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## **Equitably Undeterred? Persistence of Education Mobility and Migration Intent among Upper Secondary Education Students throughout the COVID-19 Pandemic**

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# **“Equitably Undeterred? Persistence of Education Mobility and Migration Intent among Upper Secondary Education Students throughout the COVID-19 Pandemic**

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## **Abstract**

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This paper aims to explore the effects of the pandemic on future mobility aspirations, as COVID-19 pandemic induced disruptions in overall educational experience and international mobility. The authors assess whether the hardship caused by the pandemic has affected Croatian upper secondary school students' international migration intent and aspirations for studying abroad. To that cause, authors combine three large-scale nationally representative studies conducted in the pre-pandemic (2017), pandemic (2021) and late-pandemic (2022) period. The results indicate that the number of days school spent in remote learning proved modestly associated with lower intent to migrate or to study abroad in 2021. However, contrary to expectations drawn from literature, the prevalence of intent of moving abroad remained persistent compared to pre-pandemic, while aspirations for studying abroad increased. The expected moderation effects of students' socio-economic background on migration intent during the pandemic and school closure, failed to materialize, except for migration intent in 2021, when having tertiary-educated parents proved more advantageous. In line with recent Eurobarometer surveys, our analysis imply little evidence of long-term devaluation of mobility capital among Croatian upper secondary students, as the moderators throttling mobility aspirations have likely receded.

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**Keywords:** migration intent, education mobility, COVID-19 pandemic, upper-secondary school students, Croatia

# ¿Determinación Inquebrantable? Persistencia de la Movilidad Educativa y la Intención Migratoria entre los Estudiantes de Educación Secundaria Superior durante la Pandemia de COVID-19

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## Resumen

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El objetivo de este trabajo es explorar los efectos de la pandemia sobre las aspiraciones de movilidad futura, tomando en consideración que la pandemia de COVID-19 produjo disrupciones en la movilidad internacional y en la experiencia educativa en su conjunto. Los autores evalúan si las dificultades causadas por la pandemia afectaron las aspiraciones de estudiar en el extranjero y la intención de emigrar de los estudiantes croatas del nivel secundario superior. Para ello, combinan tres estudios a gran escala representativos a nivel nacional realizados en el período prepandémico (2017), pandémico (2021) y pandémico tardío (2022). Los resultados indican que la cantidad de días escolares dedicados al aprendizaje remoto están moderadamente asociados con una menor intención de migrar o estudiar en el extranjero en 2021. Sin embargo, contrariamente a las expectativas extraídas de la bibliografía, la prevalencia de la intención de mudarse al extranjero se mantuvo persistente en comparación con el período prepandémico, mientras que las aspiraciones de estudiar en el extranjero se incrementaron. Los esperados efectos de moderación del entorno socioeconómico de los estudiantes sobre la intención de migrar durante la pandemia y el cierre de escuelas no se materializaron, a excepción de la intención de migrar en 2021, cuando el hecho de tener padres con estudios terciarios resultó más ventajoso. En consonancia con encuestas recientes de Eurobarómetro, nuestros análisis implican la poca evidencia de una devaluación a largo plazo del capital de movilidad entre los estudiantes secundarios superiores de Croacia, dada la probable disminución de los moderadores que limitan las aspiraciones de movilidad.

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**Palabras clave:** intención migratoria, movilidad educativa, pandemia de COVID-19, estudiantes de escuela secundaria superior, Croacia

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In the face of the disruption of cross-border mobility and physical closures of education institutions with the emergence of COVID-19 pandemic in 2020, a body of literature rapidly emerged dealing with the impact of the crisis on internationalization of tertiary education and mobility of students. However, past the early papers identifying a substantive disruption, and expecting change to last in “the new normal”, such empirical reports ceased almost as abruptly, with little fieldwork past 2020 finding publication well into 2023.

Setting the scene in “this living laboratory [which] is ripe for sociological analysis” and intervention (Matthewman & Huppertz, 2020, p. 675) one needs but wonder of the implications pandemic brought not only in the wider social context but in socio-educational domain as well. While existent literature provides some information on barriers and challenges to learning and working mobility during the pandemic, and some evidence on re-establishment of mobility patterns, there is little insight in the effect of pandemics and closures (as well as subsequent re-opening) on aspirations and inequalities in learning and working mobility. Our intent is to estimate the effect of such a “natural experiment”, by assessing incidence and patterns of aspirations for studying and working abroad among upper-secondary education students in spring 2021 and 2022, against the baseline surveyed in the same 24 schools in late 2017. In particular, we will assess whether the time school spent in lockdown and hardship caused by pandemic have translated into mobility aspirations. Thus we heed the call for “further investigations ... to explore the in-depth and long-term changes that the corona crisis has wrought” (Shkoler & Rabenu, 2022).

The structure of this paper is as follows. We start by mapping the literature about learning and working mobility in the European Union during the pandemic, in the context of literature on determinants and inequalities in mobility aspirations and outcomes. In order to ensure more contextual data determining these aspirations and to better isolate the pandemic effects, we provide an overview of youth and student mobility data in the pre-pandemic period using administrative and survey sources, as well as relevant research studies about migration and mobility aspirations during the past three decades. This fuels the articulation of research questions, followed by methodology

sections. The results of analysis are first assessed separately with respect to aspirations for learning mobility and migration, and then discussed jointly in the face of the existing literature and limitations. The implications of the obtained results are discussed in the final section of the paper.

