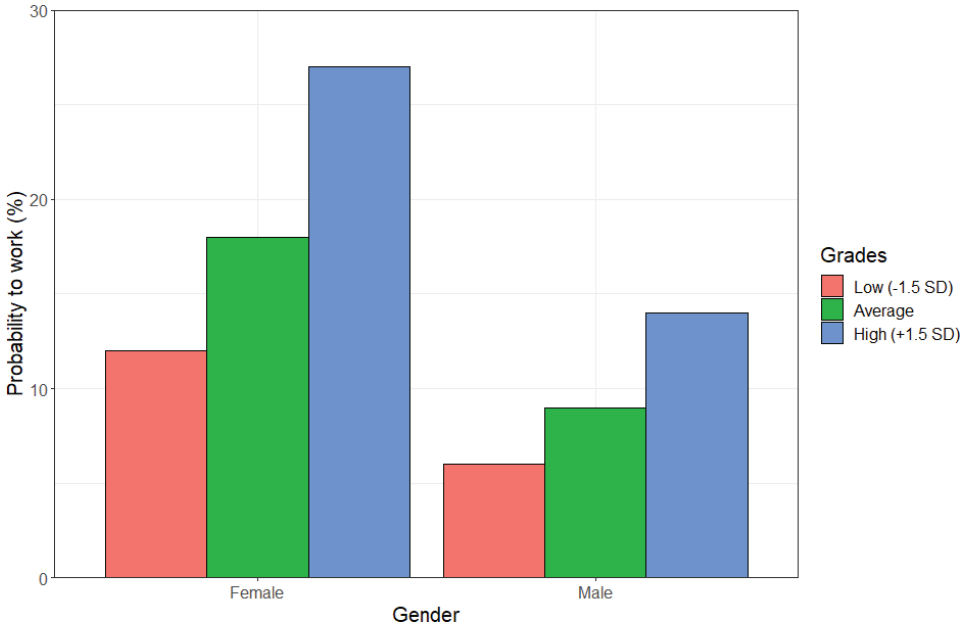
Column (b) in Table 1 presents the negative binomial part of the ZINB model used to address RQ3. This component estimates the factors influencing the number of hours worked per week among the predicted group of school students with part-time jobs, expressed as incidence rate ratios (IRRs). In this part of the model, sex shows no significant association with the outcome. While women are more likely to engage in part-time work, they are not more likely to work at a more intensive rate. However, men with parents born in the global south are less likely to work at a high intensity (IRR = 0.58) compared to both women and other men. Conversely, age continues to have a significant effect in the same direction: older students are more likely to have a job during school and are expected to work more hours per week. For each additional year of age, the rate of weekly hours worked is expected to increase by a factor of 1.13.

Aside from migration background and age, the factors influencing some school students to work at a higher intensity differ from those associated with having a part-time job. The educational level of parents has a significant effect. Compared to students whose parents' highest academic level is upper secondary school, those with parents who have attended higher education are expected to work 14% fewer hours per week

(IRR = 0.86). Moreover, parental income is negatively associated with the number of hours worked. For an increase of one standard deviation in income, the rate of hours worked is expected to decrease by 13% (IRR = 0.87). This supports previous research that has found disadvantaged youth overrepresented among intensive workers (Nelson & Gastic 2009; Staff et al. 2020). According to our model, students whose parents have higher education and better income are less likely to work intensively during school.

Concluding discussion

This article contributes to existing literature on non-standard, low-wage labor by examining young students in Sweden. The first research question addressed how employment rates have evolved over the past 15 years, a period marked by liberalization of temporary employment and reduced employment protections for non-standard workers. The results indicate an increase in young students' employment rates, with the figures most likely underestimated in the LFS. Moreover, the rise in participation rates is associated with service sectors, especially hospitality and retail, where low-wage, non-standard work is prevalent. In fact, most of the increase can be attributed to the hotel and restaurant sector, which stood out as the largest employer of young students in 2019. Therefore, I argue that young students are produced as a source of flexible and cheap labor, and should be understood as an emergent segment of low-wage service workers in Sweden (King & Rueda 2008; Savage et al. 2013; Yates 2017).

Previous studies indicate that non-standard, low-wage work is organized in gendered ways (Fuller & Vosko 2008; Hipp et al. 2015). This trend is evident in the employment patterns of young students in Sweden as well: while participation rates are increasing among all students, they are rising more markedly for girls (see also Beblavý & Fabo 2015; Statistics Sweden 2021). It is now well-known that teenagers face specific risks in the labor market. Researchers have emphasized the potential for economic exploitation (Hobbs et al. 2016, 2017) and the precarious nature of these jobs (Cohen 2013; Raby et al. 2018). However, there have also been reports of frequent sexual harassment among teenage girls (Besen-Cassino 2018; Cohen 2013; Fineran & Gruber 2009; Sheppard et al. 2019). Given that the growth in employment rates among school students in Sweden is primarily driven by young women entering jobs in the hotel and restaurant sector, further studies are needed to explore their employment conditions and working experiences.

