

# **The PLS-SEM path analysis of foreign students' motivation and expectations at a Hungarian university**

Anita Kéri

*The current research paper focuses on the PLS-SEM path analysis of foreign student motivation and expectations at a Hungarian university, the University of Szeged. Conducted in this setting, the results of the study introduce a new perspective by looking at international students from a Hungarian viewpoint. Based on initial pilot studies, the aim of this study is to test the hypothetical model of motivation and expectations of foreign students in Hungary, which includes hypotheses that motivations and expectations are closely related. PLS-SEM analysis is used to determine these connections and to test the hypotheses. Quantitative data is obtained in the form of an online questionnaire and is processed with IBM SPSS and SmartPLS 3 software.*

*It was found that five motivation types influence expectations, which are reference groups, self-realization, getting to know the culture, integration into the Hungarian community and gaining knowledge. These motivation factors influence five expectation factors, which include social, personal, cultural, labour market and educational expectations. Based on these findings, a final model for motivation and expectations among foreign students is drawn.*

*Keywords: motivation, expectations, foreign studies, internationalization, higher education*

## **1. Introduction**

One of the most important concepts today regarding higher education is internationalization. It can be observed in many countries throughout the world. However, the development of national higher education institutions (HEIs) and their foreign student education vary from country to country. In terms of education and research, Europe once had a competitive advantage over North America, but this was lost, and there has been a new tendency towards Asian countries (Japan, China, the Republic of Korea, and Hong Kong) making great strides in terms of research and student numbers. European universities have been trying to keep up and take part in this process of internationalization.

Our target country, Hungary, has been part of the European Union since 2004. Consequently, Hungarian universities have had the chance to participate in the international competition for foreign students, with several scholarships available for students to go to Hungary. In the following paper, one institution, the University of Szeged will be studied. The University of Szeged bears the status of a Research University, one of the most prestigious titles in Hungary. It has always been the objective of this university to strengthen its foreign student basis, and nowadays it is

even a bigger aim. More and more international programmes are available at the twelve university faculties. However, to investigate how the university can be even more successful in attracting foreign students, the motivation, expectations and future plans of these students must be examined. In order to identify and understand these factors, the first part of the study discusses the theoretical background of motivation and expectations, gives insight into the Hungarian educational system and its scholarships, and summarizes the main findings of the field, after which the pilot and the current studies are presented with various methodology.

## **2. Theoretical framework**

In the following section, the theoretical notions relevant to the current research are discussed. These include motivation, expectations, relevant secondary research articles and an introduction to the Hungarian higher education system.

### *2.1. Motivation*

When investigating studying abroad, motivation is the key element in determining why students wish to pursue international education. Motivation is defined as “those psychological processes that cause the arousal, direction, and persistence of voluntary actions that are goal directed” (Elliot–Fryer 2008). Motivation is divided into two main categories, intrinsic and extrinsic. Intrinsic motivation means the expression of the person, while extrinsic motivation is based on reaching an outer goal (Deci–Ryan 1985). These two categories of motivation were researched by Areepattamannil and colleagues in the case of Indian emigrant foreign students. They found that students who went abroad had higher level of intrinsic motivation and better grades than those, who stayed at home. Students, who stayed in their country had stronger extrinsic motivation (Areepattamannil et al. 2011).

The most widespread model of motivation is Maslow's hierarchy of needs, which states that there are certain needs that have to be satisfied before another need can be satisfied as well. The basic needs are physiological needs, after which come security needs, belonging, esteem and self-actualization needs (Maslow 1987). One of the most relevant motivational theories to education and learning is Maehr's theory of continuing motivation, which is a behavioural norm in which the subject goes back to his task without having any pressure from outside (Kaplan et al. 2009). This type of motivation can account for much student behaviour.

To test the motivation of students learning abroad, Nyaupane et al. (2011) observed American students engaged in their studies. They conducted a questionnaire among 136 students before they departed for an international programme lasting five weeks. The findings showed that ninety-three percent of these students had already been abroad to study and when determining how they chose a target destination, the results also showed that motivation was a key factor, together with past travel

experience and social ties. Their concept is shown as a model in Figure 1, which includes those factors that helped students decide which destination they were going to choose for their study-abroad experience.

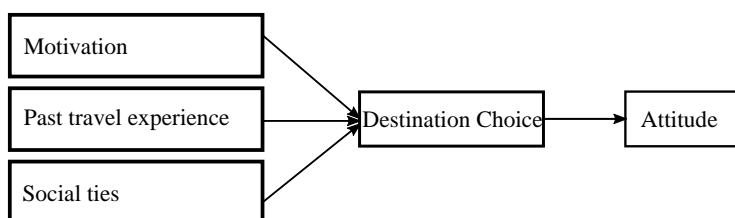
Cubillo et al. (2006) also created a theoretical model of motivational factors behind student willingness to go abroad. They determined several factors that account for student decisions when going abroad. They came to the conclusion that the decision of students depended on five factors: personal reasons, effects of the country image, city image, institution image and the evaluation of the programme of the study. These factors were used to weigh the options of the potential international student and used to make decisions based on these regarding choice of institution and target country.

