Vocational School Students' Aspirations for Higher Education and Selected Social Background Characteristics

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Abstract: This study examines the association between vocational school students' aspirations for higher education and different factors that may be related to their social background. Using cultural reproduction and relative risk aversion (RRA) theories, the study draws on data from 7060 students of four-year vocational upper secondary school programmes in Croatia. A multinomial logistic model with a random intercept was applied, in which students' aspirations for pursuing higher education served as the outcome variable. Apart from indicators of socio-economic status (SES), vocational school students' characteristics related to cultural habits and behaviours, as well as their concerns with downward mobility, were used as regressor variables in the analysis. All three constructs showed independent effects on aspirations for higher education, controlling for vocational sector, gender, school achievement, and school year. Further, a moderation effect was identified, indicating that the association between cultural capital and aspirations for higher education was stronger among students with more educated parents. In contrast to previous studies, the findings point to the potential complementarity of cultural capital and RRA concerning educational aspirations. We discuss the implications of the study and directions for future research.

Keywords: aspirations for higher education, cultural capital, relative risk aversion, socio-economic status, vocational education

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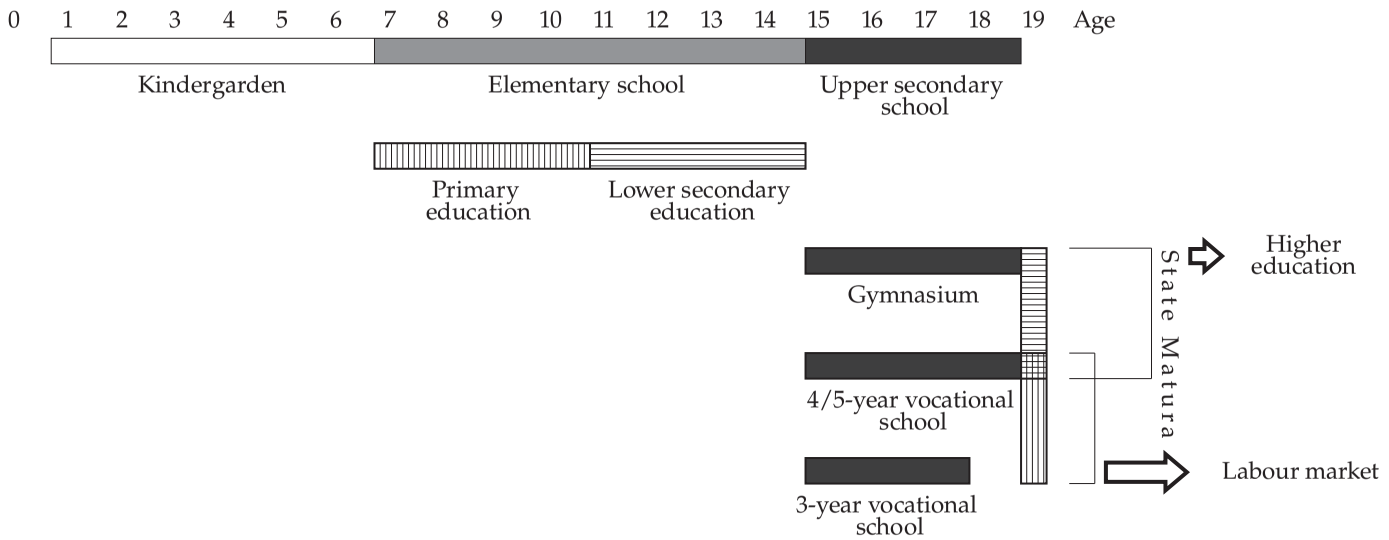
Introduction

Social inequalities in access to higher education are a topic of great concern in sociological research [e.g. Lynch and O'riordan 1998; Shavit, Arum and Gamoran 2007]. One way to approach these inequalities is to examine the association between students' social background and their educational aspirations [Dupriez et al. 2012; Matějů et al. 2007]. This is due to the fact that higher educational aspirations tend to be associated with greater motivation and higher educational attainment [Gorard, See and Davies 2012; Morrison Gutman and Akerman 2008]. Such an approach also allows us to address social factors that shape selection processes before the actual transition into higher education. This may be achieved by taking into account the relationship between family background, school performance, and educational aspirations [Khattab 2015], as well as by assessing the observed differences in aspirations 'that remain after taking differences in academic performance between students into consideration' [Dupriez et al. 2012: 506]. The latter effect refers to what is generally described as a 'social self-selection' process [Boudon 1974; Dupriez et al. 2012]. In this regard, educational aspirations may be seen as an important link between social origin and young people's future educational and occupational careers [Matějů et al. 2007]. Thus, the aim of this paper was to examine the socio-cultural factors shaping the educational aspirations of vocational upper secondary school students in Croatia. We refer to the fact that vocational education often presents an entry point to secondary education for students from low socio-economic (SES) backgrounds, and that, besides preparation for employment, it may lead to further education, including participation in higher education [Field and Guez 2018; Griffin 2014; Hoelscher et al. 2008].

