Campus International 2022

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Campus International 2022: Research and results at a glance

Does the engagement in international student mobility (ISM) help students to prepare for the labour market? Intrigued by this question, the present quantitative-empirical research addressed the effects of ISM engagement on the development of several critical labour market-related skills and characteristics that were drawn from an extensive research of the scientific literature. We developed an online-questionnaire that was translated and analogously implemented in ten European countries (Finland, Germany, Hungary, Ireland, Luxemburg, Malta, the Netherlands, Poland, Romania, and Slovenia) to collect student data.

In contrast to many previous studies which only queried their participants once after their return from the ISM experience and exclusively relied on their self-assessment of developmental gains ("Has the previous ISM experience helped you to advance this skill?"), we used a longitudinal design with a baseline measure and captured students' skills and characteristics twice by using established psychometrically sound scales. Furthermore, we included three different research groups (i.e., *control students* who stayed at home, *present sojourners* who engaged in ISM during the period of data collection and a *waiting group of future sojourners* who planned to go abroad in the semester that followed the period of data collection). This allowed us to separate differences in labour market-related skills and characteristics that already existed before the ISM experience (i.e., *self-selection effects*) from ISM effects on their development. Beyond this, we controlled for potential influences of several demographic characteristics that were shown to be related to ISM engagement such as age, gender, parental academic background, migration background, and previous (virtual) international mobility experience. The data analyses were carried our using complex state-of-the art statistical procedures (i.e., multivariate latent change models).

By these means, the present research is able to provide a more reliable estimation of ISM effects on labour market-relevant skills and characteristics than previous cross-sectional studies. In view of restricted sample sizes in the other European countries, the presented main analyses were focused on the German data (N = 910). Specifically, these analyses revealed positive ISM effects on students' development in the following domains:

- *General self-efficacy*, i.e., one's general perceived sense of competence to execute required actions and to effectively accomplish tasks
- *Multicultural self-efficacy*, i.e., one's perceived sense of competence to effectively handle interactions with people who belong to other cultural groups/have different cultural backgrounds
- *Individual adaptability*, i.e., one's skills and motivation to effectively respond to situations of crisis and to handle work stress

- Some dimensions of *career adaptability*, i.e., taking responsibility with regard to the achievement of career goals (*control*) and exploring options and searching for relevant information to help one make sound career decisions (*curiosity*).

To conclude, the present research provided evidence for substantial effects of ISM participation on the development of labour market-relevant skills and characteristics. To further expand on the present findings, future research is needed to investigate to what extent the present results can be generalized across European countries and if work placements abroad have different implications than engagement in study programs. Furthermore, it would be valuable to explore if the observed positive effects of ISM engagement persist upon return to the home country and how they relate to students' experiences during the labour market transition and their further (international) career development.

Campus International 2022: Projekt und zentrale Ergebnisse auf einen Blick

(Wie) tragen studienbezogene Auslandsaufenthalte zur Vorbereitung Studierender auf den Arbeitsmarkt bei? Ausgehend von dieser Frage untersuchten wir in der vorliegenden quantitativ-empirischen Studie die Auswirkungen studienbezogener Auslandsaufenthalte auf die Entwicklung relevanter arbeitsmarktbezogener Fähigkeiten und Eigenschaften, die aus einer umfangreichen Recherche der wissenschaftlichen Literatur abgeleitet wurden. Hierzu wurde ein Online-Fragebogen entwickelt, der in analoger (und teilweise übersetzter) Form in zehn europäischen Ländern (Finnland, Deutschland, Ungarn, Irland, Luxemburg, Malta, Niederlande, Polen, Rumänien und Slowenien) zur Befragung von Studierenden eingesetzt wurde.

Im Gegensatz zu vielen früheren Studien, die die Teilnehmenden nur einmalig nach der Rückkehr von ihrem studienbezogenen Auslandsaufenthalt befragten und ausschließlich eine Selbsteinschätzung der Veränderung erhoben („Hat ihr studienbezogener Auslandsaufenthalt dazu beigetragen, diese Fähigkeit zu verbessern?“), kam hier ein Längsschnittdesign mit einer Baseline-Messung zum Einsatz. Die untersuchten arbeitsmarktbezogenen Fähigkeiten und Charakteristika der Studierenden wurden dabei zweimal unter Verwendung etablierter wissenschaftlicher Messinstrumente (Selbstberichts-Skalen) erhoben. Des Weiteren wurden drei verschiedene Untersuchungsgruppen einbezogen (*Kontrollstudierende* ohne Auslandspläne, *aktuell mobile Studierende*, die während des Zeitraums der Datenerhebung einen studienbezogenen Auslandsaufenthalt absolvierten, und eine *Wartegruppe künftig mobiler Studierender*, die einen studienbezogenen Auslandsaufenthalt für das Semester nach der Datenerhebung planten). Dies ermöglichte es, Unterschiede in arbeitsmarktbezogenen Fähigkeiten und Merkmalen, die bereits vor Beginn des studienbezogenen Auslandsaufenthalts bestanden (sog. Selbstselektions-Effekte), von Effekten der Auslandserfahrung auf die individuelle Entwicklung zu trennen. Darüber hinaus wurden mögliche Einflüsse mehrerer demographischer Merkmale, die bisherigen Erkenntnissen zufolge mit der Entscheidung für (oder gegen) studienbezogene Auslandsaufenthalte in Zusammenhang stehen (Alter, Geschlecht, akademischer Hintergrund der Eltern, Migrationshintergrund und frühere (virtuelle) internationale Mobilitätserfahrungen) statistisch kontrolliert. Die Datenanalyse wurde – dem aktuellen wissenschaftlichen Standard entsprechend – unter Verwendung komplexer statistischer Verfahren (multivariate latente Veränderungsmodelle) durchgeführt. So ermöglichte die aktuelle Studie eine zuverlässigere Schätzung der Effekte studienbezogener Auslandsaufenthalte auf arbeitsmarktrelevante Fähigkeiten und Merkmale als frühere Querschnittsstudien.

In Anbetracht der begrenzten Stichprobengrößen in den anderen beteiligten Ländern, konzentrierten sich die Hauptanalysen auf die in Deutschland erhobenen Daten ($N = 910$). Diese Analysen zeigten positive Effekte von Auslandserfahrungen auf die Entwicklung der Studierenden in folgenden Bereichen:

- *Allgemeine Selbstwirksamkeit,* d.h. die allgemeine selbstwahrgenommene Kompetenz, erforderliche Handlungen auszuführen und Aufgaben effizient zu bewältigen
- *Multikulturelle Selbstwirksamkeit,* d. h. die selbstwahrgenommene Kompetenz, Kontakte mit Personen, die einer anderen kulturellen Gruppe angehören/einen anderen kulturellen Hintergrund haben als man selbst, konstruktiv zu gestalten
- *Individuelle Adaptationsfähigkeit,* d. h. die Fähigkeit und Motivation, auf Krisensituationen effektiv zu reagieren und mit Arbeitsstress konstruktiv umzugehen
- *Einige Dimensionen beruflicher Adaptationsfähigkeit,* d. h. die Übernahme von Verantwortung für das Erreichen eigener Karriereziele („Kontrolle“) und die Exploration von Karriereoptionen und die Suche nach relevanten Informationen, um fundierte Karriereentscheidungen zu treffen („Neugier“).