In the study by Griner and Sobol (2014), Chinese student motivation to study abroad was researched. The findings show that students would be more likely to participate in foreign programmes, if they were not so complex. Other than complexity, parents played the most important role in student motivation, because those students whose parents had already studied abroad, would be more willing to study abroad themselves, while those students with good English language skills would rather go abroad than those students lacking the same. In another country, the willingness of Kuwaiti students to study abroad was studied by Hackney et al. (2013) in the form of a questionnaire. Willingness was measured on a 6-point Likert scale. Results show that students were more likely to study abroad for a longer period of time, and their most likely destinations were Europe and North-America. It is also a common finding that students would rather be accompanied by peers and friends, if they chose to study abroad.

## 2.2. Expectations

Motivation is a key factor for foreign students when going abroad to study, but expectations and their being met or not are equally important. Once motivated to take such a step, students have certain expectations towards an institution and country. The following research is presented in order to understand the concept of expectations in terms of studying abroad. Student expectations of studying abroad have been a

*Figure 1* Conceptual model of mediating role of destination choice on pre-trip attitude formation



Source: Nyaupane et al. (2011, pp. 205–217)

narrowly studied topic. In her dissertation, Anderson (2007) refers to it in similar terms. Firstly, the main findings of the field are summarized, then Anderson's model of expectations is introduced.

Dwyer (2004) researched the impact of programme duration on the experience of studying abroad. In general, the outcome of the research supported the widespread idea that the longer a student stays abroad, the better. It was also found that summer students, who only spent the summer studying abroad, were more likely to gain sustainable benefit than those students who spend a semester abroad. This might be due to summer programmes being especially well-designed. Other than the summer and semester programmes, evidently, the students who gain the most from international studies are those who stay in a foreign country for at least one year.

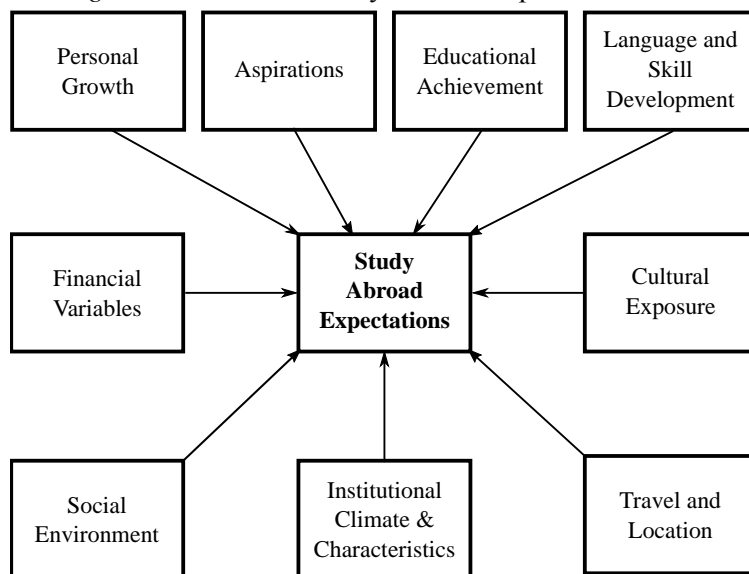
US college students and their participation in study abroad programmes through their college career were examined by Goldstein and Randi (2006). 179 undergraduate students were monitored during their 4-year college career. Different questionnaires were given to them during these four years. First, they had to complete one regarding their expectations of studying abroad. In their senior year, data about their participation in any foreign study programme was gathered. Findings showed that participating in international studies helped students to modify their expectations, to decrease ethnocentrism and prejudice, and to value the study of foreign languages.

Martin et al. (1995) created a longitudinal study in which they compared student expectations before departure to a foreign country and their reports after coming back from abroad. 248 students participated in the two questionnaires, out of which the first was concerned with the students' expectations about studying abroad, while the second one, after their return home, measured if their initial expectations had been met or not. They found that the expectations of students had been met or positively influenced, and that this was related to the place where they studied and the gender of the student. A positive relationship was determined between the overall evaluation of the studies and disappointment of expectations.

The above works of research are very important from the viewpoint of the current research, however, neither of them creates a model for the expectations of potential foreign students. In her extensive secondary data analysis, one author, Anderson (2007) presented her own model of foreign student expectations in her dissertation, as can be seen in Figure 2.

In this model, the main factors determining expectation are location and travel, educational attainment, social environment, institutional climate and characteristics, personal growth, financial variables, aspirations, cultural exposure and language development. These final results were based on interviews conducted by Anderson herself. She states that the factors that influence students to participate in study abroad are linked directly to their expectations of the study abroad experience. This model bears key importance for the current study, as it presents a basis for creating an own model of motivation and expectation in the current research.

*Figure 2 Anderson's Study Abroad Expectation Model*



*Source: Anderson (2007, p. 78)*

Based on the model of Anderson (2007) and on pilot research work, five main expectation categories were determined, comprising social, personal, intercultural, labour market and educational expectations. In the following paragraphs, these categories are examined in more detail.