Using cultural reproduction and relative risk aversion (RRA) theories, this study expands the existing body of research in several ways. Although there are studies discussing the relationships between students' SES, cultural capital, RRA, and educational aspirations, these relationships have rarely been examined in combination, as well as in the context of vocational upper secondary education. Furthermore, the study allows for insights into cumulative processes related to educational inequality, since it investigates the interaction effects of SES and students' years of schooling with cultural capital and RRA. To the best of our knowledge, these interaction effects have not been addressed in previous studies on vocational school students' educational aspirations. As past studies on vocational school students' aspirations for higher education were primarily based on research in Anglo-Saxon contexts, the study complements these with insights from the understudied educational setting of Croatia.

Figure 1. Simplified scheme of the Croatian education system (adapted from Eurydice 2019)



Context of the study

In Croatia, students enrol in upper secondary education at the age of 14 or 15 after completing compulsory elementary education (primary and lower secondary education; Figure 1). At this point, students choose between academically oriented gymnasiums and four-year or three-year vocational schools (upper secondary education). Gymnasium programmes focus on general secondary education, thereby preparing graduates for the transition into higher education. Vocational schools with four-year technical and related programmes lead to professional qualifications but also enable access to tertiary education.[1] By contrast, three-year vocational schools prepare students for entry into the labour market in industrial, trade, and craft occupations. A certificate from three-year vocational schools does not entitle students to further their education in universities and polytechnics [e.g. Eurydice 2019; Palekčić, Radeka and Zekanović 2015].[2] Therefore, the rationale for focusing on four-year vocational school students is that the programmes enable both entry into the labour market and the transition into higher education. This dichotomy of choice for vocational school students is not unique to Croatia but is also typical for other countries experiencing rapid growth in tertiary education and an increase in demand for more educated workers [e.g. Masson 2009; OECD 2012].

In 2017, approximately 65% of all upper secondary school students attended vocational programmes, about 71% of whom were in the four-year programme and 29% in the three-year programme [Croatian Bureau of Statistics 2018b]. Recent demographic trends have induced changes in the structure of secondary education: smaller cohorts of students in secondary education have led to a surplus in enrolment places and consequently to a reduction in the number of students in three-year vocational schools. However, the proportion of students enrolled in four-year vocational schools was more or less stable, while the proportion of gymnasium graduates slightly increased [Matković 2011]. Consequently, it may be assumed that students in four-year vocational schools and gymnasiums have become more heterogeneous with regard to their ability and social background characteristics. The most important criteria for entering universities and polytechnics in Croatia are students' results on the State Matura examinations,[3] school

[1] There is a small number of five-year programmes that also lead to professional qualifications and enable access to tertiary education. For the ease of the reader, we will use the term 'four-year programmes' when referring to both four- and five-year programmes.

[2] If students attending three-year vocational schools want to go into higher education, they have to complete an additional bridge-programme as a prerequisite for taking the State Matura examinations.

[3] State Matura examinations have two purposes: (1) certifying completion of secondary education for gymnasium students and (2) qualifying a student for entrance to higher education. Hence, if a four-year vocational school student wants to continue education at the tertiary level, he or she has to pass the State Matura examinations.

grades, and, in some cases, students' results on faculties' admission tests. Roughly 51% of the students in Croatia enter higher education upon graduating from a gymnasium, and around 43% after a four-year vocational school[4] [Šćukanec et al. 2015]. Nearly all students who finished four-year vocational schools in the summer of 2017 applied for tertiary education programmes (98.1%), about two-thirds (65%) passed the State Matura examinations, and 45.1% entered tertiary education successfully within the same year [Šabić 2019]. In comparison, the percentages for gymnasium students were 99.2%, 95.5%, and 86.7%, respectively.

