Doctoral (PhD) Dissertation

Factors influencing university students' interests and objectives in their studies and careers with particular focus on gender stereotypes

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Chapter 1. Introduction

Despite the civilisational progress and technological development in all developmental, social and economic fields witnessed by the world at the beginning of the second millennium, Education is the most effective tool in achieving gender equality and sustainable and continuous development. Studies conducted in Europe have shown notable gender differences in educational fields. Girls are often overrepresented in teaching, language, and social studies while being underrepresented in areas like engineering, science, and mathematics. This education gap may result in fewer opportunities for females to receive the same education level and benefits as their male counterparts. (Favara, 2012; OECD, 2009; Geerdink & Dekkers, 2011). The classification and hierarchical arrangement of the field of study ultimately lead to the profession individuals pursue throughout their lives. Among these fields of study that occupy the highest ranks in this hierarchy, STEM fields, representing Science, Technology, Engineering, and Math, contribute to economic development and higher returns in careers and the labour market (Wright et al., 2016) despite the steady increase in female graduates compared to male graduates. There are differences between men and women in their choice of higher education, as women have fewer choices in mathematics, science, technology and engineering, leading to a widening of the gender gap in most countries worldwide (OECD, 2015). Stereotypical ideas about gender dominate our thinking and our thoughts in civil societies. These ideas strictly distinguish between genders and establish appropriate roles for both genders; thus, society expects individuals to act and make decisions according to their gender. Although the increase in the number of women enrolled in higher education, where the total number in 2011 reached 54%, now only 23% were registered in STEM fields. The educational gap remained, which is considered an educational dilemma afflicting higher education, and consequently, a shortage in the availability of skilled labour in the labour market and dependence on foreign labour (OECD, 2017). One reason for this crucial phenomenon (the gender gap in STEM) is that students consider expected gains in their educational decisions, finding that women are less responsive to steady gains than men. Consequently, they are less likely to enrol in majors that lead to higher returns in the labour market, such as STEM (Declercq et al., 2018). Some earlier studies have cited the role of gender differences in abilities.

In some studies, females were hesitant to take risks in choosing science and mathematics because of their deficiency of confidence in their mathematical and intellectual abilities (Paglin & Ruffolo, 1990; Gneezy & Rustichini, 2004). Meanwhile, Zafar (2013) found that distinctions in the choice of subjects between males and females are mainly due to the different preferences

and different attitudes of female and male students. Successful role models effectively reduce girls in academic settings. The role of women models is considered among the factors that affect female students' academic and professional decisions. For example, models of ambitious and successful women in the academic community in universities, companies and institutions are considered successful and aspiring role models who embody perseverance and completeness (Olsson & Martiny, 2018). The family significantly impact the acquisition of behaviours related to gender roles, specifically since children in the earlier phases of life emulate role models in their environment. In addition to patriarchal influences and gender stereotypes, financial constraints and low participation in secondary schools after compulsory education are closely related to the gaps in the education system (Kancaniku, 2015). Gender inequality in science and technology is a hotly debated topic among policymakers and academics who agree with feminism; the factors that perpetuate gender inequality in education are gender stereotypes and multiple patriarchal control, enhancing academic choices based on gender identity (Devine et al., 2012). The education and socialisation of a child in the early stages of life ready it to create its main idea of how a man and a woman should behave. A child's stereotypical ways persist, and understanding of the stereotypical gender roles extends through other means like media, games and the pictures in textbooks. Stereotyped behaviours are reinforced by all sensory, auditory, and visual stimuli surrounding the individual's environment (Archer & Lloyd, 2002; Kollmayer et al., 2018; Endendijk et al., 2014).

Complicated and multidimensional constructs such as social and economic status, parental education, and peers influence a student's education. Garg et al. (2002) found that individual factors (high school graduation, parenting, academic expectations, and self-efficacy) greatly affected educational aspirations. Parental engagement is a form of social capital associated with university enrolment regardless of the level of individual and school resources (Perna & Titus, 2005). The participation and supervision of children’s parents in various educational stages have been of great importance to many researchers and learners. Based on the famous saying, good education generates productive and useful societal generations. The more parents participate in their children's education, the more they will be able to achieve academically and become competent members. Parents today see themselves as responsible for guiding and educating their children to choose better career topics, keeping their interests and future requirements in mind (Hunt, 2008). Families are essential factors that play an integral and significant role in determining study paths in the transition to higher education. Epstein (2010) suggests that families and communities effectively shape a caring educational environment for

their children. It also admits that parents interested in their children's education regularly interact with teachers and collaborate with the educational community. They display good parenting skills, volunteer their time in educational settings, and actively share academic decision-making in addition to the student's self-interest and potential income (Stock & Stock, 2019).

On the other hand, the university and the campus are crucial for the students. The university's faculty and staff tremendously impact students' academic decisions (Johnston, 2010). The most significant factors that define the success of an educational institution are the spreading of its reputation and the extent to which students are satisfied. The university-related factors of educational satisfaction overlap with other factors related to lifestyle outside the University. International students studying abroad are new components of an educational institution and, simultaneously, members of a new community and place of living. Their lifestyle and social connections contribute to their satisfaction with their educational institution (Kéri & Révész, 2019; Azzone & Soncin, 2019). The quality of university criteria, faculty members, study programme, staff and administration, and the University's location and image lead to higher student satisfaction (Weerasinghe & Fernando, 2018). Hungary's unique conditions and geographical location in the heart of Europe also have a remarkable language and national originality (Fenyves et al., 2019). OECD data (2019) suggest that Hungary was one of the countries with the most increased growth in international students among OECD countries between 2010 and 2017. The percentage of international university students increased, and the ratio of international students registered in Hungarian universities doubled from 5% to 10%. This comprehensive study attempts to determine the impact of gender stereotypes on students' study choices at the University of Debrecen. Also, it aims to identify the most important factors related to family background, educational institution, and sociodemographic factors that influence students' study choices and male and female personality characteristics associated with gender.

1.1. The importance of research

In the background of the research are family, cultural and social factors that lead to differences between males and females due to gender stereotypes (Endendijk et al., 2014). These studies (Nicolao, 2014; Favara, 2012; and Dalmau Valls et al. 2017) treated gender stereotypes as an independent variable in the research and reported their negative and positive effects on the behaviour of choosing a job, profession or education, focusing mainly on women and not on gender stereotypes in women and men alike, as well as social and cultural influences and the

influence of family, in particular. Most of these studies were conducted on primary and secondary school children and adolescents with little attention to college students. Most previous studies examined the relationship between gender stereotyping and the type of career or profession. At the same time, little attention is given to the academic specialisation choices in the field of research. These factors led us to conduct this research.

1.2. The purpose of the research and its objectives

The present research aims to examine the effect of gender stereotypes on students' university choices and to gain new insights into the experiences of students seeking university choices that are far removed from stereotypes and gender segregation. The current research focuses on examining the social aspects and gender roles acquired due to the socialisation process, family background, environmental and geographic factors, and differences in personality traits between men and women. as well as the way gender stereotypes affect the academic selection decisions of men and women. Through this study, we hope to engage students in knowing how they view themselves, whether their academic choices have led to a decrease in the academic representation they seek, and whether they are changing their future behaviours based on their past experiences with gender stereotypes. The results of this research will hopefully function as an important resource for male and female university students to help them choose their academic specialisation according to their talents and abilities rather than based on gender stereotypes or societal behaviour patterns that fit their gender. We hope that this research will help teachers correct imbalances in the educational process and provide strategies to help improve the academic choices of male and female students to make the best academic choices.

Overall, we had the following aims:

1. to detect the differences in students' academic choices, participation in education and gender stereotypes
2. to determine the factors influencing the choice of a university to attend
3. to create student groups based on their gender stereotyping behaviour and attitudes.

1.3. The relevance of this research concerning educational sciences

Education is an essential factor in the development of individuals and society. Many social constraints prevent people from getting an education. Some people cannot have access to basic or higher education due to gender stereotypes, which are a social constraint that makes education a dream for many people (Endendijk et al., 2014).

Gender stereotypes are over-generalising people's characteristics and behaviour based on gender. Stereotypes help people categorise things and simplify daily activities and cognitive processes (Favara, 2012). Society differentiates between male and female characteristics with clear boundaries. Therefore, people are expected to behave in a certain way appropriate for their gender. Sometimes, people are prevented from achieving their dreams due to gender bias in society because, according to the norms of society, some situations are not suitable for both genders. It is unjust when certain individuals are denied education due to gender bias (Dalmau Valls et al., 2017). Gender stereotypes unconsciously affect the decision (of women and men) to study at a particular university. For example, gender stereotypes partly explain why women choose to study sections in fields that lead to low-paying jobs. Researchers claim that increased student stereotypes directly lead to additional positive or negative perspectives towards school. Positive views direct to higher educational attainment, while negative thoughts instantly lessen educational attainment (Igbo et al., 2015). Gender stereotypes shape students' perceptions and thinking. They also affect students' classroom knowledge, choice of major, and academic achievement. In an educational setting, gender discrimination has a far-reaching influence. Advancements in Science, Technology, Engineering, and Mathematics, known as STEM, play a critical role in social progress and economic development. As a result, employment opportunities in these fields have grown rapidly and are expected to grow over the next decades (UNESCO, 2017). Recognising the extraordinary challenge of qualifying the next generation of children to contribute to this growing need, state and national education entities have improved focus and spending on STEM curriculum, including an expansion of standardised testing in science and mathematics beginning in early elementary school (Tanenbaum,2016).

While countries strive to be competitive in these areas, researchers have identified a serious dilemma: the underrepresentation of women in STEM fields (OECD, 2015). Although women make up more than 50% of workers with tertiary education, they make up only a quarter of workers in STEM. There is also a danger that women are underrepresented in other education fields; for instance, computer science and engineering make up less than 20% of the workforce at all levels (Fry et al., 2021). Gender differences in STEM interests and pursuits are evident even before boys and girls make major career decisions in adulthood, with girls doing more in high school and university and expressing less interest in STEM. This distinction continues into university entry, where more young males enrol in STEM courses than young females (Cohen & Deterding, 2009; OECD, 2011).

It is essential to understand the developmental prototypes and causes of this significant gender inequality. It was indicated that the sources of gender difference in STEM are ingrained in early childhood (Ceci & Williams, 2011). Indeed, children's STEM trajectory begins in elementary school when they first begin placed into math courses based on their performance (Fong & Finkelstein, 2014). We have pointed out in previous literature the relationship between gender stereotypes and the educational aspects of university students, particularly the impact of gender stereotypes on academic performance and success in science, technology, engineering, and mathematics. We are aware that such gender stereotypes may fester beneath the surface, at the subconscious level, in the form of implicit stereotypes. Research shows that these stereotypes often shape children's academic beliefs and interests. For example, studies have shown that boys as young as six years old are likelier than girls to believe their gender is great (Bian et al., 2017). Furthermore, these beliefs influence children's choices and cause young girls to avoid intelligence-related activities. Thus, girls already have beliefs about their abilities in early elementary school, limiting their academic choices. The gap between occupational identity and social identity increases with age. The results of the study by Ramaci et al. (2017) highlight that men perceive themselves as more independent than women in military, scientific-technical, and agricultural occupations. In addition, the type of occupation held by parents is a predictor variable of self-efficacy in choosing service occupations. The above illustrates that gender stereotypes affect academic achievement and lead to significant educational differences and gaps for women and men at all levels of education, especially in terms of academic achievement and educational and career choices. They lead to differences in higher education, which creates a problem in education policy and differences in employment.

1.4. Problem of the research and conceptualisation

Education is essential in promoting human capital, as social skills and knowledge can be developed through education (OECD, 2012a). Furthermore, access to quality and equal education is a legitimate human right and a mechanism for personal and social development, particularly if it is accompanied by a suitable academic choice (Unterhalter, 2012).

The task of academic choice is one of the most important decisions for university students, as it later establishes the rules for the future career that will accompany them for the rest of their professional lives. Gender discrimination in education and jobs continues to impact the persistence of stereotypical beliefs of both genders about what suits women and men academically, called gender stereotypes. Stereotypes are part of a complex and transparent system encompassing many aspects, starting with the family, the social and school

environment, teachers and peer groups. In addition, higher education has a fundamental role in civilised societies as it fulfils all the needs of individuals through which they can achieve a high level of performance and gives future guarantees that prepare them for life and desired career stability. Furthermore, it is universities where the most popular thoughts are gathered, always trying to find answers to the future of the societies they foster. All these privileges still have not achieved the goal of gender equality (Makarova et al., 2019). This obvious fact I attested by the statistical analysis at the international level for all 28 Member States of the European Union. The results show that at the horizontal level (men and women), women are encouraged to enrol in various educational programs. At the vertical level, there is a low percentage of women in the higher hierarchical levels of students and teachers alike. Moreover, a few of these countries have implemented educational policies that target both types of gender discrimination in academic circles, which can be considered a product of more significant social phenomena (Makarova et al., 2019). Study choice is still considered to be a subject of great controversy by psychologists and social scientists. Educators have claimed that gender socialisation causes women and men to prefer gender-specific fields of study. Women are attracted to subjects that involve people and caring, while men are attracted to subjects that require analytical thinking. Furthermore, stereotyping mathematics as a male domain result in women being underrepresented in various fields of study that require mathematical preparation (Ethington & Woffle, 1988). With the vast opportunities in professional disciplines, women need more to catch their attention and pique their curiosity. The real reasons women limit their academic and professional experiences and do not compete with men are the new disciplines they consider unsuitable for their gender. Educational systems are an integral part of society and, therefore, reflect the culture and values of that society. In most countries, gender discrimination remains a fundamental principle in school curricula and syllabus design. Men are prepared for field and practical work, while girls are trained for community work. This distinction between male and female students shows obvious differences in what girls and young people choose to study at universities and colleges (Igbo et al., 2015).

Recent years have witnessed the active participation of women in work fields. Women have become independent with their capital due to their involvement in commercial, agricultural and investment businesses, and entrepreneurs benefited greatly from employing their abilities and skills at work and were able to compete with men. However, there are still many professions that women have not been able to enter, and they always try to dominate the disciplines in which they excel - women, not men (Parsons et al., 1994). They found that many work in jobs that are

far removed from their fields of study, as are the areas of study of college students, which later affects their access to employment and job creation. Economists try to determine the gap between men and women in terms of wages paid. They have found no sign of equality between men and women in the modern sense because women's salaries are lower than men's. Moreover, since higher education and educational attainment are associated with higher incomes or wages, the financial returns between genders are also unequal: men's salaries are higher than women's (Schreiber, 1988).

Male students prefer science, engineering, technology and mathematics subjects, while girls are more likely to choose education, health and social sciences. The prevailing view is that study materials are divided by gender into subjects for boys and girls. Male subjects (science, engineering, technology and mathematics) are associated with men and carry their stereotypes as complex, dirty or socially irrelevant, in addition to what teachers and workers do in school senior jobs. They consciously or unconsciously perpetuate stereotypes when they advise and interact with students through curriculum and materials (Fong & Finkelstein, 2014). A distinction is often made between courses of study taught in schools and institutes and the various career options that change perceptions of girls and boys. Women who want to take on tasks, receive leadership, and take matters into their own hands, especially in male-dominated professions, despite often being rejected by their colleagues and friends. These are those who enjoy high confidence, which they acquired in the early stages of personal and social development in the years of socialization (Unterhalter, 2012). Predicting these negative experiences can discourage women from choosing overly male-dominated professions. More equitable treatment, sensitive family policies, and social support likely encourage a woman's willingness to consider a wide range of career options. The equality women want is not the same as the equality afforded by society, the environment and the climate in which they live. We often see and hear much rhetoric in the media and on social websites (OECD, 2012b). Despite a push towards gender equality in rights, responsibilities, and leadership positions, the reality for many women remains different. Societal expectations and customs often impose burdensome and complex roles that can hinder progress towards true equality (Fong & Finkelstein, 2014). The freedoms won by women result from a bitter struggle over many years and unprecedented sacrifices. No matter how many theories have been put forward and proposed, many ideas and hypotheses have stood the test of time through different and varied human experiences. During past eras, women had no rights, so education was their weapon to gain them. Throughout history, there has been inequality and disagreement between men and

women, which has resulted in women having fewer opportunities. Traditionally, men and women have engaged in different social, cultural, political, and economic activities. These gender-based differences in labour, which have undergone historical changes, have led to women being placed in a lower social status (Kane, 1998). Even when women and men have seemed equal in one area of life, this discerned equality has frequently led to disadvantages or grown burdens on women in another area, and women's contributions remain small compared to those of men. The world has undoubtedly changed, with many studies examining university adolescents' perceptions of career and work life between the sexes engaging completely a long time ago (Dubois-Shaik & Fusulier, 2015).

Based on what we presented in the literature above, we can predict that the dimensions of academic choice are accompanied by gender stereotypes (Table 1); Hence, we started working on gender stereotypes in this research. We believe that gender stereotypes cannot be studied separately from other factors, such as sociodemographic, geographic and institutional factors, which have been proven by many previous studies that dealt with gender stereotypes. We hope that under the circumstances, changing attitudes and opinions of society and ideas and perspectives for eliminating gender stereotypes will encourage girls' and boys' aspirations with more awareness of girls' participation in a wide range of careers to help them understand the opportunities available. In this regard, not only young people but also governments and education policymakers should pay more attention to students' needs in building a strong educational system.

Table1. The conceptualisation of research

Terms	**Dimensions**	**Variables**
Sociodemographic background	Gender Age Education level Educational level of parents Country Place of residence (capital, big city, town, village, rural area)	What is your gender? How old are you? What is your major? What is your mother's highest educational degree? What is your father's highest educational degree? What is your major? Where are you from? Level and type of study?

Socioeconomic factors	Religion The economic situation of the family Education of siblings Interpersonal factors Satisfaction with major	Are you religious? What is your religion? What is your family's income. Do you have a car, a house, savings, etc.? How did people influence your decision?
Institutional factors	Location Reputation and ranking of the university Financial aid and loans Scholarships Tuition Cost of living Employment Quality of Life Campus Life and Safety Professors Future Degrees Programme and Academic Staff Satisfaction with the programme	How did these factors affect your educational decision? Are you satisfied with your training course and your university?
Gender stereotyping	Gender stereotyping in family, society and social life. Gender stereotyping in the choice of a field of study Gender stereotyping in the choice of profession	Have you had any experience with gender stereotypes in your family, in society, and in your professional life? Do you think we can banish gender stereotypes from our lives? Are there female and male main characters? To what extent are you and your parents stereotyped? Did you choose your major based on gender stereotypes?

Personality associated with gender stereotyping	60 Personality traits from the Bem scale	Rate yourself from 1-7 on each item. Personality traits associated with gender stereotypes affecting the choice of major

Chapter 2. Gender stereotypes in the choice of studies by university students

For a more thorough investigation of the impact of gender stereotypes on academic specialisation, this chapter is dedicated to the theoretical background of the main relevant terms.

2.1. What is gender stereotyping?

Understanding the terms sex and gender, both male and female requires a deeper understanding of their meanings According to the American Psychological Association (2013) and the National Association of School Psychologists (2015), sex refers to a person's organic nature, often classified as male, female, or intersex. Sex chromosomes, gonads, and internal and external genitalia characterise it. Gender, on the other hand, refers to attitudes, emotions, and behaviours associated with a person's birth sex. Gender normative behaviours conform to cultural expectations, while non-conformist behaviours are not gender- conforming.

To better understand gender stereotyping, we also present several definitions. Gender stereotypes are individuals' thoughts about the features of males and females. The content of stereotypes varies from culture to culture and over time. These expectations are often related to gender roles in the culture (Martin & Dinella, 2011). Gender stereotyping expresses psychological characteristics related to one of the genders' comparisons with the opposite sex. These gender stereotypes are closely related to gender role ideologies, and gender stereotypes explain differences in gender role ideologies across different cultures (Martin & Dinella, 2011). Gender stereotyping, as defined by the Office of the United Nations High Commissioner for Human Rights OHCHR (2022), is an overview of prior perceptions of the characteristics or roles that men or women should possess. Gender patterns known to both sexes become useless and harmful when they become obstacles for men and women to prove themselves, develop their skills and capabilities, and exercise their rights in their professional, life and educational choices. Therefore, this subject has a substantial sociocultural environment that correlates with specific liveliness, apparel, and hobbies with males with females. Gender stereotypes express differences between the sexes that emerge and are acquired during socialisation. Gender stereotypes are a unified culture for men and women-related media. Besides, they represent a group of opposites frequently used in Western cultures, such as rough, soft, emotional and assertive. They could also be an example of providing targeted and standardised communications (Scott & Marshall, 2009).