### **COVID-19 and Student Mobility**

In terms of social impacts, Matthewman & Huppertz (2020) indicate that it could be that the youth are most affected by the lockdown as their education is being compromised, as well as they are having to forgo work. Consequences of COVID-19 pandemic, up to now, have been analyzed from different perspectives, including the sociological insights into multiple layers emerging, disappearing and transforming the open system society represents (Rana & Govender, 2022) one of them also being the education system. The precipitous closing of schools and universities across the globe has impacted significantly on the teaching ecosystem as the pandemic metamorphosed the academy radically (Seedat-Khan & Ramnund-Mansingh, 2022). Developing the Clinical Sociology Model on a COVID-19 Response grounded in virtual and remodeled university environment, Seedat-Khan & Ramnund-Mansingh (2022) identify mobility was determined by financial resources of students, by resources and co-morbidities of academics. Related more specifically to the topic analyzed within this paper, several 2020 studies indicated strong disruptions in international student mobility due to measures introduced to cope with the COVID-19 pandemic. In March and April 2020, a large majority (89%) of higher education institutions (HEIs) approached by a global International Association of Universities (IAU) survey reported a negative impact on international student mobility, with between a third and half reporting grounding of international students (in particular in Europe), interruption of programmes on part of international students, and 76% canceling student exchanges. This situation was expected to persist, with 73% expecting reduced international enrollment in the following year (2020/2021) (Marinoni et al., 2020). In a follow up study in spring 2021 majority of reporting HEIs indicated both reduction in number of exchange students (75%) and degree-seeking students (56-62%), with decline being less prevalent in Europe (Jensen et al., 2022). Similar findings were reported by countries to the European Migration Network in April 2020, with six EU

countries, USA, UK and Australia expecting a negative impact on the number of prospective international students (yet others expecting no such trends). Both reduced family income in the emission country and closure of labor markets in the receiving country increased precarity of international students, with financial support instruments being set up in only six EU countries (EMN/OECD, 2020). Research on Mainland China and Hong Kong university students' attitudes towards studying abroad have demonstrated the adverse effect of the COVID-19 pandemic on international higher education and student mobility (Mok et al., 2021). Later in 2020 some EU and OECD countries modified or adapted their immigration processes at the national level so many HEIs adapted their enrolment and admission procedures for international students. Some countries issued guidelines to HEIs to facilitate international student flows, while also respecting safety measures while many countries introduced temporary measures to mitigate the financial impact of COVID-19 on international students (EMN/OECD, 2020).

At the individual level, a survey in March 2020 with beneficiaries of the Erasmus scheme identified that about a quarter of mobilities were canceled, two fifths of students returned home, and about one third had at least one problem (including discrimination towards Italian and Asian students). The measures introduced widespread uncertainty and divergent practices with regards to financial arrangements, with a fifth of students having to refund (Gabriels & Benke-Åberg, 2020). Similar challenges were reported in a qualitative study among international students who remained in Budapest (Koris et al., 2021), with affective (loneliness), behavioral (family, friends, repatriation of peers) and cognitive (financial/logistical) aspects affecting their decisions. Such developments were widely expected to have lasting effect for student mobility (Cairns et al., 2021; Cairns & França, 2022; Farnell et al., 2021; Hudzik, 2020; Shkoler & Rabenu, 2022).

Balancing between public health risks and economic pressures, during the first wave of the pandemic the European Commission allowed the European countries to transport medicines, protective equipment, and other medical supplies, and to operate freight services essential for the functioning of the EU's internal market (Gregurović et al., 2020, p. 210). However, the so-called non-compulsory travel from third countries into the EU+ area, return and resettlement procedures for asylum seekers or refugees, as well as the free movement of workers, were halted (Communication From The Commission

To The European Parliament... , 2020). Central and Eastern Europe, being a major source of intra-European migrations, has faced mass repatriations during the onset of COVID-19 pandemic. This has raised the prospect of labor shortages in key food and care sectors in the receiving western countries, while overwhelming social services and cutting remittances in the emission countries. Nonetheless, the Commission issued guidelines to facilitate border crossing by essential workers (healthcare workers, caregivers, food producers, and seasonal workers) employed in essential industries. For structural and fiscal reasons as well as agency of migrant workers and their families, east-west worker migration flows were effectively re-established, protective measures substantively relaxed and borders reopened rather quickly, by summer 2020 (Paul, 2020; Szelewa & Polakowski, 2022). The 2022 May-June special Eurobarometer survey sheds some post-pandemic light on migratory experiences and intentions (European Commission, 2022a). The barriers do not seem stronger than before, with one in eighth stating that people find it more challenging to move for professional reasons and one in nine that people might be more likely than before to consider moving across countries (with respondents still in education being more enthusiastic), and 42% reporting pandemic having no influence on their opinion on mobility. With respect to individual plans, about 20% respondents reported intent to work abroad, and COVID-19 made about a third of them to postpone (2%), question (3%), or abandon (2%) those plans. This intent is more common among youth still in education, with 41% planning to work abroad (and a total of 8% having plans disrupted by COVID). Like most other post-socialist countries, intent to work abroad was more common in Croatia (29%), yet almost half of those had postponed (4%), questioned (6%) or abandoned (4%) those plans, ranking sixth amongst EU countries.

