

The role of geographic and socio-demographic factors in socio-cultural adaptability of international students

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Abstract

International students constitute a temporary population within the host country. In the age of increasing global mobility, societal fluidity, and the internationalization of higher education, studying abroad requires complex adaptation to new academic and socio-cultural environments. Focusing on the Serbian context, this paper examines the relations between international students' geographic and socio-demographic characteristics and changes in various aspects of their lives and personalities following their experiences abroad, particularly as influenced by socio-cultural adaptation and cross-cultural interaction. Data were collected using Limesurvey. Statistical analyses included a series of t-tests and a one-way analysis of variance (ANOVA). The findings are interpreted within the frameworks of acculturation theory and cross-cultural adaptation theory.

The results indicate that most respondents view studying abroad as transformative, with nearly half reporting significant personal change. Geographic factors, such as country and continent of origin, and socio-demographic characteristics, including sex, age, education level attaining abroad, and length of stay, influence both the nature and extent of these changes following their study abroad experiences.

Keywords: adaptation, international students, migration, temporary migration, Serbia

Introduction

The internationalization of higher education has become increasingly prominent amid globalization. This trend significantly influences the transformation of higher education and impacts both the societies of origin and destination for academic migrants. The most widely accepted definition of internationalization in higher education is "the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of post-secondary education" (Knight, 2004). However, recent scholarship has highlighted limitations in this definition (Marginson, 2023) and has raised ethical concerns, including cultural imperialism and linguistic hegemony (Hou, 2025). Altbach & Knight (2007) and de Wit et al. (2015) argue that internationalization should evolve into a more comprehensive and inclusive process that serves the public good and contributes meaningfully to society, rather than focusing solely on profit.

The International Association of Universities (IAU) 3rd Global Survey Report identifies improving student preparedness for a globalized world as the most frequently cited reason for internationalizing higher education. Additional institutional goals include enhancing reputation, strengthening research and knowledge production, and internationalizing the curriculum (Egron-Polok & Hudson, 2010). In its Strategy 2030, the IAU emphasizes societal benefit as the ultimate

goal of the internationalization process (Marinoni et al., 2024).

Jones & de Wit (2014) note that scholarly and public discourse on internationalization in higher education has predominantly centered on the Western world. However, there is increasing recognition that internationalization should not be confined to a Westernized, Anglo-Saxon, or English-speaking framework (Jones & de Wit, 2020). Tight (2022), through a systematic review, confirms that most research in this area originates from the UK, USA, and Australia, with additional national studies identified in Finland, Sweden, and Switzerland for the rest of Europe. Key themes in the literature include international students' adaptation experiences to new educational, linguistic, and social environments (Tight, 2022), as well as their pursuit of personal growth, which fosters intercultural development (Yakunina et al., 2012).

The interdisciplinary nature of migration research is a key strength, as international students are studied by demographers, geographers, sociologists, educators, psychologists, and other scholars. Since 2010, there has been a marked increase in publications on international student mobility. Acculturation theory is frequently employed to examine the experiences and outcomes of these students, with adaptation to new social environments identified as a central component of the acculturation process (Luo et al., 2023). Luo et al. (2023) report that much of the existing research focuses on psychological and socio-cultural adaptation, as outlined by Ward & Rana-Deuba (1999), and explores antecedents

and outcomes of cross-cultural adaptation through acculturation and cross-cultural adaptation theories (Kim, 2001; Berry et al., 2006; Ward & Kennedy, 1999; Shafae & Razak, 2016). Acculturation is assessed by examining changes in practices and values across domains such as language, food preferences, social interactions, clothing, and cognitive patterns. Lifestyle, closely linked to culture (Cormoş, 2022), is also subject to change through interactions in new social environments (Ng et al., 2018). Unlike other populations, international students experience academic adaptation in addition to psychological and socio-cultural adaptation (Zhou et al. 2008; Zhou & Todman, 2009; Jindal-Snape & Ingram, 2013), and socio-cultural adaptation influences academic outcomes. Cultural background plays a crucial role in adaptation (Guzel & Glazer, 2019; Perez-Encinas & Rodriguez-Pomeda, 2019), while other relevant variables include age, sex, education, and duration of study abroad (Duru & Poyrazli, 2011; Guzel & Glazer, 2019). Consequently, international students should not be regarded as a homogeneous group to deconstruct the homogenous portrayal of international students (Popadiuk & Arthur, 2004; Schartner & Young 2016).