Theoretical framework and prior research

International research has produced considerable evidence that there is an association between social background and aspirations for higher education, that is, students from privileged backgrounds tend to have higher aspirations for tertiary education than students from less privileged families [Dupriez et al. 2012; Khattab 2015; Matějů et al. 2007]. Whilst different theories have been used to explore the link between students' educational aspirations and their social background [Dupriez et al. 2012; Matějů et al. 2007], this study focuses on two approaches – cultural reproduction theory [Bourdieu 1984] and relative risk aversion theory (RRA) [Breen and Goldthorpe 1997]. Although some scholars see these two theories as competing explanations of class inequalities in education [Van de Werfhorst and Hofstede 2007], they may be approached as complementary [cf. Glaesser and Cooper 2014; Puzić, Odak and Šabić 2019].

Cultural reproduction theory sees educational inequality as a consequence and generator of class inequalities based on different distributions of capital (economic, social, and cultural capital). It rejects the view that education is meritocratic, stating that the educational system reproduces existing social inequalities, thereby favouring students from socio-economically and culturally privileged backgrounds. Thus, it emphasises the effects of students' family habitus as the 'deeply ingrained system of perspectives, experiences and predispositions family members share', which is related to social class [Reay 1998: 527]. In the school environment, these classed attributes of socialisation are recognised as cultural capital and are translated into educational advantage. Consequently, students from the dominant classes feel more confident in the educational system and have higher educational aspirations [Khattab 2015]. Cultural capital is a multifaceted concept as it includes all cultural resources that positively affect educational achievement and aspirations [Bourdieu 1997; Puzić, Gregurović and Košutić 2016]. These resources may include students' linguistic or cognitive com-

[4] About 3% of the students finish secondary education outside Croatia. The share of students from other types of secondary schools (three-year vocational school, schools in the system of adult education etc.) is 1% or less.

petencies, manners, and tastes, possession of cultural goods (books, works of art, musical instruments, etc.), or other internalised aspects of the dominant culture [Bourdieu 1997]. Although the relationship between cultural capital and educational outcomes has been examined internationally in many quantitative studies, most of these studies focused on the effects of cultural capital on educational achievement rather than on educational aspirations [e.g. De Graaf, De Graaf and Kraaykamp 2000; DiMaggio 1982; Jæger 2009; Tan 2017; Wang 2011]. In a study that examined the educational aspirations of Turkish high-school students, Arastaman and Özdemir [2019] found that cultural capital and self-efficacy beliefs had effects on students' academic aspirations, despite the fact that participants' cultural capital perceptions were relatively low. Addressing the educational underachievement of Black Caribbean boys, Stockfelt [2016] showed that cultural capital – operationalised as dispositional beliefs about the value of schooling – positively affected aspirations toward higher education. Using a sample from Macau middle schools, Wang [2011] demonstrated that watching sophisticated television programmes had effects on students' educational aspirations, while other forms of cultural capital (e.g. attending one-time cultural events with parents, household educational resources) exerted only marginal effects. While these and other studies [e.g. Jæger 2009; Puzić, Odak and Šabić 2019] found positive effects of cultural capital on educational ambitions and school achievement, others indicated ambiguous effects [Boone and Van Houtte 2013; Lamb 1989; Van de Werfhorst and Hofstede 2007]. These variations in results may be related to different operationalisations of cultural capital, as well as to different educational levels or national contexts [Barone 2006].

In contrast to cultural reproduction theory, which tackles the structural reasons for educational inequalities, RRA theory has its roots in methodological individualism [Goldthorpe 1996]. RRA theory is predominantly used in explaining educational decisions, mostly in periods of educational transitions, such as from lower to higher educational levels or programme choice. It is based on the distinction between the primary and secondary effects of social origin: primary effects refer to the relationship between social origin and school success, and secondary effects are tied to the process of educational decision-making net of ability [Boudon 1974]. According to RRA theory, students shape their educational decisions and aspirations in relation to the social position of their parents (family). Moreover, students from all classes alike tend to avoid downward mobility, that is, they tend to achieve at least their parents' social position [Breen and Goldthorpe 1997]. The aspirations to pursue tertiary education are thus lower for students from families of lower SES – children from less privileged classes achieve status maintenance with relatively less ambitious degrees, while children from higher classes have to pursue higher levels of education to maintain their (family's) social status [Breen and Goldthorpe 1997]. The RRA model has been researched internationally [e.g. Becker 2003; Daniel and Watermann 2018; Davies, Heinesen and Holm 2002; Stocké 2007] with mixed results concerning its effects on educational ambi-