Another Eurobarometer, taking place in Feb-Mar 2022 with population aged between 15 and 29 provided insights about information and priorities of European youth regarding mobility (European Commission, 2022b). With regards to popularity “Improving education and training, including the free movement of students, apprentices, pupils, etc.” was among top-ranking, with 33% of youth singling out the issue (with only 25% of Croatian youth opting for this). As for personal interests in EU mobility, a modest share of EU youth (23%), and more Croatian youth (31%) prioritized participation in learning and mobility opportunities. About 15% of EU youth have already taken part

in studying, training or apprenticeship in another EU country (HR: 11%), with lack of means most often being singled out as a barrier (36% in EU-27, 41% in HR). The student mobility via Erasmus+ was the most widely recognized EU-funded scheme for stay in other EU countries (by 50% of respondents), with the scheme enjoying above-average recognition in Croatia (60%).

## **Studying Abroad**

In “normal” times, studying abroad has numerous beneficial effects for students. For instance, it has a positive impact on students' academic performance, language and intercultural skills, and employment prospects after graduation (Dwyer, 2004; Fakunle, 2021; Lörz et al., 2016). However, findings point to the social selectivity of international student mobility (e.g. López-Duarte et al., 2021). In other words, the privileged position of students of higher socio-economic status is reflected in their greater involvement in international student exchange programs, compared to students from lower socio-economic backgrounds. Due to the expansion of higher education and its decreasing exclusivity, this phenomenon represents a new form of horizontal inequality.

International studies of aspirations to study abroad are usually conducted on upper secondary students or students who have already enrolled in higher education. These studies have also demonstrated that parental education level positively affects both the consideration of studying abroad (e.g. Salisbury et al., 2009; 2010), and actual study abroad participation (Lingo, 2019; Simon & Ainsworth, 2012). Furthermore, a student's socio-economic status, as assessed through factors such as parental occupation and income, also plays a role in determining participation in study abroad programs (Ecker-Lyster & Kardash, 2022; Simon & Ainsworth, 2012).

A plausible framing for expectation of decreasing student mobility was set by a team exploring pandemic effects on international students in Portugal (Cairns et al., 2021; Cairns & França, 2022). They argue that international learning experience comes to be characterized by risk and uncertainty, leading to devaluation of “mobility capital” and turns toward immobility. Authors characterize the nature of the experience of moving to another country as relatively brittle, as international students are being cut off from many essential forms of emotional and economic support, making such mobile

transitions “naturally” precarious. Another study relying upon qualitative data from Danish students identified such a de-internationalization turn, as students’ mobility decisions were impacted due to the COVID-19 pandemic (Anas et al., 2022).

Within a framework of motivations which drive students to seek higher education in a foreign country (Shkoler & Rabenu, 2022), COVID-19 was likely to have tarnished all three “capitals” that act as “push” towards international learning: human capital, financial capital and psychological capital. At the same time, the pull of attractors (country, university, city of visit) could get tarnished, not least due to uncertainties. However, it is the boundary conditions moderating realization of mobility aspirations that have likely changed during the pandemic. For one, formal legal requirements and transport arrangements were both made more arduous until well into 2022. At the interpersonal level, social networks with experience of mobility leading to compelling and trustworthy personal recommendations have likely shriveled and more likely to report arduous experience of repatriation or studying abroad under lockdown (Shkoler & Rabenu, 2022).

### **Trends in International Mobility of Youth and Students in Croatia**

Youth migrations have been a significant issue in contemporary Croatian society given the fact that the proportion of young persons (aged between 20 and 29) makes steadily around the quarter in total outmigration net between 2017 and 2021 (Table 1). Official data suggest that over the course of the last six years (ending with 2021) the number of international outmigrations, both among total residents of Croatia, as well as among Croatian nationals is in decline. If the pandemic years are left aside, the drop between 2017 and 2019 is quite substantial among Croatian nationals (28%), and somewhat less among total emigres (15%). In the pre-pandemic period, the drop of youth outmigration was around 19%. The pandemic years measure firstly abrupt decline in overall numbers but swiftly bounce back at the level of pre-pandemic 2019 or even higher, at least when we look at the total international outmigration.

**Table 1**

*International migration of the population of Republic of Croatia (2017 – 2021)*

	2017	2018	2019	2020	2021
Total international (out) migration	47352	39515	40148	34046	40424
International (out) migration of youth	11117	9102	9033	8287	9314
Proportion of youth emigres in total outmigration	23.48%	23.03%	22.50%	24.34%	23.04%
Total international (out) migration of Croatian nationals	45367	36413	32453	20886	25950
Total international immigration of Croatian nationals in Croatia	7911	8619	9882	8460	10622

*Note.* Source: Croatian Bureau of Statistics, 2022: Migration of population of Republic of Croatia, 2021. *First release STAN-2022-2-1*

Unlike the general tendency of rise in the numbers of mobile students enrolled in foreign universities at the level of entire Europe, the Eurostat data for the 2017–2020 period show firstly the slow but steady increase of the number of mobile Croatian students studying at Master's and Bachelor's level abroad, and an abrupt 8.5% decline in the pandemic-mired 2020 year, bringing the figure close to 2017 baseline (Table 2). However, despite early concerns, such a trend was not registered at the EU level, where the number of mobile students kept rising in 2020. The number of degrees Croatian citizens obtained abroad in other EU countries, itself being a long-term effort, steadily climbed in 2019 and 2020, closely following the EU trend.