Zusammenfassend sprechen die vorliegenden Forschungsergebnisse für substanzielle Auswirkungen studienbezogener Auslandsaufenthalte auf die Entwicklung von arbeitsmarktrelevanten Fähigkeiten und Eigenschaften Studierender. In zukünftiger Forschung bleibt zu untersuchen, inwieweit die vorliegenden Befunde übertragbar auf Auslandserfahrungen Studierender aus anderen europäischen Ländern sind und ob Auslandspraktika sich in ihrer Wirkung von überwiegend studienorientierten Auslandsaufenthalten unterscheiden. Darüber hinaus wäre es zielführend zu untersuchen, ob die beobachteten positiven Auswirkungen studienbezogener Auslandsaufenthalte auch nach der Rückkehr ins Heimatland Bestand haben und wie sie die tatsächlichen Erfahrungen der Studierenden beim Übergang in den Arbeitsmarkt und in ihrer weiteren (internationalen) Karriereentwicklung prägen.

1 Why we did this: Background and research goals

International student mobility (ISM) has become an essential part of higher education in Europe and beyond. Students go abroad to pursue manifold goals, e.g., to promote their personal development, to expand their subject-specific and general professional skills, and to improve their proficiency in the language of the host country (Zimmermann et al., 2017). Overall, employers value ISM experiences as they tend to consider mobile graduates to be particularly qualified for international activities and to be generally more capable than non-mobile applicants (DAAD & IW, 2016). Yet, there are still some questions that need to be answered.

On the one hand, despite previous evidence on the effects of ISM engagement on the development of basic personality traits and more specific (intercultural) characteristics (Wolff et al., 2020; Zimmermann et al., 2021a, 2021b; Zimmermann & Neyer, 2013, Zimmermann et al., 2024) there is still a lack of knowledge as regards ISM effects on skills and characteristics that are specifically relevant to succeed in the labour market. On the other hand, from a methodological point of view, it is important to understand to what extent potential advantages of mobile students in critical skills and characteristics can indeed be attributed to their experience abroad (i.e., represent ISM effects on individual development) and are not mere reflections of self-selection patterns. Previous research showed that students' engagement in ISM is related to several demographic characteristics, such as age, gender, parental academic background, migration background, and previous international mobility experiences (Netz et al., 2020). Likewise, different personality traits and (intercultural) characteristics were shown to affect students' mobility decisions (Wolff et al., 2020; Zimmermann et al., 2021a, 2021b; Zimmermann & Neyer, 2013; Zimmermann et al., 2024). Hence, higher levels of labour market-relevant skills and characteristics might also predispose students to engage in ISM. As a consequence, higher skill levels upon return from a stay aboard are not necessarily a consequence of ISM engagement but could have existed beforehand and guided the decision to move abroad.

In order to shed light on these lingering questions, the project "Campus International 2022" was set in place. As part of the project, we carried out a longitudinal study with two measurement occasions and three study groups, i.e., control students who stayed at home, present sojourners who engaged in ISM during the period of data collection and a waiting group of future sojourners who planned to go abroad in the semester that followed the period of data collection1. In doing so, we were able to separate self-selection effects (i.e., initial differences between mobile and non-mobile students) from ISM development effects (i.e., changes in skills and characteristics that indeed occurred during the ISM participation). Furthermore, we explored if the anticipation

1 The data was carried out in collaboration between ten national agencies and analogous data sets were collected in all ten European countries (Finland, Germany, Hungary, Ireland, Luxemburg, Malta, the Netherlands, Poland, Romania, and Slovenia). Yet, due to the low response rate in all countries but Germany, longitudinal analyses on ISM effects could only be carried out with the German sample. Further information on the response rates in the other participating countries can be inferred from Tables A1 and A2 in the Appendix.

of upcoming ISM experiences might initiate changes that are comparable to the actual experience of living abroad.

Based on the results of previous publications on the labour market value of ISM experiences (DAAD, 2008; DAAD & IW, 2016; European Commission, 2014) and a thorough research of the current scientific literature, we selected a sample of individual characteristics that were approved to be particularly relevant to thrive in nowadays (internationalized) working world and investigated their prevalence and development in the context of ISM experiences. In the following sections, we will first provide a short overview of the different characteristics under study and describe the self-report scales that were used for their measurement. We will then proceed with a detailed description of the study design and procedures, the analytical strategy and the investigated sample. Finally, we will present the results of these statistical analyses before we conclude with some remarks on the implications and limitations of the current findings and outline pathways for future research.

2 What we measured: Individual characteristics related to (international) career success

2.1 General and multicultural self-efficacy

General self-efficacy describes a general optimistic assessment of one's skills to deal with any kind of challenges and the expectation of positive outcomes in all fields of life. It reflects a perceived sense of competence to perform required behaviours and to successfully accomplish pending tasks (Bandura, 1986). There are extensive findings on the positive effects of general self-efficacy on indicators of achievement, e.g., meta-analyses on the effects of self-efficacy on academic performance (Talsma et al., 2018) or on entrepreneurial activity (Rauch & Frese, 2007). By contrast, multicultural self-efficacy reflects a domain-specific judgement of abilities and refers to students' perceptions of their competence to successfully handle interactions with people who belong to another cultural group than their own (Mazziotta et al., 2015). It is thus considered an important condition of success in a globalized labour market (Zimmermann et al., 2021a).

Few previous studies considered changes in general (Jacobone & Moro, 2015; Petersdotter et al., 2017) and multicultural self-efficacy (Zimmermann et al., 2021a) in the context of ISM using longitudinal research designs. They provided tentative evidence for increases in both constructs as a consequence of ISM participation.

In the present study, general self-efficacy was measured with the established 3-item (e.g., "I can deal with most problems on my own.") short scale by Beierlein et al. (2013). Multicultural self-efficacy was captured using an adapted 5-item version (e.g., "I am confident that I am able to establish a good relationship with people from other cultural groups.") of a scale proposed by Mazziotta et al. (2015). All answers were provided on a 7-point scale ranging from 1 (*does not apply at all*) to 7 (*applies perfectly*). Scale scores were calculated as a mean of the respective items, higher scale scores reflect higher levels of general and multicultural self-efficacy, respectively.

