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# The push-pull factor model and its implications for the retention of international students in the host country

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## Abstract

**Purpose** – Due to high demand for international talents and skilful workforces, many countries around the world, especially the ageing populations are now looking for new ways and strategies to attract more international talent. Drawing on push-pull factor theory, integrated with theory of reasoned action (TRA), this research examines international students' intention to stay or to leave the host country after completion of the students' studies.

**Design/methodology/approach** – A conceptual model has been proposed and evaluated aimed at understanding the factors that influence the decision-making of international students studying in Finland. Data were collected from a sample of 292 international students in Finland and structural equation modelling (SEM) was used to analyse the data and examine the relationships between various constructs in the model.

**Findings** – The SEM results show that several factors influence students' decision to stay or leave the host country after graduation. Aspects related to host country, institutional and economic factors and social influence (norms) directly impact students' attitude towards staying. In addition, attitude towards staying not only has a direct impact on the intention to stay, but also mediates the relationship between different pulling factors and students' intention to stay in the host country. Moreover, challenges and barriers (such as local language, challenge of finding employment and challenge of assimilating into the community or making friends) have a negative impact on the decision to stay in the host country.

**Originality/value** – This study uses push-pull theory in the Finnish context, contributing to the growing body of literature on international education policies and practices. The findings highlight the need for a more holistic approach to supporting international students, one that considers the students' unique needs and experiences in the host country and provides the students with the necessary resources and support to succeed.

**Keywords** Host country, International students, Student migration, Student mobility, Push-pull factor model

**Paper type** Research paper

## 1. Introduction

The demand for international career mobility has been made more urgent by the scarcity of domestic human resources in different parts of the world and this problem is particularly acute amongst the countries with ageing population (McDaniel *et al.*, 2015; Privara *et al.*, 2020; Segendorf and Theobald, 2019; Whysall *et al.*, 2019). One of the strategies different countries use to address the gap in expert and skilled workforce is focussing on attracting international talents (Cerna and Czaika, 2021; Chand and Tung, 2019; Thomas and Inkpen, 2017). Gesing and Glass (2019) argue that many countries around the world, especially countries with



insufficient skilled workers, have started to realise the value of talented international students, especially graduates (Singh, 2020).

Since international students obtain knowledge and develop skills during their studies in the host countries, international graduates are viewed as a short cut to boosting the number of skilled talents in the country where they studied and graduated (Farivar *et al.*, 2019). However, several countries experiencing a shortage of skilled workers have also observed that numerous international graduates depart from the host country after completing their education for various reasons (Han *et al.*, 2015; Istad *et al.*, 2021) and they either go back home or seek job opportunities elsewhere (Li and Bray, 2007). This has led to a brain drain in the host countries (mostly developed nations) (Docquier and Rapoport, 2012; Han *et al.*, 2015).

In this regard, research on international student migration focusses on how international student choose their study destinations (Mazzarol and Soutar, 2002; Mok *et al.*, 2021; Nicholls, 2018; Shields, 2019), or students' retention within higher education institutions (Aljohani, 2016; Burke, 2019). However, only few studies have focussed on post-graduations mobility intention and even less have investigated factors that influence international students' intention that might lead to an action after completing their studies. In this regard, literature lacks contributions that identify the role of the host country in facilitating student's adjustment process. We noticed a gap in the literature when it comes to examining students' attitude towards staying in the host country and that how their intentions are influenced by their surroundings.

This paper aims to contribute to the existing body of knowledge by exploring factors influencing the intention of international student to stay in or leave the host country. The research context is Finland as the country faces shortage of skilful workforce (Přivara *et al.*, 2020). According to Li and Pitkänen (2018), Finland has recently revised its national and visa policies to address the shrinking workforce and remain competitive. The government's objective is to retain competent international students and workers. The alterations made to the student residence permits aim to facilitate the completion of studies and post-graduation employment for international students. By keeping these talented students in the country, the government anticipates strengthening their job prospects after graduation and maintaining competitiveness (Mathies and Karhunen, 2021). As stated by Cai and Kivistö (2013), the growing number of international students in Finland is likely the reason behind the country's increasing popularity as a study destination. This has led to the perception that international education indirectly contributes to the Finnish economy (Evans *et al.*, 2018). However, despite the success in attracting a significant number of international students, there is still limited knowledge about the factors that motivate students to pursue higher education in Finland, as noted by Mathies and Karhunen (2021). Additionally, there is insufficient research on the factors that may discourage students from studying abroad and how these factors affect their decision-making process and behavioural intention (Fowlie and Forder, 2018; Nikou *et al.*, 2018).

From a theoretical standpoint, the theory of push-pull factors (Tran *et al.*, 2021), as well as the theory of reasoned action (TRA) (Fishbein, 1979) will be used as the theoretical foundations to identify the determinants of international students' decision to stay or to leave host country. The push-pull factor theory has its roots in the study of human migration (Lee, 1966), which views migration as the result of how push and pull influences a person moves from one place to another (Chang *et al.*, 2014). In the context of this research, the push-pull theory enables to determine how and what factors pull international students to stay in host country and how and what factors push them to leave the country. The research question guiding this research is:

*RQ.* What factors influence the intention of the international students to stay or leave the host country after graduation?