### *2.2.1. Social development*

The first expectation level is social development. These expectations include a wider range of friends, making international friends, having a wide-circle of acquaintances and getting to know local people better. This might result in their much more active social life, including being present on school events, parties or gatherings.

In their study, Ding and Li (2012) researched social network formation among Chinese students studying abroad in the US, and found that the international openness of the university played an important role in the acceptance of Chinese students. They also suggested that social networks can be very useful and that social connections also play a huge role in the decision of students to study abroad.

Another study conducted by Dewey et al. (2013) investigated social network formation when studying abroad. They conducted their research on 71 students in the Middle East and found that the most common way of making contact with other people was to engage in arbitrary conversations with strangers on the street. Time spent with native speakers and the personality of the student were the two main factors in getting to know local people and expanding their social network abroad.

This shows that the culture and the country where you come from and where you intend to stay, determine the way you are going to communicate and build a social network in the destination country for your studies abroad.

### *2.2.2. Personal(ity) development*

When deciding to study abroad, there might be certain expectations of students towards themselves related to their own personal development. This personal development might include knowing themselves better.

This aspect of overall expectations was studied by Firmin et al. (2013). They defined personal development as the broadening views of students. They conducted qualitative research on maturity and personal development among 23 American students who spent time abroad at Oxford University. This study proved that personal development was broadened thanks to the widened horizons of the students, and also by the long-lasting experience and impressions they gained while abroad. Therefore, personal or personality development is a very interesting aspect in conducting research on foreign students. It includes their own personality development and how their views on the world differ after a certain time spent studying abroad.

### *2.2.3. Intercultural experience*

Students coming to Hungary might also have expectations towards the culture and the cultural experiences they are going to have. Coming from different cultures can also involve different expectations of culture.

In their study, Czerwionka et al. (2015) studied the intercultural knowledge and language development of international students participating in short-term study programmes. They conducted interviews with students at the beginning and at the end of the programme, which constituted the basis for qualitative research, which was later backed by quantitative research as well. They found that intercultural knowledge significantly grew over the study programme, including in such areas as of daily life, food and drink, culture, history, values and politics.

In the current study, intercultural experience is also included as one of the student expectations, in particular their expectations of travelling, getting to know numerous cultures and more specifically, the Hungarian culture, and participating in the cultural life of Szeged.

### *2.2.4. Labour-market/Career prospects*

When students start higher education in a foreign country, they might also have an expectation towards their career in the future. This might include staying in the target country, going back to the home country, or even going to a third country to work. These prospects are also important in analysing the overall expectations of foreign students, in light of the fact that the students studied in the current research are planning to complete their degree in Hungary.

Bryla (2015) looked at the employment and professional careers of former Erasmus students. The study involved 2450 former students five and six years after their study abroad experience. The study found that only 1.6% of these people had never worked, and that the majority of the participants were engaged in white-collar or managerial jobs. According to the respondents, higher education and proficiency were highly important for their career development. One-third of the respondents also stated that their international student mobility had an influence on their professional development and current position.

### *2.2.5. Educational advancement*

When deciding about studying abroad, one of the highest expectations the student can have is that of educational advancement. This might be one of the main reasons why the student decides to go abroad and live in another country for a certain period. In the case of the participating students, they initially accept they will have to spend the whole duration of their studies in Hungary, which would mean at least six semesters. Therefore, in the current study, educational expectations are also researched.

In her study, Cheng (2014) examined the perceived values and preferences of study abroad programmes. She examined short-term study abroad programmes and found that participating students thought that the most beneficial effect of studying abroad was their personal development. In second place was the expectation of academic and professional advancement.

The above listed research and expectation factors provide insight into the expectations foreign students have of their target country and institution. It is therefore essential to consider these in the present study in order to determine the relationship between motivation and expectations.

### *2.3. Higher Education in Hungary*

Hungarian higher education bears similar characteristics to other foreign countries' systems of higher education. Its universities are thoroughly modern, and can be called third-generation universities, which means the universities have a further aim in distributing knowledge to other members of society as well. Nowadays universities are the centre of knowledge regions, together with which they create the knowledge economy (Wissema 2009).

In Hungary, though, there are big regional differences between higher education institutions. According to data from the Hungarian Education Authority (2017), there are altogether 21 state-financed governmental HEIs, 7 non-governmental HEIs, 3 governmental colleges and 28 non-governmental colleges in Hungary at the moment. According to their data, in the 2014/2015 academic year, 217 thousand students were studying in HEIs as full-time students. This is 6.4 thousand people less than in the previous school-year, which reflects a decrease in the number of students finishing high-school education, due to demographic reasons. Getting into higher education is

therefore becoming easier. However, there has been an initiative to prevent the phenomenon of mass degrees, so there have been changes, such as the introduction of higher admission points to universities and tuition fees in certain fields of studies. These factors have led to the situation today, where HEIs are competing not only for domestic, but for foreign students as well (Gabaldón et al. 2004)

Examining the University of Szeged in more detail, it soon becomes evident that it is a prestigious university, with twelve Faculties hosting more than 2500 students from 98 countries. Szeged is the 8th university town in Europe, with the University of Szeged having more than 500 partner universities worldwide, including more than 432 Erasmus partner universities. It currently holds 19th place out of the 360 universities in the UI Green Metric Ranking. With 9 strategic industrial partners, the University of Szeged is a highly competitive university in Hungary and worldwide.<sup>1</sup>