2.2 Individual adaptability

Individual adaptability is defined as "an individual's ability, skill, disposition, willingness and/or motivation to change or fit different task, social and environmental features" (Ployhart & Bliese, 2006). There are eight facets of individual adaptability which address different situations and contexts. In view of the present study's focus on ISM effects on skills and characteristics that are related on labour market success, the present study focused on two relevant facets, i.e., *work stress* (capacity to deal with challenging amounts of workload and associated stress) and *crisis* (behavior in and capacity to effectively handle situations of crisis). To the best of our knowledge, there are no published findings on the development of individual adaptability in the context of ISM experiences.

We captured the facets of individual adaptability using items from the individual adaptability scale by Ployhart and Bliese (2006). Sample items were “I am usually stressed when I have a large workload.” (work stress, the item is reverse coded) and “I think clearly in times of urgency.” (crisis). The answers were provided on a 7-point scale ranging from 1 (*does not apply at all*) to 7 (*applies perfectly*). Scale scores were calculated as a mean of the respective items, i.e., higher scale scores reflect more elaborate capacities to effectively handle works stress and crises.

2.3 Proactive personality

Many work environments emphasize the importance of employers’ initiative for job performance and career success (Parker et al., 2006). This disposition is captured by individuals’ proactive personality. “Proactive people scan for opportunities, show initiative, take action, and persevere until they reach closure by bringing about change” (Bateman & Crant, 1993). Previous meta-analytic research showed that dispositional proactivity is related to measures of subjective and objective career success, task and job performance, and organizational citizenship behaviour (Fuller & Marler, 2009; Spitzmuller et al., 2015; Thomas et al., 2010; Zhang et al., 2022). In the context of international student and work mobility, proactive personality was shown to be positively related to academic and social adjustment as well as expatriates’ job performance (Hu et al., 2020; Köksal et al., 2023). An earlier study provided first evidence for positive effects of ISM participation on the development of proactive personality. In particular, the effect was explained by sojourners’ more frequent engagement in the exploration of new behaviours during their time abroad (Zimmermann et al., 2024).

In the present study, proactive personality was measured with the German version (Seibert et al., 2001) of the 10-item scale suggested by Bateman and Crant (1993). A sample item is “If I believe in an idea, no obstacle will prevent me from making it happen.”. Answers were provided on a seven-point scale (1 = *does not apply at all* to 7 = *applies perfectly*). Scale scores were calculated as a mean all items, i.e., higher scores correspond to higher levels of proactivity.

2.4 Career adaptability

In his *Career Construction Theory* (CCT), Savickas (2005) defined career adaptability as a psychological resource to accomplish career-related tasks and transitions. It reflects a diverse array of attitudes, behaviours, and competencies that aid in the proactive adaptation to changing work situations (Savickas & Porfeli, 2012). In particular, five facets of career adaptability are distinguished (Nye et al., 2018): *Concern* means that individuals think ahead and take care of their career development. *Control* implies motivation and taking responsibility with regard to the achievement of career goals. *Curiosity* initiates the exploration of options and search for relevant information to help one make sound career decisions. *Confidence* refers to one’s belief about his or her ability to pursue career aspirations whilst *Cooperation* reflects one’s ability to successfully interact with and work alongside others.

Researchers in the career domain have embraced the concept of career adaptability as denoted by a rapid growth in the number of published articles in recent years. A recent review revealed consistent yet differential associations between its facets and different indicators of career success such as *employability, promotability*, job performance, work engagement, and

entrepreneurship (Rudolph et al., 2017). Career adaptability was also shown to be positively related to international career aspirations (Presbitero & Quita, 2017). Yet, to the best of our knowledge, there are no findings on the development of career adaptability in the context of international mobility experiences such as international work assignments or ISM.

We captured the facets concern, control, curiosity, and confidence with the adapted German short version (three items per facet) of the *Career Adapt-Ability Scale* (Johnston et al., 2013). Cooperation was measured using translated versions of the six items proposed by Nye et al. (2018). Sample items were “I am thinking about what my future will be like.” (concern), “I am taking responsibility for my actions.” (control), “I am looking for opportunities to grow as a person.” (curiosity), “I am taking care to do things well.” (confidence), and “I am getting along with all kinds of people.” (cooperation). Participants replied to all statements using a seven-point scale (1 = *does not apply at all* to 7 = *applies perfectly*). Scale scores were calculated per facet as the means of the respective items, i.e., higher scores correspond to higher levels of the career resources.

3 How we did it: Information on the study methods

3.1 What was done? Study design and procedure

We used a longitudinal control group design with two measurement occasions (t1, t2) and three study groups, i.e., control students (no ISM plans), present sojourners (ISM plans for the period of data collection, i.e., with departure before 30.11.2022), and future sojourners (ISM plans for the semester after the data collection, i.e., with departure between 01.12.2022 and 30.04.2023) (see Figure 1). Participants were recruited nationwide via about 350 higher education institutions in Germany that represent the vast majority of higher education institutions in the country. Likewise, local student Erasmus initiatives were contacted and asked to forward the invitation emails. These endorsed general information on the study contact and data protection protocols as well as a link to a short registration questionnaire (t0) that covered basic demographic background information as well as questions on potential ISM plans for the following semesters. Only students who indicated that Germany was their general country of residence, that they currently lived in Germany, were enrolled at a German higher education institution and not currently actively participating in (virtual) international student mobility programs were admitted to the study.

In the following, participants were contacted two times to fill in two analogous questionnaires (t1, t2) that endorsed all scales on the labour market-related skills and characteristics under study (see section 2). Participants received the invitation emails to the following measurements (t1, t2) depending on their preliminary group assignment. The time interval between the two measurements covered 22 weeks (i.e., about five months) for all study groups as this represents the average duration of stays abroad for students at German higher education institutions (DAAD & DZHW, 2023). In particular, t1 invitation emails for control group members were automatically sent out 24 hours after registration and 22 weeks later. Present sojourners were invited to t1 at two weeks before the individual date of departure reported in the registration questionnaire, the t2 invitation was sent out 20 weeks after departure. Hence, the timespan between measurements covered the time abroad, i.e., their active ISM engagement. Future sojourners obtained the emails 24 weeks (t1) and 2 weeks before (t2) their planned date of departure. In this case, the measurement period captured the time before their departure abroad during which the planning and preparation took place. Beside general information on the questionnaire and instructions for its completion, all invitation emails contained a personalized link that allowed participants to interrupt and to continue the completion of the questionnaires at their convenience. In case of non-response, participants were reminded of pending questionnaires seven days after the first invitation by an automatic email reminder. For the t2 measurement, a second reminder was used to minimize panel dropout.