Marginson (2023) highlights the dual geography of cross-border education, which encompasses both national and global relationships. In the context of migration research, King (2020) expands upon the foundational questions posed by White & Woods (1980a) by introducing a sixth key question: What are the effects of migration on the migrants themselves?

In light of these considerations, the present study examines the adaptation processes of international students in Serbia, given that international students represent a central component of international mobility in higher education. Namely, the increasing number of students studying abroad (OECD, 2024) is often used as an indicator of internationalization. The primary objective of this study is to investigate the relationships between international students' geographic and socio-demographic characteristics and the changes in various aspects of their lives following their experiences abroad, with particular attention to socio-cultural and academic adaptation in the Serbian context.

International students in the Serbian context

Although a limited number of studies, including Vasojević (2022), Lukić (2025), Markov & Periklieva (2023), Vulić-Prtorić & Oetjen (2017), Németh et al. (2025), and Ćirban et al. (2012), have examined international students in Serbia and neighbouring countries, research on their transition, cross-cultural experiences, and adaptation to university and social life remains scarce. Nevertheless, Serbia has a longstanding tradition of educating international students, dating back to its period as part of the Federal People's Republic of Yugoslavia (FNRY) and, from 1963, the Socialist Federal Republic of Yugoslavia (SFRY). Following World War II, the FNRY, under Tito's

leadership, pursued closer relations with countries in Asia, Africa, and Latin America. One manifestation of this policy was the provision of scholarships to students from African and Asian countries to study in Yugoslavia. The number of international students increased notably after the 1961 Belgrade Non-Aligned Conference (Lazić, 2009). Most of these students, originating from African and Asian non-aligned countries, received Yugoslav scholarships and pursued studies in technical sciences, medicine, economics, and agriculture. At that time, learning Serbo-Croatian was mandatory for international students to facilitate their integration into university and social life and to serve as a means of cultural influence. The primary challenges these students faced involved adapting to a new social environment while maintaining their national and cultural identities (Bondžić, 2011). Drawing on the example of African students in socialist Yugoslavia, Radonjić (2018) argues that the prevailing image of the other is characterized by solidarity. This image was initially constructed by state authorities and, since 1970, has been embraced by the broader population, contributing to the perception of Yugoslavia as a nation of global significance.

In 2010, the Government of the Republic of Serbia, as a successor state to the Socialist Federal Republic of Yugoslavia, launched the World in Serbia scholarship project to commemorate the 50th anniversary of the Non-Aligned Movement's founding in 1961. This initiative provides scholarships for study in Serbia in Serbian to candidates from 127 member and observer countries of the Non-Aligned Movement across Africa, Asia, Central, and South America. The scholarships are available for all levels of study. Recipients are accommodated in the student residence on Avala and participate in a Serbian language course, which is a prerequisite for maintaining scholarship status and commencing academic studies. The scholarship package includes a Serbian language course, a monthly stipend in dinars, free accommodation and meals in student dormitories, basic health insurance as stipulated by regulations and international agreements, a free residence visa, and complimentary recognition of high school or university diplomas. Approximately 200 scholarships are awarded annually through the World in Serbia project. The majority of international students pursue studies in medicine, organisational sciences, technical sciences, and political sciences (Government of the Republic of Serbia, 2024).