tions and decision-making. Using data from a Dutch panel survey of high school students, Need and de Jong [2000] found that the RRA mechanism can explain class differentials in students' aspirations for higher education, which may be responsible for class differentials in educational attainment. In an analysis of different pathways through the educational system in Denmark, Davies, Heinesen and Holm [2002] found that only five out of seventeen analyses showed the expected effect of the motive for families' status maintenance on educational transitions. Van de Werfhorst and Hofstede [2007] showed that secondary school students' aspirations for higher levels of education were formed through concerns with downward mobility, albeit no direct effect of social background on schooling ambitions has been found. Drawing on data from factorial and traditional surveys of upper secondary school students in Germany, Daniel and Watermann [2018] called into question the RRA hypothesis (that RRA is the driving force behind aspirations for higher education), since the authors did not find social differences in students' situational intentions for engagement in higher education. Although past studies indicate the relevance of RRA for educational aspirations, it has been noted that the observed effects may be far from conclusive, since they often rely on proxy variables instead of robust indicators of the theoretical construct [Stocké 2007; cf. Daniel and Watermann 2018].

Hypotheses

In line with our research aim and theoretical framework, we defined the following hypotheses:

- *H1: Based on cultural reproduction and relative risk aversion theory, cultural capital and RRA contribute independently and positively to vocational upper secondary school students' aspirations to pursue higher education.*
- *H2a: With regard to cultural reproduction theory, students' SES will positively moderate the relationship between cultural capital and aspirations to pursue higher education.*
- *H2b: Since students from all classes tend to avoid downward mobility, students' SES does not moderate the relationship between RRA and their aspirations to pursue higher education.*
- *H2c: As it is presumed that cultural capital and RRA affect educational aspirations consistently throughout secondary education, students' years of schooling do not moderate the relationships between cultural capital and RRA on the one hand and aspirations for pursuing higher education on the other.*

Methodology

Sample and procedure

The data used in the present study were collected during the 2017/18 academic year as part of a broader research project that focused on conditions and needs related to informing upper secondary school students about higher education choices and procedures for enrolment to study programmes in Croatia.[5] In this research project, quantitative, and qualitative data were collected from both gymnasium and four-year vocational school students, that is, from students who were attending programmes that qualified them to take the State Matura examinations and apply for higher education programmes, as well as from their teachers, school principals and counsellors (total N = 13 785). The dataset used in this study contained quantitative data obtained from 7060 students of first, third, and final year from 42 four-year vocational upper secondary schools, representing 14% of all schools of this type in Croatia. The random sample of schools was stratified by geographical location (administrative counties). In each school, students from at least one class were randomly selected and invited to participate in the research. In the majority of the schools (81%), two or more classes from every year group participated in the research, resulting in a range of 12 to 380 participating students per school. The data were obtained via a questionnaire survey for students, which they completed at school during one school lesson (45 minutes).

Measures

Demographic variables

The vocational sector attended by the students was used as a control variable in the analysis. Vocational sectors were economics, electrical engineering, catering and tourism, health care, mechanical engineering, graphics, agriculture, art, chemical technology, road traffic, forestry, geology and mining, optics and glass processing, personal services, construction and geodesy, shipbuilding, and railway traffic sector. To restrict the number of categories in the analyses, vocational sectors with less than 5% of students in the sample were merged into one broader category called *other sectors*. In addition to vocational sector, we also controlled for school year attended by the student (the data were available only for students in first, third and final year) and gender. We decided to control the effects of the aforementioned demographic variables considering that previous research

[5] The project 'Analysis of the conditions and needs in secondary education related to informing on higher education choices and procedures for enrolment on study programmes through the Central Applications Office' was financed by the Agency for Science and Higher Education, Croatia.

showed that students from different vocational sectors [e.g. Jokić and Ristić Dedić 2014] as well as students from different age groups [e.g. Jokić et al. 2018] on average have different ambitions for pursuing tertiary education. Furthermore, females are more likely to enrol in universities than males [Croatian Bureau of Statistics 2018a; Jurviste, Prpić and Claros 2015].

School achievement

School achievement was operationalised as a sum of a student's final grades in the Croatian language, mathematics, and a foreign language at the end of the previous year of schooling (Cronbach's $\alpha = .68$). These three school subjects are of special importance in the Croatian educational system, since the State Matura examinations in these subjects are compulsory for nearly all students who want to enter university. Grades were expressed on a scale of five points, which is officially used in the Croatian educational system (1 – *insufficient*, 2 – *sufficient*, 3 – *good*, 4 – *very good*, 5 – *excellent*). School grades are one of the criteria for entering universities and polytechnics in Croatia. Therefore, students who have higher grades may have higher aspirations for pursuing tertiary education. Accordingly, we used school achievement as a control variable in the analyses.