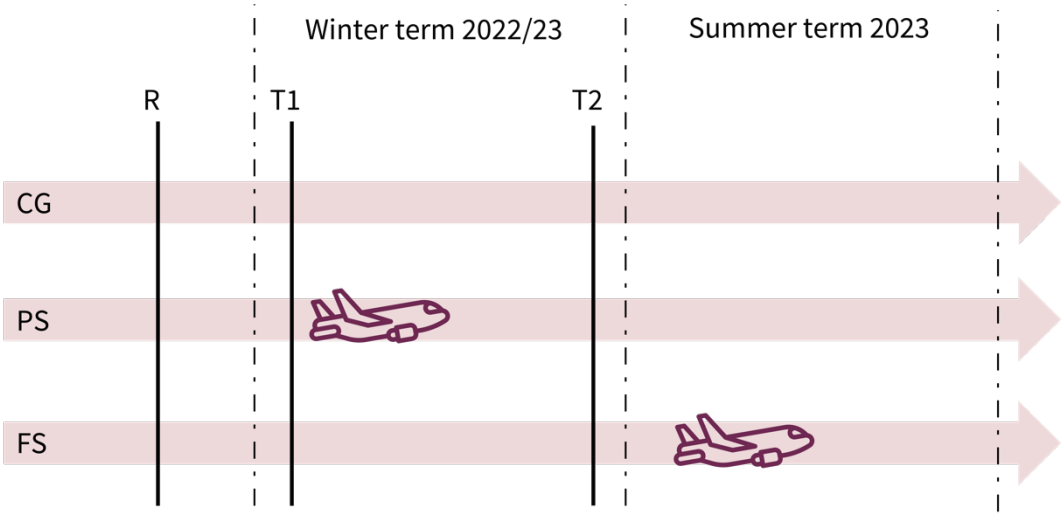

Figure 1: Campus International 2022 study design

Note. CG = control group, PS = present sojourners, FS = future sojourners. The plane symbolizes the timing of the departure abroad.

3.2 Who was involved? The study participants

3.2.1 Demographic characteristics of the overall sample

Overall, N = 1,279 participants registered for the study. At t1, N = 1,147 questionnaires were completed and N = 918 at t2. Overall, N = 910 participants completed both questionnaires and could be assigned to one of the three study groups (i.e., control students: n = 418; present sojourners: n = 425; future sojourners: n = 67). They constituted the panel sample that was used for all further analyses. The mean age of participants was 23 years, 26% of the sample self-identified as being male. One third of the participants (34%) were first-generation students, two thirds (66%) reported that at least one of their parents had obtained an academic degree. As regards the migration background, 17% indicated that at least one of their parents was born abroad. The share of participants with previous physical international mobility experiences (Have you ever lived abroad for a period of at least one month?) referred to 57% of the sample, whilst very few participants (3%) indicated previous virtual international mobility experiences (Have you ever participated in a virtual international mobility program, e.g., by attending online degree courses at a foreign host university or doing an online work placement abroad for the duration of at least one month?). The majority of participants studied at universities (76%), whilst fewer students were enrolled at universities of applied sciences (22%) or other higher education institutions (2%). About half of the sample (55%) attended Bachelor programmes, further degree types were Master's (30%) and other (15%). The most popular study subjects as coded by the ISCED-III codes were business and administration (7%), medicine (6%), and psychology (5%).

3.2.2 Sojourners and their ISM experiences

The vast majority (88%) of sojourners (n = 492) indicated that studying abroad was the main purpose of their ISM participation, only 9% intended to predominately engage in international work placements. The most popular host countries were France, Spain, Norway, Sweden (all 9%) and Italy (7%). The sojourners were also asked to report on all different kinds of financial resources that they used to support themselves during their time abroad, i.e., multiple answers could be selected. The most frequently used resources were parental financial support (77%), an Erasmus scholarship (77%), and savings from an own employment/job during the study time but previous to the stay abroad (55%). All other options (BAföG grant for studying abroad: 16%, student loan: 1%, DAAD scholarship: 4%, PROMOS scholarship: 6%, other support from HE institution: 4%, other scholarship: 13%, employment/job prior to study time: 22%, employment/job during stay abroad: 17%, sponsorship from host country: 1%, unspecified other sources: 6%) were less frequently used.

In their host countries, most sojourners engaged in their activities (i.e., studies or work placement) almost exclusively on site (70%), but there was also a substantial share who indicated that their predominately on-site activities were in some instances complemented by remote or online lectures/work (26%). Very few sojourners reported that their activities took place (almost) equally on site and remotely/online (3%), predominately remotely/online and in some instances on site or exclusively remotely/online (1%, respectively).

Amongst the sojourners who indicated that studying was their main purpose of ISM participation, 58% reported that they attended the regular course programme and participated in (about) as many courses as suggested by their degree course scheme whilst 29% said that they participated in the regular course programme but had chosen less courses than suggested by the degree course scheme. Very few participants indicated that they participated in the regular course programme and accomplished substantially more courses that suggested by their degree course scheme (6%) or that they did not participate in the regular course programme but only attended single courses of an extra-curricular course programme (7%).

3.3 Some notes for statistics enthusiasts: the analytical strategy

To assess self-selection effects as well as ISM development and anticipation effects, we implemented latent change models (McArdle & Nesselroade, 1994). In these models, the latent intercepts represent the initial levels of the characteristic under study whereas the latent change variables reflect the development that occurred between the two measurement occasions (see figure 2). Accordingly, variances of the variables reflect differences between (groups of) students in the initial level (intercept variance) or the development (change variance) of the characteristic under study. Effects of other variables, such as demographic characteristics or variables that indicate to which study group participants belong (i.e., control students, present sojourners or future sojourners) on the initial level or development thus indicate how potential differences in the initial level (intercept) or the development (change variable) can be explained. To that end, all latent intercepts and change variables were regressed on the set of demographic covariates (age, gender, parental academic background, migrations background, previous physical international mobility experience, previous virtual international mobility experiences) and two dummy variables that coded the sojourn status and served to compare present sojourners with control students

(this comparison allows to uncover ISM development effects) or future sojourners with control students (this comparison informs on ISM anticipation effects).