**Table 2**

*Mobile students from abroad: tertiary education enrolment and degrees obtained abroad by country of origin (Eurostat)*

	2017	2018	2019	2020
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		2017	2018	2019	2020
Tertiary education (Bachelor's + Master's or equivalent level)	Europe	562800	575471	567142	586572
	Croatia	3867	3977	4227	3614
Degrees obtained abroad	Eu-27			110853	131804
	Croatia	1042	769	829	961

*Note.* Source: Eurostat, EDUC\_UOE\_MOBS02; EDUC\_UOE\_MOBG02

Finally, with respect to actual experience of living abroad as of mid-2022, the Eurobarometer survey identified that 17% of respondents from Croatia had experience of working abroad and 48% had family/friends going to live or work abroad (EU-27: 47%, 38%). At the EU level, students were slightly less likely to have been abroad already (12%), but more likely to know such among friends and family (43%) (European Commission, 2022a, pp. 72-75). As well, according to pre-pandemic Eurostudent survey data Croatian students are underrepresented in student exchange programs among higher education institutions in the European Higher Education Area (EHEA). Whereas the share of Croatian students reporting temporary stay abroad has doubled from 2% to 4% between 2014 and 2019, the share among EHEA countries has declined from 8.6% to 7.0% during the same period (Gwosc et al., 2021). This indicates convergence, but one where Croatia is still lagging. Throughout the same period, the share of students aspiring to study abroad was persistently much higher than actual experience, but has declined from 36% to 26.3% in Croatia, while increasing from 26.7% to 32.0% in EHEA countries.

**Table 3**

*Students' enrolment and plans for enrolment abroad (Eurostudent V – Eurostudent VII)*

	Students who have been enrolled abroad		Students who have not been enrolled abroad but plan to go	
	Croatia	EHEA countries	Croatia	EHEA countries
Eurostudent V (2014)	2.0%	8.6%	36.0%	26.7%

	Students who have been enrolled abroad		Students who have not been enrolled abroad but plan to go	
	Croatia	EHEA countries	Croatia	EHEA countries
Eurostudent VI (2016)	2.7%	7.6%	29.5%	30.6%
Eurostudent VII (2019)	4.0%	7.0%	26.3%	32.0%

*Note.* Sources: Rimac, 2021; Hauschildt et al., 2021: Social and Economic Conditions of Student Life in Europe. EUROSTUDENT VII Synopsis of Indicators 2018–2021; EUROSTUDENT VI, I.3; EUROSTUDENT V, Q 4.1

### **Trends in Migration Aspirations of Youth and Students in Croatia**

Plans and aspirations for (international) migration have been well documented in research over the last 25 years aimed at exploring migration aspirations of Croatian youth (Adamović & Potočnik, 2022; Ilišin et al., 2013; Potočnik & Adamović, 2018; Potočnik & Spajić Vrkaš, 2017) or college students (Relja et al., 2015; Šverko, 2005). However, studies record variation among both proportions of those planning to leave as well as among those who plan definitely to stay in Croatia.

When it comes to the question “who plans to leave?” Božić and Burić (Božić & Burić, 2005, p. 31) suggest, potential emigres are most often to be found among the young population (cf. Nejašmić, 2014) coming from economically less developed regions of the country, “who still have a large part of their working life ahead of them”, with marketable skills and knowledge and who do not have strong family ties and obligations, i.e. younger, more educated and unmarried men. This is consistent with results of systematic review on migration aspirations by Aslany et al. (2021) who indicated that migration aspirations consistently decline with positive subjective assessments of economic well-being. Similar characteristics have been also recorded by other relevant research studies identifying younger, more educated, and living in smaller towns as potential emigres (Adamović & Potočnik, 2022; Potočnik & Spajić Vrkaš, 2017).

The reasons to migrate have been shifting back and forth between professional and socioeconomic (both push and pull) factors reflecting the overall societal climate and perception of prospects of a better future outside

of the country. They include a broad spectrum of individual and societal factors, the most replicated ones being the improvement of living standards and easier employment along with the poor economic prospects, high youth-unemployment rate and a negative assessment of the state of democracy in Croatia (Adamović & Potočnik, 2022; Potočnik & Adamović, 2018; Potočnik & Spajić Vrkaš, 2017). Further on, additional individual-level incentives are the desire to acquire a better education and enjoy cultural diversity (Ilišin et al., 2013; Šverko, 2005), solving their residential status (Relja et al., 2015), as well as achieving their values (Šverko, 2005). Most of the students report they plan to leave after they finish their education in order to find a job abroad (Relja et al., 2015; Šverko, 2005). However, the duration of the stay abroad varies as Potočnik and Spajiš Vrkaš (2017) report the proportion of young persons who would leave for a longer period is in rise (cf. Potočnik & Adamović, 2018). Finally, the desired destinations of migration are still the developed countries of Global North, as students specify Germany and Scandinavian countries (cf. Božić & Burić, 2005; Relja et al., 2015).

Finally, not everyone plans to leave. However, this proportion of students is also shifting as Potočnik and Spajić Vrkaš (2017) recorded firstly the drop from 22.6% in 2004 to 15% in 2013, followed by Adamović and Potočnik (2022) who recorded 62.5% Croatian youth who did not express desire to migrate in pre-COVID-19 2018.

Previous research indicates that approximately 20% of Croatian upper secondary school students who plan to pursue higher education want to study abroad (either in another EU country or outside the EU), while the rest intend to study in Croatia (Puzić et al., 2020). Higher aspirations for studying abroad are linked to both higher parental education attainment and higher monthly household income, net of students' grade point average and type of upper secondary school (Puzić et al., 2020). It's not surprising that a students' socio-economic status is linked to their desire to study abroad – Croatian higher education students who participated in an exchange program generally reported that their parents were the primary source of funding for their international mobility (Rimac, 2021).