Socio-economic status

Students' SES was operationalised using information about parental employment status and level of education [Sirin 2005]. Students were asked about the employment status of their mother and their father (separate items). The response options were: *Employed, Unemployed, Retired* and *I don't know/It doesn't apply*. Furthermore, students were asked to mark the highest educational level for their mother and father (separate items). The response options were *elementary education, upper secondary education, higher education*. Based on these two items, parental level of education was recoded to the following scale: 1 – *both parents have finished elementary education*, 2 – *one parent has finished upper secondary education*, 3 – *both parents have finished upper secondary education*, 4 – *one parent has finished higher education, and* 5 – *both parents have finished higher education*.

Cultural capital

Cultural capital was measured using two sets of items. The first set of four items referred to the cultural activities of students in the last year (*In the last year, how often did you attend movies; museums, or art galleries; theatre plays; opera, ballet, or classical music concerts? Scale: Never, Approximately 1 or 2 times, Approximately 3 or 4 times, More than 4 times*; Cronbach's $\alpha = .62$). The second set consisted of three items and referred to students' cultural activities in the growing-up period (*Think about your growing-up period. How often did your parents: Take you to museums or*

art galleries; Take you to various artistic events [theatre plays, ballet, classical music concerts]; Encourage you to read books that are not a school assignment? Scale: Never, Rarely, Sometimes, Often, Very often; Cronbach's α = .71). Both measures refer to students' cultural habits and behaviours, that is, to students' embodied cultural capital as a system of adopted dispositions related to social class [Bourdieu 1997]. These dispositions are seen as part of family habitus, that is, the deeply ingrained system of dispositions that family members share [Reay 1998]. Students' results on the two cultural capital scales were transformed to z-scores and summed to create a composite cultural capital score.

Relative risk aversion

We used the Croatian translation of the RRA scale [Van de Werfhorst and Hofstede 2007], which contained six items (e.g. *I find it important to achieve a better job than my parents; I am afraid to achieve a lower position than my parents later in life*). Students reported on a scale from 1 – *This does not apply to me at all* to 5 – *This applies fully to me*. Cronbach's α of the scale was 0.72. Scale results were formed as the mean of the results on six items.

Aspiration to pursue higher education

Students' aspirations for pursuing higher education were measured using the item *In the future, I want to pursue higher education (Yes, No, I don't know)*. This variable served as the outcome variable in the analyses.

Statistical analyses

We employed multinomial logistic modelling with a random intercept to take into account the hierarchical nature of the sample and the fact that pupils were nested within schools [e.g. Hox, Moerbeek and Van de Schoot 2018]. Aspiration to pursue higher education served as the outcome variable. *No* was the reference category, and parameters were estimated for categories *Yes* and *I don't know*. The model included control variables as well as measures of SES, cultural capital and RRA. We also included interaction terms.

The analyses were performed using the mixed-model procedure in IBM SPSS 22. We used robust estimation for the tests of fixed effects to account for possible violations of model assumptions [e.g. Heck, Thomas and Tabata 2012]. The intraclass correlation coefficient values for categories *Yes* and *I don't know* were .107 and .025, respectively. The belonging design effects were larger than 2 (19 and 4, respectively), which confirmed that random intercept analyses, rather than fixed intercept analyses, should be conducted [Huang 2018].

The majority of students (N = 6272; 88.8%) provided responses to all variables, which produced an almost complete dataset (98.5% of all cells were com-

pleted). The missing rates for individual variables were low (≤ 4.2%), and because a missing rate of 5% or less is usually considered inconsequential for data analysis [Dong and Peng 2013; Schafer 1999], we decided to run a complete-case analysis. All variables had variance inflation factors (VIF) smaller than two, meaning that there were no signs of multicollinearity.

Results

Descriptive statistics

More than one-quarter of participating students attended the economics sector (Table 1). Other vocational sectors with relatively large student representations were electric engineering, catering, tourism, health care, and mechanical engineering. There were more males than females in the sample, which is in accordance with the gender distribution of students in vocational upper secondary schools in Croatia [Ministry of Science and Education of Croatia 2019]. Average school achievement corresponded to grade 3 (i.e. *good*). Students from different school years were evenly represented in the sample.