For a reliable interpretation of the latent intercept and change parameters, it is important to ensure strict measurement invariance, i.e., equal factor structure, equal factor loadings, equal intercepts, and equal residual variances over the two measurement occasions (Vandenberg & Lance, 2000). We evaluated the appropriateness of these assumptions by the inspection of several model fit indices whereby RMSEA ≤ .06, CFI ≥ .95, and SRMR ≤ .08 were interpreted as indicating a good model fit (Hu & Bentler, 1999). To account for non-normality of distributions, we estimated all latent change models using the Satorra–Bentler method for model estimations. In order to reduce the model complexity for the models on proactive personality (10 items) and career adaptability/cooperation (6 items), we did not use all single items as indicators of the latent constructs, but constructed three parcels per construct. Items were assigned to the parcels by the item-to-construct method (Little et al., 2002) based on the standardized factor loadings of an initial confirmatory factor analysis that was carried out using the items of the first measurement (t1). All analyses were carried out using SPSS 29 (IBM Corp. Released, 2022) and Mplus version 7 (Muthén & Muthén, 1998–2015). As completeness checks were implemented in the online questionnaires, few cases of single missing values (mostly on the covariates) occurred. These were treated using the full information maximum likelihood (FIML) procedure as implemented in Mplus.

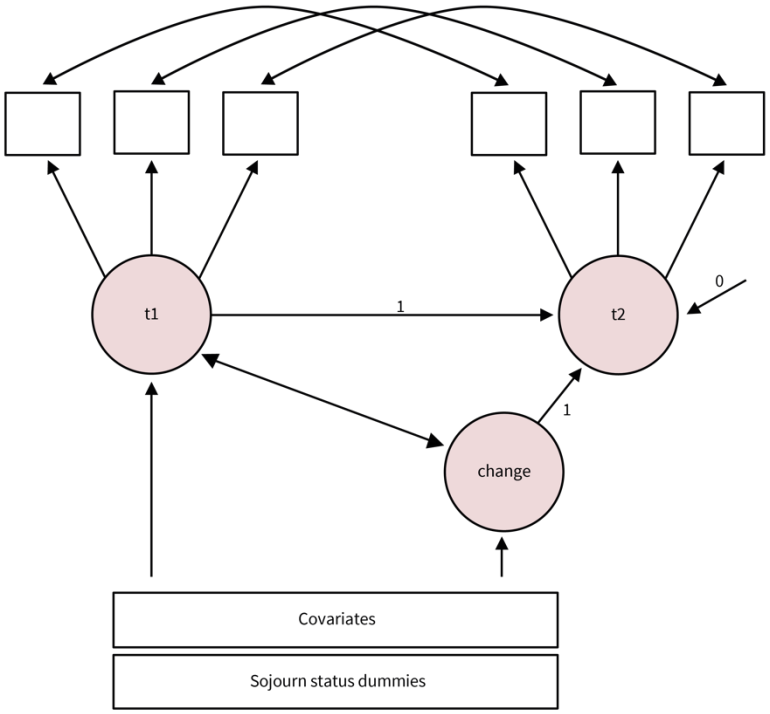

Figure 2: The analytical model (conceptual model)

4 What we learned from the data: the results

4.1 Descriptive results

Table 1 provides an overview on the descriptive results, i.e., the means and standard deviations that were observed for the different characteristics at the two measurement occasions (t1, t2) in the three different study groups (i.e., control students, present sojourners, future sojourners). Additionally, the last three columns provide information on Cohen's *d* which is a standardized effect size measure for change observed between two measurement occasions. According to Cohen (1988), effects of .10, .30 and .50 can be interpreted as reflecting small, medium or large effects. Given the nature of the constructs under study, i.e., personal skills and characteristics that are presumed to be consistent across situations and rather stable, and in view of previous results on individual development in the context of ISM experiences and beyond (Bühler et al., 2023), we expected to find (at best) small change effects. Yet, it is important to consider that even statistically small effects may have substantial long-term influences as they may guide further (education and career-related) decisions and thus initiate cumulative change across years and decades (George et al., 2011).

As the Cohens'*ds* in Table 1 indicate, present sojourners (but not future sojourners) tend to increase in general and multicultural self-efficacy whilst the other two do not change much or slightly decrease in these characteristics. As regards the individual adaptability facets, the pattern is a bit different. Whilst present sojourners increased on both dimensions, future sojourners decreased quite substantially and controls slightly. For proactive personality, quite substantial positive changes can be observed for presents sojourners and – a bit less pronounced – for future sojourners whilst no much change occurs in the control group. By contrast, the pattern for the different dimensions of career adaptability is quite mixed. For concern, control, and cooperation increases in the group of present sojourners are observed whilst future sojourners and controls increase less or decrease. As regards curiosity and confidence, controls and future sojourners tend to decrease whilst present sojourners remain rather stable (curiosity) or slightly increase (confidence). These descriptive results provide a first impression on patterns of change and point to potential differences in the developmental trajectories of present sojourners in comparison to control students and future sojourners (i.e., ISM development effects). Yet, more elaborate multivariate latent change analyses are essential to control for confounding effects of the covariates (age, gender, parental academic background, migration background, previous physical and virtual international mobility experiences) and to account for measurement error (McArdle & Nesselroade, 1994).

Individual characteristic	Means (t1)						Means (t2)						*Cohen's ds*		
	Control students		Present sojourners		Future sojourners		Control students		Present sojourners		Future sojourners		d_{cg}	d_{ps}	d_{fs}
General self-efficacy	5.42	(0.92)	5.63	(0.75)	5.76	(0.62)	5.39	(0.89)	5.80	(0.69)	5.72	(0.79)	-.06	.33	-.06
Multicultural self-efficacy	5.34	(0.95)	5.58	(0.82)	5.56	(0.71)	5.33	(0.93)	5.73	(0.78)	5.59	(0.64)	-.03	.19	.05
Individual adaptability: Crisis	4.17	(1.14)	4.35	(1.03)	4.50	(1.06)	4.11	(1.22)	4.47	(1.08)	4.39	(1.10)	-.11	.25	-.21
Individual adaptability: Work stress	4.79	(0.87)	4.95	(0.82)	5.02	(0.71)	4.77	(0.89)	5.09	(0.83)	4.83	(0.72)	-.04	.27	-.38
Proactive personality	4.52	(0.86)	4.70	(0.86)	4.75	(0.75)	4.53	(0.91)	4.87	(0.78)	4.84	(0.82)	.06	.37	.26
Career adaptability: Concern	5.52	(0.98)	5.58	(0.93)	5.71	(0.78)	5.56	(0.97)	5.72	(0.91)	5.61	(0.82)	.08	.25	-.23
Career adaptability: Control	5.55	(0.91)	5.77	(0.80)	5.76	(0.72)	5.53	(0.88)	5.84	(0.78)	5.75	(0.74)	-.04	.14	-.02
Career adaptability: Curiosity	5.80	(0.72)	5.90	(0.67)	5.99	(0.60)	5.70	(0.77)	5.90	(0.69)	5.88	(0.67)	-.16	-.01	-.21
Career adaptability: Confidence	5.46	(0.78)	5.61	(0.71)	5.63	(0.73)	5.40	(0.79)	5.65	(0.75)	5.60	(0.65)	-.12	.06	-.06
Career adaptability: Cooperation	5.61	(0.64)	5.64	(0.66)	5.65	(0.51)	5.53	(0.88)	5.69	(0.67)	5.60	(0.52)	-.22	.10	-.15

Table 1: Campus International 2022: Descriptive results with scale means, standard deviations and Cohen's ds for all participant groups

Note. Cohen's ds (RM, pooled) of .10, .30 and .50 can be interpreted as reflecting small, medium and large effects.