This paper presents empirical data and quantitative analysis to provide new insights into the factors that influence international student's decision to stay or leave the host country and demonstrates how these insights contribute to the broader body of research on international students' migration. This paper provides a clear context for the case of international students in Finland and this will involve discussing the economic and social factors that are relevant to international students' migration in Finland. By providing a detailed analysis of the factors that influence international students' decision and demonstrating the potential practical implications of the research findings, this paper aims to make a unique contribution to the field of international students' research.

The paper is organised as follows: [Section 2](#) reviews previous findings on students' post-graduation plans. [Section 3](#) presents the theoretical model and hypotheses. [Section 4](#) covers research methodology and data collection. [Section 5](#) discusses the results. [Section 6](#) provides discussion, conclusion and limitations with recommendations for future research.

## 2. Literature review

Literature shows that several factors influence international graduates' decisions to stay or leave the host country such as political, personal and social factors ([Agnihotri et al., 2023](#); [Bredenkamp et al., 2023](#); [Fowlie and Forder, 2018](#); [Li and Bray, 2007](#)). [Farivar et al. \(2019\)](#) explored push-pull factors related to international student mobility by examining graduates who changed their initial career mobility intentions, despite originally planning to leave the host country after graduation. Some studies have examined factors influencing students' decision to stay in the host country after graduation ([Han et al., 2015](#); [Millea et al., 2018](#); [Shen and Herr, 2004](#)). For example, [Gesing and Glass \(2019\)](#) explored the influence of political, economic and social factors on international students' intention to stay in or leave the USA after completing their studies. [Baruch et al. \(2007\)](#) identified the perception of the labour market, adjustment and settlement processes, family ties and social support as the most impactful factors affecting students' intention to stay or leave the host country after their studies.

Other studies tend to identify influential factors based on home country vs host country ([Gesing and Glass, 2019](#); [Rivas et al., 2019](#)). Some research shows that due to cultural differences between home and host countries, international students often face many challenges when deciding to study abroad ([Kruanak and Ruangkanjanases, 2014](#)). An exemplary instance would be the comparison conducted by [Kruanak and Ruangkanjanases \(2014\)](#) between student life in a student's home country and their new life in the host country. This study specifically concentrates on the cultural, social and economic differences and challenges encountered by the students. Furthermore, based on their research, [Baruch et al. \(2007\)](#) discovered that the decision of students who come to study in the UK and the USA to either remain in the host country or return to their home country is influenced by their level of adjustment in the host country. Other studies have examined the impact of cultural distance on students' intention to leave the host country after graduation ([Fouarge et al., 2019](#)). [Baruch et al. \(2007\)](#) reported that students from China, Taiwan, Thailand, Africa, the Arabian Peninsula and Latin America have a higher inclination to return to their home countries due to cultural adaptation issues. The study found that students from diverse cultural backgrounds struggle to adjust to new environments, which leads to a higher tendency to return to their home countries.

In addition, [Tran et al. \(2021\)](#) found that in the context of Chinese graduate returnees, in addition to the incentives of salary and good working environments which support their career prospects and professional advancement, being recruited into the reputable firms in big cities provides strong motive to return to their home country after graduation. Moreover, [Gribble et al. \(2015\)](#) found that enhancing the employability skills of international students

via integrated career education such as an English language proficiency training and soft skills development are central to success of international students' employability.

### 3. Theoretical background and hypothesis development

This section uses the push-pull factor theory as a theoretical lens to understand this phenomenon from theoretical standpoint (Curtis and Ledgerwood, 2018; Nghia, 2019; Nghiêm-Phú and Nguyễn, 2020). Some prior studies attempted to examine the attractive factors (such as economic, institutional and environmental) that impact students' decisions to study abroad and, possibly, to remain in the host country once their studies are finished. For example, Istad *et al.* (2021) discovered that the students' intentions to do so are positively correlated with their satisfaction with their academic performance, social adjustment and quality of life in South Korea.

Mazzarol and Soutar (2002) evaluated prospective students from four different countries (Indonesia, Chinese Taiwan, India and Mainland China) using the push-pull factor theory to explain why some students choose to study abroad or opt to stay in the host country. The results revealed that characteristics associated with the host country (pull factors) act as attractions for students, whilst factors related to the home country (push factors) serve as motivations for students to pursue studies abroad. The push factors identified were (1) the perception amongst students that studying abroad is better than studying locally, (2) difficulties in getting into the local educational institutions, (3) unavailability of preferred study programmes, (4) willingness to get a better understanding of the West and (5) the intention of settling in the host country. In addition, the pull factors influencing students' decision to choose a host country were (1) knowledge and awareness, (2) cost issues, (3) environment, (4) geographic proximity, (5) social links and (6) personal recommendation.

Alberts and Hazen (2005) found professional, societal and personal factors influencing international students' decision to stay in the USA or return home. Professional factors were more likely to encourage students to stay, whilst cultural and personal reasons motivated them to leave. Similarly, Eder *et al.* (2010) found that personal growth, language improvement and career growth were push factors, whilst college-related issues, physical geography and cultural attraction were pull factors for students going to the USA. Structural factors such as visa issues and living costs were identified as constraints in the decision-making process of the international students. Maringe (2006) also stated that multiple push-pull factors come into play in students' decision to study and live in abroad. For example, Abbas and Sagsan (2020) stated that poor education quality and low career prospects in the home country are the push factors that influence young people to decide to go abroad to study. Furthermore, Findlay *et al.* (2016) suggested that a collection of pull factors makes a specific country stand out amongst others. For instance, a country's development regarding its infrastructure and facilities (Shakoor *et al.*, 2021), career prospects, higher quality educational institutions and the market value of graduates are some of the highly influencing factors amongst young people that influence them to choose a specific country.