The Gender Equality Committee of the Council of Europe (2015) defines stereotypes as ready and previous ideas about what females and males will be in their societies and allocating sexual

roles specific to each gender. The impact of gender stereotypes on the lives of all individuals. As is well known, gender stereotypes can stop individuals' personality development, talents, and abilities, reduce their educational and professional opportunities, and cover almost all forms/areas of their lives. Gender stereotypes can be divided into two types: those with descriptive and those with prescriptive components. The depicted components are beliefs about what men and women typically do, and the descriptive elements are ideas about what females and males should accomplish. The prescriptive nature stems from the connection and interdependence between men and women and creates expectations about how men and women should behave (Koenig, 2018). Prescribed stereotypes can have positive and negative elements: Positive prescriptive stereotypes indicate acceptable behaviours that one gender should exhibit more than the other. Negative stereotypes indicate unacceptable behaviours one gender should avoid more than the other (Prentice & Carranza, 2004; Rudman et al., 2012). The studies aimed to improve a trait-based estimation of personal distinctions in community uptake of gender recipes and to document the content of these recipes. Bem's scale of feminine and masculine characteristics was formulated in 1974 by American psychologist Sandra Bem, a proponent of the feminine approach that a person can express both feminine and masculine characteristics and create an inventory of gender roles.

Bem planned her inventory to represent two completely different measures of culturally defined masculinity and femininity. Bem designed her scale (1974) to include a broad range of desirable personal characteristics in women and desirable in men and asked participants to make these ratings according to community desirability rather than personal opinion. Both male and female respondents rated female characteristics as more desirable than male characteristics, and male participants rated male characteristics as more desirable than female ones. These criteria resulted in 20 feminine and 20 masculine traits that appear in the Bem Sex-Role Inventory (BSRI; Bem, 1981). Feminine qualities are tender, feminine, loving care, cheery, compassionate, not harsh, seeking to soothe hurt feelings, flattering others, modest, naïve, loving children, faithful, sensitive, shy, quiet, kind, understanding, warm and yielding. Masculine traits are leader, aggressive, aspirant, analytical, emphasised, athletic, competitive, upholding own beliefs, dominant, powerful, has custody qualities, self-reliant, individualistic, makes decisions fast, masculine, self-sufficient, strong personality, willing to carry a stand, and willing to carry risks. These characteristics are a good representation of prescriptive gender stereotypes.

Rudman and Glick's (2001) study points to the need for obligatory gender stereotypes to understand men and women better, as obligatory gender stereotypes indicate (acceptable or unacceptable) behaviour. Infringements of descriptive stereotyping in males and females frequently lead to astonishment and moral anger because the individual is not behaving as they should. Responding to female and male goals helps maintain quality hierarchy and keep men in high-ranking positions, limiting experienced women's access to the same positions. For example, women who oppose popular stereotypes through healthy behaviour are unpopular and less likely to be hired, even though they are considered qualified. Men can also suffer relapses when they violate obsessive stereotypes by lacking strength and displaying weakness (Rudman et al., 2012).

It is not clear whether these prescriptive stereotypes are more limiting for adult males or females. A growing body of research has examined the repercussions on females, possibly because females are frequently kept out of high-ranking posts, which is an actual prejudice in the community. Nevertheless, there is ample proof that males' adult behaviour could be more restrictive than females. For example, although there is no immediate measurement of obligatory stereotyping, Hort et al. (1990) show that males are more stereotyped than females. According to the case contrast hypothesis, two necessary stereotypes can provoke a counter-reaction in men: lack of agency and showing vulnerability and only one in females: showing dominance (Rudman et al., 2012). This discussion suggests that men are perceived more negatively than women when violating gender patterns because men lose status from abuse (while women gain it). The situation is considered a positive and acceptable outcome. Moreover, methods related to insecure masculinity also suggest that men must publicly and regularly demonstrate their power to be classified as men because masculinity is an unpredictable and immaterial social status (Koenig, 2018).

Moreover, incidents of gender discrimination that involve differential practices are thought to reflect more on the prescriptive component of gender stereotypes. In contrast, incidents of gender discrimination that involve differential effects are thought to reflect more on the descriptive component (Burgess & Borgida, 1999). Even a feminine routine can diminish a man's status and cause him to forgo feminine behaviours. According to this thought, this pressure can lead to strong stereotypes that push a man to behave efficiently and avoid weaknesses to be considered a man, a pressure that is not as strong in women. The sexual orientation view also implies that women's behaviour is judged more harshly than men's and that men who exhibit feminine behaviour are more likely to be classified as homosexual than

women who exhibit masculine behaviour. Given all of these considerations, male stereotypes may be more powerful in preventing these negative consequences of loss of status, loss of masculinity, and perceptions of homosexuality. On the other hand, female gender stereotypes lead women to choose the characteristics defined by the norms of conventional femininity (Koenig, 2018).

2.2. The sources of gender stereotyping

The gender structure of societies is built in individual and collective ways, ultimately creating environmental and social opportunities and constraints that benefit men more than women and affect families. Gender interferes with and affects many other characteristics, such as ethnicity, race, gender orientation, for example, in the USA, a woman of colour (African American) has stronger workforce relationships than middle-class European American women, given their involvement in providing more well-being for their families. The factors that influence gender roles can vary depending on social structure and family dynamics. (Blackstone, 2003).

2.2.1. Educators and parents

According to Igbo et al. (2015), there are observable differences in the ways males and females are treated, even before birth, parents prepare separate rooms and buy blue clothes for boys and pink ones for girls the toys, offered to girls are different from those intended for boys, and this different treatment can affect the behaviour that children exhibit. Gender stereotyping begins in the early years of life due to parental treatment when parents treat their male and female children differently. Fathers are the first example for their children to learn life experiences. The male child begins by imitating the father, and the female child begins by imitating the mother through imitation and observation of the role model (parents). For example, the one responsible for providing care, attention, and household chores is the mother (female model), and mowing the grass, changing the car tyre, and installing the television antenna is the father (male model).

(Archer & Lloyd, 2002; Bem, 1981). The child's stereotypical behaviours are expanded by increasing his awareness of stereotypical gender roles through media, games and picture books. Furthermore, the early preschool stages lead to the acquisition of gender identity, which teaches the child to be male or female and what follows to stereotype his behaviour. These stereotypical behaviours grow more comprehensive with all the surrounding sensory, auditory and visual stimuli. Culture, which significantly affects behaviour, includes everything the child learns from his/her social environment during socialisation and adherence to behavioural norms

specific to each gender and type. These behavioural patterns become permanent patterns passed on to other generations. Controversially, studies suggest that gender-stereotypical culture drives female-run entrepreneurship and is more reliable than the opportunity factor. On the other hand, gender stereotypes are seen as a stumbling block for successful women-led projects (Adom & Anambane, 2019).

Dealing with daily events around the children and making them aware of the practices and behaviours that suit their gender makes them interact without their awareness and realise what is right or wrong. Parents reinforce these stereotyped behaviours with siblings, peers, and televisions, predisposing them to appropriate responses, clothing, and colour selection (Igbo et al., 2015). What matters at this stage is appropriate behaviour and what is required to be in harmony with the climate and the events experienced by it and apply them. Society affects the gender roles practised by both females and males. The gender roles performed by the gender (male and female) do not deviate from the reasonable expectations of each behaviour which are appropriate for the society that adopts them because gender roles are the result of continuous interactions between society and individuals in the environment; their interaction gives them indications of whether behaviours are compatible with the environment and consistent with societal practices (Blackstone, 2003). During socialisation, individuals learn the acceptable social roles and behaviours of both sexes in their societies and receive clear instructions about what is fair and rewarding work and what society rejects and avoids. The method of learning by observation leads to the learning of stereotypical gender behaviours, which is why adults from parents and educators are models for children to imitate in all their movements and behaviours.

Expected value theory focuses primarily on the role of stereotypes that parents, teachers, or peers implicitly convey to children (Wille et al., 2018). The parents and teachers actively develop and stimulate gender-stereotyped behaviour, mainly through the indirect transportation of their biases. In childhood, it is possible to overcome gender stereotypes with the help of parents, siblings, school, and peers because children face deprivation in later life stages of making the right choice appropriate to their abilities and capabilities (Mutekwe et al., 2011). The family collectively have considerable effects on developing behaviours related to gender roles, especially since children imitate models in their environment for reincarnation in the early stages of life. The study by Kancaniku (2015) counted family-related factors as the vanguard of the reasons concerning the choice of education after secondary education, which is the influence of parents. Gender stereotypes were also influential factors, followed by financial

constraints and low participation in secondary schools where compulsory education developed. Classrooms are perhaps the places most prone to gender stereotypes, beliefs, and practices, and there are strong indications that most teachers are promoting gender stereotypes directly or indirectly. Teachers promote gender stereotypes through math and science classes by encouraging excellent male students rather than girls. Also, teachers in sports classes choose boys more than girls in physical activities or sports competitions (Ifegbesan, 2010). Much initial work on children's beliefs about sex and mathematics focused on measuring their explicit and consciously accessible attitudes and stereotypical beliefs. Several studies have found that children under five explicitly endorse traditional stereotypes that associate mathematics more strongly with boys than with girls. Furthermore, these beliefs influence children's choices and cause little girls to avoid intelligence-related activities. Thus, even in early elementary school, girls have beliefs about their abilities that limit their academic choices (Régner et al., 2010). Children and their parents support the stereotype that females are better at reading and males are better at math, showing that children believe girls dislike math and find it more difficult and inferior compared to language arts (Del Río & Strasser, 2012). Overall, this work shows that the seeds of this stereotype are already taking root in the minds of young children as they approach the onset of formal education. Research shows stereotypes often shape children's academic beliefs and concerns. Elementary school teachers harbour gender stereotypes about mathematics and believe lower-performing boys are more competent than girls (Tiedemann, 2000). In a study (Keller, 2001) of more than 6,000 middle school students (grades 6-8) in Switzerland, researchers found that teachers who explicitly portrayed mathematics as a male domain for their male students also have this belief. Parents and educators do not convey stereotypes about STEM through their behaviour and performance in these areas. For example, female teachers' attitudes about mathematics may be passed on to their students, creating stereotypes about mathematics and gender in those students. The transmission of stereotypes through math anxiety can also occur at home. The study by Maloney et al. (2015) has proven that parents' anxiety about mathematics depends on predicting their children's achievements in mathematics. Parents with high math stress had children who did worse in math at the end of the school year. Most importantly, parents frequently help with their children's math homework, allowing them to transfer their math anxiety to their children. The teachers' influence on students is significant. Especially the teenager who hopes to have a role model and mentor who holds their hand and opens doors for them. However, teachers in general and caregivers inadvertently present gender stereotypes, and their perceptions of gender stereotyping will transfer to the classroom environment, which influences their lives and educational decisions

(Schechter, 2006). Four main factors affect students' choices at the university level (parental influence, financial constraints, low secondary school participation, and societal perceptions regarding gender stereotypes) (Kacaniku, 2015). Educators may encourage children to learn more science by constantly praising everything they do during their lab and physical experiments and the different sports they do right. However, encouraging girls may be different; for example, telling them they have an excellent job helping lab colleagues here begins thinking that boys are technically gifted and girls are humanly gifted (Eccles et al., 1990). Research indicates that stereotypes often shape children's academic beliefs and interests. For example, these beliefs are ingrained in young girls' minds at six that they are less competent than boys. These beliefs drive young girls to avoid mental activities related to intelligence and thus affect their academic choices (Bian et al., 2017).

Gender identity is formed at an early age, and later in, gender stereotyping turns into two main categories (male and female). It recognises that gender patterns that cause female fear of risk, self-confidence, and negative attitudes towards competition, which have the most substantial role in forming gender identity, contribute most largely to gender decisions in academic selection later (Gneezy & Rustichini, 2004). For this reason, teachers and educators should reduce or be careful not to show stereotyped behaviours in front of children so that they do not learn, including gender-stereotyped behaviour (Olsson & Martiny, 2018). After childhood, boys and girls develop a new understanding of identifying, distinguishing, and representing gender differences and knowledge of the representation of social and cultural attitudes of men and women. on the one hand and socially acquired stereotypes on the other. That accentuates gender differences, where they are expected to explore partially new ways of establishing interrelationships (Crespi, 2004). In conclusion, these are indications that gender stereotypes can influence the academic choice of male and female children (Igbo et al., 2015).

The basis of stereotypes appears strongly in education, which is the ultimate solution to eliminate the roots of gender stereotypes that hinder the equal educational process. Therefore, as Fiske (2012) says in its Global Education Monitoring Report, relevant governments should continuously review school curricula, textbooks, and teacher training courses to ensure that gender stereotypes are narrowed. Vocational and industrial programs and scholarships encourage women to be included in science, technology, engineering, and mathematics (STEM). When we talk about the differences between men and women, most of it is due to gender stereotypes adopted by societies that control the course of life and even mentality, influencing how genders define themselves and how others treat them. Gender stereotypes also

affect how they think and remember information about themselves and the opposite sex. One effect of gender segregation is that they are not given equal opportunities: They are prevented from expressing themselves as they see fit. The wide gap between genders in choosing academic subjects and what they think is appropriate for their gender is not due to the preconceived gender stereotypes imposed on them. There is no doubt about social factors. Psychology significantly impacts attendance and performance in STEM subjects with a greater educational difference between the sexes, although socioeconomic factors predict performance in public education (Xie et al., 2015). However, there are promising indications of inequality disappearing between genders in almost all Western countries; despite the era charged with many changes and the period of loading the excess information, gender stereotyping has not disappeared. Still, it appears in different shapes; in another sense, it is wrapped, brief, and possesses a characteristic of survival, its existence undeniable. The assumptions regarding gender stereotypes are interminable and self-reinforcing beliefs (Greenwald & Banaji, 1995). Gender stereotypes of the type of occupation or job that both males and females should hold appear based on the environment and society in which individuals grow up. The traditional division of responsibilities by gender stereotypes men's jobs are scientists, engineers, pilots, and computer scientists. Women's occupations are teachers, nurses, and doctors (Reskin, 1993). Gender stereotypes can impact the career choices of females and males, causing women to make less risky career choices and allowing men to choose more difficult and dangerous types of jobs (Grossman, 2012).

2.2.2. The distribution of the social role

Gender roles are known as the actions and behaviours that include each person's social roles based on his gender. Many opinions about the underrepresentation of women in science, mathematics, and engineering subjects created a study gap in higher education and a professional difference after graduation; moreover, their tendency to choose humanitarian and linguistic subjects and medical or biological specialities. People learn and accept social roles through socialisation, which works by estimating and discouraging unwanted behaviour. In communities, socialisation agencies such as the family, schools, peer groups, and the media outline the child's behavioural standards one would expect to follow; once a person accepts a set of behavioural patterns, it becomes necessary for the individual. Consequently, assimilating these behaviours and beliefs, community awareness, and expectations attract individuals' attention to different career options (Bender, 1994). Gender roles are linked to the prevailing societal culture, and their sexual roles are determined based on their prevailing sexual culture.

Therefore, gender stereotypes can define aspects of gender roles by defining each group member's characteristics (Eisenchlas, 2013). The influences of family, school, peers, media, self-assessment of abilities, and the importance of various academic subjects and fields form the students' expectations for success in STEM (Eccles, 1994; Sáinz & Eccles, 2012; Eccles & Wang, 2016). There are indications that the study gaps are caused by psychological and cultural factors that appear in negative sexual stereotypes suggested by parents, teachers, and peers.

According to the social role theory, which assumes the development of gender stereotypes in early periods of children's lives as a result of imitation of adult behaviour, and in line with this idea, choices of subjects such as mathematics and science are linked to males more than females (Eagly & Steffens, 1984; Cao & Banaji, 2016; Kahn & Ginther, 2017). European countries show gender differences in education, particularly in science, mathematics, engineering, and information technology. There is an under-representation of women in these fields, while they have an over-representation in humanities, arts, languages, and education. These findings highlight the need for more inclusive and effective educational systems to ensure equal opportunities for all genders (Turner & Bowen, 1999).

Researchers unanimously agree that socialisation leads to gender stereotypes that later affect educational and vocational choices. Previous research has shown that there are self-attributes for men and women, although they differ in many aspects, but are consistent with the gender stereotypes of individuals (Bem, 1974). Gender is used to describe the society. Likewise, gender stereotypes applied by males and females are linked to the societal environment as well as individuals' perceptions about themselves in their stages of development in a way that makes individuals know their male and female roles with specific and unique characteristics (Igbo et al., 2015). Role models can reduce and define the gender stereotypes of stigmatised groups, which may be the case for women in male-dominated STEM fields. Interventions that build on role models foster a sense of belonging and identity and strengthen females' connections to the STEM community (Lockwood & Kunda, 1999). Dasgupta (2011) used the theoretical lens of the stereotyped insemination model to explain how to connect with successful female role models in STEM, which acts like a "social vaccine" that protects women's self-concept from stereotypes in STEM fields. However, finding a sufficient number of women professionals in STEM fields is challenging because there are few. For example, Stout et al. (2011) found that females exposed to calculus professors demonstrated better self-efficacy, greater self-concept, and higher identification and engagement with STEM, even among students who still held gender stereotypes. Although women have gained a foothold alongside men in most areas of

business and have overcome many gender barriers and prejudices over the years, gender stereotypes still develop problems in promoting women's professions. Gender stereotypes prevent women from holding prestigious leadership positions that offer them the same efficiencies as men. Women are reluctant to compete and fill the leadership roles available because their career expectations are tied to previous ideas about them that were embedded in the socialisation stage, known as social roles. Globally, only 29% of women are in leadership positions. This sense of inability and lack of competence to keep up with men in competition and career advancement and to share the burdens of work places a heavy psychological burden on them. It causes them to develop psychological conditions when they attempt to use an interpersonal leadership style in male-dominated industries (Gardiner & Tiggemann, 1999). Gendered behaviour discourages and frustrates women in the workplace. Negative perceptions of women's performance or effectiveness influence their aspirations for career advancement (Tabassum & Nayak, 2021). In Schein's (1975) study male and female respondents agreed that successful leaders are characterised by traits associated with men, such as leadership ability, competitiveness, confidence, objectivity, aggressiveness, strength, ambition, and willingness to take responsibility. In contrast, women are associated with treating others with affection, helpfulness, kindness, gentleness, compassion, and sensitivity to interpersonal relationships (Hentschel et al., 2019).

2.2.3. The influence of the media

Various media such as television, social media, cartoon films, advertisements, and programs that children watch constitute an essential factor in developing gender-stereotyped behaviours among children of different ages, starting from pre-school, primary and secondary school, and beyond. Children follow the stereotypical behaviours they see through the media, which tells males that it is normal to use violence to solve problems and that their self-esteem is linked to their appearance. Gender stereotypical behaviours are so pervasive that parents do not notice bias (Ward & Aubrey, 2017; Wille et al., 2018). Davies et al. (2002) found a relationship between girls' continued exposure to media that presents gender-stereotypical material and their educational choices. Girls constantly exposed to commercials that show women doing housework and spending time at home decrease their interest in math-related education and finding employment. They found that television personalities in child-friendly media have a low percentage of women in the portrayed characters for science, technology, engineering, and mathematics compared to men. This bias firmly specifies in children that science, technology, engineering, and mathematics jobs belong to men more than women, strengthening the

distribution of roles according to gender (Eagly & Steffen, 1984). Media play a role in girls' loss of interest in STEM subjects through the media's portrayal of STEM specialists with characteristics inconsistent with women's gender roles (Cheryan et al., 2013). For example, the media often portray computer scientists as socially inept and technology-centric; this may make women and girls feel that they do not fit in STEM professions and preserve the stereotype that STEM is more suitable for men. Despite the multiplicity and diversity of the media, television remains the most influential medium in spreading gender stereotypes among children, especially programmes that convey thoughts and gender stereotypes about gender roles in STEM fields, such as showing girls as weak at mathematics and science. However, it is unclear whether stereotypes on TV shows affect girls' and boys' performance and motivational dispositions in mathematics (Wille et al., 2018). The power of messages embedded in popular culture for children, including television, soap operas, or the Internet, which children and adolescents increasingly seem to consume even though they reproduce explicit forms of sexual messages and gender stereotypes regarding environmental influences (Solbes-Canales et al., 2020).