### **Aim and Hypotheses**

The present study investigates the changes in Croatian upper secondary students' aspirations to study and migrate abroad before and during the COVID-19 pandemic and whether those aspirations are affected by days spent in remote learning and perceived effect of pandemic on their own well-being. As this development is likely to have had different impact in different social strata, our effort explores the moderation effects of parental educational level on effect of the pandemic on students' migratory aspirations (both education and work related).

Specifically, we hypothesize that:

H1: students will be less likely to aspire to study abroad during the pandemic than before the pandemic;

H2: effect of parental educational level on students' aspirations for studying abroad will be stronger during the pandemic than before pandemic (i.e. we expect moderation effects);

H3: students who experienced more days in remote learning and report adverse effect of pandemic on their well-being will be less likely to aspire to study abroad;

H4: effect of parental educational level on students' aspirations for studying abroad will be stronger for students who experienced more days in remote learning (i.e. we expect moderation effects);

H5: students will be less likely to aspire to move abroad during the pandemic than before the pandemic. This effect will be persistent to some degree after the most intense phase of pandemic;

H6: students who experienced more days in remote learning and adverse effect of pandemic on their well-being will be less likely to aspire to move abroad;

H7: students whose parents have lower educational level would be in particular more likely to aspire to migrate during the pandemic (i.e. we expect moderation effects).

## **Methodology**

### **Data**

This paper draws from upper secondary student survey data collected in three research projects led by Institute for Social Research in Zagreb.

1. “Analysis of the conditions and needs in secondary education related to informing on higher education choices and procedures” (BOAS), funded by the Agency for Science and Higher Education, Croatia. The data were collected from first, third and final grade students from 59 schools in October to December 2017 (pre-pandemic period).
2. “National monitoring of the impact of the COVID-19 pandemic on the educational system in the Republic of Croatia” (ANACONDAS), funded by the Croatian Ministry of science and education. The data were collected from second and fourth (final) grade students from 79 schools in May to June 2021 (pandemic period).
3. “Changes in the organization of the educational process caused by the COVID-19 pandemic: Effects on educational experiences, well-being and aspirations of pupils in Croatia (EWChange)”, funded by the Croatian Science Foundation. The data used in the present study were collected from third grade students during June to August of 2022 (late-pandemic) period, with the same school selection as the previous study.

### **Participants**

In all three instances, the samples of schools were nationally representative for Croatia, selected by consistent methodology. We have restricted analysis in all three datasets to students that were attending programs that qualified them to apply for higher education programs (i.e. gymnasium and four-year vocational school programs). For the sake of comparability, the analyses observing changes from the baseline year were constrained to 24 schools that participated in all three surveys, limiting the analysis to the same grade to discount the life-cycle effect. Thus models using pairings of 2017 BOAS and 2021 ANACONDAS were based on answers of 4355 4th-grade students (dominant age 18), whereas those using pairings of 2017 BOAS and 2022 EWChange surveys were based on 4305 answers (3rd grade; dominant age

17) from 24 recurring schools, and models estimating effects of school closure and direct impact of the pandemic using 2021 ANACONDAS survey only focused on 6600 4th grade students (dominant age 18) from 79 schools.

In all three cases the data were collected via pen-and-paper questionnaires in a consistent fashion, with all the consenting students from the class filling the survey in the classroom under supervision during one school lesson (45 minutes).

## **Measures**

Majority of the measures used were collected in all three surveys using identical instruments, ensuring comparability. Structure of responses is presented in Tables 1 (outcomes) and A1 (independent variables and controls).

Aspiration for studying abroad was assessed through the questionnaire item, applied consistently with final grade students in study (1) and study (2): “Which is the most desirable place for you for pursuing higher education?” Possible answers were recoded to two categories indicating student aspiration to study abroad: “No” (“Zagreb”, “Regional university center”, “Some other city in Croatia”) or “Yes” (“Some other EU country”, “Some other country outside the EU”). This item was absent from the 2022 EWACHange survey, and was included only in 4th grade in ANACONDAS survey.

Migration intent was measured in all surveys with an item: “Where do you see your future in 20 years?” Answers were recoded to two categories indicating if a student has an intention to migrate: “No” (“The place where I go to upper secondary school”, “Some other place in Croatia”) and “Yes” (“Some other EU country”, “Some other country outside the EU”).

Effect of pandemic on students’ well-being was measured in the 2021 ANACONDAS survey with one item (“Please, estimate how the COVID-19 pandemic affected you”) on a scale from 1 - extremely negative to 5 - extremely positive.

Additionally, we used the data regarding the student’s school program type (a gymnasium or a vocational) and days spent in remote learning (school level average) as reported by school in spring 2021.

Information on the educational level of the mother and father was combined into one variable, parental educational level, consisting of

categories “One or both parents less than upper secondary school”, “Both parents upper secondary school”, “One parent tertiary education” and “Both parents tertiary education”.

Current employment statuses of mother and father (“Employed”, “Unemployed”, “Retired”, “I don’t know/It doesn't apply to me”) were also dichotomized (Employed: “No”/“Yes”).

## **Statistical Analysis**

As a first step in the analysis, the gross change in outcomes regarding pre-pandemic, pandemic, and late pandemic migration intentions, as well as association of those outcomes with duration of school closure and Effect of pandemic on students’ well-being was assessed using simple bivariate rank-correlation (Spearman’s  $\rho$ ).