Moreover, the University provides full-time study programmes in numerous foreign languages, and it also has exchange programmes and non-degree programmes. The oldest tradition of foreign study programmes is in the field of medicine, taught in English, which turned 31 years old in 2016. Since its launch, other faculties have also initiated foreign-student-targeted study programmes.<sup>2</sup>

Students, whose target country is Hungary and whose target institution is the University of Szeged, buy a certain service, when they enter this university. Therefore, attracting students is very important for the university. As Filip (2012) reasons in his study, it is very important to use the elements of a relevant marketing mix in creating various impressions in students, even though we are talking about a public institution. Education can be viewed as a type of service that has the features of heterogeneity, intangibility, perishability and inseparability (Mudie–Pirrie 2006).

With this short insight into the higher education system of Hungary and the University of Szeged, it is easier to see why it is so important for the institution to compete locally and worldwide for its students. However, to get to know why students choose Hungary and the University of Szeged, it is essential to study foreign students' motivation and expectations.

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<sup>1</sup> <http://www.u-szeged.hu/english/facts>

<sup>2</sup> <http://www.u-szeged.hu/english/education/where-knowledge-meets>



### 3. Methodology

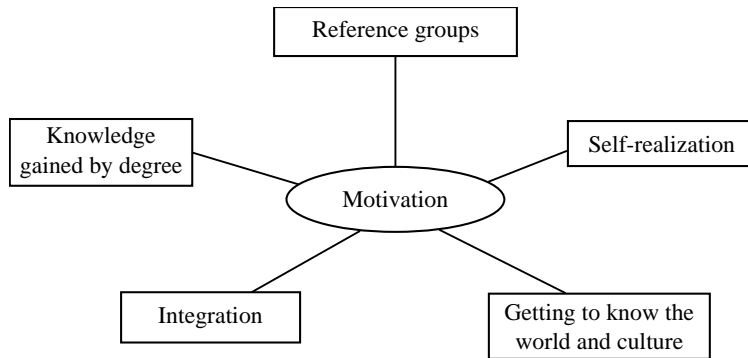
In this chapter, the data obtained during primary research is analysed with PLS-SEM path analysis. Firstly, the pilot studies that led to the current analysis are presented. Then the hypotheses are listed. The hypotheses are tested and the model of Motivation and Expectation of Foreign Students is introduced.

#### 3.1. Pilot studies

As we could see from the previously discussed research, the reasons behind student choice of school can vary and can be very extensive, which is why investigating what factors affect their purchasing decision process and what motivates them the most is extremely interesting. In order to study and determine foreign student motivation, expectations and future plans, pilot studies were conducted at the University of Szeged between 2014–2016. Only the main results of these pilot studies are reported here, as they are essential for understanding the model of motivation and expectations in the current research.

Initially, three qualitative focus group discussions were organised with foreign students to get to know their motivations better. It was found that reference groups, the country's attractiveness, gaining knowledge, and the value of the Hungarian higher education influenced the students' motivation in choosing the target destination and country. The results of the focus group discussions constituted the basis of subsequent quantitative research. It was conducted in the form of an online questionnaire and the aim was to determine the main motivational factors that had influenced the respondents. Altogether 128 valid answers were evaluated, which was a substantial number compared to the overall foreign student population at the university (approximately 1,200). From the data obtained, factor analysis was conducted, and five main motivational factors were determined in students choosing Hungary: reference groups, self-realization, getting to know the culture, integrating into the community and gaining knowledge by means of a Hungarian degree. The results can be seen in Figure 3.

Now that the main motivational factors had been determined, the next area which had to be studied was expectations. In order to get a first insight into the expectations of foreign students, 17 in-depth interviews were conducted with foreign students from various faculties. The results of the in-depth interviews gave a better insight into the expectations of foreign students at the University of Szeged. Based on these results, the secondary data, and Anderson (2007)'s Study Abroad Expectation Model, five expectations types could be distinguished: social, personal, cultural, labour market and educational expectations.

*Figure 3* Motivational factors

Source: Own construction

### 3.2. Hypotheses

Based on the findings of the pilot studies, several hypotheses were formulated regarding foreign student motivation and expectations. These hypotheses can be seen in Figure 4.

H1: Reference group motivation has an effect on:

H1a: social expectations

H1b: educational expectations

H2: Self-realization motivation has an effect on personal expectations.

H3: Cultural motivation has an effect on cultural expectations.