2.3. Gender differences in the academic choice

The education system is a subsystem of population societies; therefore, education systems reflect the nations they represent and the culture and values of that community. In some countries, gender discrimination remains one of the most important principles in designing school practices and curricula. Men are taught public life, while girls are prepared for jobs that serve men and are assigned tasks that limit their physical and mental abilities. This distinction is reflected in the different course choices for women and men in higher education: women often dominate classes in education, health, and social sciences. Meanwhile, male students dominate STEM courses. The idea of male and female subjects is still prevalent and dominates the education sector. After 1982, there was a significant development in female college graduation rates. Scholars have suggested many reasons for this overrepresentation, such as the college experience, which includes choice of major, attendance patterns, social integration, and academic achievement (Ewert, 2010). Despite changes and information overload, gender stereotypes persist in various forms, assumption that these stereotypes are ineradicable is a self-reinforcing belief (Greenwald & Banaji, 1995). In recent decades, more women than men have entered higher education (Declercq et al., 2018; OECD, 2015). However, the gap between men and women in their chosen fields of study is large and persists in most countries. Women are less likely than men to study STEM subjects. In 2015, only 19% of women in OECD countries

studied ICT subjects and 25% in engineering, while women accounted for 54% of first-year students (OECD, 2017). Several studies (Nicolao, 2014; Favara, 2012; Zafar, 2009; Shi, 2018; Chopra et al., 2019) show that women prefer humanities, languages and education and do not choose science, engineering or technology as a choice of study and later permanent career. The findings point to the following questions: are girls less intelligent than boys, do girls work harder than boys, and are boys inherently more aggressive and violent than girls? Feminist theory denies any differences between girls and boys under the guise that gender stereotypes are the source of these differences, the unjustified representation of parents and society's behaviour of treating girls differently than boys (Kite & Whitley, 2016; Stangor, 2015). Previous studies have highlighted several factors that may lead to gender differences in university choice. The most prominent of these is the factor of gender stereotyping, which is the focus of our study. According to (personal tastes, individual abilities and visualisation of the results related to the choice of a field of study), the fields of study are selected with certainty. However, the reasons related to gender stereotypes are different, and we can show the main factors related to gender stereotypes that lead to the differences between males and females in the selection of studies. Women's lack of confidence in competing with men is a result of their early exposure to gender stereotypes. Also, they avoid these roles due to fear of male competition despite the potential for success. The same applies to academic productivity, in which Men outperform women, a crucial factor for university professors (Ginige et al., 2007; van den Besselaar & Sandström, 2016). The belief that girls must excel in mathematics can hinder their confidence in scientific subjects. This perception may vary based on geographical location, society's cultural and structural capabilities, and women's level of freedom and equality. This belief can impact their access to higher education, leadership positions, and parliament (Fényes,2015). Gender discrimination in academia can be seen as a by-product of more global social phenomena. To make matters worse, it acts as a mechanism to reinforce these negative societal developments, which can easily be seen as a vicious cycle (Macarie & Moldovan, 2015). Among the differences between gender beliefs reflected in employment and career advancement is that the job and the nature of the job influence an individual's self-assessment and position in society (McGinn & Oh., 2017).

According to previous research results, the differences between men and women in choosing STEM professions are connected to women's fear of competing with men in mathematics even though they have the same skills and performance (Correll, 2001; Ochsenfeld, 2016). Gender patterns affect academic and career decisions, as has been demonstrated in many studies in the

field. Nevertheless, there is evidence that gender role models actively reduce gender-stereotypical behaviours in girls' academic and career choices. They can be active at any age. It was found that applying these gender roles is abundant in the university academic community, where there are role models of successful women and aspirants and examples of perseverance and completeness (Olsson & Martiny, 2018). The influence of gender stereotypes on career choice occurs mainly through family, societal, and environmental factors, with the main reason being the interaction of these factors with personal considerations (Ochsenfeld, 2016; Ana-Andreea et al., 2013). It seems that horizontal gender segregation in education contributes to gender differences in the labour market, and gender stereotypes influence children's educational choices and continue to shape them later in life (Favara, 2012; Olsson & Martiny, 2018). This effect is more pronounced for girls than boys, and the influence of stereotypes decreases in single-sex schools.

Nevertheless, there is evidence that gender role examples actively reduce gender stereotypical behaviours in girls when they choose a major or academic major. Zafar (2009) suggested two main causes of the gender gap: differences in natural abilities and preferences in selecting outcomes. Gender stereotypes strongly influence women's choices, causing them to learn and achieve little and to fail to value themselves and feelings of inadequacy and imperfection, ultimately changing their career choices (Ertl et al., 2017; Trusz, 2020). Female students' choices are influenced by teachers' expectations, while males are influenced by their perceptions (King et al., 2017). Shi (2018) states that female students lack self-confidence. The lack of a female role model often leads females to choose fewer STEM majors: female students assigned to female professors in courses in math and science tend to perform better and stay longer in STEM subjects than students assigned to male professors. Regarding preferences and other career goals in the arts and sciences, the education field contributes significantly to a slight difference in the relationship between academic level and family composition.

Barone and Assirelli (2020) acknowledge that gender discrimination in education is critical in describing gender inequality in the labour market despite gender differences in educational attainment. Educational models for women in science subjects often lead women to choose more STEM subjects. Raise the self-efficacy of children, which is very important in the education process; parents should be very interested in this aspect by increasing children's morale and helping them make their decisions. Parents-related factors such as perceived self-efficacy impact children's personalities, and gender differences are more likely to occur in occupational preferences (Ramaci et al., 2017). Paglin and Rufolo's (1990) studies attributed

the differences between males and females in academic choice to differences in abilities, such as mathematical ability, which creates a lack of confidence in their academic abilities to enter the fields of engineering and mathematics (Gneezy & Rustichini, 2004). The differences in the choice of subjects between males and females are mainly attributed to the different preferences of male and female students and the different attitudes of females and males (Zafar, 2013). One explanation researcher give for educational choices in the face of expected earnings is that women are less responsive than men to regular payments. Quadlin (2020) has shown that men and women choose completely different fields of study even when they indicate the same initial preferences called gendered logic of primary choice. For men and women with the same initial preferences, the direct options for men are more strongly correlated with future earnings than the preliminary choices for women. As a result, they are less likely to choose majors that lead to higher profits in the labour market, such as STEM.

According to Kreuzer (1992), women's expectations of leadership roles are lower than men's. Among the findings of the research of Gupta et al. (2008) is how male stereotypes about entrepreneurship - implicit and explicit - can be motivated. When they find a gender difference in entrepreneurial intentions, these differences are mitigated by eliminating gender stereotypes, and the prevailing belief subconsciously influences women's choice of field of study. Girls' inclination and engagement in professions are far from entrepreneurship, a more masculine inclination according to previous mental beliefs that defined women's abilities. Women's entry into entrepreneurship should follow neutral characteristics. Women seem to prefer different cooperative occupations. Chopra et al. (2019) used a data-intensive approach to examine gender differences in STEM fields. They found that women have different reasons for applying to engineering programs than men, and women are less likely to be interested in entrepreneurship. Observed proof suggests that women have less arrogance and a higher level of humility, negatively affecting risk-taking behaviours and limiting their participation in engineering and entrepreneurship. The study of McIntosh et al. (2012) confirmed that many women in Scotland have negative attitudes towards occupations they understand to be masculine. The findings confirmed that in many students' views both men and women were suited to the jobs of waiters/waitresses, teachers, shopkeepers, police officers, managers, solicitors/lawyers and doctors. However, other occupations were consistently based on gender stereotypes, including supposedly "male" occupations such as lorry driver, engineer, plumber, electrician, labourer, and the armed forces. Female occupations such as nurses and nursing assistants remained feminine. Many women reported that they now do not need to work in engineering, maintenance

and repair (78%), construction (73%), transportation, wholesale and delivery (70%). Moreover, public policies such as expanding science, technology, engineering, and mathematics curricula may exacerbate the gender gap without targeted interventions to increase girls' academic confidence.

2.4. Conclusion

The basis of stereotypes is strongly manifested in education, which is the ultimate solution to eliminate the roots of gender stereotypes that hinder the equal education process. Therefore, as UNESCO (2012) says in its Global Education Monitoring Report, relevant governments should continuously review curricula, textbooks and teacher training to ensure that gender stereotypes are dismantled. Vocational and industrial programs and scholarships are considered to promote women's inclusion in STEM fields. Societies have failed to eliminate discrimination and segregation between females and males to change the different roles of females subjected to harassment and bickering by men. Also, women have the same qualifications and degrees as men and do the same work as men, but the wages are different. Therefore, we find that most women do not compete with men, do not get involved in men's jobs, and adhere to gender stereotypes to ensure their safety in society, apart from the fact that a woman's work brings additional burdens and responsibilities according to her multiple social roles. In terms of the differences between men and women, a great role is played by the gender stereotypes adopted by societies, which control the course of life and even the way of thinking and influence how the two genders recognise themselves and how others treat them. Gender stereotypes also affect how they think and remember information about themselves and the opposite sex. The effects of gender segregation include not being given equal opportunities and not being able to express themselves as they see fit. It is not what the preconceived gender patterns forced upon them that is the great divide between the two genders in the academic subjects they choose and deem appropriate for their gender. Rather, it is social, cultural, economic, and psychological factors that greatly impact participation and achievement in science, technology, and mathematics subjects, where the largest educational gaps exist between the two genders. However, socioeconomic measures predict achievement in public education (Xie et al., 2015).

Other research has examined the effects of the education gap between males and females. It found that important factors in widening the educational gap between males and females include family factors and the constraints that colleges impose on girls' enrolment in academic subjects. Modern research focuses on enabling women to pursue higher education and graduate, after which they are employed and can use their skills in the labour market, which is essential

for inclusive economic growth. Development in all areas of education plays a critical role in economic growth, even in high-income countries. Therefore. all education policy forces are committed to providing women access to higher education (Duflo, 2012). Gender stereotypes persist; although some traditional gender stereotypes have been mitigated, they show that they persist in many ways. A great deal still remains to be done by women before all components of traditional gender stereotypes are fully dismantled and pushed back so that men and women can be judged based on their merits rather than their gender (Hentschel et al., 2019).

Chapter 3. Factors that affect students' choices at university

3.1. University criteria factors

The choice of study depends on several factors. There is huge heterogeneity in the distribution of students among colleges, with geographic proximity, employment opportunities in the region, university reputation, and accessibility all conflicting. Finally, many political considerations can affect students' educational choices (Azzone & Soncin, 2019). McDonnell (1995) suggested that students attach importance to eight significant factors when choosing a university. These are academic reputation, campus size, geographic location, availability of scholarships, required majors, social atmosphere, number of students, and admission rules/criteria. Similarly, İlgan et al. (2018) proposed seven factors, some entirely consistent with those mentioned in the McDonnell (1995) study. These seven factors are academic environment, university size, location, subjects offered, social environment, extracurricular activities and cost. Đỗ et al. (2015) suggested four factors often in common in most research. These groups of elements are the student's characteristics, the university's characteristics, the influence of others, and the communication efforts of the university.

3.1.1. Location

The distance between a student's home and a higher education institution plays a crucial role in students' decision to enrol in college. Universities that are both affordable and located nearby serve as a significant motivator for students to pursue further education. College location significantly influences attendance rates, with students living near campus being more likely to attend (Hossler & Gallagher, 1987). Some students prefer institutions that are convenient and easily accessible. However, the cost of transportation can be a deterrent for low-income students. It is worth noting that location sometimes affects attendance and the program or course of study offered by the institution (Absher & Crawford, 1996; Kohn et al., 1976; Gibbons & Vignoles, 2009). Gorman (1976) identified uncontrollable factors such as location and natural beauty that influence students' choice of study, as it is challenging for institutions to modify these conditions. The location and size of an educational institution are crucial when selecting a university, followed by academic quality and reputation. Other factors to consider when making a decision include the availability of academic programs, the geographical location of the university, its prestige, the distance from home and family, the university's establishment date, and faculty advice. Distance from home is related to funding, with students from lower socioeconomic backgrounds preferring closer universities due to higher living costs (Cubillo et al.,2006; İlğan et al., 2018; Drewes & Michael, 2006). Students can be significantly impacted

by the natural and cultural environment, including the beauty of the landscape, the geographic location, weather, campus aesthetics, and associated amenities, all of which can provide a sense of belonging and connection (Nicholls,2018).

3.1.2. Reputation of the university

A university's image and reputation significantly impact the selection process, influencing potential students and parents. University rankings are closely watched and considered indicators of academic quality and future employability. However, universities with lower rankings can still create compelling brands or be considered good options. Universities are implementing improved marketing strategies to attract local and international students and improve their academic reputation (Webb, 1993). Nowadays, students highly consider university rankings and programs, especially when collaborating with foreign universities, due to the importance of a university's reputation. A strong reputation is crucial for hiring top students, forming partnerships, securing funding, and engaging with stakeholders. It indicates excellence in research, development, and teaching (Kusumawati,2010). A university's reputation is a crucial factor in a student's determination to continue studying, as it is closely linked to the programs offered by the institution, and students are more likely to choose a good and reputable university for their studies (Ciriaci & Muscio, 2014).

3.1.3. Academic program

Students in their first year of college need guidance in deciding their major, especially when they decide changing their majors, leading to unnecessary changes and postponed graduation. Students need expert help to make informed decisions, and degree packages can simplify major choices by providing clear direction through college and the workforce. Tailored generation programs can help students understand their aspirations and meet necessary conditions. Recognising their academic success makes students more likely to pursue postsecondary education (Sia & Ming, 2010). In their study, Ford et al. (1999) highlighted the importance of certain factors that students consider when selecting a college. These factors include program flexibility, academic reputation, campus facilities, employment opportunities, institution location, and study duration. Students typically compare programs based on various criteria such as subject choices, availability, admission requirements, quality and diversity of education, and degree and course flexibility. Choosing an appropriate program is vital in ensuring that students are well-suited to their chosen field.

3.1.4. Scholarships

To effectively adopt student-centric approaches, universities must understand their students' needs and stay current on their competitors in the higher education industry. Scholarship opportunities are a crucial factor that students consider when choosing a university. Scholarships are affordable and offer many opportunities to learn about different cultures. (Li,2013). The main reasons international students choose to study in Hungary are personal motives, academic geographical motives, financial motives (such as the availability of Hungarian scholarships), and family and future expectations (Casas et al., 2020). According to a study by Saleh in 2022, students who receive scholarships or a combination of scholarships and loans are greatly influenced by their choice of institution. The study also highlights the significance of the Hungarian government's scholarships in attracting potential students to universities in Hungary. According to Kim (2004), offering loans in addition to scholarships is a significant factor in attracting students to an educational institution. A report by the British Council in 2017 (Azzone & Soncin, 2019) confirms that UK students now consider scholarships the most important factor when choosing a college abroad. However, they are generally limited to high school scholarship recipients since students with lower grades see them as less relevant to their situation (Drewes & Michael, 2006). When choosing a college, students give significant importance to its reputation and the quality of education it provides. Women actively participate in scholarship programs yearly, and their participation is almost on par with men. Female students invest their time and effort into completing academic tasks with the same dedication as their male counterparts. There is no discrimination against women in the institutional selection of scholarships, and participating institutions do not exhibit any bias towards female students (Kinzie et al., 2007).

3.1.5. Costs (tuition fee)

The influence of pricing at a reasonable price and the scholarship financial aid the university offers are among the wide range of issues researchers find to be the most important factors in students' decision on college choice. Chapman (1981) noted that costs become a significant obstacle that stops students from studying in a college. Then financial aid should be provided to reduce the burden in terms of costs, whereas only if the financial contribution is going smoothly will there be several "college choices" available to be mentioned. Public universities offer cheaper education fees than private universities, which means that private education institutions face challenges in terms of price advantage. However, if the programs or facilities offered by particular private universities can help the consumer gain more, the pricing offered

should be emphasised. The priority is on beliefs made by students about the advantages of college and the social and educational outcomes associated with individual university investments. Paulsen (2001) suggests that children's savings measures designed to increase college enrolment rates would be more effective if they included strategies to build children's identity-based attachment to college. College identity programs would be more effective if combined the standards pursue a cost-benefit framework that believes that students are rational and intend to the potential costs and advantages of education and non-education in choosing whether to follow higher education.

3.1.6. Financial aid

It was indicated that financial aid presented by the university is one of the most important qualities expected from a certain college. Therefore, students who obtain financial support are more likely to attend college (Jackson, 1988; Litten, 1982). Sia & Ming (2010) examined the mediating impact of information on college choice and located that students are satisfied with their college choice because they are satisfied with their details regarding financial factors. They receive financial aid, or a combination of financial aid and loans, which positively affects enrolment in first-choice institutions. On the other hand, receipt of loans only significantly affected the continuation of studies and enrolment. In other courses, it gives them psychological reassurance and a sense of satisfaction due to the availability of a full source of income without the fear of being unable to complete their studies (Kim, 2004).

3.1.7. Educational facilities

Absher & Crawford (1996) remarked that academic facilities such as classrooms, laboratories and libraries are important in a student's choice of university. Accordingly, this study hypothesises that educational facilities are essential forecasters that impact university choice decisions. Facilities may be necessary to attract key research staff or to create an environment where knowledge is generated more quickly. They affect students' perceptions of their educational experience (Fleming & Storr, 1999). Students may also choose a particular university based on their expectations of its social context and environmental characteristics. In addition, institutional facilities, the role of social factors and student characteristics have been studied in depth with mixed results. Some studies found that rental rates, distance to university facilities, room security, room size, dorm security, and other dorm amenities were the most important factors predicting student satisfaction with their dorm. Other studies also found that proximity to campus, rent price, amenities, room comfort, location, social connectivity, and safety are the most important factors influencing students' housing preferences (Khozaei et al.,

2010). need for marketing arises earlier than in the UK, which means that there is a need to examine the mechanisms by which decisions are made. The perceptions of the university by potential students and the contribution that these perceptions make to attracting or deterring applications, the characteristics of the programme must match the university's ability to respond appropriately to those characteristics, eventually guiding to greater student satisfaction, academic achievement, and personal development. Student enrolment and retention are theorised to be determined by three sets of variables that make up the appropriate study institution:1 – Students' characteristics, such as their personal goals, abilities, needs, interests, and values. 2 – The characteristics of the institutional environment include physical, academic, and social, and 3 – psychological and logical variables, which include facility management (Price et al., 2003).

3.1.8. Employment opportunities

It observed that the choice of field of study has a strong correlation with employment opportunities after graduation. During times of economic downturns, when unemployment rates are high, more students from all majors tend to opt for graduate studies instead of entering the job market (Goyette & Mullen, 2006). According to Mesquita and Lopes (2018), there is a difference between the choice of graduate studies and enrolling in them. Therefore, employment decisions are a matter of personal preference. Social and cultural factors, influenced by gender stereotypes, have historically drawn more men towards technical and technological occupations, while more women tend to become teachers and social employees. However, gender imbalances have become more complex in recent times. This complicatedness is reflected in the general preferences of men and women. Even assuming that profession impacts choice, the stability of some occupations regarding immediate employment and adequate salary also affects the options available to men and women. In addition, the literature highlights that students' self-perceptions and perceptions of degrees and social encouragement influence their choices. The perceptions of higher education students regarding themselves, their courses, gender stereotypes, and the perceived convergence between gender, subjects, and professions, particularly in certain majors and professions.

Although all students believe that they are completely free to choose whether to enrol in higher education, choices are decided by social and gender stereotypes and occupational stability. The essential factors in choosing a major are enjoying the courses, finding a potential job, and parental approval. Girls and boys have similar preferences while studying. Nevertheless, their decisions differ concerning the workplace: non-financial outcomes in university are most

important in female decisions, while financial outcomes in the workplace explain many choices among males. Zafar (2009) analysed the gender gap using differences in beliefs and preferences. Economic factors (free admission, future career benefits); social factors (university image, marital status, reputation of the university) were all determinants of students' choice of study (Ana-Andreea et al., 2013). The quality and popularity of the education universities offer are also essential elements. It is crucial for graduates' preferences to have a job and a professional future and to perceive the quality of universities. Employment of university graduates has been and remains a priority focus for universities across the European Union, as defined by the Bologna Process. Despite the increased number of highly skilled university graduates over the past decades, the likelihood of being employed/ employment was limited (Ciriaci & Muscio, 2014).