Data from the Statistical Office of Serbia indicate a gradual increase in the number of international students in Serbia, both self-funded and scholarship recipients. In the 2015/2016 academic year, there were 10,690 international students, representing 4.3% of the total student population. By 2023/2024, this figure had risen to 11,573, or 4.6% of all students, with projections suggesting continued growth. The number of countries represented by international students also increased from 109 in 2015/2016 to 135 in 2023/2024. In 2015/2016, the largest groups of international students came from Libya

and Saudi Arabia, while in 2023/2024, the leading countries of origin were the Russian Federation, India, Iran, and Nigeria (Statistical Office of the Republic of Serbia, 2017; Statistical Office of the Republic of Serbia, 2024).

Currently, fourteen countries provide scholarships enabling Serbian students to pursue studies abroad (Government of the Republic of Serbia, 2025). Germany and Austria represent prominent destinations for temporary educational migrants from Serbia (Predojević Despić & Lukić, 2024). Participants in international exchange programmes, as well as returnees, frequently emphasize the advanced practical training equipment available at foreign institutions (Vidicki, 2024). For nationals of Western Balkan countries, obtaining a European Union diploma confers a competitive advantage in the labour market (Predojević Despić & Lukić, 2024). Beyond the increased likelihood of employment with a foreign diploma, the perceived quality of academic programmes and the opportunity to experience life abroad also influence students' decisions to study outside Serbia (Stojšin et al., 2023).

Methodology

Data collection

In the Serbian statistical system, international students are defined as those who hold foreign citizenship. This article reports findings from a broader study employing both quantitative and qualitative methods, including an online survey, three focus group discussions, and 19 in-depth interviews (Stojšin, 2025). The data analyzed in this paper were derived from an online LimeSurvey platform conducted between late 2023 and early 2024. The online survey included two versions of the questionnaire. One was for students currently studying outside their home country, and the other was for students who had studied abroad and then returned or moved elsewhere. Both versions were available in Serbian (for students from Serbia studying/studied abroad) and English (for international students studying/studied in Serbia), and making a total of four questionnaires, one for each group. The questionnaires for students studying abroad had 32 questions, while the versions for returnees had one extra question about the year they returned. All questions were closed-ended, but respondents could also provide their own answers. The questionnaires featured four Likert scales with 36 total opinions and five assessment scales. The last ten questions asked about the respondents' socio-demographic details (Stojšin, 2025). After incomplete questionnaires were removed, 222 respondents remained. They were divided into four groups, but the sample was not representative, leading to uneven group sizes. Specifically, it included 127 Serbian students studying abroad or who had returned to Serbia after studying abroad, as well as 95 foreign students studying in

Serbia or who had completed their studies in Serbia and returned to their countries of origin. Eligibility required that participants have studied abroad for at least one academic year, and that they were not older than 35.

Data processing

The data from an online Limesurvey platform were subsequently transferred to Microsoft Excel. After coding, we had a total of 111 variables. A range of statistical techniques was applied in the analysis. Descriptive statistics and bivariate analyses, including t-tests and one-way ANOVA, were conducted based on the data's characteristics. When assumptions for classical ANOVA were not met, Welch's ANOVA was employed. Post hoc comparisons utilized Tukey's and Games-Howell's tests to identify group differences. Effect sizes were calculated and interpreted according to Cohen's criteria (Cohen, 1988). Analyses were performed using SPSS 20.0 for Windows to identify factors influencing specific outcomes.

Recognizing that adaptation levels vary across personal and situational factors, the analysis incorporated statements reflecting respondents' attitudes toward various life domains and their self-perceived changes resulting from studying abroad. Bivariate analyses were conducted to assess statistically significant relationships between these statements and a range of geographic and socio-demographic variables. Initially, participants' perceptions of whether studying abroad had changed them (V1) were examined, followed by an analysis of statements about the types and degrees of changes they had experienced since studying abroad (V2). Responses were collected using a five-point Likert scale. The geographic and socio-demographic variables included sex (male/female) (V3); respondent groups (Serbian students studying abroad and returnees; international students in Serbia and those who returned to their country of origin) (V4); continent and country of origin (Europe/Asia/Africa ; Serbia/Ghana/Nigeria/UAE) (V5 and V6); level of study pursued or completed abroad (V7) (faculty/master's, specialization/PhD), time spent studying abroad (groups with number of years) (V8), and age (up to 24/25-30/over 30) (V9). Given the small number of respondents from the American continents, responses from these respondents were excluded from the analysis of attitudes towards the continent of origin. The analysis by country of origin included only countries with at least 5 respondents in the survey.