In order to test the robustness of those differences and address more complex research questions, we have applied five multilevel binary logistic models in line with the setup described above. The multilevel design was used in order to take into account the structure of the sample and the fact that students were nested within different schools. We used robust estimation for the tests of fixed effects to account for possible violations of model assumptions (e.g. Heck et al., 2012). The intra-class correlation coefficient values (ICC) for the outcome variables in different models were rather small (between .02 and .06). However, the belonging design effects were larger than 2, which confirmed that multilevel analysis is more appropriate than single-level analysis (Huang, 2018). All variables had variance inflation factors (VIFs) less than two, i.e. there were no indications of multicollinearity.

## **Results**

### **Descriptive statistics**

About one in six of the final year students in the samples expressed an aspiration to study abroad (Appendix 1). On the other hand, somewhat less than half of them expressed an intention to migrate. About half of students included in analyses had one or both parents who had achieved tertiary education, with upper secondary pairing being most common, and less than

one in ten had low educated parents. On average, students estimated that the pandemic had a negative impact on their lives and spent more than 6 weeks in remote learning. Changes in prevalence of aspirations for studying abroad and migration intentions during COVID-19 pandemic with respect to parental education are presented in Appendix 2.

**Aspirations for Studying Abroad**

The observed 2.5 percentage point difference in aspirations for studying abroad between 4<sup>th</sup>- graders who attended school before pandemic and those who attended same schools during pandemic (Table 4) indicate weak but statistically significant increase, a change in direction contrary to the assumed (H1 rejected).

**Table 4**

*Changes in upper secondary student migration intent and aspiration for studying abroad prior to and during various phases of pandemic*

	Migration intent	Aspirations for studying abroad
4th grade students		
Pre-pandemic (2017)	42.7%	15.1%
Pandemic (2021)	42.0%	17.6%
Spearman’s $\rho$	-.01	.03*
3rd grade students		
Pre-pandemic (2017)	45.5%	
Late-pandemic (2022)	46.3%	
Spearman’s $\rho$	.01	

*Note.* \*  $p < .05$ ; \*\*  $p < .01$

As expected, the number of days the school was engaged in remote learning was negatively related to both migration intent and aspirations for studying abroad (Table 5). However, these effects were very small. On the other hand, the self-assessed effect of COVID-19 pandemic on personal well-being was not related to outcome variables (H3 partially accepted).

**Table 5**

*Prevalence of student migration intent and aspirations for studying abroad with respect to duration of school closures and self-assessed impact of the pandemic. 2021*

	Migration intent	Aspirations for studying abroad
Yes	39.2%	17.0%
Quintiles of duration school engaged in online learning only		
Bottom quintile (fewest days)	43.1%	20.1%
Second quintile	39.3%	12.7%
Middle quintile	41.7%	18.8%
Fourth quintile	39.0%	14.8%
Top quintile (most days)	38.6%	15.3%
Spearman's $\rho$	-.04*	-.05**
Self-assessed effect of COVID-19 pandemic on personal life		
Very negative	42.1%	15.5%
Negative	38.0%	17.1%
Neither negative nor positive	37.1%	16.6%
Positive	49.0%	23.6%
Very positive	62.9%	21.1%
Spearman's $\rho$	-.01	.02

*Note.* \*  $p < .05$ ; \*\*  $p < .01$ ; Spearman's  $\rho$  calculated using number of days (not quintiles)

Multilevel regression models of students' aspirations for studying abroad are presented in Table 6. The interaction effect of parental education and time point (pre-pandemic vs. pandemic) was not significant (H2 rejected; cf. Table A2). As well, interaction effects of the number of days spent in remote learning and parental educational level were not statistically significant (H4 rejected). Thus, regardless of the (weak) gross effects of the pandemic on the aspirations to study abroad that were identified, there is no evidence of those effects being heterogeneous with respect to students' parental educational background.

**Table 6**

*Multilevel logistic regression models of students' aspirations for studying abroad*

	Pre-pandemic vs. pandemic (4 <sup>th</sup> grade)		Pandemic (4 <sup>th</sup> grade)	
	Log OR	SE	Log OR	SE
Intercept	-1.80**	0.28	-1.33**	0.41
Year (2021) <sup>a</sup>	0.29	0.28		
School type (vocational) <sup>b</sup>	0.34	0.24	0.18	0.15
Employed mother	-0.07	0.10	-0.23*	0.11
Employed father	0.05	0.15	-0.03	0.12
Parental educational level <sup>c</sup>				
One parent tertiary	0.08	0.21	-0.21	0.25
Both parents upper secondary	-0.36	0.24	-0.41	0.26
One or both less than upper secondary	-0.10	0.35	-0.58	0.49
Effect of pandemic on well-being			0.12*	0.05
Days in online learning			-0.01	0.01
Interaction (Year*Parental educational level)				
2021*One parent tertiary	-0.38	0.24		
2021*Both parents upper secondary	-0.08	0.26		
2021*One or both less than upper secondary	0.31	0.44		
Interaction (Days in online learning*Parental educational level)				
Days in online learning*One parent tertiary			0.00	0.01
Days in online learning*Both parents upper secondary			0.00	0.01
Days in online learning*One or both less than upper secondary			0.01	0.01
ICC	0.04		0.06	

	Pre-pandemic vs. pandemic (4 <sup>th</sup> grade)		Pandemic (4 <sup>th</sup> grade)	
	Log OR	SE	Log OR	SE
Random effect - intercept	0.15		0.21	
-2LL	17340.0		19754.1	
AIC	17342.0		19756.1	
BIC	17348.2		19762.4	

Note. <sup>a</sup> reference category is “2017”; <sup>b</sup> - reference category is “gymnasium”; <sup>c</sup> - reference category is “both parents tertiary education”; \* p<.05; \*\* p<.01.