3.1.9. Security (quality of life inside and outside the university)

Prospective students may feel overwhelmed by the new educational and social landscape, as they are forced to balance the additional rigours of coursework, major selection, and classroom participation with the added pressure of immersing themselves in new social networks. Stress in student life may exacerbate risk-taking and depression, particularly in those who work jobs in addition to their studies. Anxiety is exacerbated by stress, which progressively impairs pupils' academic performance (Martin et al., 2006). Thus, student satisfaction in education refers to how good colleges satisfy their students' expectations. Student satisfaction is associated with broad feelings such as approbation, enjoyment, reassurance, excitement, and entertainment. Universities with high student satisfaction understand that highly satisfied students provide several benefits. These students are less exposed to expenses, remain longer as customers, re-enrol in degree programs, and talk highly about the organization and its benefits/products (Kotler & Fox, 1995). Students' satisfaction on- and off-campus includes how to present their methods and their lesson experiences. In addition, a growing body of research suggests that students' social adjustment may be essential in anticipating student fulfilment (Mallinckrodt, 1988). These studies claim that integration into social conditions is important to retention at a certain academic institute. Deming (1982) also claims that most individuals form their beliefs based on the people they see, whether they are disappointed or satisfied. The university's location also contributes to student satisfaction. Some students also value being comfortable when the institution offers the possibility of higher education to people of every grade and class. Banwet & Datta (2002) It was also observed that the physical environment, layout, lighting, classrooms, class sizes, the shape of buildings and lands, and the general cleanliness of campus

all influence students' perceptions of the educational institution's quality. Cole (2002) discovered that student satisfaction decreases when class numbers are bigger in prior cohorts and students complete required fundamental modules rather than voluntary ones, resulting in students' disillusionment and expectations of the educational institution.

3.1.10. College Effort to Communicate with students

To reach students worldwide, universities use technology to promote themselves through various channels, including television advertisements, internet networks, and radio. Social media platforms like Facebook, Instagram, Snapchat, and Twitter are being used to communicate with students, with some admissions advisors interacting earlier than usual. However, traditional recruitment methods like face-to-face connections and campus tours are still in use. Students seek originality and prefer easy interaction with current and incoming students over university officials. Universities are also preparing for more intensive exams, recognising the potential power and implications of using certain platforms as essential tools in their marketing mix. This shift in marketing strategies aims to enhance the university's image and vision in diverse geographical areas (Sia & Ming, 2010; Karcher, 2011). In 1981, Chapman identified three important factors influencing students' choice of university during the selection process. These factors are the efforts of the faculty, important people, and the students' characteristics, such as their high school performance and aspirations. The process involves three stages: preparation, search, and choice. During the preparation stage, students are interested in attending university and pursuing a career. Then, they search for information about the universities they are interested in and choose the major they require (Hossler & Gallagher, 1987).

Wajeeh and Micceri conducted a study that discovered a connection between technology and how students perceive a university's academic reputation. According to the study, 77% of students believe that the latest technology has a significant impact (either 47% or 30%) on the university's reputation. Universities use technology to communicate with students through video clips, virtual tours, and photographs. A survey conducted in 2012 by Zinc University found that more than two-thirds of high schools use social media to make college admission and study choices, which is why universities face a highly competitive environment. Higher education institutions use marketing and advertising strategies to understand and meet the needs of young people when selecting an educational institution. They employ various techniques and tactics to attract students, which helps in better resource utilisation, more effective marketing

campaigns, and allocation of marketing budgets to programs, services, and strategies that influence student enrolment behaviour (Wright, 2018).

The global higher education sector has experienced significant changes, with increased competition in student recruitment and the expansion of higher education. Universities can participate in decision-making through advising, offering information about majors before enrolment, and special programs to identify students. They also offer career assessments, mandatory career planning courses, and trained advisors to help students find their major. Higher education marketing differs from product marketing, as it involves building strong relationships with students and conveying ideas about the institution. University administration must market its institution and create special marketing recommendations that emphasise its strengths and give students a reason to choose it. Previous studies have shown that relationships between students, staff, and the campus environment influence students' decisions to continue their studies (Briggs & Wilson, 2007; Wright, 2018; Nicholls et al., 1995; Fosu & Poku, 2014).

Visits to a university are crucial to influencing students' educational decisions, as they allow them to interact with the campus network and subculture firsthand. Students often prefer to visit a university campus before applying for a major or to a college to create a sense of familiarity and harmony. Admission efforts, observation books, and excessive college visits can trap students from visiting the campus. However, a visit allows students and their families to explore the institution's institutional and qualitative characteristics. Universities can encourage students to create sensory memories by touching campus statues or taking pictures, which can encourage decision-making. The campus environment, including buildings, classrooms, furniture, posters, fliers, statues, students, and gardens, represents the symbols and characteristics of the university and can directly influence student potential (Hossler et al.,1990; Yost & Tucker, 1995).

3.2. Family background factors

Family factors significantly affect young people's educational aspirations and academic performance. Personal ability is the most important factor when choosing a major, followed by competitive and parental factors. These three factors are interrelated. Competitive and parental factors also strongly affect students' academic choices; these three factors have clear correlations. Education shapes individuals' perspectives, goals, and cultural foundations. Family, parental involvement, socioeconomic status, peer influence, and teacher influence all contribute to a well-organised and civilised society. Social networks, such as family, faculty, and school administration, also significantly shape an individual's education, providing a

cultural foundation, societal frameworks, and productivity (Garg et al., 2002; Sánchez et al., 2006; Teachman & Paasch, 1998; Sarwar & Masood, 2015; Mann et al., 1989).

3.2.1. Parents and siblings' education

Parental participation in supporting and encouraging students is important for the students' achievement at school. The results of previous studies prove that the influence of parents on children is, in turn, driven by the level of parental education. It may affect potential differences in forming career preferences or navigating educational paths in science, technology, engineering and mathematics. Academically successful parents are more likely to have higher academic expectations of their children, encourage academic learning, and expose their children to abundant resources and challenging curricula, such as advanced math/science courses. These are directly and indirectly linked to students' academic performance and choice of the subsequent educational path (Schnabel et al., 2002). Parents who have achieved personal goals that enabled them to succeed in the academic field are reinforced by positive behaviours that stem from self-confidence. Their successful personality is reflected in their children's academic behaviour, which, in turn, enhances their perseverance and skills to pass paths of success, overcome academic challenges, and compete with peers. In this case, it is only natural that parents who have yet to find the same amount of success and positive reinforcement in their schooling will withdraw from further academic challenges (Nelson, 2009). The cultural and material situation decisively affects what is required for a successful study for children. Financial resources are also important in purchasing study supplies and sending children to private schools to learn additional languages and science subjects they do not have in public schools. Educated parents develop children's interest in learning habits, educational participation and behavioural support, which influence their children's school choices. The importance of parents' education is reflected in cultural capital theory, which emphasises the importance of parental culture and the environment in which they grow up. Because educated parents, without a doubt, have a greater understanding and awareness of the rules of proper study. They pay more attention to their children's knowledge, educational aspirations, and interests and help them with the school curricula. Ultimately, they put their children on the right track in academics and life (Li & Qiu, 2018). A cohesive family accustoms its children to commitment and family cohesion, a fertile ground for strong sibling relationships. Just as fathers have an important role in their children's professional and academic choices, the role of the older siblings is no less important than that of the parents (Li & Qiu, 2018). The literature indicates that children's relationship with older siblings is fundamental to the individual's

development in various aspects of life. Older siblings who are rapidly advancing in their identity development facilitate rapid advances on the part of their younger siblings. Young people's self-narratives often centre around how they are similar to and different from their siblings (Smith, 2020). As individuals go through adolescence, they adopt the attitudes and tastes of their older siblings' their younger siblings use their older siblings as role models, often mirroring their older siblings in physical skills and behaviours, life and career paths. While investigating the relationship between siblings, which often leads to academic choice, the question arises why the increased presence of older siblings in universities leads to higher enrolment rates of younger siblings. The answer is very simple: the older brothers are considered a source of inspiration and encouragement for the younger brothers, and this is called social capital, which is the balance of individuals from social relations, which facilitates the desired social outcome because older siblings with a college education provide essential information to their younger siblings that improve college access (Smith, 2020). Several factors contributing to the quality of students' academic achievement overlap and present the most important reasons, such as family size and birth order, all of which leads to the association of school or college graduation between the two brothers. Children with older siblings are more likely to be affected not only by their family size and birth order but also by the educational attainment of all the older siblings and families in which there are cases of academic failure of one of the siblings at school. It may become a lesson for the younger brothers or sisters to benefit from to avoid making the same mistakes as their older siblings. It becomes a source of support for them to face similar challenges, which increases their chances of success (Wall-Wieler & Roos, 2017). Another method is the older siblings' sense of responsibility towards the younger siblings, which leads to providing emotional support, which can affect his academic adjustment. It is worth noting that the cumulative average of the younger siblings is simultaneously linked to the support the older siblings provide. This emotional support provided by older siblings to younger siblings, they can promote development and socialisation and provide emotional and academic support. Same-sex siblings show tendencies for closer relationships, thus creating a higher level of influence towards the younger brother. On the other hand, female siblings often show more affection and support in their younger siblings' relationships than their older male siblings (Kipp, 2015).

3.2.2. Socioeconomic status of the family

Choosing a career path has become daunting, with many majors and university departments offering students attractive study options. When students choose an academic major, they

control many social and economic areas and family factors and consider the profession's future, benefit from it in temporary employment after graduation and the extent to which the labour market needs their specialisation, as well as calculating the wages they receive from behind the speciality they choose. Students are more influenced by their families when choosing a specialisation, which is a rewarding career option (Wildman & Torres, 2001). Empirical evidence indicates that students' choices of educational institution and course of study are related to family socioeconomic status (Niu, 2017). It is commonly assumed that students from low socioeconomic status families decline higher education in characteristics such as entrance, participation, and degree achievement (Flores, 2007). Since all societies are stratified, stratification impacts comprehension of educational imbalance. The association between the main proportions of stratification in the more extensive society and educational phenomena is key to comprehending educational phenomena.

The influence of the family is essential in changing the academic achievement of male and female students. Family education is actively supported and related to improving student achievement in both genders. Family education and socioeconomic status influence students' academic achievement at any level of education. Students with college-educated families tend to achieve at the highest levels. Children whose families have high levels of education have a significantly better statistical chance of participating in higher education (Ofuani & Gbenedio, 2018). Prioritizing male education is important in third-world nations because family resources are scarce. It is socially acceptable for women to grow up like this. Because girls in these civilizations are more accepting of other people's cultures and social mores, they often drop out of school to support their brothers who are men. Dads, in particular, want their male children to go to school since they will provide those people with retirement and old-age benefits (Ofuani & Gbenedio, 2018).

It is widely accepted that if learners want to maximise their potential at school, they will need the full support of their families. Governments, administrators, teachers, and family organisations worldwide are occupied by attempts to promote family involvement in education. The family's socioeconomic status is the basis of the imbalance in STEM enrolment, even after regulation of the level of academic preparation. The desire of the children to have similar work is more strongly influenced by the father's employment as a professional or executive. Higher socioeconomic class households produce fewer women who want to concentrate on business; this is not the case for men. According to Mugo (2012), students who think that having a good financial situation is important are more likely to study business. It was found that urban

students' academic achievement was more profoundly influenced by their families' socioeconomic status than that of rural students (Li & Qiu, 2018). An interesting variable that may influence academic choice is the effect of expected future earnings from the major that lead to future occupation, which varies by gender and race (Montmarquette et al., 2002).

3.3. Peers and teachers

Peer relationships during adolescence are widely viewed as more powerful than those developed through early childhood. Negative friendship traits include disloyalty, hostility, and competition, while positive traits of friendships include companionship, intimacy, warmth, and closeness. Friendships that are well-tuned and socially qualified can serve as positive role models. Conversely, friendships with peers who are aggressive or characterised by other behavioural problems may lead to adverse outcomes (Ryherd, 2011). It was found that peers significantly influence educational choice decisions, especially in choosing science, mathematics, and engineering, and have less impact in choosing second language subjects. Social factors appear crucial in acquiring gender stereotypes, affecting high school students' performance. Students' school performance is affected by the positive peer influence factor that prepares them for an atmosphere of competition, affecting their likelihood of choosing majors (science, mathematics, and engineering) at the undergraduate level (Schøne et al., 2020). All family, societal and environmental factors influence the professional choice of students, the main reason being the interaction of these factors with personal considerations related to individuals, which were personal factors (family and peers) (Ana-Andreea et al.,2013). Students should have access to appropriate information, advisory assistance, and guidance to help facilitate the ideal decision-making factors affecting business administration students in choosing their major. Among them are the five sub-actions that affect students' choices: Preference and dissonance after selection, the influence of self and peers, nature of marketing specialisation, gender, choice of profession, convenience, and occupation. Evidence confirms the importance of the social level that affects students' educational choices and social classes and their relationship to educational opportunities. Social differences lead to class differences that limit access to higher education, and the current research has demonstrated the influence of classes. Social studies have study options for students in addition to exams at the national level that affect students' study choices (Sianou-Kyrgiou, 2010; Feld & Zölitz, 2017). It was found that local occupational interests better express career decisions that align with the expectations of friends and parents. The influence of gender stereotypes in choosing a profession often manifests itself through the individual's internalisation (Ochsenfeld, 2016).

There is a profound influence on personal interests, parental professional guidance, and the influence of lecturers and teachers on the selection of students at the university. Students have difficulty choosing major subjects due to a lack of proper guidance (Owino & Odundo, 2016). Men's and women's choices correlated with personality when checking women's preferences in the medical profession and choosing any medical speciality. However, the choices were different between men and women, as it turned out that men were drawn to the high-tech medical professions and technology orientation. At the same time, men and women have equal self-esteem and career-planning factors (Buddeberg-Fischer et al., 2003). Besides teachers (agents effective in shaping students' interests), parents in particular guide their children's concentration and future employment orientations. Parents produce stereotypes in the conscience of the general society when they prove that boys are better at practical, technological, and logically structured activities than girls. They differentially structure the leisure time of their sons and daughters based on user activities for them. Toys like Lego, game boards for boys, and Barbie dolls for girls demonstrate differentiated gender-structured roles (Faitar & Faitar, 2013). It is assumed that grown-ups (parents and teachers) are necessary for students' beliefs about the importance of certain courses of study, while peers are not. It has recently been hypothesised that peers have a particularly prominent influence on young people's appreciation of school and coursework (Fordham & Ogbu, 1986; Franklin et al., 1996), suggesting that their influence on academic assessment is perhaps more significant for adults. However, another expectation is that school social workers (teachers and classmates) influence individual students' academic beliefs and behaviours more than family members (Bouchey, 2004). It is assumed and predicted that high-quality teachers would raise examination scores and supply emotionally supportive conditions that contribute to students' social and emotional development, control classroom behaviours, provide acceptable content, and support required thinking. Teachers vary widely in their ability to influence students' social and emotional expansion and the variety of empirical school behaviours (Blazar & Kraft, 2017). It has been reported? that the low number of female students in science and engineering subjects is a general problem in most Western countries. There is a strong male dominance in science, engineering and technology. Nevertheless, a study by Malik and Al-Emran (2018) showed that female students are interested in information technology and computer science and want to be active members of the digital world. The meta-analysis research by Eagly et al., 2020, was conducted in the United States to express the personal characteristics of both genders that have changed over the past thirty years. The results of the study show that gender stereotypes of women affected the agency more than male gender stereotypes; this confirms that women are

more willing to break free from gender stereotypes than men because women are more affected by gender stereotypes and change. The study also shows that the origin of gender stereotypes is in society. There is ample evidence that gender equality significantly impacts the choice of fields of study in science, technology, engineering, and mathematics. Conventional forces constrain the aspirations and professional choices of women with high levels of competence and quantitative skills that may, over time, overcome the forces of equality (Alon & Diprete, 2015).

3.4. Personal interest in the study field

When students meet the requirements for success and stand in the face of obstacles that hinder their continuity toward the set goal driven by a personal desire to complete particular specialisation companies with the love of the study subject will be an obsession that escorts some people from their childhood to the later stages of their professional lives. When compatibility is aligned with the factor of interest, students achieve outstanding success and reap psychological and social benefits (Beggs et al., 2008). However, students compete for academic seats with an urgent personal desire to study the speciality and obtain a scientific degree so that they can obtain feasible financial gains. They will look for schools of commerce and management. With all this discrepancy in goals and objectives between the first and second groups, with different goals, only some students pursue their dreams (Fizer, 2013). Most students choose their major based on their academic abilities. However, the chances of success or their work habits for success are slight or missing in some disciplines that require more study, time, and effort than in other disciplines. That is why they resort to specialisations requiring less effort and classes, which will ultimately affect their career paths.

In contrast, other students can cope with the workload and continue to withstand the difficulties and more classes and studying, such as future doctors, veterinarians and lawyers, for which they need more than one academic degree (Beggs et al., 2008) when it comes to the preferences of the family and parents. Most parents want their children to attend good colleges and gain good jobs, but in some cases, this might conflict with the children's preferences. They prefer to attend vocational schools and take quick courses because they want to be construction workers, industrialists, or carpenters, i.e., they prefer business-handmade jobs (Pusztai et al., 2023). The most important aspect of choosing the academic major that leads to the profession, the personality factor, must be addressed. Students choose majors compatible with their characteristics, which gives them confidence in their abilities and knowledge of the extent to which the students will go in their education, making them comfortable and satisfied (Kim,

2011). Students with an investigative character are more properly suited to majoring in technological know-how fields. Students with a creative persona are more. likely to do well in the arts and interdisciplinary fields. Students of sociology may be overly effective in the social sciences (Porter & Umbach, 2006). One of the theories that establish a link between students' personality traits and how they choose their academic fields of study is Holland's (1997) theory. It assumes that students of different personality types (realistic, exploratory, artistic, social, daring, and traditional) learn the appropriate academic choice and academic environment that is compatible with their personality. According to Feldman et al. (2004), students' choice of major is influenced by their personalities, abilities, and interests. However, students don't always end up pursuing what they desire due to socio-economic factors such as parental level of education, income, and financial constraints. Once they choose a major, they tend to adapt to it and develop the necessary skills and interests, making them similar to their peers in terms of educational and social engagement, satisfaction, and personal costs and dissatisfaction.

3.5. The cultural context of international students

Studying abroad offers numerous opportunities but also brings significant changes and challenges. Students must adapt culturally, socially, emotionally, and academically to succeed. Adaptation varies depending on the host culture's unique influence (Erturk & Nguyen, 2022).

Hungarian higher education is experiencing internationalisation due to global competition, changes in national markets, and mobility patterns. Countries seek international students due to declining student numbers, improved education quality, or increased income. Governments stimulate competition through regulations and incentives, leading to increased export of academic services and new forms of internationalisation (Lannert & Derényi, 2021).

The main reasons why international students choose Hungary include its highly-ranked universities, English study programs, moderate tuition fees, and affordable living costs. Most international students return to their home countries, later contributing to Hungary's scientific, economic, and cultural ties (Lannert, 2018).

International student mobility is primarily driven by proximity factors such as language, historical ties, geographical distance, bilateral relationships, and political framework conditions. Asia is the largest region of origin, accounting for 57% of all mobile students in OECD countries in 2021. Europe is the second major region, with European students making up 22% of all mobile students. However, proximity is only sometimes a criterion for mobility,

with many students who do not come from their home region. English-speaking countries are the most attractive destinations for mobile students (OCED, 2023).

The internationalization of higher education in Hungary highlights the development and effectiveness of education in attracting international students and influences fundamental political, social, educational and training aspects of the European Union. The European labour market is one of the main drivers of the internationalization of higher education. In addition to the support provided by the Hungarian government, international student mobility and quality development through financial instruments such as Erasmus+ and the Stipendium Hungaricum scholarship program (Lannert, 2018).

Academic motivation, psychological well-being, and sociocultural adjustment all positively impact adjustment experiences. For Turkish students in Hungary, physical factors like communication, facilities, and culturally sensitive practices significantly affect their adjustment experiences. Compared to their American counterparts, Turkish students in Hungary enrolled in intermediate English courses face more challenges. However, they also perceive a low cultural distance due to cultural similarities and positive attitudes towards Turkey and ethnic Turks in Hungary (Erturk & Nguyen,2022).