Results

Perspectives of respondents regarding the impact of studying abroad on personal development

The sample included 222 students, of whom 122 identified as female and 11 did not declare their sex. Foreign students represented 46 countries, primarily from Europe (40.5%), Africa (27.9%), and Asia (18%), with a

smaller proportion from other continents. Most participants (63%) were aged 20-29 years. The mean duration of residence abroad was 4.27 years (SD = 3.52). The majority of students were enrolled in master's, specialization, or degree-seeking programs.

Survey participants were initially asked to indicate whether, and to what extent, studying abroad had changed them. The largest proportion of respondents (49.5%) reported that studying abroad changed them significantly, whereas only a small minority (3.7%) indicated no change at all (Lukić, 2025). To investigate the relationship between respondents' perceptions of change (V1) and various geographic and socio-demographic characteristics, a series of t-tests and a one-way analysis of variance (ANOVA) were conducted.

A series of t-tests compared responses between two independent groups for the variable under analysis. The results indicated no statistically significant differences in attitudes between male and female respondents, nor between Serbian and foreign respondents, regarding the impact of studying abroad. An ANOVA was conducted to compare attitudes across three or more respondent groups regarding the extent to which studying abroad had changed them (Table 1). The analysis revealed statistically significant differences between respondents' attitudes and their highest level of education attained or anticipated. Specifically, those with a doctorate reported

greater perceived change from studying abroad compared to those with lower educational attainment (a bachelor's or master's degree). The effect size (eta squared = 0.02) suggests a weak association between these variables.

Table 1. Variations in respondents' attitudes regarding the impact of studying abroad based on the highest level of education attained during their studies abroad

Attitude about the change they experienced while studying abroad (V1)	V7	Mean value			F	p*
		Faculty (70)	Master's/Msc. Specialization (88)	PhD (46)		
		3.29	3.17	3.52	3.44	0.035

(*p<0.05)

The ANOVA test revealed a relationship between attitudes regarding the impact of studying abroad and the duration of the respondents' stay in the host country. Post hoc analyses identified significant differences between specific groups. Respondents who remained abroad for seven years reported greater changes than those who stayed for five years (Table 2). The effect size, measured by eta-squared, was 0.08, indicating a medium effect.

Table 2. Differences in respondents' attitudes regarding the impact of studying abroad as a function of the length of stay in the host country

Attitude about the change they experienced while studying abroad (V1)	V8	Mean value							F	p*
		One year (28)	Two years (38)	Three years (26)	Four years (30)	Five years (21)	Six years (17)	Seven and more years (34)		
		3.11	3.45	3.46	3.03	3.00	3.29	3.65	2.877	0.014

(*p<0.05)

Analysis of this statement by continent and country of origin, including respondents from Europe, Asia, Africa, Serbia, and several other countries, revealed no statistically significant relationships, as indicated by ANOVA results. Similarly, examination of attitudes by age indicated no statistically significant differences among respondent age groups. No differences in respondents' attitudes regarding the impact of studying abroad were observed.

Attitudes regarding the types and extent of changes experienced by respondents since commencing their studies abroad

Participants were presented with statements regarding various types and degrees of personality changes, such as clothing style and eating habits, that may have occurred since studying abroad (Table 3). Most

respondents reported a change in eating habits (60.2%), whereas the majority indicated no change in clothing style (57.1%). Approximately half (50.7%) reported a change in their opinion about their country of origin, while 40.7% did not, and 8.6% remained neutral. Over half (52.5%) stated that their attitude towards friends from their own country had not changed, though 37.9% reported some change and 9.6% were neutral. Regarding attitudes towards family, 55.3% indicated little or no change, 32.8% reported a change, and 11.9% were neutral. Most respondents (60.3%) reported changes in how they spend their free time, and 68.1% noted a shift in their desired lifestyle. Similarly, 61.6% indicated that their career aspirations had changed, either completely or partially, since studying abroad. A majority (59.4%) also reported that their attitude towards other cultures had changed to some extent during their time abroad.