H4: Motivation for integration has an effect on:

H4a: personal expectations

H4b: cultural expectations

H4c: labour market expectations

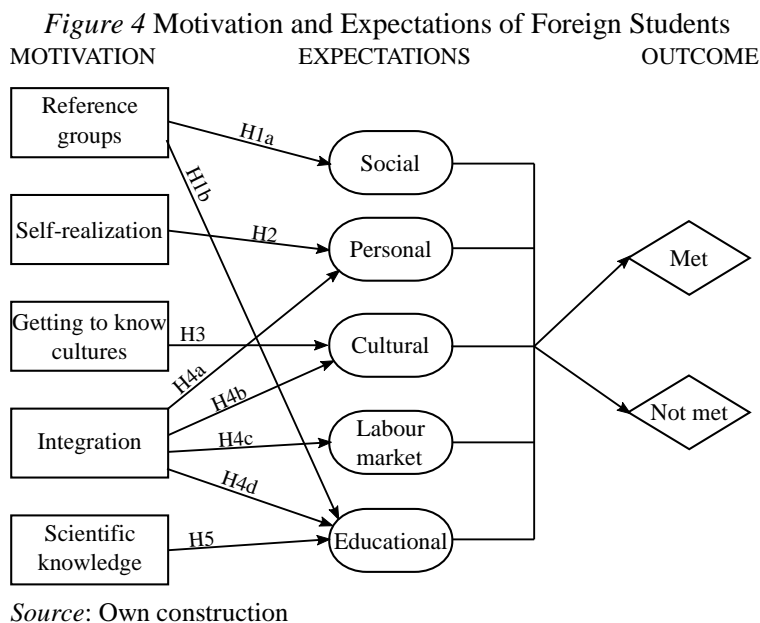
H4d: educational expectations

H5: Motivation for gaining knowledge has an effect on educational expectations.

Further analysis needs to be conducted to test the model of motivations and expectations.

### 3.3. Background of the study

As the motivation and expectations of foreign students can vary hugely, a model is needed to understand these motivations and expectations better. It is also necessary to see whether motivations and expectations are related to each other, or not. The current research concentrates on only one higher education institution, the University of Szeged. Cubillo (2006)'s model of motivation and Anderson (2007)'s model of expectations constituted the basis of the current study. The relationships between



motivations and expectations were determined based on this previous research and on pilot studies.

The study was conducted in the form of an online questionnaire. The main aim of the questionnaire was to get as many respondents as possible, as it is very hard to physically meet the target group, the foreign students of the University of Szeged. Therefore, it was shared mainly on social media sites and among relevant social media communities. The subjects of the questionnaire were foreign students studying at the University at that time. The questionnaire was available to them during September 2016. Altogether 121 valid responses were collected. For the analysis of the data, IBM SPSS and SmartPLS 3 software were used.

From Table 1 it can be seen that 56.2% of the respondents were male and 43.8% of them female. Regarding their age, they are mainly students between the ages of 18 and 25. This age group accounted for 70.3% of the respondents. People above 26 only constituted 29.7% of the respondents. The language of instruction among the respondents was mainly English, at 87.6%.

It can be seen in Table 2 that the students filling out the questionnaire came from various countries. The country represented with the highest number of respondents in the research was India (21), after which came China (11), Turkey (7), Vietnam (7), Algeria (6), Tunisia (6), and Germany (5). The “other” group comprises nations that were represented less than five times in the survey. These nations include: Austria, Azerbaijan, Brazil, Colombia, Ecuador, France, Greece, Hungary, Iran, Iraq, Israel, Italy, Jordan, Korea (South), Laos, Lebanon, Mongolia, Morocco, Namibia, Nigeria,

*Table 1* Respondent characteristics

Variable		Frequency (person)	Percent (%)
Gender	Female	53	43.8
	Male	68	56.2
	<i>Total</i>	121	100
Age	18-25	85	70.3
	26-32	27	22.3
	33-41	9	7.4
	<i>Total</i>	121	100
Language of instruction	English	106	87.6
	German	3	2.5
	Hungarian	8	6.6
	Other	4	3.3
	<i>Total</i>	121	100

*Source:* Own construction

*Table 2* Respondent Country of Origin

Country	Country of Origin	
	Frequency	Percent
India	24	19.8
China	11	9.1
Turkey	7	5.8
Vietnam	7	5.8
Algeria	6	5
Tunisia	6	5
Germany	5	4.1
Other	55	45.4
<i>Total</i>	121	100

*Source:* Own construction

Norway, Seychelles, Spain, Syria, Taiwan, the United Kingdom, West Bank and Yemen.

Foreign students can study at any faculty of the University of Szeged. The questionnaire was filled in by foreign students from each faculty. Students from the Faculty of Medicine had the highest amount of responses at 30.6%. This can be explained by the fact that the highest number of foreign students enrol in this Faculty. They were followed by the Faculty of Arts, amounting to 12.4%, the Faculty of Economics and Business Administration, with 10.7%, and the Faculty of Dentistry, with 6.6%. The overall results can be seen in Table 3.

### 3.4. PLS-SEM analysis

After this description of the study's background, we now turn to investigating further the PLS-SEM analysis. To study if motivations have any effect on expectations, structural equation modelling was used (SEM). This process can be applied in investigating hypothetical models (Lei–Wu 2007). It has two types, the covariance-

Table 3 Respondent Faculty

Faculty	Frequency	Percent
Faculty of Agriculture	2	1.7
Faculty of Arts	15	12.4
Faculty of Dentistry	8	6.6
Faculty of Economics and Business Administration	13	10.7
Faculty of Engineering	2	1.7
Juhász Gyula Faculty of Education	2	1.7
Faculty of Health Sciences and Social Studies	1	0.8
Faculty of Law and Political Sciences	6	5
Faculty of Medicine	37	30.6
Faculty of Pharmacy	6	5
Faculty of Science and Informatics	29	24
Total	121	100

Source: Own construction

based (CB) and the partial least squares (PLS) method (Kazár 2014). The partial least squares method can be used if the sample is relatively small and the variables do not necessarily conform to a normal distribution (Hair et al. 2012, Kazár 2014). As this was the case here, the PLS method was used to analyse the current model. The outer and the inner model will be described in the following section.