4.2 Main results: ISM patterns of self-selection and development

The detailed statistical results of the latent change analyses for all constructs are summarized in Table A3 in the Appendix. Importantly, in the multivariate latent analyses the effects of all covariates in the model are controlled, i.e., effects of the sojourn status variables on the latent intercept or change variables were substantiated above and beyond (potential) effects of age, gender, parental academic background, migration background, previous physical international mobility experiences, and previous virtual international mobility experiences (in other terms, their (potential) influence is statistically controlled for, i.e., "removed" from the estimation of the ISM effects).

Patterns of self-selection. The analyses revealed substantial positive effects of sojourn status on the latent intercepts of general and multicultural self-efficacy, individual adaptability/crisis, proactive personality as well as the career adaptability dimensions control, confidence, and curiosity. This means that present and future sojourners (except for curiosity, here only the effect for future sojourners reached significance) showed higher levels in the respective characteristics than the control group at the study onset, i.e., before sojourners' departure abroad took place. This speaks to a self-selection of students into ISM by these characteristics and underlines the importance of longitudinal studies to reliably assess effects of ISM on individual development.

Beyond the sojourn status variables, migration background had positive effects on the intercepts of multicultural self-efficacy and proactive personality which implies that students with a migration background had higher levels in these characteristics than students without a migration

background at the study onset. A similar positive effect was observed for previous physical international mobility experiences on multicultural self-efficacy, i.e., individuals who had previously lived abroad for at least one month reported higher multicultural self-efficacy at the beginning of the study. There are several scattered effects for age that obtained statistical significance. Yet, the effect sizes are very small, hence a meaningful interpretation does not seem warranted.

ISM development effects. Most important with regard to our research questions on the development of labour marked-related characteristics in ISM are the effects of sojourn status on change. The analyses indicated that present ISM engagement has substantial positive effects on the development of general self-efficacy, multicultural self-efficacy, both facets of individual adaptability, as well as the career adaptability dimensions control and curiosity. This implies that – compared to control students – sojourners increased in these characteristics during their ISM experience. Hence, the assumption that ISM has positive effects on the development of these labour market-relevant skills and characteristics is supported by the current results. To illustrate the differences in development between the participant groups, manifest change scores are plotted in Figures 3 and 4.

Interestingly, there was a single, yet negative effect of future ISM on development for individual adaptability/crisis. This suggests, that – compared to control students - future sojourners decreased in their capacities to effectively handle situations of crisis in the run up to their departure abroad. However, no further effects of future ISM participation were observed. Hence, overall, anticipating a departure abroad (future sojourners) does not have the same developmental effects as actually moving abroad (present sojourners).

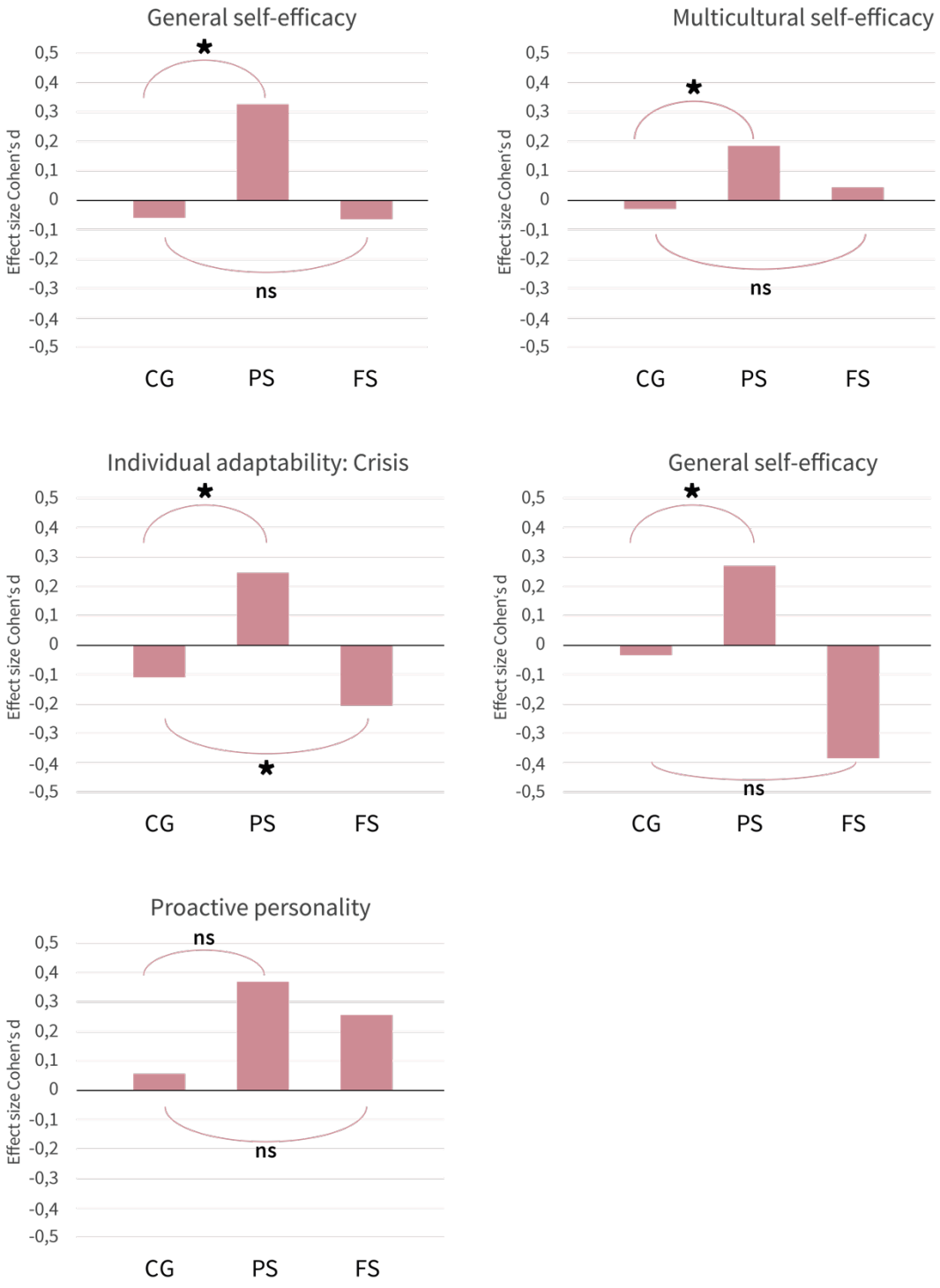

Figure 3: Effect sizes manifest change (t1 – t2) in labour market-related skills and characteristic

Note. * significant at p < .05, ns = not significant. Differences in Cohen's *ds (RM, pooled)* between the groups of .10, .30 and .50 can be interpreted as reflecting small, medium and large effects.