A study conducted by Faubl et al. (2021) revealed that foreign medical students studying in Hungary initially faced some challenges in building relationships due to differences in language, socialisation, and communication. However, as their training progressed, they overcame these difficulties and moved towards a more ethno-relative direction. As a result, they were able to appreciate the positive aspects of the multicultural environment. The study concluded that developing intercultural connections and collaborations during multicultural university studies can help students acquire intercultural competence, which can benefit their future medical careers.

According to a study by Yerken and his colleagues (2022), international students in Hungary face various social and cultural adaptation challenges. These challenges relate to affiliative and power relations, academic performance, and cultural understanding between international and Hungarian students. It is noteworthy that in addition to financial satisfaction, international students also encounter difficulties in social and cultural adjustment and psychological adjustment measures. These challenges further exacerbate the factors above.

International students in Hungary have five main academic motivations: education, training, labour market, social, community, cultural and personal development. In addition, cultural

factors, academic quality, international environment, and cost of living are also important motivating factors. Like any other societal group, international students are curious to learn about the culture of the host country, and they also have the opportunity to obtain a Hungarian scholarship, which plays an important role in establishing stability and strengthening loyalty to the host country (Hegedűs, 2022).

Students often arrive in a host country with preconceived notions about the language, food, religious values, university life, leisure activities, weather, customs, and habits, leading to misunderstandings and negative experiences. LaRay M. Barna's research identified six obstacles to effective intercultural communication. These include assuming similarities, language barriers, misinterpreting nonverbal cues, preconceived notions and biases, a tendency to judge, and high levels of anxiety. Although preconceptions can be misleading, it is also important to recognise and respect individual differences (Barna, 2017). Education should raise students' awareness to appreciate the complexity of different cultures and avoid over-generalisation. This can be achieved by responding to experiences, respecting cultural identity, understanding how people create and negotiate their identity, and avoiding being influenced by previous experiences. It is also important to be aware of media, political, and institutional influences that may influence perceptions of people from other cultures (Bajzát, 2017).

Academic literature has extensively studied the impact of international students on society and the economy. Numerous studies have focused on their role as consumers, direct contributions to the economy, and their effects on economic recovery. International students bring significant social and economic benefits to their study countries. A recent study by Alpek B. et al. (2022) in Hungary analysed the economic impacts of international students under the Erasmus+ and Stipendium Hungaricum programs. The research revealed that the spending of international students in Hungary had a multiplier effect on various economic sectors that produce related goods and services. Additionally, the presence of international students affected other macroeconomic indicators such as gross value added, the use of imported goods and services, employee compensation, and employment.

Cultural integration understanding plays a vital role in helping international students overcome the challenges they face while studying in Hungary. International students must be aware of this and integrate into Hungarian society to eliminate preconceived notions about the introverted nature of institutional culture in Hungarian education. Universities should also consider incorporating the knowledge and experience of international students into their teaching to improve their courses. In addition, students should strive to ensure that their

experience enhances the learning conditions or internationalisation, which can only be achieved with the willingness of faculty members to exchange experiences.

3.6. Factors supporting international students to study in Hungary

University selection involves emotional and rational decisions, various stakeholders, and selection procedures (Johnston, 2010). For international students pursuing their studies in Hungary, the course they intend to study is the most critical factor in the decision-making process. According to a survey, 75.7% of the respondents prioritise their chosen course, followed by an assessment of the universities and countries offering it. The quality of education, internationally recognised university degrees acquired in the European Union, and the university's reputation are the most significant factors that influence the selection of an educational institution. However, most current foreign students have little or no knowledge of Hungary (30% and 55%, respectively) before they decide to study there. Consequently, Hungarian universities must compete in the same international arena as other educational institutions that are better known and find effective differentiation and positioning strategies to attract students. Hungarian universities face challenges that are unique compared to their Western European counterparts. These challenges are attributed to low international ratings and delayed internationalisation processes. Due to these challenges, some individuals often view Hungarian universities negatively. However, there are opportunities available that can help improve the visibility of Hungarian universities and make them more attractive to international students. Despite the potential negative assumptions and delays in the internationalisation process, Hungarian universities have the potential to become visible alternatives for international students with the help of these opportunities (Zoltán, 2019).

When it comes to choosing an educational destination, students consider several factors, such as the cost of tuition fees, cost of living, and location. For location, students prioritise countries located in the heart of Europe and have good accessibility through international airports. However, students tend to pay less attention to university life, including factors such as safety, high-quality infrastructure, and the presence of international students on campus. In addition to the quality of education and reasonable costs, international students choosing Hungary as their destination also consider other circumstances, such as the country's reputation and recommendations from former international students. The application process, invitation to universities, and discrimination rates are also important to them. Students rely heavily on statistics and evaluations, followed by English-language websites of higher education

institutions and information from higher education agencies. They find printed documents like flyers and posters the least relevant. Finally, social media profiles of higher education institutions are the most efficient communication channels for promoting them (Holicza & Erdei, 2018). Hungary is becoming increasingly popular as a destination for students interested in studying in Europe and looking for a unique experience. Unlike American universities, Hungarian universities are located in the capital or university towns, providing students with many social, artistic, and business opportunities. Social and cultural events are much more affordable in Hungary than in the United States or Western Europe, making it an attractive destination for students on a budget. Additionally, Hungary is a great starting point for students who want to explore Europe, as it is easily accessible from anywhere on the continent. Several researchers (Zoltán, 2019; Feyynes et al., 2019; Valent, 2019) have identified the factors that motivate ethnic Hungarian high school students from Slovakia when selecting a university. These factors include the likelihood of graduation, perceived admission security, university reputation, and external recognition of cultural life within the institution. Examining internationalisation processes at different levels is beneficial for evaluating the processes and outcomes of internationalisation in Hungarian higher education. International students choose to study in Hungary for various reasons, including geopolitical factors, such as Hungary's location, which connects European countries, easy access to Schengen countries, quality education, and employment opportunities after graduation. Apart from the broader global context, it is essential to consider different internationalisation features in the regional and neighbourhood context when designing research and evaluating results (Lannert & Derényi, 2021). Many students consider social relationships and recommendations essential, especially from friends, relatives, parents, and teachers. Among these factors, 55% of the students consider recommendations from friends to be critical. The most influential factor for students is the lower cost of living and tuition fees compared to other countries (Fenyves et al., 2019). The study by Lányi and Pozsgai (2016) identified seven main factors influencing students' choice of a university: cost, student support quality, a recommendation from lecturers and staff, failure to gain alternative admissions, personal intention to pursue studying programme, attachment to university and school location benefits. Contrary to theoretical findings, Via city was the first and most important factor. Pull factors for studying abroad include quality education, a European diploma, scholarships from the Hungarian government, and practical skills that improve job prospects.

English-speaking countries like the United States of America, Canada, and the United Kingdom are popular destinations for international students from Asia and Africa. By implementing a well-planned strategy, Hungary can also attract more students from these continents. Based on data from 2011/2012, the distribution of international students coming to Hungary by region is as follows: Europe 72.56%, Asia 20.82%, America 3.42%, and Africa 3.57%. Foreigners make up 5.6% of the student population in higher education institutions in Hungary (Pusztai et al., 2016). Hungary's internationalisation of higher education saw a significant step with the Bologna Process in 1999. The country introduced advanced professional programs in 1997, doctoral studies in 1994, and three-year bachelor's degree programs in 2004. By 2006, the system was fully implemented, and the Hungarian higher education system became "euro-compatible" with the introduction of the European Credit Transfer System (ECTS) in 2002. The introduction of doctoral studies, advanced professional programs, and ECTS marked a significant milestone in Hungary's higher education policy (Pusztai et al., 2016). Attracting international students has become a priority for developed countries, which has led to competition between universities and countries. In 2018, 5.6 million students were studying abroad, with an average annual increase of 4.8% globally. Projections suggest that up to 8 million people will have joined the international student community by 2025. Hungary's higher education enrolment increased steadily, reaching 38,422 students during the 2019/2020 academic year (Betáková et al., 2021). Students choose to study in Hungary for various reasons such as the country's highly-rated universities, availability of English-taught programs, affordable tuition fees, low cost of living compared to other European nations, and the Stipendium Hungaricum programs, also students choose Hungary as a study destination because of the quality of education, the opportunity to experience diverse cultures, and the convenience of living (Borodina & Adrián Estrela Pereira, 2023). The Stipendium Hungaricum scholarship is also a crucial factor that attracts students to pursue their studies in Hungary, as mentioned by Saleh in 2022. The Stipendium Hungaricum Scholarship (SH) program was established in 2013 to support international students pursuing higher education in Hungary financially 28 Hungarian institutions offer the program and provide over 460 study programs in foreign languages. There are five main types of scholarships available. In recent years, theoretical frameworks have gained popularity, and research has mainly focused on popular countries like the US, UK, Germany, France, Australia, Japan, and China. To evaluate the impact of international students on Hungary's higher education, Tempus Public Foundation has conducted studies that highlighted three phases: quantitative, double degree programs, and qualitative indicators. The SH program, a government-sponsored scholarship, is a unique

initiative in Hungary. It serves as an internationalisation, diplomacy tool, and economic investment. However, it is difficult to separate the program's impact from that of Erasmus+ as a regional program or fee-paying students (Tong, 2021). It is often much easier to meet the eligibility requirements of the programmes in Europe than in the United States. European colleges often do not require standardised test scores (e.g., SAT, GRE, GMAT, LSAT). Also, unlike Hungarian universities, US universities (and some European universities) usually require a comprehensive admission package, including a CV, cover letter, reference letter and full transcripts. Thus, it might be useful to make the admissions process less complex can be useful (Zoltán, 2019). International students play an important role in the internationalisation of higher education and talent mobility, as their transnational mobility and geographic distribution directly impact the world's economic, political, and innovation patterns. This has increased the importance of higher education to foster innovation, creativity, and economic growth. Geopolitical considerations and the geoeconomic impact of student mobility are now part of national and institutional policies. The COVID-19 pandemic has further accelerated the digital transformation of education, necessitating individuals with advanced knowledge and skills to navigate the changing work and learning landscape. Hungary's state secretariat, playing the "soft power card" since the April 2022 national elections, has focused on international visibility, particularly by introducing the Stipendium Hungaricum state scholarship in 2013 (Császár et al., 2022). Over the last nine years, the number of international students enrolled in Hungarian higher education has nearly doubled, with their proportion within the total student population increasing by ten percentage points. This rise reflects the reliance of Hungarian higher education on international students. While most students come from Asia, most students studying in Hungary come from Germany, Romania, Slovakia, Serbia, and Ukraine. The popularity of Hungarian higher education among neighbouring countries is declining. Nevertheless, the country now hosts students from 80% of the world, including countries like Botswana, Burundi, Chad, the Dominican Republic, Ivory Coast, Haiti, and Niger. Hungarian higher education institutions are also popular among students from Western Europe. The major groups of institutions where international students are taught correspond to the overall domestic structure regarding ownership and funding. Full-time study is the most common type of program, with 88.7% of the approximately 230,000 international students in Hungary studying full-time between 2008 and 2017 (Vincze & Bács, 2020).

We can be certain that the number of international students coming to Hungary will continue to increase. The past decade between 2015 and now, has witnessed a noticeable increase due to Hungarian scholarship programs (see Tables 2 and 3).

Table 2. Number of International Students in Hungarian Higher Education

Academic year	All training levels
2020/2021	37 925
2019/2020	36 090
2018/2019	35 472
2017/2018	32 309
2016/2017	28 628

source: Educational Office https://dari.oktatas.hu/firstat.index

Table 3. Distribution of international students coming to Hungary by region

Academic year: 2020/2021 fall	Per capita	% of all international students in Hungary
Asia	17165	45,26%
Europe	15657	41,28%
Africa	3680	9,70%
America, Australia and other	1423	3,75%

source: Educational Office https://dari.oktatas.hu/firstat.index

Chapter 4. Theories interpreting gender differences in academic choices

4.1. Social stratification theory

4.1.1. Karl Marx and Max Weber

Social stratification divides people into different socioeconomic classes based on occupation, income, wealth, social status, or political power. Higher social classes have better access to higher education, while lower social classes have limited access. To overcome barriers, working-class groups should be encouraged to pursue higher education. Factors like social class, financial barriers, racism, and employment opportunities contribute to this disparity (Lynch & O'Rorordan, 1998; Elster, 1985; Archer's, 2000) and have a significant role.

Gender inequality is a multifaceted social system that varies based on societal beliefs and individual relationships. Modern sociologists, such as Emile Durkheim, K. Davis, T. Parsons, and R. Merton, have extensively studied this topic. It is essential to recognise that the consequences of gender inequality can vary based on societal norms and personal interactions. *Contemporary society* is a complex system with different social roles often linked to social status, economic position, and class. These roles impact how people are viewed and recognised within society, as observed by Bertaux and Thompson in 2007.

Modern society creates social hierarchy through mutual recognition and respect; capable and skilled individuals occupy critical social positions rather than just economic rewards, leading to class inequality. Factors like special qualifications, limited access to education, and skills required for higher positions contribute to this inequality. Social classes are categorised based on income, consumption patterns, and lifestyle. Marxist classifications include the bourgeoisie, petty bourgeoisie, the proletariat, landlords, Lumpenproletariat, and the peasantry. (Elster, 1985; Archer et al., 2002). Karl Marx's class struggle theory explains the distinction between a society's standard of living and social class, focusing on the interaction between objective conditions, feelings, and social and political movements. It identifies historical stages with different class patterns, such as enslavement, feudal formation, and capitalist systems (Bertaux & Thompson, 2007; Davies, 1979). Marxist theories divide society into social classes and hierarchies, focusing on individual differences in psychological, social, cultural, and civilisational characteristics. They argue that transitions are determined by an evolutionary law, not by ownership of production means (Lachmann, 1990; Gingrich, 1999).

Max Weber defines social class as the succession of economically based hierarchies with equal life opportunities and the ability to acquire goods and services. Wealth is not the sole criterion

for social class (Scott & Marshall,2009). Weber believes that social relations between classes are determined by the market interaction between economically differentiated individuals. In contrast, the situation is determined by the interaction between individuals at the economic level. Despite the many connections between notable individuals in their position in one place, and thus the distinction between the class and the situation regardless of their close relationship, individuals can occupy a high social position in society. Nevertheless, they hold areas of lower quality (Lin, 1999). Marx views production as an objective structure of class relations, while Weber analyses market relations from the perspective of human agents' motives and strategies. Weber's model focuses on the labour, upper, and lower classes, incorporating economic, status, and political power stratification. Weber's ideas on class situation and the polarisation of classes remain relevant today. He argues that status groups, often the most influential, control the majority, leading to a belief in a Marx-like revolution. This idea suggests that a few, indirectly controlled, influence the majority, potentially causing a revolution (Scott & Marshall,2009).

Max Weber agrees with Marx's theory that the capitalist system is based on two basic classes: the bourgeoisie, which controls production, and the proletarian class, which makes great efforts in the production process and is free from ownership and control of the means of production. Weber believes that a society's superstructure of social values, consciousness, and ideology is the foundation for the long-term development of communities. This is illustrated by the connection between capitalist development, the spread of capitalism, and the protestant doctrine (Lin, 1999). Marx and Weber both provide insights into societal stratification. Marx posits a ruling and subordinate class, with the proletariat overthrowing capitalists through a social state. Conversely, Weber views class as a combination of status, party, and lifestyle. He believes that hard work and lifestyles contribute to class divisions, with education, background, pronunciation, clothing, and affiliation playing significant roles. Although Marx's ideas may seem outdated, Weber's approach still provides a more flexible understanding of class division in society (Scott & Marshall,2009: Lin, 1999).

4.1.2. Social stratification (Pierre Bourdieu)

Pierre Bourdieu, a renowned Marxist scholar, combines Marxism with structuralism to examine society as a conflict, competition, and domination field. He studies the hierarchy of social classes and the role of cultural practices in creating social inequality. Bourdieu's sociology is rational, focusing on symbolic violence without personal or political bias. He advocates for establishing a scientific sociology that uses social applications for legitimation and provocation. Bourdieu believes that social behaviour is linked to a competitive structure, dominance, and

conflict that individuals unconsciously produce as a habit through socialisation (Bourdieu, 1999; and Bourdieu, 1986).

The educational system plays a significant role in perpetuating societal disparity by favouring a dominant group of people, resulting in symbolic violence against those who are socially disadvantaged. In sociology, habitus is studied to understand how actions are linked to societal structures and how they shape communities. Bourdieu's focus on the sociology of the educational system, cultural field, and intelligence allows us to better understand how symbolic violence occurs. By analysing social conflicts and power relations, we can identify the root causes of inequality and design effective solutions to help promote a more just and equitable society. Bourdieu's concept of social capital has significantly impacted contemporary social discourse, particularly concerning the relationship between accumulated wealth and social domains. Capital, derived from classical economics, is central to Bourdieu's theory. It encompasses cash, tangible assets, and intangible images. Gender inequality refers to the social order where men hold higher positions than women. There are various approaches to studying gender stratification, and scholarly discussions typically focus on key dimensions of inequality and the levels of difference between genders (Wacquant, L. 2013; Bourdieu, 1986).

Gender stratification research examines inequality among genders, races, and classes from various angles but often overlooks the diversity of sexual orientation, gender identity, and sexual expression., In his ethnographic study of North African tribes, Pierre Bourdieu sheds light on the natural position of male dominance in social structures. Although Bourdieu's analysis was published in 2001, it has since been criticised for providing a historical and decentralised view of the world and focusing solely on the structural limitations of male domination. He also explains the existence of crises in the educational scene through the theory of cultural arbitrariness, linking success to possessing symbolic and cultural capital. Bourdieu highlights the mechanisms that reproduce the same hierarchical structure in society and the traditional hierarchy in the political sphere, demonstrating a relationship between unequal adoption and learners. The educational actor's task is not only to educate and develop the future generation but also to prepare them for the physical and moral challenges that society will face (Fowler, 2003). Bourdieu's sociology is centred around analysing the systems of control that govern community structures. The individuals within these communities often unconsciously repeat the same patterns of class production via their strategies to navigate new or unexpected situations. However, this is something that sociologists should take seriously (Blondel & Bourdieu, 1981).

4.1.3. Symbolic Violence, Masculine dominions, Habitus

Pierre Bourdieu touched upon important terms that express gender discrimination in society and education and later strongly influence the academic choices of male and female students, namely male dominance, symbolic violence, habitus, and symbolic capital.

4.1.3.1. Symbolic violence

There are, as we know, two kinds of violence: physical and organic, which harms others, and symbolic and polite disorder through dominant language, dominance, ideologies, and the popularisation of ideas, also through defamation, slander, insult, religion, the media, and psychological violence. Therefore, Pierre Bourdieu knows that symbolic violence is a gentle, tortured, unimaginable violence, invisible to its victims, exercised through purely symbolic means and way, through communication, knowledge, and recognition of the limits of feelings and intimacy (Thapar-Björkert et al., 2016)

The concept of symbolic violence refers to the imposition of opinions, attitudes, and knowledge through gender stereotyping in civil societies, which deprives individuals of their natural rights to protect and minimize affairs, as classified by Bourdieu. Symbolic violence is a shape of brutality plied by a social actor with consent and participation. Bourdieu claims that symbolic violence can lead to better results than political and police violence. One of the greatest shortcomings of Marxism is that it has not delivered such moderate forms of violence, which are effective and influential even in the economic sphere. This issue has serious implications for the intellectual debate on whether power emanates from below and whether the person being controlled desires this situation imposed on him. In other cases, social actors know the obstacles imposed on them (Uhlmann et al., 2002). Even in cases where they are subject to determinants, they contribute to the generation of the influence over which a certain type of coercion can arise; the effect of domination results from these interactions and equilibrium between deterministic determinants and perceptual methods. There is a certain amount of denial in acknowledging violence against women without recognising it as violence. Since our birth in a social world, we accept several axioms and beliefs that impose themselves on us automatically and efficiently We do not need to accept it. Therefore, analysing how we automatically accept opinions and ideas in our social world is the basis for a realistic theory of control and politics because of the direct alignment of physical and mental structures. All forms of silent and clandestine persuasion occur through the ordinary order of things (Uhlmann et al., 2002).

Riddel et al. (2001) examine the impact of gender on social capital in America, focusing on women's labour force growth and dual-occupation families. They argue that women's work outside the home provides opportunities for social connections but decreases their time for community involvement. Women account for only a fraction of the overall shrinkage of social capital in America over the past two decades, as less educated and dynamic women have more leisure time to organize civic activities. Meanwhile, evidence also shows that neither is time pressure. Over the past two decades, time pressures, financial hardship, and women's shift into the workforce have been the main reasons for civic engagement. Civic engagement and social cohesion have declined almost completely among both women and men, whether they are working or not, married or not married, financially exhausted, or economically comfortable (Inglehart & Norris, 2003).