### Migration Intent

There was no change in migration intent between the pre-pandemic and pandemic cohort (4<sup>th</sup> grade), nor between the pre-pandemic and late-pandemic cohort (3<sup>rd</sup> grade). The net observed overall prevalence in migration intent among the students (Table 4) turned out stable compared to the 2017 baseline even at the peak of the COVID-19 pandemic, and remained so in the late phase of pandemic, disputing hypothesis 5.

**Table 7**

*Multilevel logistic regression models of students' migration intent*

	Pre-pandemic vs. pandemic (4 <sup>th</sup> grade)		Pre-pandemic vs. late-pandemic (3 <sup>th</sup> grade)		Pandemic (4 <sup>th</sup> grade)	
	Log OR	SE	Log OR	SE	Log OR	SE
Intercept	0.08	0.13	0.12	0.20	0.39	0.28
Year <sup>a</sup>						
2021	0.36*	0.17				
2022			0.08	0.13		
School type (vocational) <sup>b</sup>	-0.05	0.10	0.06	0.09	-0.06	0.10
Employed mother	-0.17*	0.08	0.07	0.10	-0.08	0.08
Employed father	-0.16*	0.08	-0.24*	0.10	-0.28**	0.08
Parental educational level <sup>c</sup>						
One parent tertiary	0.06	0.11	-0.17	0.11	-0.21	0.31
Both parents upper secondary	-0.20	0.14	-0.23	0.14	-0.53**	0.19
One or both less than upper secondary	-0.05	0.25	-0.49**	0.14	-0.72*	0.34

	Pre-pandemic vs. pandemic (4 <sup>th</sup> grade)		Pre-pandemic vs. late-pandemic (3 <sup>th</sup> grade)		Pandemic (4 <sup>th</sup> grade)	
	Log OR	SE	Log OR	SE	Log OR	SE
Effect of pandemic on well-being					-0.02	0.04
Days in online learning					0.00	0.00
Interaction (Year*Parental educational level)						
2021*One parent tertiary	-0.56**	0.17				
2021*Both parents upper secondary	-0.53**	0.18				
2021*One or both less than upper secondary	-0.56	0.35				
2022*One parent tertiary			-0.18	0.18		
2022*Both parents upper secondary			-0.14	0.14		
2022*One or both less than upper secondary			0.06	0.28		
Interaction (Days in online learning*Parental educational level)						
Days in online learning*One parent tertiary					-0.01	0.01
Days in online learning*Both parents upper secondary					0.00	0.00
Days in online learning*One or both less than upper secondary					0.00	0.01
ICC	0.02		0.05		0.03	
Random effect - intercept	0.07		0.13		0.10	
-2LL	17076.7		16919.2		21199.5	
AIC	17078.7		16921.2		21201.5	
BIC	17085.0		16927.5		21208.0	

Note. <sup>a</sup> reference category is “2017”; <sup>b</sup> - reference category is “gymnasium”; <sup>c</sup> - reference category is “both parents tertiary education”; \* p<.05; \*\* p<.01.

As well, reported negative impact of pandemic on personal well-being (Table 5) does not seem to be associated with lower propensity to migrate. However, if impact is measured via the number of days spent online, there is a weak tendency in the expected direction, with students from schools closer for a shorter time more likely to be intent on emigrating (providing some support for Hypothesis 6). The regression model established that this effect did not have a social gradient (Table 7, interaction with parental education), and vanished below threshold of significance once controls were included.

While prior to the pandemic there were few observed differences in intention to migrate with respect to educational background, it seems that some divergence emerged during the peak of the pandemic in 2021 with students who had both tertiary educated parents pushing ahead (cf. Table A2). This change in patterns is confirmed by the outcome of the regression model (Table 7), indicating association expected in H6, yet running in unexpected direction. However this moderation did not persist into 2022, as both main and interaction effects of period and education were absent (supporting second part of H5). Notably, in all the models, regardless of the period, students whose parents (in particular fathers) are employed, expressed the intent to migrate abroad less frequently. This indicates the role of financial distress in contributing to emigration intent.

## **Discussion and Conclusions**

The observed patterns in Croatian upper secondary students' aspirations to study and move abroad before and during the COVID-19 pandemic turned out quite different than hypothesized in the set-up (Cairns et al., 2021; Cairns & França, 2022; Farnell et al., 2021; Hudzik, 2020; Shkoler & Rabenu, 2022). We expected that students will be less likely to aspire to study abroad during the pandemic than before pandemic, yet we identified a slight increase in prevalence of aspirations to study abroad, likely due to EU mobility instruments, available only since 2013, became more entrenched.

Students expressed a somewhat stronger general aspiration to migrate abroad in comparison to studying abroad. This intent was reported by almost half of the students in all three studies analyzed, indicating that the drivers of general mobility intent are rooted in motives other than (continuation) of

education, most presumably prospects of better life and career outside Croatia. At a general level, the prevalence of intent of moving abroad remained persistent in 2021 and 2022, compared to the pre-pandemic level, while aspirations for studying abroad increased. This implies that barriers erected in 2020 did not leave marks on students' intents, in line with the Eurobarometer result that the pandemic had no influence on the opinion about planned mobility (European Commission, 2022a). However, there might be some scarring effect of school closures as days spent in remote learning turned out to be modestly but negatively associated with both intent to migrate or to study abroad. As well, the effect of pandemic on well-being was associated with lower propensity to migrate in one of the models.