Similarly, Pimpa (2003) suggested that the opinion of family members and recommendation of others are critical factors influencing an individual's behaviour and thus should be treated as a major force in the student's decision to go abroad. A similar suggestion was stated in the study conducted by Bourke (2000), where the authors argued that suggestions and views from family members and closest friends were found to influence student's choice of the host country for abroad studies. Furthermore, recommendations from friends and family (Bourke, 2000; Mazzarol and Soutar, 2002) and recommendations from agents (Gatfield and Chen, 2006) have been discussed in these studies to explain the pull factors that influence students' decision to move or to stay abroad.

Chen (2016, 2006) studied the decision-making process and the influential factors regarding East Asian international students' intentions to go to the Canadian graduate schools.

The results showed that several factors influenced the decision of the students to choose these graduate schools. The major factors highlighted were the tuition fees, scholarships, the quality of the country's education and the visa process. A similar study was carried out by Branco Oliveira and Soares (2016) in Portugal where 298 international students participated in the research. The results showed that the reputation and quality of the university (institution) were the most attractive factors to influence students' decisions and concluded that students mostly rely on personal contacts for the information needed to make the decision. Moreover, some studies have also discussed factors like reputation of the country or education quality in attracting international students or encouraging them to stay in the host country (Binsardi and Ekwulugo, 2003; Mazzarol and Soutar, 2002). In addition, awareness about the country amongst international students was stated as one of the six pull factors influencing students to make study abroad decisions (Mazzarol and Soutar, 2002).

We also discovered that several attractive aspects of the host country's educational institutions like the quality of teaching (Maringe and Carter, 2007) and the reputation of the institution (Chen, 2006, 2007) influence the study abroad decision of the international students. Moreover, different environmental factors like the good climate of the host country, English-speaking environment (Mazzarol and Soutar, 2002), study environment (Chen, 2007) and safety (Binsardi and Ekwulugo, 2003) have been discussed in multiple studies. All in all, it can be concluded that multiple factors influence student's decision to stay in the host country. Hence, we postulate:

- H1. Aspects related to host country positively influence students' attitude towards staying.
- H2. Institutional factors positively influence students' attitude towards staying.
- H3. Economical factors positively influence students' attitude towards staying.
- H4. Environmental factors positively influence students' attitude towards staying.
- H5. Recommendation of friends and relatives positively influence students' attitude towards staying.

In addition, the concept of social influence, which refers to "the processes whereby people directly or indirectly influence the thoughts, feelings and actions of others" may have a direct and positive impact on the student's attitude towards staying (intention to stay in the host country), hence:

- H6. Social influence (norms) positively influence students' attitude towards staying.

It can also be assumed that the positive attitude towards staying contributes to the decision of international students to stay in the host country after completion of their studies, hence:

- H7. Attitude towards staying positively influence students' intention to stay in the host country.

### *3.1 Push (challenges and barriers) factors*

This section reviews and identifies challenges faced by international students, which make students to decide to leave the host country. Literature shows that the lower level of social satisfaction amongst international students in the USA has been found to be as one of the most influential challenging reasons for leaving the host country after finishing studies (Van Horne *et al.*, 2018). The host country's academic standards and the issue of racial discrimination were also mentioned by Lee (2015) and Alho (2020), as potential barriers to stay for international students who encountered these issues in the host country.

Similarly, several prior studies reported that international students whose first language is not English, encounter socio-linguistic difficulties in the host country (Yan and Berliner, 2013; Zhou *et al.*, 2011). Chan (2013) argue that non-native speakers of the language feel embarrassed about their lack of fluency and that they believe they are being unfairly judged by the native speakers. Moreover, studies regarding the challenges faced by international students in the UK have found that factors such as homesickness, feeling of being isolated, stress and depression, culture shock and even dietary issues were amongst the main barriers and challenges influencing students to leave the host country when they finish their studies (Alloh *et al.*, 2018; Cowley and Hyams-Ssekasi, 2018).

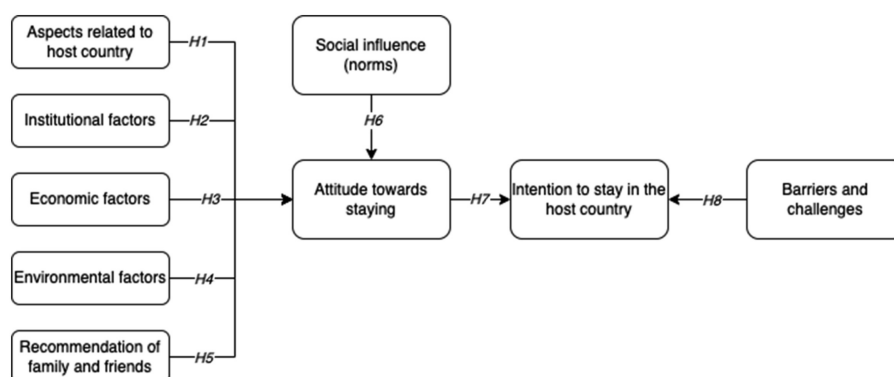
Moreover, cost-related factors like tuition fees, living costs and travel costs were found as influencing factors in international students' decision-making process to stay in or leave the host country (Binsardi and Ekwulugo, 2003; Chen, 2006; Eder *et al.*, 2010; Maringe and Carter, 2007; Mazzarol and Soutar, 2002). In addition, challenges like culture shock (Alloh *et al.*, 2018; Cowley and Hyams-Ssekasi, 2018), local language difficulty (Yan and Berliner, 2013; Zhou *et al.*, 2011), racial discrimination (Lee, 2015), lack of financial aid (Wan, 2001) have been identified as the main challenges that international students face whilst being in the host country. Thus, we propose the following hypothesis:

*H8.* Barriers and challenges (push factors) faced by international students in the host country has a direct negative effect on the intention to stay in the host country.

Based on the theoretical discussion presented above, this research develops a conceptual model (see Figure 1).

#### 4. Methodology

This research follows the Finnish National Board on Research Integrity (TENK) Ethical principles of research with human participants and ethical review in the human sciences in Finland and other instructions and regulations. By using the knowledge and insights gained from the literature review, a survey questionnaire was developed to collect data. The collected data and research hypotheses were examined and analysed through partial least square structure equation modelling (PLS-SEM). The use of PLS-SEM as the statistical analysis technique adds rigour to the study, enabling the examination of multiple factors and relationships within a theoretical model and testing the research hypotheses (Sarstedt *et al.*, 2014). By moving beyond traditional qualitative research and testing a theoretical model, we



**Figure 1.**  
Research model

Source(s): Figure by authors



aim to enhance our understanding of the antecedents influencing international students' decisions to stay in or leave Finland after completing their studies. The research methodology employed holds also practical implications for policymakers, educational institutions and other stakeholders by providing several evidence-based insights that can inform decision-making and contribute to the development of effective strategies to attract and retain international students.

Drawing from the push-pull factor theory and a part of the TRA (Ajzen, 1991; Fishbein, 1979), we tested three sets of antecedents: (1) pull factors (five dimensions), (2) push factors (challenges and barriers) and (3) social influence (norms) together with attitude towards staying and assessed how these antecedents impact the outcome variable (intention to stay). The survey consisted of two sections: section one collects demographic information and section two collect data to measure the items (survey indicators) forming the nine constructs in the research conceptual model. It should be stated that we only surveyed students currently leaving in Finland, as Finland is the research context.

#### *4.1 Measures*

In this research, we used previously tested and validated survey measures. For example, measures for pull factors (aspects related to the host country, institutional factors, economic factors, environmental factors and recommendation from family and friends) were derived from Mazzarol and Soutar (2002) and Kruanak and Ruangkanjanases (2014). Survey items for measuring attitude towards staying and social norms (influence) were derived from Baruch *et al.* (2007), Okun *et al.* (2002) and Teo (2010). Items measuring push factors (challenges and barriers) were derived from Alloh *et al.* (2018), Van Horne *et al.* (2018) and Yan and Berliner (2013). Finally, items for measuring intention to stay in the host country were derived from Okun *et al.* (2002) and Teo (2010). All survey items were measured with the 5-points Likert scales, from 1 “strongly disagree” to 5 being “strongly agree”.

#### *4.2 Data collection*

An online survey was distributed amongst the universities in Finland. Prior to the distribution, the survey was pre-tested by an expert panel of professors, senior lecturers and researchers, as well as international students to check for the clarity of the survey statements. All comments and feedback received were used to adjust the readability, language and clarity of the survey. The invitations were sent to international students in Finnish universities over six weeks from October to November 2022. Many respondents did not qualify for our sampling strategy either because they were not international students, or they were just visiting Finland for a shorter period of time. However, exchange students if they were in Finland at least for one complete semester were included. The survey was opened by 720 potential respondents, 453 have started the survey, but at the end we collected 320 complete responses.

### **5. Data analysis and descriptive results**

We used Smart PLS v.4 to analyse the data. Of the 320 respondents, 28 were disqualified from further analysis as they did not engage fully in the survey or gave insufficient information. As a result, the final dataset contained 292 responses and 171 (58.6%) were females, 111 (38%) were males and 10 (3.4%) preferred not to indicate their gender. The age range was 21–30 ( $n = 215$  (73.6%)), 30–35 ( $n = 40$  (13.7%)) and over 35 years old ( $n = 26$  (8.9%)). When asked to choose the option, which describes you the best, the following information was found. I am currently an international student ( $n = 243$  (83.22%)), I have studied in Finland as



an international student ( $n = 25$  (8.55%)), I am an exchange student ( $n = 22$  (7.5%)) and I have studied in Finland as an exchange student ( $n = 2$  (0.7%)).

Of the respondents, 134 (45.9%) studied for a bachelor's degree, 147 (50.4%) were studied for a master's degree and 3 (1%) were PhD students. Of the respondents, 58 (19.9%) were married, 217 (74.3%) were single and 17 (5.8%) did not want to reveal their marital status. Respondents were mostly from Iran, Germany, China, India, Bangladesh, Italy, Nepal, Nigeria, Pakistan, Russia, Spain, Sri Lanka, the UK, the USA, Turkey and Vietnam. Also, more than 90% of the respondents indicated that they do not have other nationalities.