This article also contributes by examining young students' labor force participation and work patterns through an intersectional lens to explore the heterogeneity of the figure of the student-worker. Following previous findings on how precarious and temporary work may correspond in its risks and patterns with different social divisions (Campbell & Price 2016; Fuller & Vosko 2008), I analyzed how labor force participation and work patterns vary in terms of gender, age, class, migration background, and education. RQ2 analyzed differences between workers and non-workers among upper secondary school students. The findings revealed that the working hours of employed school students are moderate, with a median of 8 hours per week. Older students are more likely to do part-time work than younger ones, while those with a parent receiving social benefits or with origins in the global south are less likely to have a job during school. Gender and previous educational attainments strongly correlate with the

outcome: girls are more than twice as likely to be workers during school, and the probability also increases with grades from compulsory school. Previous qualitative studies have associated school students' part-time work with employability discourses, where young workers 'imagined a competitive future for which they needed to individually prepare their work skills and saving money' (Raby et al. 2018, p. 247). Additionally, focusing on teenage girls' work experiences, Sheppard and colleagues (2019) connect these with entrepreneurial ideals and gendered discourses, specifically 'can-do' girlhood narratives. Whether these explanations can help us to understand why girls and high-achieving students in Sweden tend to be more likely to work during school than others remains to be investigated.

The final research question examined how work patterns, specifically the number of hours worked, vary among differently situated students. Apart from age, which shows that older students tend to work at a higher intensity, the findings diverged from those of the first model part. In essence, the variables associated with being employed during the school year differ from those that predict higher-intensity work. Students with parents who have higher education and/or better income are expected to work fewer hours per week. This underscores the importance of examining students' work patterns intersectionally: the findings indicate that potentially harmful intensive work during school is linked to disadvantaged class positions, supporting numerous international studies (McCoy & Smyth 2007; Nelson & Gastic 2009; Raby et al. 2018; Staff & Mortimer 2007; Staff et al. 2020). The risks associated with intensive part-time work primarily concern poor academic achievement and school dropout. Thus, the findings of this study raise concerns that the patterns of part-time work among young students may perpetuate or exacerbate class-based inequalities.

Lastly, it is interesting that the regression models predicted young students with origins in the global south are less likely to work during school, and that men from this background are less likely to work at a higher intensity. This finding supports Swedish research highlighting the employment challenges faced by young people with migration backgrounds, particularly disadvantaging men from the global south (Brandén et al. 2016). However, it contrasts with qualitative studies that have observed high levels of part-time work among this group (Lindblad 2016). The work experiences of young people with migration backgrounds have been challenging to capture in official statistics (Larsen & Ilsøe 2021; Statistics Sweden 2018b), particularly those employed within the informal economy, which international research has highlighted as important for this group (Besen-Cassino 2018; Clampet-Lundqvist 2013; Hodgson & Spours 2001). This is important to bear in mind when interpreting the statistics in this article, especially given the events that occurred during the study period. In 2015, Sweden received over 160,000 asylum applications, with more than 35,000 being from unaccompanied children under 18, a group unlikely to be adequately covered in the LFS (Statistics Sweden 2023b). Moreover, these youth had strong incentives to work because they were subject to a temporary regulation known as 'the Swedish Upper Secondary Act', which made their residence permits contingent on securing permanent employment after completing school. This underscores the need for further studies using alternative quantitative data sources or qualitative methods to explore the work experiences of young students with a migration background in Sweden.

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Notes

[1] The variable comes from the LFS and is self-reported. The reason for choosing this variable rather than data from the official educational registry is the missing data. The registry data had a 19.2% missing rate for my sample, whereas the same number was <1% for the LFS variable.

[2] Seventy-three individuals belonged to local labor market units with less than 10 observations in the sample. All these units were small rural centers with no nearby commuting municipalities. These observations were therefore included in a separate category, rather than excluding them from the analysis.

[3] In the model version including outliers, the effect of income is significant, suggesting that children from families with better income are more likely to work part-time during the school year. Two single outliers with high leverage drive this effect: individuals whose parents' income is more than 10 standard deviations from the mean (11 and 15, respectively), and who are in paid work. After excluding these observations, the income variable is no longer significant, which better mirrors most of the sample according to visualizations of the data.

Appendix

Appendix, Figure 1 Employment rates among Swedish students. Weighted LFS data.