5.1.3.2. Masculine dominance

The spread of patriarchy in many societies and the accompanying gendered segmentation of physical and social structures has led to the belief that the gendered division of social roles is real and normal. This has led to a complex crystallisation of symbols and metaphors in the long run. The biological differences between men and women have been subsumed as expressions of objective reality. Pierre Bourdieu observes the complete reversal of causes and consequences that characterised patriarchy by focusing on how male masculinity was transformed from a biological parameter into a symbolic and metaphorical sign of power, virtue, and honour. This mechanism makes it possible to determine more precisely how the anatomical difference between genitalia becomes a natural and objective justification at the social level and an objective truth that cannot be overcome (Yahyawi & Ali, 2018). In this context, the patriarchal system reproduces its mental and social structure. It inaugurates the same differences, despite the intellectual, economic and political independence that women enjoy in our contemporary history. Academic specialisation does not function in isolation from the dynamics of male domination. If we are to start from the Western European context, the professions, management, curricula, and even the norms and values of scientific thought and daily academic practice are all subject to gender segregation. The perception of dominant masculinity finds its expression in the terms and metaphors of the language prevalent in the academy. We take, for example, the linguistic separation of sciences such as the natural sciences, which are inherently (hard), and (soft) sciences, which are subjective, such as gender studies. It is a subdivision that has its (soft) roots in a sexual description of the masculine and the feminine. It takes a long time to

pass from metaphor to truth since the masculine is characterised by hardness, roughness, and strength (Yahyawi & Ali, 2018).

Moreover, rationality brings it closer to the objectivity of the female, characterised by fragility, softness, weakness, and passion. Thereupon, the rationally oriented sciences are classified as masculine sciences. In contrast, the sciences are classified as having an aspect of subjectivity snared up with femininity, another example that reflects the pervasiveness of the masculine mentality. In academia, separating facts from feelings and associating the former with the hard sciences. Emotions that do not fall within the realm of subjectivity dominate masculinity. At the same time, femininity is associated with the subjective. Pure science contradicts the image of science in academia as it is not neutral on either the emotional or sexual side (Krais, 1999). We must remember that until the: seventies, the academic field was male par excellence. The description does not imply that the percentage of males at colleges was greater than that of women. The first wave produced various outcomes, the most significant of which was an understanding of the history of the function allocated to a single generation. The second wave began in the 1970s and was distinguished by attempts on a larger scale and the diversity of its themes and issues. Prevalent was awareness of the masculine viewpoint within the academic disciplines of the social sciences and humanities, as well as the issue of whether research inside university institutions was committed to male primacy (Mottier, 2002). This distinction and the construction of cognitive systems based on the male view of things, of which women in their entirety are an ancient practice, can be traced back to the beginnings of the patriarchal institution's control over the smaller structures of society, such as the family and significant structures like empires and kingdoms. The extent of this control varies from culture to culture, but religious systems and the discourse they produce remain among the most important social institutions. They perpetuate gender discrimination and seek to reproduce it (Carroll & Mills, 2006). This imbalance in power relations means that gender discrimination in the assessment of academic competence persists. A practice prevalent in many universities and most academic institutions favours cultural values associated with masculinity, such as competitiveness and rationality. In addition, ways of accepting women as part of these institutions identify many of the fundamental importance for producing scientific knowledge. For example, objective and neutral myths produce unequal power relations. They lead to the restoration of the patriarchal system and the reproduction of reality and control over it, not to explain or understand what is implied (El-Masri, 2015).

5.1.3.3. Habitus

Habitus represents a method Bourdieu uses to find out what constitutes social fields and essence, which ultimately leads us to conclude that individuals can apply this concept to themselves to identify their class and social position. However, the individual can also project it onto others separate from him to know what exists between them and what distinguishes them and to determine which class they belong to (Crossley, 2001).

Judith Butler (1988) claims that social role becomes a biological factor and a fixed identity. That is, a process of constant repetition, after which it becomes something ordinary and familiar, which is to some extent consistent with the theory of Bourdieu about habitus, through which a person's social identity is formed. The habitus represents a system of permanent and transferable preparations or transferable (transposable) and constructed structures. They are ready to function as constructive, generative principles and an organisation of practices and representations. In its general form, it is society and has become detached and embedded in the body through education, socialisation and formation. Butler's approach offers the possibility of breaking free from this permanence by relying on the concept of agency, in contrast to Bourdieu's structuralism, which makes habitus a system of unconscious preparations (Butler, 1988).

Moreover, society's structure, including values, ethics, and determinants of behaviour, thought, and choice, reflects people's history and a stable system of qualifications and attitudes. Habitus is a set of enduring and transferable preparations, socially acquired and deeply rooted in the self, comprising at least three basic dimensions: the psychological and emotional dimensions (choices, tendencies, and preferences) and a logical mental dimension (ideas, principles of understanding and interpretation). A practical ethical dimension (actions, and values) indicates the origin or social milieu (Moncrieffe, 2006). Bourdieu provides an example that he derives from the French dialect in the remote regions of Paris. If we assume that the French individual in these areas in a position unfavourable to Paris. The dialect is difficult for the person to change because the years of living and growing up in one of the regional villages have automatically made him train his vocal skills to spell sounds in a certain way and let the culture embody them. Local community and adoption of the roles of those who surround it with values, customs and traditions is a system of life that must fuse according to its components and what the individual has to follow. We conclude that this concept is a historical product that has emerged in social education and learning. As a result, the individual has a specific capital stock that he involuntarily uses in various practices and that enables him to deal with the social world (Yayaoui & Ali, 2018).

Habitus stands for the behaviour, habits, and lifestyle of an individual and others, such as the social help they receive from belonging to a particular social condition. In our society, it is inconceivable to flee or leave one's habitus because it has evolved into a daily habit from the origin; according to the values and practices of the society that they pledge, it is inevitable to follow and adhere to them (Asimaki & Koustourakis, 2014).

As for habitus, Bourdieu adds, it is the individual's sense of where they belong. It emerges through differentiation in a social place and context and forms a system of perception and appreciation of these practices. Accordingly, the boundary between habitus and other boundaries is in a constant state of competition and identification away from stagnation (Bourdieu, 1981). Several scholars of Bourdieu's idea claim that what is meant by habitus is often misunderstood, sometimes concerning specific routines in daily life or used as a synonym for the word socialisation. Habitus is part of Bourdieu's theory about defining temperament in social space. It can also mean rules for actions that help distinguish one class as the dominant class from another, such as the dominant class in the social field. Bourdieu refers to habitus as a system of plans to produce certain practices (Navarro, 2006). Habitus, then, is a set of common characteristics of a class. Despite the availability of knowledge, it is impossible to predict what a class would do about a class habitus, a person belonging to the dominant class and the controlled class, at a given time and under given circumstances. Class comprises conscious and unconscious thought, perception and preparation plans. It acts as a mediator between objective structures and practice.

Habitus explains the reproduction of social and cultural domination. It represents new derivations based on which thousands make preparations for immersion in life and take this as the basic rule through which all their orientations and patterns of action are expressed in everyday life (Mottier, 2002).

4.2. Social learning theory (Bandura)

There are gender differences in academic selection and academic specialisation. The reasons for the prevalence of this phenomenon are purely social and class, with academic specialisation being chosen according to images and gender patterns that society is willing to segregate according to gender. Bandura believes that family is the core of learning behaviour, and parents are the models to imitate. Hence, children imitate everything that their parents do using observation and practice in their early life stages. It forms behaviour patterns that one follows throughout their life (McHale et al., 2003). Social learning theory interprets behaviour as observation and modelling and stereotypes as mental symbols that emerge from observation

and attention to the model. The learning process occurs through four sequential processes: Observation, attention to the model behaviour, retention of the response, and the ability to remember it through encoding and realistic operations. The two psychologists Bandura and Walters (1959) believe that children are psychologically neutral at birth and that biological differences between males and females are not sufficient to explain differences in gender stereotyping. They have emphasised the role of imitation and reinforcement in gender stereotyping.

Stereotypical behaviour comes through: First, impersonation is where children form behavioural patterns corresponding to their gender. girls reincarnate the mother's personality, and boys reincarnate the father's personality. Second: Reinforcement: Parents help their children align their behaviour with appropriate gender roles. They encourage and reward behaviour that is appropriate for their gender and does not encourage unacceptable behaviour. Perry and Bussey's (1979) research introduced the modified social learning theory on the contribution of tradition to the development of gender, which states that children learn appropriate behaviours for each gender by noting the differences in the frequency with which male and female models show different responses in certain situations. The study found that a child's imitation of an adult is strongly influenced to the extent that the child believes that an adult typically engages in behaviours appropriate for the child's gender. Social learning theory (Bandura, 1977a) states that academic imbalances sometimes arise from stereotypes and student positioning. The subjective concept of the subject results from the interaction between their understanding of the subject matter and their stereotypical perceptions acquired from the environment in which they live and interact, leading them to prefer one school subject and exclude another academic subject. Thus, the approach serves as a guide for identifying the elements of the student stereotype that may influence the student's preference for the subject. Bandura's new take on social learning theory assumes that other people think educational choices are right or wrong. The reason is to support the choice made by others to maintain the social balance or stereotypes of academic choice and thus maintain the social stability of the stereotypes associated with educational choice. As Bandura (1977b) pointed out in his theory of social learning, any behaviour that a child exhibits are the result of acquiring the behaviour from the people around him (models). Strategies for Acquisition of Social Knowledge (Observational), there are four basic techniques applied in joining observational learning: (a) interest, (b) retention, (c) motor duplication, (d) stimulus, and reinforcement. Attention measures are crucial in determining if an observer is paying attention to a sequence of modelling

stimuli. The observer must record and reproduce real notes or movements in symbolic form through images or verbal coding, ensuring that the model is interesting and worthy of imitation. This process determines whether the observer will imitate the particular behaviour (Bandura, 1972).

Moreover, repetitive training of the recorded images or verbal elements of the model's behaviour can significantly increase the retention of the given behaviour. In kinetic strategies, "symbolic representations" of patterns modelled for manual execution (Bandura, 1972) are used. In other words, the observer follows instructions to perform new behaviours that are not externally requested or represented but are reproduced internally through "utilizing symbolic representation of modelled behaviour as a guide of appropriate action" (Manz & Sims, 1981, p. 111). Finally, stimulus and reinforcement processes refer to perceived or unfavourable outcomes of imitation of model actions that are likely to increase or decrease the likelihood of imitation. By observing the behaviour more than once, the child imitates the response, and the behaviour reinforces itself each time the child imitates it. Hence, it is learned and becomes a regular habit. People learn and develop habits from their parents, who are the first role models in dealing with their social environment. Patterns are shaped since childhood, and children learn from their parents through observation and conversation about their mores and behaviours. Bandura (1986) noted that gender stereotypes occur when parents treat girls and boys differently. So, children imitate behaviours modelled by their parents. Boys imitate the father's model, and girls imitate the mother's model. Hence, children consider their actions appropriate for their gender and consider it normal behaviour.

According to Bandura (2001), an individual's personality can be interpreted more accurately and, in more detail, based on their behavioural inventory (the patterns of behaviour that they have acquired) because they have experienced and been exposed to growth and change during their learning and acquisition. Socialisation theory asserts that learning occurs indirectly through observation and modelling by society. Socialization not only causes gender differences but also influences their expression. Men and women skew their responses to appear socially acceptable, leading to differences in self-assessment on tests of likability (Fagot, 1978; Lindsay, 2015; Endendijk et al., 2014). Both genders learn gender stereotypes from their social environment and media, such as television, social media, and advertising. These experiences continue to influence later in life, with research showing that men's and women's self-descriptions differ in ways that conform to these stereotypes. (Bem, 1974; Spence & Buckner, 2000). Maccoby and Jacklin (1974) presented several major conclusions about the differences

and similarities between the genders. They considered that the choice of people whom children imitate plays an essential role in their development. In addition, they clarified that parents are the only ones responsible for the social education of children and that children play an essential and significant role in the adoption of gender stereotypical behaviours and introduced the term socialisation to describe the actions directed at children.

4.3. Conflict theory (Karl Marx)

Other theories that deal with gender stereotypes include functional and structural theory, which is one approach which assumes that gender roles have a special place in society because they emerge from the family as the perfect component of society. The family is functioning properly (Zosuls et al., 2011). Proponents of functional theory praise the different gender roles prevalent before the industrial revolution. Men take on outdoor tasks, while women take on indoor tasks due to the physical limitations of pregnancy, breastfeeding, and the inability to leave the house for extended periods. These roles were handed down to later generations because they were an effective way to maintain order. Conflicts between people have existed for ages. Sometimes struggle occurs in societies for power, and the conflict happens between different classes of opposites in the society, such as the rich, the poor, the liberal, and the feudal; we can also consider the man and the woman as two examples of conflict theory.

According to sociology, there is a conflict between two groups with different opinions, ideas, and beliefs, one of which may be the dominant group and have influence and authority. The second category that opposes it is the group that resists and opposes power and hegemony. Conflict occurs when problems arise between the two groups because the dominant group violates the rights of the subjugated group. The theory of conflict between women and men as two genders contradicts their ideas and agrees on many issues. However, when the men, who are the dominant and strong group, try to impose their authority on the women, the subordinate's group, the women, fight back and defend their rights. An example of women being persecuted is that they are denied the right to gradual access to higher education; this is not far back in history (Conover & Sapiro, 1993). Feminist theory is considered a kind of conflict theory between the sexes. The conflict that exists is between the home of the man and the woman.

Furthermore, the struggle in which the man refuses to give up his supremacy and the woman is not willing / refuses to submit to this unjust power because she feels insulted, inferior and deprived of her rights that no one should take away. These conflicts are common in patriarchal societies where the man is sacred, and everything he does is right and not subject to debate.

Women have to endure not showing their feelings and not expressing their opinions - women in such societies are subjected to exclusion, enslavement and silence. They lose confidence in themselves and their environment, especially men (Zosuls et al., 2011).

4.4. Gender roles theory (Alice Eagly)

Human behaviour is influenced by social education, by the early learning that the child receives in the first stages of life. The behaviour is formed in them as if someone had paved the way for them and told them not to deviate from this way all their life because other ways are impassable. The gender stereotypes that the child is given continue until puberty, and the formation of gender identity extends these practices and behaviours. Girls choose feminine careers such as education, nursing, and languages, and we rarely see women become pilots or naval captains. In contrast, boys choose masculine careers such as science, engineering, and mathematics (Trusz, 2020). Much literature related gender stereotypes and their relationship to academic choice, which confirms the impact of family, social environment, class climate, and the effect of media. According to Bandura (1977a), social learning theory states that are learned due to collaboration between environmental and behavioural factors. The theory is based on the principles that individuals interact with and become part of their physical, social, economic and political environment and influence and are influenced by their environment. Social roles are coupled with gender roles performed by women and men, and there are many roles for a single person. The best representation of social roles is reincarnation, where the person takes the role seriously and can influence the most people possible because he expresses his feelings and senses. In advanced Western countries, men's representation of male roles, such as taking high-level administrative positions and working in commerce and liberal professions, generating a great deal of profit, led to entrepreneurial and business roles being associated with men and women conforming to their gender-stereotyped roles with care work (Ridgeway, 2001). Social role theory is also called social structure theory or social-cultural theory. According to gender role theory, the division of labour between individuals in society is based on differences between members of the same community.

It is especially the individual psychological disputes that arise from assigning them to the different roles that correspond to their gender. This referring back causes the diversity of functions and their differences in society, as well as biological differences necessary to produce more differences between the sexes that lead to more different roles. An example of this is the physical strength, size, and stature of men that caused them to fight wars without women, which brought them money and wealth, as well as the ability to dominate and control women and

make them dependent on men (Eagly & Wood, 1999). Eagley's social role theory assumes that the segregation between gender and social psychological expectations leads to gender roles. Eagly and Crowley (1986) show the association between the size and type of social roles and gender characteristics. They claim public participation is characterised by caring and emotional expression, often associated with household chores and, thus, with women. The role of success is characterised by factors such as assertiveness and independence, which are often associated with public service and men. Behaviour is strongly influenced by gender roles, where cultures allow for the concept of gender stereotypes and live up to preconceived expectations based on these gender stereotypes. Social role theory is broad-based, applicable to all situations, and deals with assertive, power-related, supportive, or emotional-related behaviours (so-called social behaviour). However, the explanations given by this theory are not specific or detailed. The theory predicts that women generally act collectively and have less power than men in the same situation, that this difference is greater when gender plays a major role in the situation, and that gender differences are weak or missing when people recreate a standard and institutional role (Ridgway, 2001)

4.5. Margaret Mead's theory

Margaret Mead investigated cultural differences in gender roles, highlighting the way biological differences in masculinity and femininity determine and influence social and personal attitudes, leading to societal discontent. In her research, Mead discussed the impact of gender differences on gender roles in societies, especially in African and Asian societies. Men often have dominant social positions, while women promote feminism, leading to social problems for those who cannot conform to these gender differences. Mead has focused her work on gender and culture. Her studies of sexuality in Samoan tribes show that cultural and personal influences shape children's beliefs and behaviours more than genetic or biological disposition. She has supported the nature versus nurture debate, arguing that children learn by observing the behaviour of adults (Bauer, 2017).

Margaret Mead's writings on sex roles, including Sex and Temperament and Male and Female, explored cultural differences in maleness and femaleness. She emphasized the tension between biological and cultural explanations, arguing that biological development is a potential not fully realized by human imagination. According to Mead, gender is not exclusively a product of culture but rather a combination of biological and cultural factors. Margaret Mead believed that all individuals are born with sexes and temperaments that distinguish them. Mead argued that gender patterns are not entirely cultural and that more research is required to determine if these

temperamental traits are evenly distributed between the sexes. Mead's gender model is multidimensional as it acknowledges that each human culture draws cues from temperament, gender, caste, occupation, and education. She believed that the same temperament existed in all humans and was recognisable (Coffman, 2021).

Mead discusses the global consensus on male and female gender roles based on physical traits and biological differences. These roles start in childhood and continue throughout a person's life. Most cultures believe men are more aggressive due to their stronger bodies, leading them to take on difficult roles and leave light jobs for women (Sanday, 1980).

Mead's study on gender roles and asymmetric relations in the 1960s and 1970s emphasised the need to recognise the significant differences between men and women. According to Mead, a woman's sex membership is more easily identifiable than a man's, as a man's complete sex membership is accomplished through cultural means. Mead believed that men's need for achievement is comparable and results from a woman's ability to bear children. Women must be encouraged through education to be ambitious and curious. On the other hand, for men to be content, they must have culturally elaborate forms of expression that are enduring and certain. Mead suggested that male activities should be considered more important than female activities. However, this idea of universal sexual asymmetry in the evaluation of male and female activities is not supported by ethnographic evidence. Mead's ethnographic research reveals that some societies have symmetrical roles of the sexes in ritual and ceremony, whereas others adhere to an asymmetric pattern (Sanday, 1980).

Margaret Mead's book *Coming of Age* in Samoa explores the cultural differences between male and female societies. Mead's book, *Sex and Temperament in Three Primitive Societies*, claims that Observations in various societies show that gender roles vary across cultures and biological differences do not determine social functioning. Instead, upbringing and cultural transmission contribute to these differences. Females were dominant in the Tchambuli Lake region of Papua New Guinea without causing special problems. The study revealed contrasting gender roles in different cultures. Each culture establishes desirable action patterns for its components, which are internalised and replicated through generations. Mead suggests reducing the rigidity of gender roles and allowing both sexes to develop fully by reducing the differences that come with these roles (Harris, 2021).

4.6. Conclusion

This chapter focuses on the main theories explaining the difference between the genders in academic choice, which, from the point of view of biological theories, go back to genetics. As for the theories of social psychology, which relate the differences to the family and social environment and the acquisition of appropriate behaviours consistent with each gender, these gender patterns can be acquired through observation and imitation, reinforcement. The theories of social capital were about gender stratification and the interpretation of the differences between the genders as male supremacy exercising symbolic violence to keep women in the lower social classes to control females and reinforce male dominance and social habitus acquired, applied and used by all members of society. In addition to the influence of social capital, which Pierre Bourdieu considers essential and influential in education fragments, economic barriers play a significant role in the lack of access to higher education for children from lower social classes. At the same time, other factors are equally important to economic factors, including cultural and educational elements, which are among the most important factors influencing access to higher education. We should be aware that these factors are interrelated and caused by many factors. Among the most critical factors is the role of the state and educational intermediaries in creating cultural and educational disparities first and foremost, and then economic inequality. These disparities allow new ways of examining the actors and contexts in which they are ameliorated.