Table 3. Perspectives on the nature and magnitude of changes experienced by respondents since departing to study abroad

Variables	Mean value
My eating habits (V2 ₁)	2.68
The way I feel about my country of origin (V2 ₂)	2.96
The way I dress (V2 ₃)	3.42
My attitude toward friends from my country of origin (V2 ₄)	3.36
My attitude towards my family (V2 ₅)	3.55
The way I spend my free time (V2 ₆)	2.64
The way I want to live my life (V2 ₇)	2.34
The relationship toward a career I wish to pursue (V2 ₈)	2.48
My attitude toward other cultures (V2 ₉)	2.59
<i>What has changed in your life since you went abroad and to what extent? 1 – entirely; 2 – mostly; 3 – undecided; 4 – partly; 5 – not at all</i>	

Consistent with the previous chapter, the influence of geographic and socio-demographic characteristics on the statements in Table 3 was examined using a series of t-tests and a one-way analysis of variance.

The t-tests revealed a statistically significant relationship between respondent groups and the variables V2₇ and V2₉. Respondents from Serbia reported a greater change in their views on lifestyle compared to students who are currently studying or have studied in Serbia. Similarly, respondents from Serbia indicated a greater change in attitudes towards other cultures than international students studying or having studied in Serbia (Table 4).

The effect sizes for V2₇ (eta squared = 0.04) and V2₉ (eta squared = 0.02) indicate a weak relationship between the analysed variables.

Table 4. Differences in respondents' attitudes concerning changes in their perspectives on lifestyle and attitudes toward other cultures by respondent group

Variables		Mean value		t	p*
		Students from Serbia (studying abroad/had studied abroad) (126)	International students (studying in Serbia/had studied in Serbia) (93)		
The way I want to live my life (V2 ₇)	V4	2.12	2.65	-2.986	0.004
My attitude toward other cultures (V2 ₉)		2.40	2.84	-2.307	0.022

Table 5. Sex-based differences in respondents' attitudes toward changes in their preferred way of life

The way I want to live my life (V2 ₇)	V3	Mean value		t	p*
		Male (89)	Female (122)		
		2.15	2.57	-2.348	0.020

(*p < 0.05)

The analysis confirmed a relationship between respondents' sex and variable V2₇. Specifically, male respondents reported a greater change in their desired lifestyle compared to female respondents (Table 5). The effect size in this case (eta squared = 0.03), consistent with most previous findings, indicates a small effect.

Further analysis indicated that the continent of origin influences specific attitudes. The results demonstrated differences in the perspectives of European, African, and Asian students regarding variables V2₂ and V2₅ (Table 6). Post hoc tests identified that European and Asian students were significantly more likely to report a change in their opinion about their own country, whereas most African respondents indicated that such a change had not occurred. Similarly, analysis of attitudes toward family revealed a distinction between African students and their

European and Asian counterparts. African students predominantly reported no change in family relationships, while the majority of European and Asian students indicated that their relationships had changed since studying abroad. For both variables analyzed (eta squared = 0.06 for V2₂ and V2₅), a medium effect size was observed.

The analysis of attitudes by country of origin revealed an association between attitudes toward changing the way people dress (V2₃), attitudes toward family (V2₅), and country of origin (Table 7).

In the country-level analysis, only countries with at least five respondents (Nigeria, Ghana, and the UAE) were included, and their attitudes were compared to those of students from Serbia.