For the majority of the students, both parents were employed at the time of the research and held at least an upper secondary school diploma. On average, students participated in the listed cultural activities fewer than once or twice in the previous year. Similarly, they were rarely encouraged by their parents to participate in cultural activities during their childhood. On average, students reported medium levels of RRA. Regarding the outcome variable, more than two-thirds of the students from the sample wanted to pursue higher education, while one-quarter was indecisive.

Multinomial logistic random intercept model

We tested the multinomial logistic model to check for the independent contributions of SES, cultural capital, and RRA in explaining students' aspirations for pursuing higher education while adjusting for other variables. Multinomial logistic models result in separate estimates of parameters for each outcome category minus the reference category. In the present study, we chose category *No* as the reference category, so parameter estimates were calculated for categories *Yes* and *I don't know*.

Parameter estimates for category *Yes*

Regression parameters of the control variables indicate that students were less likely to aspire to higher education (i.e. to choose category *Yes* in comparison to reference category *No*) if they attended the health care sector or some of the

Table 1. Descriptive statistics of regressors and outcome

	M, %	SD	Range
Control variables			
Vocational sector (%)			
Economics	25.1%		
Electrical engineering	22.6%		
Mechanical engineering	7.1%		
Catering and tourism	12.4%		
Health care	10.7%		
Other sectors	22.1%		
Gender (%)			
Females	46.1%		
Males	53.9%		
School achievement	10.2	2.33	6 – 15
School year (%)			
1st year	32.7%		
3rd year	33.1%		
Final year (4th and 5th)	34.1%		
Socio-economic status			
Mother's employment (%)			
Employed	72.7%		
Unemployed	22.7%		
Retired	2.2%		
I don't know / Not applicable	2.4%		
Father's employment (%)			
Employed	78.6%		
Unemployed	5.7%		
Retired	12.3%		
I don't know / Not applicable	3.4%		
Parental education	3.4	0.91	1 – 5
Cultural capital and relative risk aversion			
Cultural activities in the last year	1.8	0.57	1 – 4
Cultural activities in childhood	2.4	0.93	1 – 5
Relative risk aversion	3.3	0.77	1 – 5
Outcome variable			
In the future, I want to pursue higher education			
No	7.0%		
Yes	67.9%		
I don't know	25.2%		

smaller vocational sectors (i.e. other sectors) than if they attended the largest vocational sector, economics (Table 2). Female students were more likely than male students to express a wish to attend higher education. Furthermore, students with higher school achievement tended to have higher aspirations than low-achievers. Students who attended first year of upper secondary school tended to have lower aspirations for higher education than students who were in the last year of upper secondary school. However, there was no effect related to attendance of the third year of upper secondary school. These findings indicate that it was necessary to control for the selected variables in our model.

Regarding SES, the children of unemployed mothers were less likely to aspire to higher education than children whose mothers work. Further, children of more educated parents tended to have higher aspirations for higher education. This suggests that at least some elements of SES have statistically significant effects on students' aspirations that are independent of the effects of control variables. Lastly, students with higher levels of cultural capital, as well as students with higher RRA, had higher aspirations for higher education. The other main effects were not statistically significant. The interaction terms indicate a moderation effect of parental education on cultural capital. More specifically, the association between cultural capital and aspirations for higher education was stronger among the children of more educated parents. Interaction terms related to other pairs of variables were not statistically significant.

Parameter estimates for category *I don't know*

Regression parameters of control variables indicated that students were more likely to choose category *I don't know* instead of the reference category *No* if they had higher school achievement and if they were in their first or third year of upper secondary school compared to final-year students (Table 2). Regarding SES, students are more likely to be indecisive if their parents were more educated. Further, students with higher estimates of cultural capital, as well as students with higher levels of RRA, were more likely to choose category *I don't' know* than category *No*. The interaction terms showed that the relationship between cultural capital and indecisiveness about pursuing higher education (compared to having no such aspirations) was stronger for the children of the more educated parents. Interaction terms related to other pairs of variables were not statistically significant.

Parameter estimates for category *Yes* had systematically larger absolute values than estimates for category *I don't know*. Moreover, parameter estimates for category *I don't know* either had the same direction as estimates for category *Yes* or were statistically insignificant, indicating that indecisiveness regarding higher education really lies somewhere on a continuum between relatively firm decisions to pursue or not to pursue higher education. These two findings held for all regressors that were in at least one instance (i.e. for at least one outcome category) flagged as statistically significant, except the dummy variables representing school years.