Chapter 5. General educational trends of female students in higher education

The first and most frequently scrutinised research trend on gender differences is the gender gap, which comprises several aspects, including academic achievement, females' involvement in higher education, and gender differences in the choice of specialisation. Females have been disadvantaged and treated unequally as men at all levels of education for many decades, and higher education has had a greater share of this disadvantage. For many years, access to higher education was reserved for men. Gender equality is one of the key educational goals that countries aim to achieve in their strategic planning for education both in the long and short term. Despite the efforts of international organisations and national governments to achieve equality and bridge educational gaps between the sexes, educational inequalities still exist (UNESCO, 2015). The phenomenon of gender inequality in different countries and parts of the world still exists, not to mention the differences between human societies and cultures that are widening this gap. Writing a chapter on women's participation in education will inevitably examine the main reasons for women's involvement in education. The literature on women's education highlights their recent rise in society, with personal and collective reasons contributing to their participation. Women, regardless of their location, deserve to be part of a high and educated society. The consequences of gender differences between men and women will lead to different academic specialisation decisions and the outcomes of those decisions. When a student graduates, salaries vary depending on the specialisation. The labour market for men and women differs because of the different specialisation decisions. Men opt for technical, technological, and scientific majors, which offer them better employment opportunities and higher pay.

On the other hand, women still opt for social, linguistic, and literary subjects, however, in the age of technology and data, we need technical and digital specialisations, so the above professions lead to higher pay. Some statistics confirm these differences. For example, if we compare men and women in their choice of subjects, the differences are obvious, as the number of female graduates between 1998-2005 was 17% and 7%, respectively, of male graduates. The differences between males and females in engineering were 5% compared to 21% for males. These differences between the two genders affect the percentage of degrees awarded by gender. In 2005, degrees awarded to females reached 76% in education subjects compared to 26% in engineering (UNESCO, 2015). Societal mentality (society's view of women), which differs from culture to culture, and gender stereotypes are among the most important influencing factors that determine girls' willingness to choose mathematics and science, resulting in fewer

women than men enrolling in science and technology courses (UNESCO, 2010). There is no doubt that the onset of the digital revolution and the advent of modern technologies has made many women opt for vocational education, science and technology and consider them viable careers for women, as has been the case in China, India and Korea. The constant agitation over gender issues, especially in higher education in many parts of the world, has led the dominant disciplines, especially in the social sciences and literature, to review the curriculum from a gender perspective (UNESCO, 2010).

5.1. Gender differences in higher education

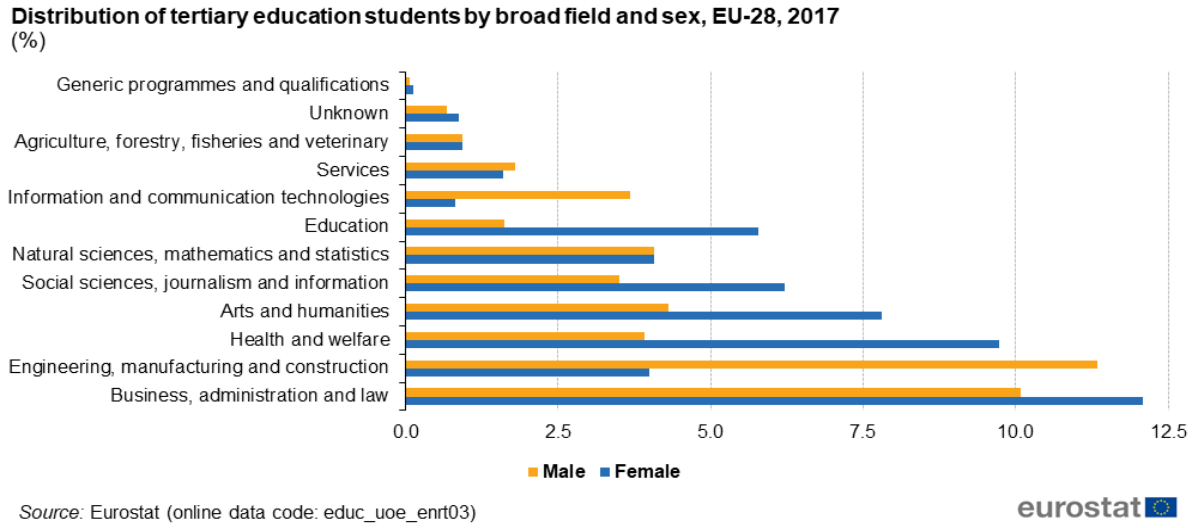
This chapter presents the most frequently discussed issues regarding women's participation in higher education. Over the last twenty-five years, significant progress has been made in achieving gender parity and improving girls' education and inclusion in education, thanks to the relentless efforts of policies and programmes to change societal attitudes and provide financial support (UNESCO, 2015). The UNESCO plan aims to achieve gender parity in education by 2005, but progress has been slow. By 2009, gender balance was achieved in primary and secondary education, but adult illiteracy remains a challenge, with 63% of adult illiterates being male. Women have recently overtaken men in education, but the gap between men and women in higher education remains a significant issue. Women are turning away from scientific fields such as engineering, computer science and mathematics. Statistics show that in countries with economic cooperation and development, 75% of degrees mentioned above have large gaps between men and women in the fields of study, especially in science, technology, and mathematics. The statistical data of the OECD report (2011) shows that most of the degrees in humanitarian and health fields were awarded to women with a share of 71% and that there is a large gender gap in education, especially in manufacturing and construction, which has peaked in Japan. Only 10% of science, computing and mathematics graduates in the Netherlands are women, while Indonesia has the most balanced data across all disciplines. The enrolment rate of women in Poland peaked at almost 70%, and Japan ranks last with a share of nearly 40% of the total (OECD, 2011).

According to Eurostat's 2017 report, women constituted 54% of the total number of higher education students across the twenty-eight European Union governments. Among female students, 57.1% held a Master's degree, 53.4% had a Bachelor's degree, and 51.3% held short-course qualifications. However, men represented the majority of students in doctoral studies, with 52.1%. Women made up almost three-fifths of the total number of students in tertiary education in 2017 in Sweden, Slovakia, and Estonia. Among the countries in the European

Union, Greece had the lowest percentage of women in higher education at 48.6%. In Switzerland, Turkey, and Liechtenstein, the proportion of women in higher education was a minority, and surprisingly, Germany also saw a decrease in the number of female students. The percentage of women participating in higher education in Germany was 48.5%, the lowest among the countries studied. The highest participation of women in undergraduate studies was in Sweden, with 63.5%, followed by Greece with 47.3%, and Germany with 46.4%. These were the only three countries in the European Union where men outnumbered women in undergraduate studies. Cyprus also had a low percentage of women participating in undergraduate studies at 48.7%. Regarding the percentage of women enrolled in Master's programs, Cyprus, Poland, the Baltic countries, Slovenia, Croatia, Slovakia, and the Czech Republic had the highest percentage of women, with 60.0% of the total number of students. In Hungary, women constituted the majority of higher education students, making up 54.2% of the total number of students. The percentage of women in Bachelor's programs was 52.6%, while in Master's programs, it was 57.0%. The rate of women in doctoral programs was 48.6%.

The largest percentage of participants in higher education in the 28 countries (EU) studied business, administration or law. Their share was 22.2% in 2017, and women represented the largest share of the total number of participants in this field. Their share was 15.6%, and the number of men who participated in this field was enormous, accounting for three-quarters of the students who participated in this field. Nursing and health were the third largest fields of study, accounting for 13.6% of all university students. This field of study was dominated by female students, who accounted for three-quarters of all higher education students in this field. In the remaining subjects, females comprised many participating students studying educational sciences. They accounted for four-fifths of the total number of students learning arts and human sciences. In this area, women comprised two-thirds of the full participants. As for information and communication technology, many men looked into this field (Figure 1).

Figure 1. Female participation in higher education by the field of study (Eurostat, n.d.)[1]



Among female students over 40, the percentage was the same in all member countries of the OECD between 1998 and 2005, ranging from 52% to 54%. Comparing female students from the two age groups, under 24 and over 40, we find that the gender gap is larger in the older age groups, those over 40. In 2005, the number of female students and those over 40 exceeded the number of students under 24 by 10% in Hungary, Iceland, New Zealand, Norway, Slovakia, Sweden and the United Kingdom, while the opposite was true in Turkey (UNESCO, 2015).

The rate of women aged 25-34 with tertiary education in Hungary increased from 28% to 37% between 2008-2018. This percentage is higher than the rate of men with tertiary education, which increased from 20% to 25%. Nevertheless, the employment rate of women with a tertiary degree is low at 76% compared to that of men at 94%. This discrepancy is due to the gender gap, one of the largest in OECD countries. It is worth noting that the gender gap in Hungary decreases with age, as 83% of women with tertiary education work at ages 35 to 44, compared to 98% of men. Among employed women with tertiary education aged (45-54), 94% are employed, approximated 95% of men. Among younger adults (25-34 years), the share of tertiary graduates in Hungary is still well below the OECD average, at 31% compared to 44%. See (Table 4) (OECD, 2019).

[1] Eurostat (n.d.). Students enrolled in tertiary education by education level, programme orientation, sex and field of education. Retrieved from: https://ec.europa.eu/eurostat/databrowser/view/EDUC_UOE_ENRT03__custom_4955446/default/table?lang=en

Table 4. Tertiary attainment in Hungary of 25- 34 years old by gender

Hungary			OCED average		EU 23 countries	
#	2008	2018	2008	2018	2008	2018
Male	20%	25%	31%	38%	28%	36%
Female	28%	37%	40%	51%	38%	56%
Total	24%	31%	35%	44%	33%	43%

Source: "Education at a Glance 2019" (2019a) *education at a Glance* [Preprint]. Available at: https://doi.org/10.1787/f8d7880d-en.

5.2. The productivity of women in higher education

Higher education, in general, and university education are among the most important educational institutions in modern society. They are considered the highest rung of the career ladder. Universities are essential to meet the needs of the labour market for experts and specialists with remarkable skills and high scientific competence, whether in technical, administrative, social, economic or other fields. University is a social organisation like other organisations and institutions such as factories, banks and hospitals, which cannot dispense with it. University is also considered one of the most important social organisations as it is the feeder to all organisations in the community. Several sociologists have studied why women are less productive than men in academics. We know the glass ceiling that limits women's access to higher positions to varying degrees still exists in higher education institutions worldwide. They have given us several reasons that prevent women from advancing in their careers and cause them to be less effective in research than their male counterparts in academia. From this point of view, children can be seen as part of the gap between women and men in academic work, especially in research production. Thus, the gender gap widens as the number of children increases (Hunter & Leahey, 2010). Shyness and femininity do not align with the masculine leadership qualities required by women, who often settle at the bottom of the hierarchy and achieve low career achievements, as they do not fit the masculine notion of leadership.

5.3. The limited access of females to senior positions in higher education

Although women have played a limited role in all walks of life throughout history, the problem of women becomes very apparent when they are deprived of higher education. Gender disparities have emerged in this area in all countries to date. Women make up more than 50% of the world's population, and they need to learn and achieve a high level of education to achieve comprehensive development. The ultimate goal of education is to cultivate talents, improve people's status, and expand their awareness and knowledge (World Bank, 2002). Efforts are

still being made at the international and local levels to achieve equal opportunities for both genders to attain higher positions in higher education because several reasons make the process of equality an urgent necessity. Among other things, gender equality is essential from a social justice perspective in developed societies, and according to OECD (2012b), providing opportunities for women in higher education leads to economic growth. Despite the growth in the number of females enrolling in higher education, there is an apparent inequality between men and women occupying leadership positions. In the last years of the last century, especially in the last quarter, the number of women accessing higher education increased, especially in Western Europe and North America, to such an extent that their number now exceeds that of men (UNESCO, 2012). Women often end up in stereotypical jobs due to various factors such as their upbringing, social environment, and personality traits. However, employers may sometimes prefer hiring men over equally qualified women due to perceived qualifications and institutional barriers that prevent women from obtaining suitable job training or integrating into the labour market, as discussed by Fényes in 2010. In Western societies, reaching the highest leadership position is the basis for academic merit. One of the crucial positions at the departmental level is that of the professor, and the top leadership level is that of the university president and vice president. Organisations that advocate for individual and gender equality in society consider the presence of women in leadership positions as an essential means of empowering, retaining, and motivating people in their positions. One of the benefits of the presence of women in higher positions is that women can bring different opinions, which facilitates leadership in senior positions. Women in higher positions increase their chances of making organisational and scientific decisions. Women in higher leadership positions act as role models and motivate other women to follow in their footsteps (O'Connor et al., 2015).

There is one woman for every two men on the European Union's scientific and administrative boards. Sweden is considered a pioneer in women's rights and gender equality in the European Union. However, according to 2012 Swedish statistics, the percentage of women in higher education who held professorial positions was 22% by 2011, therefore a great deal remains to be done before we achieve gender equality. The situation in the UK is not much different. Although women make up 48.8% of faculty members, professors make up only 19.8% of that percentage across all higher education institutions in the United Kingdom. It may take 40 years for women professors to achieve the equivalent rank of women employees in the United Kingdom educational institutions. The representation of women in university degrees is relatively lower than in all other academic degrees (Yousaf & Schmiede, 2017).

5.4. Factors that contribute to expanding women's participation in higher education

Studies conducted in recent decades show that the number of women contributing to higher education is steadily increasing. These studies agree on the social and cultural variables that increase women's enthusiasm and make them seek the best in their profession, role and social standing. Women faced numerous challenges and sacrifices due to changes in family structure and birth control, which were at the cost of their efforts and lives. Society's response to these changes varies based on their culture and the acceptance of these changes in women's behaviour. The demographic factors that affect women's participation in higher education include the cultural, economic factors and social status of educational situations, in addition to financial problems, climate, traditions, cultural perceptions, poor motivation, intellectual engagement and the impact of students' geographical location (Hailu & Asfaw, 2013). The variables related to a woman's social, cultural, and personal life are all different and change according to the cultural background and gender stereotypes of the society in question, as well as the beliefs and ideas that dominate the cultural, spatial, and social environment from which the woman comes. The relevant literature on the issue of women's participation in higher education is uncertain about the causes and outcomes. In other words, the cause may be the outcome simultaneously, and they all overlap and are intertwined; for example, birth control and delay in childbearing are among the reasons that lead to women's career advancement in higher education. At the same time, repeated childbearing and attention to family life may be a cause of delaying women's careers in higher education

5.4.1. The high proportion of women in the labour market

Reducing discrimination between men and women in the labour market has increased women's participation in higher education. Studies in the United States show that 50% of women left the workforce due to occupational bans on married women from 1900 to 1950. In the years that followed, more women participated in higher education, which meant more women in the labour market. Another example of women's participation in higher education is Japan, where women's participation in higher education increased after the Law on Equal Opportunities for Men and Women in 1986. This equality of opportunity between men and women increased their participation in some universities with little experience in the labour market compared to men (Edwards & Pasquale, 2003). Women's educational attainment is positively related to labour force participation in society, and the labour force participation of women with university degrees tends to increase. Each additional year of female education increases the labour force participation rate (Yenilmez, 2010). Two main trends explain the increased employability of

women due to higher education. The first trend explains the increase in women's employment with a university degree as a function of higher education knowledge and skills contributing to workforce development. The second trend illustrates the increase in women's employment with university degrees as evidence for employers to determine the individual's potential social and cultural capital. The higher education a woman attains affects her choice of the type of work she does. It increases their chance of entering the labour market and improves earning potential. However, it also gives them qualifications that increase their employment opportunities and change women's attitudes towards the traditional roles they play in the family and workplace (Parvazian et al., 2017). Students spend their studies waiting impatiently for graduation and may be thinking about the financial returns they will receive once they are employed with their university degrees. Recent evidence shows that after controlling for various measures of family background and income, workers with high university degrees take jobs that offer them a sense of accomplishment, a lot of independence and creativity at work, and social interaction with their peers (Oreopoulos & Petronijevic, 2013). According to reports on cross-national studies, girls' higher educational attainment reduces the wage gap.

While women are known to meet their work obligations and work full time as they are less inclined to work part-time and continue their work, the educational level of women leads to a reduction in the wage gap between men and women (Benavot, 1989). As mentioned earlier, since a highly educated woman can reduce the wage gap between males and females in the labour demand, it is also possible to reduce the income gap between genders. In the 1970s, changes in family characteristics bridged the income gap between men and women; in the 1980s, the rise in women's educational attainment was the driving force behind closing the gap between men and women (Yenilmez, 2010). The education policy explanation for the gender wage gap in the labour market was primarily due to women choosing educational fields that lead to lower-paying jobs. This interpretation is primarily due to changes in labour selectivity, gender differences in skills, gender discrimination in the labour market and changes in comparative advantage in shifting supply and demand (Yenilmez, 2010). Changes in women's employability affected society and individuals when educational attainment determined life chances. However, in European countries, the increased participation of women in higher education has yet to lead to equal social access. Although there has been an increase in the number of tertiary graduates in the male and female middle classes, most developed countries face difficulties accessing life opportunities (Brennan, 2008).

5.4.2. The combination of professional and family life

Female academics are engaged in a great deal of work besides research and teaching, so they have to juggle many jobs simultaneously. It is difficult to balance their academic life effortlessly and smoothly; the pressure of work and family forces them to sacrifice periods of rest and leisure to compensate for the missed work. At the same time, we find that the opposite is true for men: flexible work schedules help academic men organise their workday and meet the ever-changing needs of their families. This flexibility gives men enough time to organise their work and not go home early (Rafnsdóttir & Heijstra, 2011). Thus, we can conclude that this flexibility and gendered use of time restores the traditional power relations between women and men. It divides the work that separates the sexes and makes men more relaxed and happier in organising their time than their female counterparts despite the enormous workload. Academic women in college, especially married women, to balance the many pressures and maintain their career and success, resort to delaying childbearing, marriage, and contraception as is done in the United States (Goldin & Katz, 2002). However, this factor varies from culture to culture.

In Japan, having a child can be seen as the first step toward increasing women's participation in higher education, reducing the number of dropouts, decreasing family size, and allowing children to receive a better education. The more men in the family, the fewer opportunities for women's education (Vincent-Lancrin, 2008). Even information technology, which saves time and effort in much academic work, is sometimes unavailable to women. Just guessing... Because the academic woman is forced to take her work home to complete it, the woman's time at home becomes the other's share (Davies, 1999). The research findings (Raiden & Räisänen, 2013) conducted on a sample of male academics from (Sweden and the United Kingdom) who worked in different academic fields revealed that men are focused on their careers and consider them a priority. Also, they have the urge to pursue personal projects and develop them. The findings emerged from three narratives: family connected to a partner, work as a priority and a desire to pursue personal projects. Among the key narratives that academic men competed with each other in their responses was work as a priority. Swedish and British men noted that balancing work, family, and life is difficult due to the pressure on men, particularly Swedes. Despite campaigns and policies for gender equality, work-life balance is still one of women's concerns. Fertility behaviours and family structure are among the critical issues discussed in experimental research in this area and among the changes that have led to increases in divorce rates, cohabitation out of wedlock, monogamy, and lower fertility rates in developing and developed countries. Many women choose not to have children, and their numbers are greater

than those of women who work for pay. Family responsibilities and childcare societal changes have resulted in benefits to women as the number of women in education has increased in many developed countries, along with a decline in fertility. Factors contributing to lower fertility rates include technological advances in contraception, later age at marriage and childbearing, higher lifetime fertility rates, and an increase in the number of women in paid work (Yenilmez, 2010).