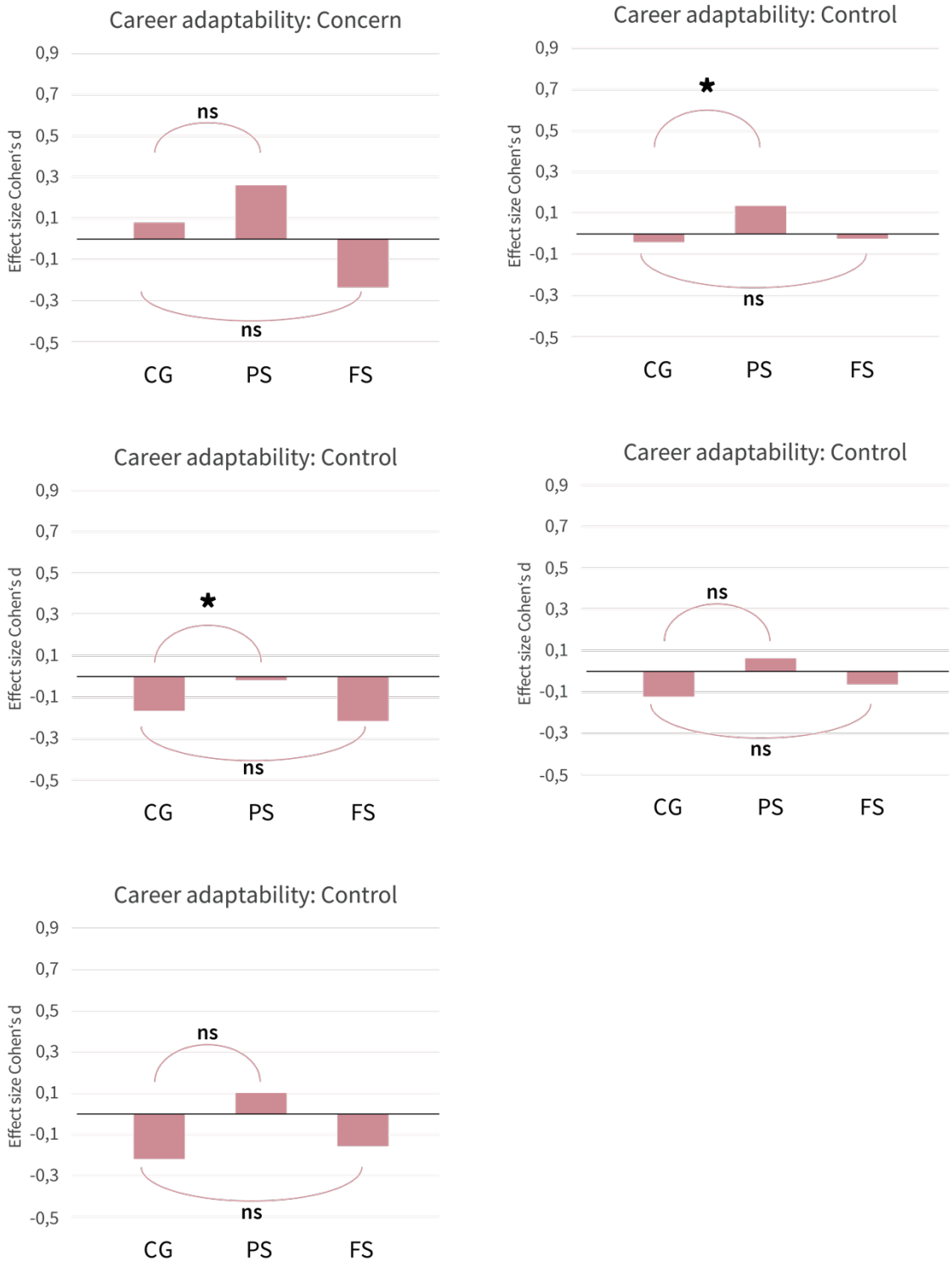

Figure 4: Effect sizes manifest change (t1 – t2) in dimensions of career adaptability

Note. * significant at p < .05, ns = not significant. Differences in Cohen's *ds (RM, pooled)* between the groups of .10, .30 and .50 can be interpreted as reflecting small, medium and large effects.

5 Implications and future directions

5.1 What we learned from the present research

The main goal of the present research was the investigation of ISM effects on individual development in a set of labour market-relevant individual skills and characteristics above and beyond potential pre-departure differences in these characteristics between mobile and non-mobile students. To that end, descriptive analyses and multivariate latent change models were carried out using a panel sample of N = 910 students that belonged to three different study groups (i.e., control students: n = 418; present sojourners: n = 425; future sojourners: n = 67).

The results corroborated the effect of active ISM engagement on the development of general and multicultural self-efficacy, both dimension (crisis and work stress) of individual adaptability, and some dimensions (control and curiosity) of career adaptability. The effect on proactive personality was marginally significant in the present study, but substantiated in earlier research (Zimmermann et al., 2024). Overall, the present study provided evidence for substantial effects of ISM participation on the development of labour market-relevant skills and characteristics. Importantly, although some of the observed effect sizes for the change effects were rather small, they were comparable to the effects observed in other studies that addressed ISM effects (Wolff et al., 2020; Zimmermann et al., 2021a, 2021b; Zimmermann & Neyer, 2013; Zimmermann et al., 2024) as well as to the effects of major life events (such as entering the labour market, parenthood etc.) in several domains of work and private life (Bühler et al., 2023). Beyond this, it is important to consider that even statistically small effects can have substantial long-term influences as they may guide further (education and career-related) decisions and thus initiate cumulative change across years and decades (George et al., 2011).

5.2 About the future: some directions for further research

Yet, in interpreting the results, some limitations of the present study also need to be considered. First, the present analysis is restricted to a sample from one sending country (Germany). In order to explore to what extent, the present results are specific to the experiences for German students or can be generalized to a European context, comparable data from different European contexts are an essential endeavour of further research.