### 5.1 Measurement results: validity and internal reliability

Several statistical tests such as factor loadings, Composite Reliability (CR), Average Variance Extracted (AVE), Cronbach's alpha and Discriminant Validity were computed to check the internal validity, reliability and consistency of the scales. All survey items (except for a few items) exceeded the recommended threshold value of 0.70 for factor loadings (see Table 1). The internal consistency and reliability of latent construct was assessed via Cronbach alpha with recommended threshold value of 0.70 (Hair *et al.*, 2012). The Cronbach alpha values for all constructs were above the recommended threshold, with 0.945 for the intention to stay in the host country as the highest and the economic level factor with 0.705 as the lowest Cronbach's alpha.

The composite reliability (CR) was computed to assess construct reliability, considering the value of 0.70 as the threshold (Hair *et al.*, 2011). As shown in Table 1, the lowest CR ( $\rho_c$ ) value was 0.724 for the economic level factor and the highest was 0.931 for the intention to stay in the host country. The lowest AVE value was 0.606 for the social influence (norms) and the highest was 0.869 for the aspects related to the host country. All in all, these values indicate that all the constructs used in the measurement model met the threshold values, so we can establish an acceptable construct reliability. Convergent validity was also evaluated to determine how closely two measures of structures that ought to be connected theoretically are indeed related (Fornell and Larcker, 1981; Hair *et al.*, 2011). The AVE can be used to analyse the relationship and threshold is 0.50 or higher. All the AVE values were between 0.52 and 0.66, and thus, convergent validity was established in our data (see Table 1). We then calculated the discriminant validity, which, unlike the convergent validity, the aim is to establish that the measures or concepts have no association or relationship and to demonstrate that the items used to measure a construct accurately captured the intended construct and that the construct was not captured by other measures (Henseler *et al.*, 2015). Following the Fornell and Larcker (1981) criterion, the distinctness of the constructs and the discriminant validity in the data were determined, see Table 2.

In addition, we evaluated the discriminant validity of the construct using the Heterotrait–Monotrait ratio (HTMT) approach. The HTMT is an alternative approach to establish the discriminant validity and the obtained values were below the desired threshold value of 0.85 as recommend by Henseler *et al.* (2015). Thus, the discriminant validity was established for the measurement model and constructs, see Table 3.

As the dependent variable (intention to stay) was predicted by multiple independent variables and there is a risk of intercorrelation amongst the dependent variables, a multicollinearity test through the value of variance inflation factor (VIF) was computed. Hair *et al.* (1998) and Petter *et al.* (2007) suggested that the lowest acceptable VIF value is 3.3. The results of the VIF values show no issue; thus, multicollinearity was not a problem in our data, as the lowest value was 1.89 and the highest 3.091. Moreover, a common method bias (CMB) was examined to check if there was any bias attributable to the measurement method, following two different approaches, (1) Harman's one-factor test (Podsakoff and Organ, 1986) and (2) common latent factor (CLF) technique, as recommended by Podsakoff *et al.* (2003) and

Constructs	Items	Factor loadings	Cronbach's alpha	CR (rho_c)	CR (rho_c)	AVE
Attitude towards act of behaviour	ATT1	0.755	0.883	0.891	0.91	0.628
	ATT2	0.776				
	ATT3	0.798				
	ATT4	0.859				
	ATT5	0.805				
Barriers and challenge	ATT6	0.758	0.732	0.739	0.849	0.653
	CHA6	0.733				
	CHA7	0.846				
	CHA8	0.841				
Economic level	ECONO1	0.882	0.705	0.724	0.836	0.631
	ECONO2	0.766				
	ECONO4	0.728				
Environmental level	ENVI3	0.769	0.791	0.795	0.863	0.612
	ENVI4	0.787				
	ENVI5	0.789				
	ENVI6	0.784				
Host level	HOST1	0.953	0.924	0.927	0.952	0.869
	HOST2	0.964				
	HOST3	0.878				
Institutional level	INST1	0.835	0.88	0.891	0.922	0.748
	INST2	0.888				
	INST3	0.904				
	INST4	0.831				
Intention to stay in the host country	INT1	0.935	0.945	0.931	0.96	0.858
	INT2	0.937				
	INT3	0.873				
	INT4	0.958				
Recommendation level	RECO1	0.804	0.827	0.871	0.879	0.646
	RECO2	0.795				
	RECO3	0.807				
	RECO4	0.808				
Social influence (norms)	SN1	0.800	0.92	0.906	0.915	0.606
	SN2	0.710				
	SN3	0.736				
	SN4	0.850				
	SN5	0.837				
	SN6	0.742				
	SN7	0.764				

**Table 1.**  
Descriptive statistics      **Source(s):** Table by authors

[MacKenzie and Podsakoff \(2012\)](#). The result of the Harman’s one-factor test showed that none of the constructs explained more than 50% of the variance. In the second approach, the CLF approach was examined through comparison of the chi-square value difference between unconstrained model and a model where all paths were restricted to zero. The CLF test results showed that the CMB had no effect on any of the model’s path relationships.