Table 6. Differences in respondents' attitudes toward changes in perception of their country and attitudes toward family by continent of origin

Variables		Mean value			F	p*
		Europe (152)	Africa (32)	Asia (26)		
The way I feel about my country of origin (V2 ₂)	V5	2.89	3.69	2.58	6.213	0.002
My attitude towards my family (V2 ₅)		3.42	4.31	3.19	6.533	0.002

(*p < 0.05)

Table 7. Differences in respondents' attitudes toward changes in dress style and attitudes toward family, based on the country of origin

Variables		Mean value				F	p*
		Serbia (109)	Nigeria (7)	Ghana (7)	UAE (5)		
The way I dress (V2 ₃)	V6	3.44	3.29	2.43	4.40	5.028	0.021
My attitude towards my family (V2 ₅)		3.47	4.14	4.71	3.00	9.683	0.002

(*p < 0.05)

Table 8. Differences in respondents' attitudes toward changes in leisure activities by age group

Free time (V2 ₆)	V9	Mean value			F	p*
		Up to 24 (82)	25-30 (71)	Over 30 (58)		
		2.38	2.63	2.98		

Subsequent analyses revealed differences in attitudes toward dressing between respondents from Serbia and the UAE. Respondents from Serbia were more undecided about changes in their dressing style since studying abroad, whereas most respondents from the UAE reported that their dressing style had changed. Differences were also observed regarding attitudes toward family relationships. Specifically, Serbian respondents were more likely to report changes in their relationships with their families, whereas most respondents from Ghana reported no such change (Table 7). The effect sizes for both variables (eta squared = 0.05 for V2₃ and for V2₅) suggest a small effect.

Analysis of attitudes by age group indicated an association between age and perceptions of changes in free-time activities (V2₆). Younger respondents (up to 24 years old) were more likely to report changes in how they spend their free time compared to older respondents (over 30 years old) (Table 8). An eta squared value of 0.04 indicates a small effect.

Further analysis indicated that, for variables V2₁, V2₄, and V2₈, none of the examined geographic or socio-demographic characteristics -including sex, age, respondent group (students from Serbia studying abroad, those who returned from studies abroad, international students in Serbia, and international students who studied in Serbia and returned to their country of origin), continent and country of origin, level of study pursued

abroad, or duration of study abroad—significantly influenced the respondents' answers.

Discussion

Findings on international students in Serbia support Findlay et al. (2012) observation that international student mobility is shaped by cultural, political, societal, and economic factors. These students encounter various challenges as they adapt to their new environment, including unfamiliar societal values, customs, and norms. Changes (personal growth and transformations) due to studying abroad as noticed by participants and their family and friends in the Serbian context are seen as beneficial (Lukić, 2025). We found significant changes in how international students from/in Serbia spend their free time, their career aspirations and a shift in their desired lifestyle. Empirical data from Poland also show that most international students adopt new life perspectives (75%). The origin of students affected the level of personal and cultural changes, while socio-economic factors and the value placed on free time also differed between the groups (Mutlu et al., 2010). Our findings show that geographic background does not affect respondents' perceptions of personal change from studying abroad. Among socio-demographic factors, only the highest level of study and length of stay in the host country are statistically significant. Students with a PhD and those

students who lived longer abroad reported greater personal change, with length of stay having a stronger effect. These findings align with previous research indicating that longer residence in the host country is associated with reduced acculturative stress, improved psychological adjustment, and increased familiarity with the host culture (Kashima & Loh, 2006; Thomas & Sumathi, 2016). Previous research shows that the length of stay abroad is a key factor that directly influences acculturative stress levels and the quality of international students' adaptation. Students who remain in a foreign country for extended periods of time, particularly beyond the first year, report significantly lower stress levels compared to those in the initial stages of their stay. The passage of time facilitates "cultural learning," a central concept in cultural adaptation theory, suggesting that duration of stay serves as a resource for acquiring specific competencies. This process enables students to develop enhanced social skills, broaden their interactions and networks with the local population, and improve language proficiency. Increased engagement with local residents and a deeper understanding of host country norms directly mitigate feelings of isolation and culture shock (Yu & Wright, 2016; Ward & Kennedy, 1999). Nevertheless, research on international students in Croatia, that was also part of Yugoslav federation, did not identify significant differences in socio-cultural adaptation by length of stay, contradicting earlier findings. Students who demonstrated better socio-cultural adaptation also exhibited improved socio-psychological adjustment (Vulić Prtorić & Oetjen, 2017).