Furthermore, the presents sample contained a large proportion of participants who (predominately) went abroad for study purposes whilst few participants engagement in international work experiences. Yet, in particular with regard to the development of labour market-related skills and characteristics, international work placements might constitute a particularly beneficial context for students' exploration and leaning. Hence, further research including larger samples of students who engage in the labour market abroad might further help to more specifically explore the benefits of ISM participation.

Finally, with the data at hand we cannot provide information regarding the persistence of the observed ISM effects on development. With regard to the persistence of ISM effects on basic

personality traits, a previous study including a five-year follow up measurement after return showed a differentiated pattern of results that suggested differences in the persistence of effects between different traits (Richter et al., 2020). As the majority of sojourners may not start into professional life immediately upon return from their stay abroad but several months or years later, it would be useful to explore to what extent the observed effects persisted and indeed payed off with regard to the job market transition and the (international) career development thereafter.

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Appendix

Country	Registration*	t1 completed	t2 completed	Panel sample
Finland	123	112	76	**76**
Germany	1,279	1,147	918	**910**
Hungary	133	119	48	**48**
Ireland	78	65	33	**32**
Luxemburg	59	31	14	**14**
Malta	198	173	82	**81**
Netherlands	124	89	42	**42**
Poland	251	215	106	**105**
Romania	228	183	79	**78**
Slovenia	68	63	43	**43**

Table A1: National samples – participant numbers

Note. * Participants who fulfilled the participation criteria (current country of residence in country of survey, student, not currently participating (virtual) ISM, information on international mobility plans, mobility in the defined period) and provided a valid email address to be invited to t1.

Country	CG	PS	FS	All
Finland	63	6	7	**76**
Germany	**418**	**425**	**67**	**910**
Hungary	43	1	4	**48**
Ireland	24	8	-	**32**
Luxemburg	11	2	1	**14**
Malta	57	20	4	**81**
Netherlands	28	13	1	**42**
Poland	95	9	1	**105**
Romania	10	66	5	**78**
Slovenia	29	9	5	**43**

Table A2: National samples – participants per study group

Note. CG = control group, PS = present sojourners, FS = future sojourners.

Predictors	General self-efficacy		Multicultural self-efficacy		IAD crisis		IAD stress		Proactive personality	
	b	*p*	*b*	*p*	*b*	*p*	*b*	*p*	*b*	*p*
Effects on intercept										
Gender (= female)	.03	.116	.03	.159	.01	.780	-.02	.462	.09	.233
Age	-.00	.884	.01	.112	.02	.048	.00	.651	.04	< .001
Migration background	-.03	.723	.19	.006	.06	.553	-.09	.325	.37	< .001
PQ parents (= higher education)	.02	.749	-.02	.663	.11	.145	.00	.955	-.07	.392
IM experiences	.13	.071	.36	< .001	.05	.558	.01	.887	.08	.315
VM experiences	.11	.401	-.00	.977	-.07	.515	.10	.459	-.03	.800
Present ISM	.16	.011	.23	< .001	.17	.022	.13	.054	.20	.008
Future ISM	.32	< .001	.21	.022	.29	.013	.19	.201	.28	.032
Effects on change										
Gender (= female)	.03	.105	.01	.823	-.01	.477	.00	.922	-.03	.710
Age	.00	.498	-.01	.366	-.02	.088	-.00	.818	-.01	.302
Migration background	.00	.958	-.10	.121	-.03	.758	-.00	.973	-.11	.190
PQ parents (= higher education)	.03	.664	.03	.579	-.03	.736	.00	.961	-.11	.122
IM experiences	-.07	.388	-.03	.573	-.00	.961	-.07	.303	-.08	.322
VM experiences	-.09	.392	.05	.605	.16	.217	-.06	.523	.16	.068
Present ISM	.29	< .001	.24	< .001	.19	.031	.19	.006	.14	.080
Future ISM	.06	.507	.13	.119	-.27	.027	.11	.377	.11	.375

Table A3: Campus International 2022: Results from the latent change models on ISM self-selection (effects on intercept) and development effects (effects on change)

Notes: Significant effects ($p < .05$) in bold. The covariates were coded as follows: Gender (0 = male, 1 = female), migration background (0 = no, 1 = yes), PQ (professional qualification) parents (0 = no parent with higher education degree, 1 = at least one parent with higher education degree), IM (international mobility) experiences (0 = no, 1 = yes), VM (virtual mobility) experiences (0 = no, 1 = yes).

Predictors	CA – concern		CA – control		CA – curiosity		CA – confidence		CA – cooperation	
	b	*p*	*b*	*p*	*b*	*p*	*b*	*p*	*b*	*p*
Effects on intercept										
Gender (= female)	.11	.001	.06	.033	.01	.515	.05	.015	.05	.148
Age	.00	.556	.02	.040	.02	.001	.02	< .001	.01	.046
Migration background	.12	.183	.06	.484	.05	.411	-.04	.489	-.24	.006
PQ parents (= higher education)	-.11	.110	.02	.812	.05	.339	-.01	.777	.10	.082
IM experiences	.06	.380	.09	.200	.10	.065	.07	.105	.04	.553
VM experiences	.04	.732	.10	.531	-.14	.256	.07	.306	-.02	.817
Present ISM	.08	.198	.19	.004	.08	.165	.14	.002	.09	.107
Future ISM	.14	.319	.23	.033	.19	.033	.19	.016	.13	.121
Effects on change										
Gender (= female)	-.03	.374	-.01	.816	-.01	.451	-.02	.296	-.04	.170
Age	.00	.745	.00	.961	.00	.863	-.00	.713	-.01	.398
Migration background	-.18	.154	-.13	.345	-.06	.602	-.08	.404	-.13	.473
PQ parents (= higher education)	-.01	.846	-.00	.983	-.09	.218	.04	.516	-.07	.447
IM experiences	-.05	.484	-.05	.576	-.05	.492	-.09	.097	.03	.724
VM experiences	-.05	.746	.10	.211	-.03	.865	.02	.810	-.04	.604
Present ISM	.10	.224	.18	.035	.22	.008	.11	.095	.11	.217
Future ISM	.00	.985	.11	.309	.11	.251	.07	.428	.11	.328

Table A3 (continued): Campus International 2022: Results from the latent change models on ISM self-selection (effects on intercept) and development effects (effects on change)

Notes: Significant effects ($p < .05$) in bold. The covariates were coded as follows: Gender (0 = male, 1 = female), migration background (0 = no, 1 = yes), PQ (professional qualification) parents (0 = no parent with higher education degree, 1 = at least one parent with higher education degree), IM (international mobility) experiences (0 = no, 1 = yes), VM (virtual mobility) experiences (0 = no, 1 = yes).

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