Table 2. Multinomial logistic random intercept model of vocational school students' aspirations for higher education – first part

	Yes		I don't know	
	B	SE	B	SE
Intercept	3.17**	0.23	1.28**	0.21
Control variables				
Vocational sector[a]				
Electrical engineering	–0.19	0.26	0.07	0.22
Mechanical engineering	–0.60	0.34	0.03	0.22
Catering and tourism	–0.28	0.27	–0.06	0.27
Health care	–0.39*	0.19	0.20	0.21
Other sectors	–0.87**	0.26	–0.23	0.23
Gender (female)	0.43*	0.18	0.10	0.18
School achievement[d]	0.39**	0.04	0.16**	0.03
School year[b]				
1st year	–0.63**	0.20	0.53**	0.20
3rd year	0.23	0.13	0.54**	0.15
Socio-economic status				
Mother's employment[c]				
Unemployed	–0.32**	0.12	–0.16	0.10
Retired	0.71	0.49	0.70	0.51
I don't know / Not applicable	–0.36	0.35	–0.13	0.27
Father's employment[c]				
Unemployed	0.11	0.23	0.19	0.25
Retired	–0.22	0.15	–0.17	0.16
I don't know / Not applicable	–0.20	0.33	0.01	0.28
Parental education[d]	0.42**	0.06	0.23**	0.06
CC and RRA				
CC[d]	0.36**	0.06	0.18**	0.06
RRA[d]	0.66**	0.12	0.31*	0.15
Interactions				
Parental education x CC	0.13**	0.05	0.11*	0.05
Parental education x RRA	–0.01	0.08	–0.03	0.07
1st year x CC	0.10	0.11	0.09	0.11
3rd year x CC	–0.02	0.10	0.00	0.11
1st year x RRA	–0.20	0.15	–0.13	0.19
3rd year x RRA	–0.16	0.16	–0.10	0.20

Table 2. Multinomial logistic random intercept model of vocational school students' aspirations for higher education – second part

	Yes		I don't know	
	B	SE	B	SE
School level variance	0.18	0.06	0.02	0.02
ICC	.05		.01	
AIC	59 163.0			
BIC	59 176.5			

Note: The outcome variable is 'In the future, I want to pursue higher education' ('Yes', 'No', 'I don't know'; the reference category is 'No'). CC – cultural capital, RRA – relative risk aversion, ICC – intraclass correlation coefficient, AIC – Akaike information criterion, BIC – Bayesian information criterion. [a] The reference category is Economics. [b] The reference category is Final year. [c] The reference category is Employed. [d] The variable is grand-mean centred. *p < .05. **p < .01.

Additional analysis showed that the model without interaction terms fit the data somewhat better (AIC = 58 052.3, BIC = 58 065.7) than the model with interactions. However, we decided to report the model with interactions because it was instrumental in addressing our research problem. Directions and statistical (in)significances of the estimated parameters for the main effects were the same in both models, and their values were similar.

Discussion

The aim of the study was to address the association between vocational school students' aspirations for higher education and different factors related to their social background. Apart from the control variables, students' background characteristics were assessed by SES indicators as well as through indicators based on cultural reproduction and RRA theories.

The results of the descriptive statistics revealed that students showed strong aspirations for higher education, with one-quarter of them being indecisive and a minority showing no intention to pursue the tertiary sector. This suggests that, despite being qualified to enter the labour market, the majority of four-year vocational school students perceive extended educational careers and transition into higher education as a preferable option. This is supported by administrative data on applications to Croatian higher education institutions [Šabić 2019].

With regard to possible background characteristics that may be associated with students' aspirations for higher education, the analysis indicated the relevance of students' SES as well as the effects of two reproductive mechanisms: cultural capital and RRA [Bourdieu 1984; Breen and Goldthorpe 1997]. All three