5.2 Structural results

We used the structural equation modelling (SEM) approach to assess the relationships between the constructs in the model. As [Figure 2](#) shows, the SEM results revealed that the explained variance ( $R^2$ ) of intention to stay was explained by a variance of 39% and attitude towards staying was explained by a variance of 69%. Because we used PLS-SEM to examine

the path relationships, it is not possible to report the model fit results. However, the Standardised Root Mean Square Residual (SRMR) value can be used for the model fit. The SRMR refers to the difference between the observed correlation and the model implied correlation matrix, with the threshold value of less than 0.10 (or 0.08 in a more conservative version) (Hair *et al.*, 2012). In our analysis, the SRMR value was (0.084).

Next, to obtain the significance of the estimates (t-statistics) in the path model, a bootstrap analysis with 5,000 resamples was computed, see Figure 2. The SEM results showed that the path between aspects related to the host country and attitude towards staying was positive and significant ( $\beta = 0.79$ ,  $t = 18.838$ ,  $p < 0.001$ ); therefore, H1 was accepted by the model. This is consistent with earlier findings of Luo *et al.* (2019) who also suggested that supports from host country positively influence students' decision. The direct paths between the institutional level factor ( $\beta = 0.12$ ,  $t = 2.513$ ,  $p < 0.01$ ) and the economic level factors (a probability of finding high salary paid job) ( $\beta = 0.10$ ,  $t = 2.122$ ,  $p < 0.05$ ) to the attitude towards staying were positive and significant. Thus, H2 and H3 were supported by the model. Ammigan (2019), Erturk and Luu (2022) and Pham and Jackson (2020) also found that institutional level and economic level factors positively relate to students' study abroad experiences. The SEM results further showed that the paths between environmental level factor (*I plan to stay in Finland after my graduation because immigration procedures are less complex and student-friendly*) and recommendation of family and friends (e.g. *I plan to stay in Finland after my graduation because my parents/relatives recommended*) were not significant and have no impact on the attitude towards staying. Thus, both H4 and H5 were rejected. These results are inconsistent with the findings of Cubillo *et al.* (2006) who argued that

**Table 2.**  
Discriminant validity  
Fornell and Larcker  
criterion

Constructs	ATT	BAR	ECO	ENV	Host	INS	INT	REC	SN
Attitude towards act of behaviour	0.79								
Barriers and challenges	−0.15	0.81							
Economic level	0.57	−0.01	0.79						
Environmental level	0.52	−0.19	0.58	0.78					
Host level	0.79	−0.11	0.63	0.44	0.93				
Institutional level	0.61	−0.06	0.61	0.52	0.55	0.87			
Intention to stay in the host country	0.53	−0.37	0.43	0.50	0.47	0.42	0.93		
Recommendation level	0.49	−0.01	0.55	0.43	0.47	0.60	0.32	0.80	
Social influence (norms)	0.44	−0.09	0.40	0.41	0.35	0.43	0.42	0.71	0.77

**Source(s):** Table by authors

**Table 3.**  
Discriminant validity  
and Heterotrait–  
Monotrait ratio  
criterion

Construct	ATT	BAR	ECO	ENV	Host	INS	INT	REC	SN
Attitude towards act of behaviour									
Barriers and challenges	0.21								
Economic level	0.70	0.09							
Environmental level	0.61	0.24	0.77						
Host level	0.85	0.15	0.78	0.52					
Institutional level	0.68	0.13	0.76	0.62	0.61				
Intention to stay in the host country	0.58	0.44	0.53	0.57	0.50	0.46			
Recommendation level	0.52	0.09	0.69	0.51	0.50	0.64	0.34		
Social influence (norms)	0.48	0.12	0.50	0.48	0.39	0.48	0.44	0.84	

**Source(s):** Table by authors

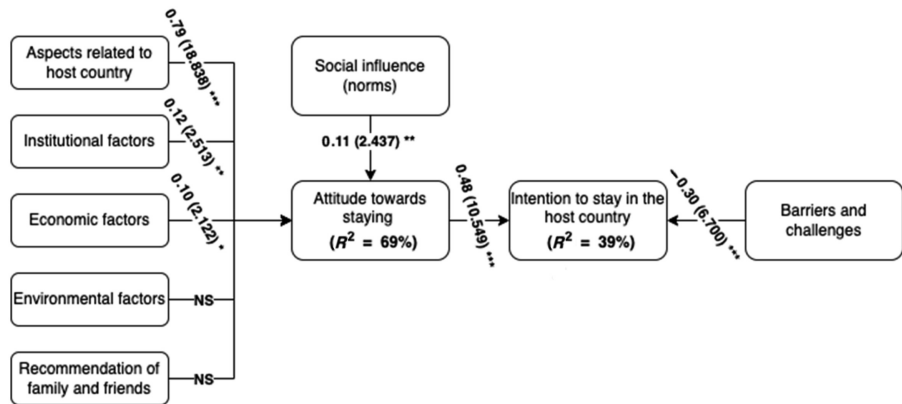


Figure 2.  
Conceptual results

Note(s): \*\*\* $p$ -value < 0.001; \*\* $p$ -value < 0.01; \* $p$ -value < 0.05  
Source(s): Figure by authors

recommendation from family, friends and professors influence prospective international students' institutional choice and [James-MacEachern and Yun \(2017\)](#) who argued that environmental cues are one of the most important pull motivational factors. The differences in the findings could be due to several plausible reasons when comparing the research results to earlier studies. Differences can be justified by considering the influence of contextual factors such as study design, population characteristics, geographical factors, time of data collection and the presence of random variation can all contribute to the observed disparities.