#### 3.4.1. Constructions, the outer model

The phenomenon of motivation and expectations were studied with a 5-point Likert scale. Scales were created based on previous research from secondary literature and pilot studies. In terms of motivation, reference groups, self-realization, cultural motivation, integration and gaining knowledge were examined. While in connection with expectations, social, personal, cultural, labour market and educational expectations were investigated.

The manifest variables related to the latent variables have a reflective indicator role, so they are the causation of the latent variables. Before the PLS-SEM analysis, three criteria were tested to prove the validity of the data (Kazár 2014). To test the credibility of the phenomenon, explorative factor analysis was used. The credibility of the latent variables was measured with Cronbach  $\alpha$ , which had to be higher than 0.6 (Hair et al. 2009). From the first appendix, it can be seen that this is true for all variables. To analyse the latent constructs' convergence validity, the standardized factor weight ( $> 0.5$ ), the average variance extracted ( $AVE > 0.5$ ), and the composition reliability ( $CR > 0.7$ ) were studied. Comparing the results of the current study, it can also be seen in the first appendix, that the existence of all the ten constructions is validated. Based on the test of Fornel and Larcker (1981), the discriminant validity was also examined, which means that the variables' AVE value had to be higher than the squares of the correlation coefficients between the construct

and the other constructs. As can be seen in the second appendix, this criterion is also met in all cases.

### 3.4.2. *The inner model*

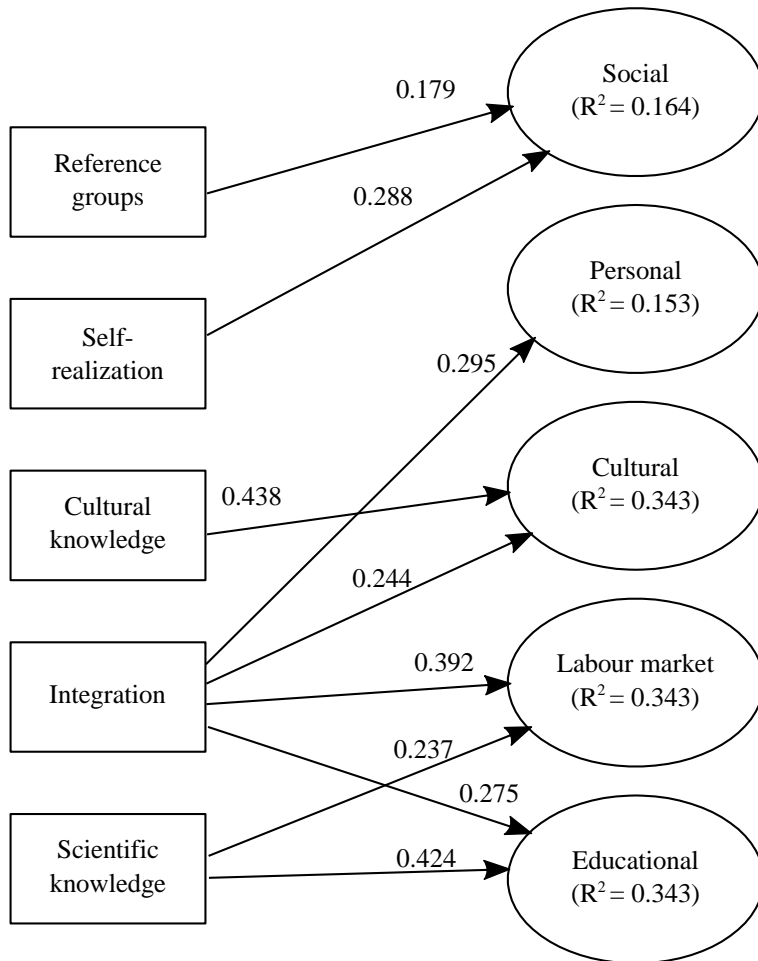
In this section the testing of the standardized path coefficients is described. The aim of the path analysis is to determine the direct effects of motivation on expectations. The significance of the path coefficients was analysed by bootstrapping. The results of bootstrapping can be seen in the third attachment. From the P values in the table, it can be seen that at a five percent significance level, not every variable has a significant effect on the dependable variables related to it. In particular, reference group motivation does not have an effect on the educational expectations and self-realization motivation does not have an effect on personal expectations.

The final model was drawn up based on the significant effects, according to which the exogenous variables in the model are the reference group, self-realization, cultural, integration, and gaining scientific knowledge motivation, while the endogenous variables are the social, personal, cultural, labour market and educational expectations.