Although the length of stay is often cited as a key factor in adaptation, Schartner & Young (2016) indicate the difference between different levels of study and how acculturation develops over time. They emphasize that the level of study (undergraduate vs. graduate) is a critical variable that may fundamentally determine how students adjust, suggesting that academic demands and developmental stages shape socio-cultural and psychological outcomes differently. Undergraduate students are more susceptible to nostalgia. In contrast, postgraduate students, including those pursuing master's and doctoral degrees, tend to adapt to socio-cultural environments more rapidly due to prior life experience and more clearly defined academic and professional goals. Younger students at the undergraduate level are more likely to depend on peer support (Kashima & Loh, 2006). Our findings show that students pursuing/gained PhD abroad reported greater personal change, compared to other students.

Gender analysis is essential in migration studies and constitutes a significant factor influencing migration processes. Identifying and emphasizing gender-specific changes experienced by male and female international students is essential for adopting a gender-sensitive approach in migration research. Female international students may face greater challenges in socio-cultural

adaptation due to cultural restrictions, prevailing social norms in the host society, or perceived discrimination. Guzel & Glazer (2016) found that self-identified male and female international students in the northern California University did not differ regarding socio-cultural adaptation difficulty although male international students reported more social interaction difficulty than women, that could hinder adaptation. Our findings indicate that gender differences are evident only in the extent of change regarding preferred lifestyles, with men exhibiting more pronounced shifts.

We found that age is associated with changes in leisure activities, as younger students report greater confidence that their free-time habits have changed since studying abroad. In contrast, older students typically encounter greater difficulty in modifying their established habits. According to a literature review by Luo & Zhang (2021), duration of stay and age are key demographic factors influencing cross-cultural adaptation of international students. While a longer duration of stay increases familiarity with social norms, older individuals often demonstrate reduced adaptability due to a lower willingness to alter established values, heightened social isolation, and more complex responsibilities, including family and career obligations, in comparison to younger students.

Both individual characteristics and varied socio-cultural backgrounds shape the experiences and adaptation processes of international students. Students from collectivistic cultures, such as those in many Asian societies, often encounter acculturation stress when exposed to unfamiliar cultural norms and values. Research from the United States demonstrates that Asian students are more likely to use passive coping strategies for stress and face greater difficulties with social adaptation than their European peers. In contrast, European students tend to integrate more quickly, which may be attributed to reduced cultural distance and more closely aligned academic expectations (Fritz, 2008). Studies by Tullah (2024) and Ngwira et al. (2024) suggest that an international student's continent and country of origin play a significant role in determining their adaptation trajectory. Tullah (2023) argues that geographical distance serves as an indicator of cultural and structural barriers, with greater physical distance often resulting in slower socio-cultural integration. Ngwira et al. (2024) further note that these challenges manifest as continent-specific stressors encountered by international students as they navigate new social environments. Furthermore, differences in living standards between the country of origin and the host country contribute to financial insecurity-related stress, which frequently serves as a primary factor in unsuccessful adaptation. Students from conflict zones, such as Ukraine and the Middle East, experience concerns about family members that impede their adaptation.

We found variations in international students' attitudes toward their families based on continent and country of origin. African students, particularly those from Ghana, predominantly reported no change in family relationships, whereas Asian and European students, as well as those from Serbia, reported the opposite. These findings are significant, as Mutlu et al. (2010) demonstrate that maintaining strong relationships with parents after studying abroad is crucial. Family and friends serve as key support systems for international students from diverse backgrounds. Disconnection from established social networks, due to challenges in sustaining these relationships, increases vulnerability to loneliness and impedes adaptation to new social environments (Ng et al., 2018).