Moreover, the SEM analysis showed that the path between the social influence (norms) and attitude towards staying was positive and significant ( $\beta = 0.11, t = 2.437, p < 0.01$ ); thus, providing support for [H6](#). The path between attitude towards staying and the intention to stay in the host country was positively related ( $\beta = 0.48, t = 10.549, p < 0.001$ ), providing support for [H7](#). These results support the findings of [Özoğlu et al. \(2015\)](#) who also indicated that social influence and norms positively relate to international students' attitude and intention to study abroad. Finally, we found that the challenges and barriers impact negatively ( $\beta = -0.30, t = 6.700, p < 0.001$ ) students' decision to stay in the host country after completing their studies. Thus, [H8](#) was also supported by the proposed model.

In addition, participants were asked to select up to three challenges and barriers, which they feel impact their decision to leave the host country (Finland) after graduation. We asked "which one of the following might have the most influence on your decision to leave Finland after your graduation? (You can select up to three)". [Table 4](#) shows the results.

As [Table 4](#) shows the top three challenges and barriers selected by the students are (1) difficult to find work ( $n = 194$ ), (2) language barrier ( $n = 119$ ) and (3) difficult to become a part of the society or find a local friend ( $n = 88$ ). Of the respondents, 35 indicated other challenges and barriers such as: "I was not accepted by the Finnish society", "lack of opportunities for my spouse", "darkness in winter", "family and being away from family and loved ones", "socialisation with locals/Finnish prototype", "high cost of living", "it can be hard to make friends", "UK or US can offer better PhD opportunities since I want to be an academic in the future". These results are consistent with the research findings of [Khanal and Gaulee \(2019\)](#) who labelled the challenges of studying in overseas institutions into pre-departure; for example, obtaining accurate information, understanding the admission procedure and preparing documents for visa acquisition, post-departure; for example, language barriers,

**Table 4.**  
Challenges and  
barriers students face  
during their studies in  
the host country  
(Finland)

Challenges and barriers	n	Percent (%)
Language	119	41.3
Difficult to find work	194	67.4
Discrimination and racism	56	19.4
Lack of professional networks	61	21.2
Bureaucracy	26	9.0
Climate	66	22.9
Difficulties in adapting the local cultural understanding	25	8.7
Difficult to become a part of the society or find a local friend	88	30.6
Financial issues such as high taxation and/or low salaries	76	26.4
Others	35	12.2

**Source(s):** Table by authors

financial issues and cultural adjustment when they are in the host countries and post-study; for example, uncertain future.

### 5.3 Results of mediation analysis

We ran mediation analysis to assess if attitude towards staying mediates the relationships between the push factors and the social influence (norms) to the intention to stay in the host country. The mediation test results showed that attitude towards staying mediates the path between aspects related to the host country ( $\beta = 0.38$ ,  $t = 9.122$ ,  $p < 0.001$ ), institutional level ( $\beta = 0.08$ ,  $t = 2.405$ ,  $p < 0.01$ ) and social influence (norms) ( $\beta = 0.05$ ,  $t = 2.518$ ,  $p < 0.01$ ) to students' intention to stay.

We also, ran the moderation test using the gender of respondents as a control variable. The results showed that factors influencing female students and male's students are different. In other words, different factors impact the decision of female and male students to stay or leave the host country after graduation. For example, the paths between the economic factors ( $\beta = 0.16$ ,  $t = 2.256$ ,  $p < 0.05$ ) and institutional factors ( $\beta = 0.15$ ,  $t = 2.157$ ,  $p < 0.05$ ) to attitude towards staying were only significant for the male students. Whereas the paths between (1) challenges and barriers ( $\beta = -0.41$ ,  $t = 7.447$ ,  $p < 0.001$ ) to intention to stay in the host country and (2) social influence ( $\beta = 0.12$ ,  $t = 1.990$ ,  $p < 0.05$ ) to attitude towards staying were only significant for the female students.

## 6. Discussion

The SEM findings indicate that the student's decision is affected not only by the push-pull factors (Gesing and Glass, 2019; Leone and Tian, 2009), but also their social surrounding (influence of others). For example, Relyea *et al.* (2008) argue that student's propensity for risk and perceived value of the international experience influence student's decision on study abroad. We discuss our threefold contributions below. First, this research theoretically contributes to the literature by proposing a research model, informed by sound theoretical models (the push-pull factor theory and the TRA). The findings show that the proposed model can, to a large extent, predict the processes (influential factors) of decision-making of the international students to stay or leave the host country after graduation. It was discovered that the challenges and barriers that students encounter whilst pursuing their education (such as language barriers, employment difficulties, discrimination, difficulties assimilating into the community or making local friends and a lack of professional networks) have a

negative effect on their intention to stay in the host country (Ammigan, 2019; Chen and Zhou, 2019).