From Figure 5 it can be concluded that the effect between the latent variables are positive in all cases. The reference groups' motivation has an effect on social expectations ( $\beta = 0.179$ ) and the motivation of self-realization also has an effect on social expectations ( $\beta = 0.288$ ). Cultural motivation affects cultural expectation of foreign students ( $\beta = 0.438$ ). The motivation of integration into the Hungarian community has an effect on four expectation types. Its weakest effect is on cultural expectations ( $\beta = 0.244$ ), which is followed by its effect on educational expectations ( $\beta = 0.275$ ), personal expectations ( $\beta = 0.295$ ), and it has the biggest effect on labour market expectations ( $\beta = 0.392$ ). The motivation of gaining scientific knowledge in Hungary has an effect on labour market expectations ( $\beta = 0.237$ ) and on educational expectations as well ( $\beta = 0.424$ ).

The strongest effect in the model are the effects of cultural knowledge motivation on cultural expectations ( $\beta = 0.438$ ) and the motivation of gaining scientific knowledge on educational expectations ( $\beta = 0.424$ ).

*Figure 5* Model of Foreign Student Motivation and Expectations



*Source:* Own construction

### 3.5. Results

In the following section the results of the study are presented and the hypotheses analysed. At the beginning of the current research, hypotheses were formulated, which can be accepted or rejected based on the outcome of the PLS-SEM analysis of the relationship between foreign student motivation and expectations. Table 4 summarizes the outcome of the study and tests each hypothesis.

*Table 4* Testing the hypotheses of the current study

Hypotheses	Statement	Accepted	Rejected
H1a	Reference group motivation has an effect on social expectations.	X	
H1b	Reference group motivation has an effect on educational expectations.		X
H2	Self-realization motivation has an effect on personal expectations.		X
H3	Cultural motivation has an effect on cultural expectations.	X	
H4a	Motivation for integration has an effect on personal expectations.	X	
H4b	Motivation for integration has an effect on cultural expectations.	X	
H4c	Motivation for integration has an effect on labour market expectations.	X	
H4d	Motivation for integration has an effect on educational expectations.	X	
H5	Motivation for gaining knowledge has an effect on educational expectations.	X	

*Source:* Own construction

The above summary shows that only two hypotheses were rejected. Reference group motivation does not influence educational expectation, nor does the motivation for self-actualization have an effect on personal expectations. However, when testing the model, additional relations were found between the variables. These two additional effects in the model are the relationship between self-realization motivation and social expectations and the connection between scientific knowledge gaining and labour market expectations. Therefore, it can be stated that:

- Self-realization motivation has an effect on social expectations.
- Scientific knowledge gain has an effect on labour market expectations.

#### 4. Conclusions

During the pilot studies, which included two qualitative and one quantitative analysis, the aim was to determine the main motivational factors of foreign students. Based on the results of these pilot studies, the hypothetical model of Motivation and Expectations of Foreign Students was drawn up, which was later tested in the current study with a PLS-SEM path analysis.

The results show that there are several connections between foreign student motivation and expectations. Their motivation has an effect on their expectations in many cases. However, the current research sample does not represent the whole population of foreign students at the University of Szeged. Additional research should be conducted to gain representative data from the University and possibly compare the Hungarian results with data from foreign students of a university from another



country. A comparative analysis would further determine the target-country-specific motivation and expectations of foreign students.

With the present results we are able to define the connection between the motivation and expectations of foreign students, which promises to be of key importance in creating future marketing strategies aimed at attracting and keeping foreign students at the University of Szeged. This would furthermore have budgetary advantages, as foreign students contribute significantly to the income of the University.