constructs showed independent effects on aspirations for higher education (Hypothesis 1 confirmed), controlling for vocational sector, gender, school achievement, and school year. The adjustment for the effects of these control variables allows us to infer with greater confidence the effects of the examined background characteristics [e.g. LaValley 2008]. Compared to students who did not aspire to higher education, the effects of SES, cultural capital, and RRA were positive and consistent for those who showed a clear intention to continue higher education and those who were yet indecisive in this regard. This result is consistent with previous findings regarding secondary school students' aspirations for higher education [Daniel and Watermann 2018; Dupriez et al. 2012; Khattab 2015]. It has to be noted that the effects of cultural capital for each of the mentioned categories of students were stronger for those of higher SES, that is, for those who had more educated parents (Hypothesis 2a confirmed), and that these effects were not dependent on school year (Hypothesis 2c partly confirmed). Both findings echo Bourdieu's thesis [Bourdieu 1984] on the importance of cultural capital for social reproduction. The analysis showed that the effects of RRA on aspirations for higher education were not dependent on parental education (Hypothesis 2b confirmed) nor school year (Hypothesis 2c partly confirmed). The lack of a moderation effect of parental education on RRA is in line with theoretical expectations, and it may be partly explained by potential normative expectations concerning participation in higher education in Croatia [Šabić 2019]. The fact that there was no interaction effect between year of schooling and RRA suggests that mobility concerns consistently affect aspirations for higher education throughout secondary education.

In summary, the results of our study support previous findings on the importance of SES and cultural capital [Khattab 2015; Wang 2011], as well as RRA [Chesters and Watson 2013; Van de Werfhorst and Hofstede 2007], for educational aspirations. However, in contrast to previous studies [e.g. Breen and Goldthorpe 1997; Van de Werfhorst and Hofstede 2007], our study indicates that cultural capital and RRA may be used together in examining educational aspirations. Along these lines, our findings suggest that vocational school students from low-SES families face similar barriers to other students of low SES. The analysis indicated that these barriers may be associated with constraints related to parental education and employment status, fewer past and present cultural activities, and concerns with downward mobility. Furthermore, since we were able to control for students' academic achievement, the effects of SES, cultural capital, and RRA may be interpreted as being related to students' self-selection processes that affect educational choices independent of ability (secondary effects) [Boudon 1974; Nash 2003]. Notably, these effects correspond with a more integrated perspective on social self-selection processes [cf. Goldthorpe 1996; Breen and Goldthorpe 1997] that refers to rational (status-related concerns) as well as cultural factors (habitual processes and experiences) [Nash 2003; Puzić, Odak and Šabić 2019]. Nevertheless, this assumption should be subject to further clarification [cf. Glaesser and Cooper 2014; Nash 2003; Van de Werfhorst and Hofstede 2007].

From this perspective, our earlier assumption that vocational education might facilitate participation in higher education for students from lower socio-economic backgrounds seems, at best, incomplete. This means that formal arrangements, such as recognition of prior learning or bridging programmes conducive to vocational school students [Field and Guez 2018; Griffin 2014], may be more realistic in connection with earlier interventions in the educational careers of disadvantaged students [Doolan, Puzić and Baranović 2018; cf. Heckman 2006; Neugebauer and Schindler 2012]. The results of our study suggest that these interventions may address cultural constraints, such as those related to self-perceptions of students' academic potential [Lynch and O'Riordan 1998; Reay et al. 2001], as well as students' perceptions of 'the difficulties and risks of undertaking higher education compared to being in the full-time labour market' [Chesters and Watson 2013: 199]. Accordingly, our findings further point to the importance of improving low-SES students' knowledge about the benefits (e.g. life chances and career perspectives in relation to different levels of qualifications) and costs (e.g. considering potential scholarships and funding opportunities) related to higher education [cf. Daniel and Watermann 2018].

Concerning the shortcomings of the present study, one is related to the cross-sectional nature of the study design, which reduces the possibility of inferences about the effects of SES, cultural capital, and RRA on educational aspirations at different points in students' educational trajectories. A second limitation of the study is the students' self-assessment of their school performance and their parents' employment status and level of education. In future studies, it would be more accurate to use official school grade records and parental questionnaires to obtain the aforementioned data. Furthermore, research would benefit from additional measures of cultural capital (e.g. parental cultural practices) and RRA (e.g. motives for status maintenance in relation to parents' class position) that could also be gathered via parental questionnaires. Further, the present study focused on the relationship between students' background characteristics and aspirations for higher education, thereby omitting factors related to school composition (e.g. with regard to educational practices or influence of peers) or the wider institutional context (e.g. the structure of the educational system). While it is certainly possible that some school characteristics affect students' aspirations for higher education, we accounted for the relatively small values of intraclass correlation coefficients (ICC), which indicate that the major regressors of aspirations for higher education are most likely situated at the student level. The relationship between the institutional context (e.g. with regard to level of differentiation and/or standardisation within the educational system) and educational aspirations could be examined in future research on data from different countries and different educational settings.

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