The expected moderation effects of students' socio-economic background on migration intent in face of the pandemic and school closure for most part failed to materialize. The only exception being intent to emigrate in 2021, where having tertiary educated parents proved more advantageous. This effect, however, did not prove persistent, and was absent in the late-pandemic period of 2022. Overall, students whose parents were less educated (cf. Table A2) and unemployed expressed stronger intent to move abroad. These effects are in line with other (pre-pandemic) research on migration aspirations (cf. Aslany et al., 2021; Božić & Burić, 2005) pointing to the notion that migration aspirations strengthen with negative subjective assessments of economic well-being (such as poorer familial background).

While this analysis benefits from including a common set of schools being surveyed at different time points using a common set of indicators, there are several limitations to our design. Such a secondary analysis allowed for inclusion of only limited number of individual-level indicators repeated across the studies, essentially limiting analysis of the effects of students' socio-economic background. Further on, the timing of both baseline and follow-up studies might not be the most appropriate for measuring effect of the pandemic. We have no data collection point in the "early" pandemic period as the first pandemic dataset was collected in spring 2021, i.e. fifteen months into the pandemic, when the vaccination already started. As well, the study used for the baseline was collected in 2017, only four years after 2013 Croatian EU accession, and almost three years prior to the pandemic, so that the steady rise of education mobility in 2018 and 2019 may have masked the actual pandemic effects.

We have constructed hypotheses on migration aspirations based on the expectations and findings established early on in the COVID-19 pandemic, yet working with 2021 and 2022 data found only limited support for two out of seven hypothesis (H3: those more affected by pandemic being less likely to migrate; H5: migration intentions reverting to the pre-pandemic patterns). Actually, we have observed patterns contrary to the expectations in two cases (H1: observed an increase in aspirations for studying abroad; H7: students with educated parents being more likely to be intent going abroad during pandemic). There was little evidence of long-term devaluation of “mobility capital” or reduction in “psychological capital” due to pandemic uncertainties throttling mobility aspirations at the population level. The moderators proposed by Shkoler and Rabenu (2022) were likely most out of the picture by the time of our 2021 survey. Namely disruption of financial capital at the family level ameliorated due to large public investment at the national and European level, workable transport arrangements and legal requirements regarding studying and working abroad ironed out. On the other hand, dissemination of negative experiences via personal contacts likely played small role in Croatia due to absence of mass repatriations in Croatia (Table 1) and modest number of internationally mobile students.

In broader societal terms, the impression gained is one of systemic resilience, at least with respect to learning and working mobility, with little evidence of long-term hunkering down or of increase in aspirational inequalities in face of disruptions in socio-educational domain and mobility regimes temporarily imposed by COVID-19 pandemic.

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**Appendix**

**Appendix 1**

*Descriptive statistics of the variables used in the study (% , M, SD)*

	Pre-pandemic vs. pandemic (4 <sup>th</sup> grade)		Pre-pandemic vs. late-pandemic (3 <sup>th</sup> grade)		Pandemic (4 <sup>th</sup> grade)
	2017 N=1857	2021 N=2498	2017 N=1796	2022 N=2509	2021 N=6600
Aspirations for studying abroad					
No	84.9%	82.4%			83.0%
Yes	15.1%	17.6%			17.0%
Migration intent					
No	57.3%	58.0%	54.5%	53.7%	60.8%
Yes	42.7%	42.0%	45.5%	46.3%	39.2%
School programme type					
Gymnasium	54.4%	54.2%	55.3%	57.9%	39.9%
Vocational school	45.6%	45.8%	44.7%	42.1%	60.1%
Employed mother					
No	21.2%	18.0%	21.0%	15.5%	20.5%
Yes	78.8%	82.0%	79.0%	84.5%	79.5%
Employed father					
No	18.3%	18.2%	19.0%	13.0%	20.0%
Yes	81.7%	81.8%	81.0%	87.0%	80.0%
Parental educational level					
Both parents tertiary	19.3%	22.0%	21.5%	25.7%	20.2%
One parent tertiary	29.3%	27.5%	27.5%	29.6%	25.0%
Both parents upper secondary	44.3%	42.5%	43.3%	38.4%	44.7%
One or both less than upper secondary	7.0%	7.9%	7.7%	6.3%	10.1%
Effect of pandemic on well-being					M=2.23 SD=0.84
Days in online learning					M=42.86 SD=17.13

## Appendix 2

*Prevalence of aspirations for studying abroad and migration intention prior and during COVID-19 pandemic with respect to parental education*

	Aspirations for studying abroad		Migration intent			
	4th grade (age 18)		4th grade (age 18)		3rd grade (age 17)	
	2017	2021	2017	2021	2017	2022
One or both less than upper secondary	15.5%	25.4%	44.0%	40.1%	37.9%	43.1%
Both parents upper secondary	12.2%	14.8%	39.0%	35.5%	44.1%	43.1%
One parent tertiary	17.4%	16.9%	46.3%	42.6%	45.3%	44.0%
Both parents tertiary	17.1%	21.0%	45.2%	53.9%	51.2%	54.8%

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