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## Appendices

### Appendix 1. Constructions and indicators

Constructions (latent variables)	Items	Standardized factor weight	Mean	Standard deviation
<b>Reference groups</b> Cronbach $\alpha=0.703$ AVE=0.523 CR=0.819	My family played a huge role in my choice of destination and school.	0.624	2.66	1.47
	My friends encouraged me to come to Hungary.	0.802	2.48	1.51
	I came to Hungary because other students recommended it to me.	0.790	2.50	1.37
	I chose Hungary, because I heard good things about it.	0.691	3.64	1.20
<b>Self-realization</b> Cronbach $\alpha=0.748$ AVE=0.567 CR= 0.841	I had a clear aim, why I came here.	0.814	4.24	1.16
	Mostly, I have good grades at the university.	0.704	3.88	0.99
	I have/had high expectations of myself.	0.717	4.19	1.00
	I came here, because I would like to reach self-actualization	0.778	4.20	1.17
<b>Getting to know cultures</b> Cronbach $\alpha=0.613$ AVE= 0.531 CR= 0.774	Getting to know other cultures is very important for me.	0.779	4.09	1.07
	I chose Hungary, because it is in Central Europe and I can travel from here.	0.670	3.01	1.25
	Learning languages motivated me a lot, when choosing Hungary.	0.739	3.38	1.27
<b>Integration</b> Cronbach $\alpha= 0.733$ AVE= 0.621 CR= 0.837	After I finish university, I would like to stay here, in Hungary.	0.885	2.36	1.25
	After I get my degree, I would like to get a job here, in Hungary.	0.868	2.55	1.38
	I chose my university, because I liked the city itself.	0.612	3.25	1.16
<b>Gaining knowledge</b> Cronbach $\alpha= 0.796$ AVE= 0.684 CR= 0.868	I chose Hungary, because the teaching standards and the standards of the university were very important for me.	0.860	3.79	1.13
	I chose Hungary, because here, I get practical and valued skills with my degree.	0.875	3.86	1.24
	Learning played the biggest part in my decision to come to Hungary.	0.747	3.96	1.29
<b>Social expectations</b> Cronbach $\alpha=0.851$ AVE= 0.698 CR= 0.903	In Hungary, at the University of Szeged, I expect that... [I will make new friends.]	0.867	4.44	0.75
	I will get to know Hungarian people.	0.808	4.22	0.95
	I would be in a reliable and great community.	0.836	4.29	0.88
	I will have long-lasting international relationships.	0.832	4.36	0.84
<b>Personal expectations</b> Cronbach $\alpha=0.858$ AVE=0.711 CR= 0.909	I will be more open-minded with people.	0.911	4.46	0.85
	I get good experience for personality development.	0.865	4.43	0.89
	My language knowledge will improve.	0.732	4.12	0.99
<b>Cultural expectations</b> Cronbach $\alpha=0.889$ AVE=0.755 CR= 0.926	I will gain new skills related to my studies.	0.865	4.52	0.80
	I will be able to travel to different foreign countries.	0.778	4.15	0.92
	I can get to know other cultures.	0.624	2.66	1.47
	I will participate in the cultural life of Szeged.	0.802	2.48	1.51
<b>Labour market expectations</b> Cronbach $\alpha= 0.755$ AVE= 0.651 CR= 0.849	I am going to get to know the Hungarian culture.	0.790	2.50	1.37
	I will have good work opportunities abroad.	0.691	3.64	1.20
	I can work in the European Union.	0.814	4.24	1.16
<b>Educational expectations</b> Cronbach $\alpha=0.906$ AVE=0.787 CR= 0.937	I will have good work opportunities in Hungary.	0.704	3.88	0.99
	The University of Szeged is well-equipped.	0.717	4.19	1.00
	There are well-educated teachers at the University of Szeged.	0.778	4.20	1.17
	I will gain useful knowledge at the University of Szeged.	0.779	4.09	1.07
	I am going to have interesting lessons and courses at the University of Szeged.	0.670	3.01	1.25

Source: own construction

Appendix 2. AVE indicator and the Correlation coefficient square values between the latent variables

Latent variable	AVE	Reference group motivation	Gaining knowledge motivation	Self-realization motivation	Personal expectations	Social expectations	Cultural expectations	Educational expectations	Labour market expectations	Cultural motivation	Integration motivation
Reference group motivation	0.523	1	0.182	0.130	0.025	0.043	0.027	0.036	0.054	0.058	0.053
Gaining knowledge motivation	0.684	0.182	1	0.540	0.107	0.181	0.131	0.257	0.134	0.216	0.219
Self-realization motivation	0.567	0.130	0.540	1	0.080	0.114	0.127	0.163	0.107	0.271	0.161
Personal expectations	0.711	0.025	0.107	0.080	1	0.520	0.466	0.545	0.270	0.102	0.126
Social expectations	0.698	0.043	0.181	0.114	0.520	1	0.635	0.520	0.343	0.165	0.216
Cultural expectations	0.755	0.027	0.131	0.127	0.466	0.635	1	0.386	0.263	0.292	0.181
Educational expectations	0.787	0.036	0.257	0.163	0.545	0.520	0.386	1	0.310	0.103	0.210
Labour market expectations	0.651	0.054	0.134	0.107	0.270	0.343	0.263	0.310	1	0.081	0.216
Cultural motivation	0.531	0.058	0.216	0.271	0.102	0.165	0.292	0.103	0.081	1	0.206
Integration motivation	0.621	0.053	0.219	0.161	0.126	0.216	0.181	0.210	0.216	0.206	1

Source: own construction

## Appendix 3. Results of bootstrapping

	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values
Cultural motivation -> Cultural expectations	0.438	0.449	0.093	4.730	0.000
Gaining knowledge motivation -> Educational expectations	0.424	0.417	0.096	4.403	0.000
Gaining knowledge motivation -> Labour market expectations	0.237	0.239	0.091	2.614	0.009
Integration motivation -> Cultural expectations	0.244	0.246	0.080	3.040	0.002
Integration motivation -> Educational expectations	0.275	0.279	0.063	4.363	0.000
Integration motivation -> Labour market expectations	0.392	0.399	0.082	4.792	0.000
Integration motivation -> Personal expectations	0.295	0.298	0.084	3.527	0.000
Reference group motivation -> Educational expectations	-0.050	-0.028	0.084	0.594	0.553
Reference group motivation -> Social expectations	0.179	0.206	0.087	2.047	0.041
Self-realization motivation -> Personal expectations	0.166	0.187	0.103	1.619	0.106
Self-realization motivation -> Social expectations	0.288	0.297	0.101	2.865	0.004

Source: own construction