As higher education becomes increasingly international, cross-cultural adaptation emerges as a significant source of stress and anxiety for international students. It is essential for education policymakers to understand and address this issue. Previous research offers a comprehensive understanding of how cultural adaptation and the embrace of cultural diversity positively influence international students, including their academic achievement, mental health, and intercultural competence (Shafaei & Razak, 2016; Oleganju et al., 2024). In Serbia, personal growth and transformation resulting from studying abroad, as observed by participants, their families, and friends, are also regarded as beneficial (Lukić, 2025).

Crăciun (2018), through an analysis of national higher education policy documents, determined that higher education internationalization remains limited globally. Specifically, 80% of countries lack a national higher education internationalization strategy, while only 11%—22 out of 195—have an official strategy. These countries are primarily European, economically developed, and attract substantial numbers of international students. In 2021, the Government of Serbia adopted the Strategy for the Development of Education in Serbia by 2030. Specific objective 2.2 aims to enhance the relevance of higher education at both national and international levels by increasing enrolment in study programs offered in foreign languages (both face-to-face and online), expanding participation in joint international study programs, and raising the number of students in internationally accredited programs. Achieving this objective requires targeted support for internationalizing higher education. In the context of internationalization, the Ministry of Education, Science, and Technological Development of the Republic of Serbia provides ongoing support to higher education institutions for developing, accrediting and promoting study programs in foreign languages at all levels. Financial resources are aimed to be allocated for the development of high-demand online study programs in foreign languages, as well as for the creation of joint international study programs at all levels. To support foreign students in Serbia, the Ministry of Foreign Affairs

and Trade aims to coordinate with relevant ministries, institutions, and bodies to simplify procedures for foreign citizens wishing to study in the Republic of Serbia (Government of the Republic of Serbia, 2021).

Conclusions

Broader patterns of social transformation linked to international education highlight the necessity for further research and a more comprehensive understanding of the effects of internationalisation. International students constitute a distinct temporary migrant group that seeks to enhance their human capital at particular stage of the life course. Studying abroad facilitates substantial personal transformation for international students. Moreover, socio-cultural shifts in identification and sense of belonging, driven by mobility, can affect their decisions to stay in the country of study or return to their country of origin. The results indicate that, among international students from and in Serbia, only the highest level of study gained abroad and the duration of stay in the host country are statistically significant predictors of life changes and socio-cultural adaptation. A medium effect size was identified solely for the duration of stay.

The most pronounced changes among international students from and in Serbia were observed in attitudes toward other cultures, leisure activities, preferred lifestyles, and career aspirations. The types and extent of changes experienced since commencing studies abroad varied by respondent group, sex, age, continent, and country of origin. These findings corroborate previous research, which has demonstrated that such variables influence the acculturation and adaptation of international students across diverse cultural backgrounds and geographic regions. A medium effect size was found exclusively for attitudes regarding changes in perceptions of one's country and family when analyzed by continent of origin. By focusing on Serbia, this study contributes to broadening the predominantly Western perspective in research on international student adjustment in a new socio-cultural setting. Successful cross-cultural adaptation among international students can enhance satisfaction with academic performance and contribute to the positive reputation of Serbia's educational institutions.

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Informed Consent Statement

Based on insights from the project documentation regarding the anonymity of respondents, the use of data,

and data storage, the overall research was approved by the Ethics Committee of the Institute of Social Sciences under No. 527/2022. Furthermore, for an online survey, the positive decision of the Ethics committee of the Institute of Social Sciences was given additionally (No. 00-1637/2023) after the adopted changes in the questionnaire, which related to the omission of a question about respondent's academic discipline (faculty), which the Ethics committee saw as a possibility to identify the respondents. The questionnaire included a brief introductory section that informed participants of the research's purpose, data confidentiality, and data use.

Conflicts of interest

The author declares no conflict of interest.

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