Second, the findings show that out of five pulling factors, only three (1) aspects related to the host country (e.g. *“staying in Finland after my graduation can help enhance my career prospects”*), (2) institutional factors (e.g. *“I plan to stay in Finland after my graduation because my current university qualifications and reputation are recognised”*) and (3) economic factors (e.g. *“I plan to stay in Finland after my graduation because of microeconomic and macroeconomic development”*) impact the decision of international students to stay in Finland. Two other factors, environmental factors (e.g. *“I plan to stay in Finland after my graduation because geographical distance from my home country is not far”*) and the recommendation of family and friends (e.g. *“I plan to stay in Finland after my graduation because my parents/relatives recommended”*) do not play a major role in the decision-making of the international students to stay in Finland.

Third, we found that the social influence (norms) as a construct from an established theoretical model (i.e. TRA) directly impacts international students' intention to stay in the host country after completion of their studies (Mesidor and Sly, 2016). We also found that there is a difference between females and males students' intentions to study abroad. For example, the economic factors directly impact only male students' decision to stay in Finland. For female students, the influence of their surrounding (social influence) has a direct effect on their intention to stay in the host country (Finland) after their studies.

## 7. Conclusion, limitations and future work

Our study was motivated by the lack of empirical research that conceptualises factors influencing the decision of international students to stay or leave the host country after graduation. Drawing from the push-pull factor theory and the TRA, this research investigates the following question: *“What factors influence the intention of the international students to stay or leave the host country after graduation?”* Using a unique dataset of 292 international students from different universities in Finland, an integrated conceptual model was developed to empirically evaluate the students' intention to stay or to leave the host country. Five dimensions of the pull factor theory (1) (aspects related to the host country, institutional factors, economic factors, environmental factors and recommendation from family and friends), (2) challenges and barriers faced by the students in the host country during their studies as push factors and (3) social influence (norms) were used to theoretically assess international students' intention to stay or leave the host country.

In this research, we expand previous research on the mobility of international students and make significant advancements in our comprehension of the dynamics involved. Based on the push-pull factor theory supplemented with the TRA, this research empirically investigates and analyses the factors influencing the decision of international students to stay in or leave the country after completing their studies. The findings show that several pull and push factors directly and indirectly impact their decisions. For example, the strongest impact on the students' intention to stay in Finland after graduation is the aspects related to the host country Yun (2014). This factor includes the prospects students see to enhance their future job and career paths, as well as how they perceive their social status to be after graduation. Moreover, the results show that the links between pulling factors (e.g. aspects related to the host country and institutional factors) to the intention to stay are mediated through attitude towards staying. Because of the significance of the aspects related to the host country, seen through its direct relationship to the attitude and its indirect relationship to the intention to stay in the host country, we recommend that higher education institutions and universities, specifically in Finland, to pay closer attention to this crucial aspect.

Moreover, the diversity in the sample allows for a more nuanced understanding of the experiences of international students in Finland and enables us to examine the intersection of various factors that influence their experiences. Finland is known for its high-quality education system, which is ranked amongst the best in the world. In addition, Finland offers a high standard of living, a safe and welcoming environment and excellent research opportunities, which are all attractive factors for international students. Furthermore, the Finnish government has implemented a range of policies and programmes to support international students, including tuition fee waivers (conditionally), scholarships and other forms of financial support. International students also have access to a range of services, such as language courses, career services and social events, which help them to integrate into Finnish society and navigate their new environment.

By providing a more detailed description of the sample of international students, as well as discussing the local context and the supports available to international students in Finland, this paper will offer a more comprehensive analysis of the experiences of international students in Finland. This will allow for a deeper understanding of the factors that influence their migration decisions as well as their experiences in Finland. If the goal is to make Finland an appealing place to study and leave, it is advised that higher education institutions pay close attention to the challenges and barriers that international students encounter (such as discrimination, bureaucracy and social integration) whilst pursuing their studies (Alho, 2020).

### *7.1 Practical implications*

The research findings reveal challenges for international students in foreign countries, particularly with regards to employment and career development. Policymakers and educators should address these challenges by creating targeted support programmes and closer partnerships between universities and industry. The implications of the research are not limited to Finland and should be considered by policymakers and educators in other countries to attract and support international students. Moreover, the findings have broader implications for international student recruitment and support policies in other countries beyond Finland. For instance, our findings suggest that factors such as language proficiency, cultural differences and the availability of career support services can all play a significant role in shaping international students' decisions to study and work abroad. Therefore, policymakers and educators in other countries should consider these factors to develop and implement policies and practices that attract international students.

In addition, the implications of hiring more international students for local jobs raise concerns about potential competition amongst the local workforce, but it is important to consider the benefits and control measures related to their retention in the host country. Retained international students can contribute to the local economy, foster knowledge transfer and cultural exchange and control measures such as visa policies, integration programmes and collaboration with educational institutions can help facilitate their successful transition and integration into the workforce.

The study is not without limitations. Information on the students' degree programmes was not collected, which could affect the study's results, as knowing more about the different study programmes could help to determine whether the type of education has a significant effect in the choices made by international students. Language barriers were acknowledged but participants' Finnish language skills were unknown and the sample size may also not be representative of all international students in Finland. This information can be included in future studies to help the Ministry of Education in the host country make policy recommendations. Finally, we propose additional research in various contexts to explore the proposed research model because this study only examined the international students' intention to stay in Finland after completing their studies.



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