5.4.3. The relevance of socioeconomic factors in women's participation in higher education

Educational decisions are important because they represent a major decision in a student's life. Students' opinions/ decisions are largely influenced by a large number of people around them. These groups include the category of friends in middle school, which increases the likelihood that girls and boys will choose science, technology, engineering or mathematics rather than language subjects. It also increases the likelihood of career choice over school choice. Recording data and surveys suggest possible mechanisms leading to comparable achievement in STEM topics, smaller gender bias against females, and an expanded want to contend with males (Schøne et al., 2020). The effects of the developments that have occurred in modern societies and the separation of fathers due to divorce cases. Children grow up in a home with only one parent (generally headed by mothers), and where male children will suffer more, the influence of mothers on studies is more important than that of the father. Children of educated parents have more educational opportunities. Thus, we can conclude that social factors influence the education of children, especially females. Minority boys have lower educational attainment than girls whose fathers are less educated, and brothers and sisters may be emulated as educational role models (Loury, 2004). The difference between males and females in participation in higher education is widespread. The difference becomes even more apparent when we note that girls are underrepresented in science, technology, and mathematics. This disconnect is significant for the future because it can lead to women having to fill jobs with lower wages the reasons for these disparities are numerous and extensive. Perhaps the most important are the various demographic, economic, social, and educational factors that may decrease or increase in the coming years. Increasing numbers of women not pursuing science or technology degrees will lead to a widening gender wage gap in the labour market. Men may also be affected by the dramatic increase in women's participation in higher education, leading to unequal participation and completion in higher education between the sexes (Ramachandran, 2010). Access to higher education is considered a critical and urgent factor that is considered the starting point for participation in higher education, followed by retention in higher education

and survival and completion of study and graduation. When discussing these three points, we need to consider all the factors that affect educational institutions (urban/rural, remote/mountain/desert), which affect girls more than boys. In rural and remote areas not served by transportation, getting from these areas to educational institutions is a safety issue, especially in societies where girls cannot travel long distances alone. Cultural, sectarian and religious norms strongly impact girls' access to higher education, not to mention the sexual assault and physical violence that girls face, which limit their ability to complete, continue and move on to higher education. Other factors, such as substance abuse and pregnancy at a young age, early marriage, domestic responsibilities, and issues of honour and shame, are why girls do not attain and participate in higher education and thus do not complete their studies (Ramachandran, 2010). Parents, particularly fathers, play a crucial role in their children's education choices, as their involvement is seen as a form of care for their future and helps them choose the best course of study, varying based on their cultural, educational, and social background (David et al., 2003). Peers play an essential role in students' lives during adolescence, contributing to making important decisions and participating in higher education.

Studies have shown that peer influence is greater on girls than boys when choosing mathematics. Girls respond more strongly to their social environment than boys, especially when there are strong gender stereotypes in society (Eccles et al., 1984). According to the human capital theory, individuals tend to choose the course of study that will bring them the greatest financial gain in the future. However, this, of course, varies between men and women. Economic factors include the returns to higher education studies and degrees for women, alternative options and the structure of economies (Vincent-Lancrin, 2008). The gender gap in the returns to higher education is an economic factor affecting women's participation rate in higher education. Reversing the inequality will, in turn, lead to higher returns for women than for men. Data from countries in 2003 on the personal internal rate of return to a tertiary degree 4 (a person is obtaining a tertiary degree, ISCD5/6) show that rates of return were higher for women than for men (Belgium, Korea, New Zealand, and Norway and the United Kingdom). Thus, higher incentives for one gender are reflected in higher participation rates in higher education. Note, however, that higher returns for women are not inconsistent with higher salaries for men in the labour market. Returns are also more or less the same in five other countries (Denmark, Finland, Sweden and Switzerland), around 1% in the United States and significantly lower in one country (Hungary) (OECD, 2007). See (Table 5).

Table 5. Private internal rates of return for an individual obtaining a university-level degree, ISCED 5/6 (2003)

	Rate of return when the individual immediately acquires the next higher level of education		Rate of return when the individual, at age 40, begins the next higher level of education in full time studies, and the individual bears:			
			Direct costs and foregone earnings		No direct costs but foregone earnings	
	Males %	Females %	Males %	Females %	Males %	Females %
Belgium	10.7	15.2	20.0	28.2	21.1	32.2
Denmark	8.2	8.1	12.4	10.2	12.5	10.5
Finland	16.7	16.0	16.2	13.2	16.4	13.4
Hungry	22.6	15.0	25.1	19.4	27.8	22.0
Korea	12.2	14.9	15.0	27.7	15.9	31.1
New Zealand	9.3	12.9	6.5	7.5	7.2	8.8
Norway	12.1	15.7	15.6	15.9	15.8	16.2
Sweden	8.9	8.2	10.4	8.2	10.8	8.7
Switzerland	10.0	9.8	10.9	20.6	11.3	22.2
United Kingdom	16.8	19.6	11.4	14.9	12.5	16.8
United States	14.3	13.1	12.9	9.7	15.1	13.0

Source: OECD (2007), education at a Glance 2007: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/eag-2007-en.

Moreover, there are differences between the genders. Women responded less to bonuses than men because men have less confidence in positive evaluation than women, discouraging them from taking risks and leading them to study less. However, there is an overlap between the salaries of university graduates and high school diplomas, so they believe that a higher degree does not increase their chances of getting a better-paying job (Charles & Luoh, 2003). Another fundamental problem in higher education is the alternative opportunities for men and women that help build economies and make higher education less exciting and interesting. This may be accompanied by a decline in men's participation in higher education, as happened in France in 1997, where the dissolution of military service resulted in a decline in men's participation in higher education and reduced opportunities to obtain a university degree, especially for those from disadvantaged social backgrounds. In the United States, it has been observed that a percentage of 4% to 6% of men who participate in higher education is attributed to reasons to avoid military service (Vincent-Lancrin, 2008). The various factors contribute to limiting

women's education and their access to higher education. Poverty is one of the major factors contributing to the widening of the gender gap in education. Poor and low-income families face difficulties accessing education for their male and female children compared to affluent families. Fathers with little or no formal education must learn the importance of educating their female children in addition to their male children.

There has been a clear distinction between boys and girls within the family in the past centuries, evident in various aspects of life, including female education. Meanwhile, fathers who have received an education give equal importance to the education of females and males. The gaps between girls and boys are greater in rural areas than in urban areas (McCracken et al., 2015). Thanks to the current calling for gender equality, especially in the last century, families have begun to reconsider the issue of equality between their children. In Japan, e.g., it is common to prefer an older son; thus, girls' educational opportunities increase when they have fewer male brothers (Ono, 2004). In Turkey, the financial influence of families has a greater impact on female children's access to education (Tansel, 2002). As far as the Organisation for Economic Cooperation and Development member states are concerned, the differences have disappeared in most countries. One of the hypothetical explanations for the behaviour of families is the increasing interest in female education, especially in disadvantaged areas. In France, for example, we find, especially among working-class families (blue- and white-collar workers in the lower classes) and immigrants, that parents have higher anticipations for female children than their male children (Vincent-Lancrin, 2008).

The practices of educational policies and the policies of government institutions affect women's participation in education in developing countries by propagating ideas and beliefs that limit women's academic abilities and because girls have no chance in the equal sharing of decision-making power in the workforce. Consequently, women face various types of discrimination in the labour market (Dawson-Amoah, 2015). However, changes in women's behaviour are only some reasons for their participation in education. Although many interdependent and influential factors contribute to increasing women's participation in higher education, these factors reach a high level of complexity and sensitivity. However, a reciprocal relationship exists between women's participation in higher education and economic, social and cultural aspects (Parvazian et al., 2017). Education policies in developed countries are making great efforts to achieve gender equality and women's success in education, create the necessary balance, and close educational gaps. They are spending enormous amounts of money on women's participation. In this regard, the changes in increasing women's involvement in higher education are

synonymous with the transformations in higher education; they all interact and influence each other (Parvazian et al., 2017).

5.5. Conclusion

Since the 1990s, global conflicts and challenges have prompted societies to reshape their economic and administrative systems, highlighting the need for radical organizational change. This has led to the emergence of numerous management concepts to improve performance and differentiate between intense competition in different careers. Women excel in decision-making, delegating authority, and effective communication, as well as compassion and appreciation for others' needs. This leadership style is essential for knowledge economy societies today and in the future, as it allows for faster relationship building and more accurate identification of mistakes. Nevertheless, for all that, women are still often executors and far from decision-makers, no matter how effective. Like other institutions, higher education institutions operate in a competitive environment that requires creativity to ensure their survival and improve their competitive position. Despite developments in higher education and the increase of females in administration positions in higher education, further progress is needed. Some studies attribute the lack of females in leadership positions in higher education to the challenges women face in academic positions. First, the lack of women's empowerment to achieve leadership positions in higher education and their limited presence in the presidency of community colleges and private universities must be noted (Madsen, 2011). Second, the low percentage of women with academic ranks as professors and associate professors compared to the percentage of men in these ranks can be mentioned. Thirdly, the underrepresentation of women compared to men in first-level university faculties worldwide at private and public universities is noticeable (Madsen, 2011). As mentioned earlier, the low presence of women in leadership positions in higher education is a worldwide phenomenon. Studies have shown that the percentage of women in higher education in the United States does not exceed 23%, while that of female faculty does not exceed 26.81%. The professoriate and the rate, 43%, and other studies that included 27 European countries found that women hold only 13% of leadership positions in higher education. In the UK and Australian universities, 5.16% of teaching staff are women, not to mention the economic and social conditions that affect the level of girls around the world. These conditions vary in different societies, but they still exist and limit the advancement of women academically, scientifically and professionally.

Chapter 6. Introduction of the research

6.1. Research questions and hypotheses

During the main research, various questions were raised. We collected the questions into groups and formulated hypotheses for each block of questions.

First, we planned to determine who the international students learning at the University of Debrecen are. We also planned to compare them to our two control groups (Hungarian students learning at the University of Debrecen and Iraqi students learning at the Salahaddin University).

RQ1*: What characteristics do international students have regarding the factors influencing participation in further education, the people influencing the choice of a university to attend, factors contributing to the choice of a university to attend, Bem's feminine and masculine types, the factors created from the opinions about how gender stereotypes affect the academic choice and the possibility of eliminating gender stereotyping from society? What kind of differences can be detected along these factors between the three groups?*

H1a: Significant differences can be detected between the three groups in factors taking part in further education (Algadheeb, 2015), the people influencing the choice of university to attend (Azzone & Soncin, 2019; Kéri & Révész, 2019), factors contributing to the choice of a university to attend (Bourdieu & Ness, 1977), Bem's feminine and masculine types (Yahyawi & Ali, 2018), and the factors created from the opinions about how gender stereotypes (Kancaniku, 2015).

We wanted to investigate the direction of the effects in the case of the core variables concerning factors influencing the choice of a university to attend.

RQ2*: What kind of factors significantly affect the factors influencing the choice of a university to attend generally and specifically.*

H2a: Sociodemographic variables have a significant impact on factors influencing the choice of a university: being a woman and being younger (Tabassum & Akhter, 2020), learning in fee-paying form and on lower grades (Gaspar & Soares, 2021; Zoltán, 2019), living in bigger settlements (Rudhumbu et al.,2017; Gaspar & Soares, 2021), having parents with higher educational level, (Wang & Huang, 2021) having higher objective and subjective financial status (Ahmed et al., 2022) and being religious positively (De Soto et al., 2018) all contribute to students' choice of a university to attend.

H2b: The impact of factors influencing further education (Algadheeb, 2015), people participating in education (Azzone & Soncin, 2019; Kéri & Révész, 2019), gender stereotyping factors (Wang & Huang, 2021; Casas et al., 2022), and eliminating old ideas

about gender stereotypes (Saleh, 2022) are significantly positive while Bem's stereotyping indexes (Yahyawi & Ali, 2018) do not significantly affect the choice of a university.

Lastly, we also wanted to explore the pattern of student behaviour, specifically concerning gender stereotyping attitudes and behaviour. We also planned to explore student clusters based on stereotyping characteristics.

RQ3*: What kind of student clusters can be created regarding the stereotyping characteristics of students?*

H3a: Significant differences can be detected in the cluster membership according to the sociodemographic background variables gender (Olsson & Martiny,2018 and Kancaniku ,2015), major – including STEM (Gneezy & Rustichini, 2004; Olsson & Martiny, 2018), academic year, training level, financing type, parents' education (Shaheen & Awan, 2020), type of settlement (Rudhumbu et al., 2017; Gaspar & Soares, 2021), objective financial status and religiosity).

H3b: According to the clusters, significant differences can be detected in the factors influencing the choice of a university to attend, people participating in education (Algadheeb, 2015), factors contributing to the academic choice of a university to attend (Fenyves et al., 2019; Zoltán, 2019; Saleh, 2022), and gender stereotyping factors.

6.2. Instruments

The quantitative research instrument used in this research contains questionnaires measuring factors that lead to academic choices, and the Bem Inventory Scale, which was specifically designed to measure the extent of masculinity and femininity and moderation in personal characteristics and includes 60 characteristics found in male and female students.

The first group of questions in the questionnaire was related to sociodemographic background, including the following:

- gender
- age
- field of major
- academic year
- training level
- financing form of education
- mother's highest educational level
- father's highest educational level
- country of origin

- place of residence (capital, big city, town, village, rural area)
- objective socioeconomic status
- subjective family income
- type of settlement where student's family lives
- religiosity
- parents' attitudes toward learning

The second block of questions is related to factors influencing academic specialisation:

- Factors influencing participation in further education (finding a well-paid job, having knowledge, geographic proximity of higher education institution, finding my profession, because it easier to find a job with a degree, to make all kinds of connection, because I didn't want to work yet, follow family tradition, I could afford it, there was no tuition fee, it was a job requirement, and in hopes of social mobility).
- People influencing the choice of a university to attend (teachers, mother, father, mother, friends, relatives/siblings, high school counsellors, religious adviser, recommendation of a former student, college publication, private letters from universities, telephone calls, university representatives, campus visits, others, please specify).
- Factors contributing to the choice of a university to attend (closeness to home, location, availability of housing, cost of living, tuition costs, scholarship available, the reputation of the institution, the reputation of the program, athletics opportunities, religious atmosphere, size of the student population, variety of courses offered, specialised program offered, student-professor relationship, family tradition, and preparation for graduate school.)
- the reason behind the academic choice

The third block of questions was related to satisfaction with the current studies, including:

- satisfaction with the University of Debrecen
- satisfaction with the major chosen
- intention of completing graduate studies

The fourth block of questions contained the items of the Bem Sex Role Inventory (Bem, 1974), including 60 personality characteristics associated with gender, 20 feminine chrematistics (like shy, feminine, sympathetic, compassionate, eager to soothe hurt feelings and soft-spoken), 20 masculine characteristics (masculine, dominant, athletic, willing to take a stand, acts as a

leader), and 20 neutral characteristics (like friendly, competitive, ambitious, likeable, understanding and self-sufficient).

The fifth block of questions included items about the perception of gender stereotyping determining students' academic choice:

- a 7-item scale measuring factors of gender stereotyping determining the students' academic choice (1- the existence of gender stereotyping depends on society. 2- we should get rid of gender stereotyping thoughts. 3- I don't believe in differences between males and females. 4- I am against the gender differences in choosing a major 5- Women are more likely to be stereotyped than men in academic choice 6- the responsibility for gender stereotyping rests with the family. 7- educated families do not espouse gender stereotyping ideas.
- Own experience about gender stereotyping
- Beliefs concerning the difference in the impacts of gender stereotyping in men and women when choosing the major of study (10-point Likert scale)
- Beliefs concerning masculine and feminine specialisations. (10-point Likert scale)
- A 6-item scale concerning the self-evaluation of the possibility of eliminating gender stereotypes in your lifetime. (5-point Likert scale)
- Self-evaluated level of being stereotypical (5-point Likert scale)
- Father's perceived level of being stereotypical (5-point Likert scale)
- Mother's perceived level of being stereotypical (5-point Likert scale)
- Perception of the phenomenon in which females choose a masculine specialisation and males choose a feminine specialisation in terms of being socially acceptable
- Classification of jobs as feminine, masculine or neutral (baby sitter, scientist, politician, film director, fireman, dressmaker, pilot, traffic warden, judge, sweeper, teacher, secretary, ballet dancer, belly dancer, truck driver, waiter, journalist, policeman, dentist, gynaecologist, astronaut, postman, florist, mechanic, grocer, mason, and labourer)
- Classification of toys as feminine, masculine or neutral (airplane, ring/necklace/bracelet/earring, hairdryer, kite, Disney character dolls, Marvel character dolls, stuffed dolls, toy boat, bicycle, gun, truck, pram, rocking horse, play station, constructions, sewing machine, car, teddy bear, football, skates, pots, puzzle, brush/mirror, chess, tea set, drum, train, and makeup set).

The full questionnaire is attached in annexes.

6.3. Sample

The current research sample consisted of 327 international and Hungarian higher educational students from different universities: students residing inside Hungary, and international students from universities outside Hungary. The participants came from different countries (Europe, Asia, Africa, the Middle East and South America). A questionnaire was used to gather data for the investigation. The data collection process was carried out between June 2021 and February 2022. First, by publishing the questionnaire online in educated groups through social networking sites (Facebook, Hungarian scholarship groups, and students' groups), in addition to the help I received from my fellow teachers at Salahuddin University in Erbil in collecting data from students. The data collection was also online through the administration staff at the University of Debrecen and survey was sent by e-mail to all international students with Neptune accounts at the university. All demographic data for the sample description will be available in the sample properties shown.

The research sample consisted of females with a percentage of 57.5% and males with a percentage of 42.5% with the mean age of the sample being 25.42 (SD=6.004). Concerning financial status, the proportion of scholarship holders (73.7%) surpasses the proportion of those who study at their personal expense as fee-paying (part-time) students (26.3%). As for their places of residence, the proportion of students residing in capitals is 23.9%, that of those living in big cities is 26.9%, the percentage of those living in the suburbs of big cities is 11.3%, the percentage of those living in a town is 28.4% and, finally, the percentage of those residing in rural regions (urban area) is the lowest with 9.5%. The research sample consisted of students from different countries. The largest percentage was seen among Nigerian students with a ratio of 11.3%, followed by those coming from Iraq (10.4%) and Hungary (7.6%). Students from India, (6.7%), Vietnam (4.6%) Jordan and Mongolia (4.3%), and Syria (4.0%) participated with higher proportions.

Table 6. Country of origin of the respondents

Country	Frequency	Per cent	Country	Frequency	Per cent
Nigeria	37	11,3	Albania	2	0,6
Iraq	34	10,4	Algeria	2	0,6
Hungary	25	7,6	Angola	2	0,6
India	22	6,7	Azerbaijan	2	0,6
Jordan	14	4.3	Kyrgyzstan	2	0.6
Vietnam	15	4.6	Laos	2	0.6

Mongolia	14	4.3	Palestine	2	0.6
Syria	13	4.0	Peru	2	0.6
Pakistan	11	3.4	Tunisia	2	0.6
Iran	8	2.4	Ukraine	2	0.6
Egypt	8	2.4	Botswana	1	0.3
Kenya	7	2,1	Cambodia	1	0.3
Japan	8	2,4	East Africa	1	0.3
Brazil	7	2.1	Ecuador	1	0.3
Turkey	5	1.5	Ethiopia	1	0.3
Bangladesh	5	1.5	Iceland	1	0.3
China	5	1.5	Macedonia	1	0.3
Ghana	5	1.5	México	1	0.3
Indonesia	5	1.5	Montenegro	1	0.3
Philippines	5	1.5	Myanmar	1	0.3
Colombia	4	1.2	Russia	1	0.3
Lebanon	4	1.2	São Tomé and Principe	1	0.3
Morocco	4	1.2	South Korea	1	0.3
South Africa	4	1.2	Spain	1	0.3
Sudan	4	1.2	Thailand	1	0.3
Tanzania	4	1.2	Taiwan	3	0,9
Israel	3	0.9	Uganda	1	0.3
Kosovo	3	0.9	Uzbekistan	1	0.3
Malaysia	2	0.6	Zimbabwe	1	0.3

Regarding the university where the student's study, a significant proportion of them (93.0%), is from the University of Debrecen, which was due to the specific focus of the current research. 7.0% of the respondent's study at the University of Salahaddin.

Concerning the training level of the respondents, 38.8% study at BSc/BA level, 16.9% at MSc/MA level, 19.9% studies in undivided training (e.g., law, medicine, teacher) and 24.2% study at doctoral level. Respondents exhibited diverse specialisation; most of the students are learning in medical (22.6%) and engineering-related majors (16.2%). However, the proportion of students learning in majors of natural sciences (9.2%), economics (8.6%), agriculture (8.9%), arts & humanities (7.3%), IT (6.7%), health (5.8%), and pedagogy/teacher training (5.8%) is

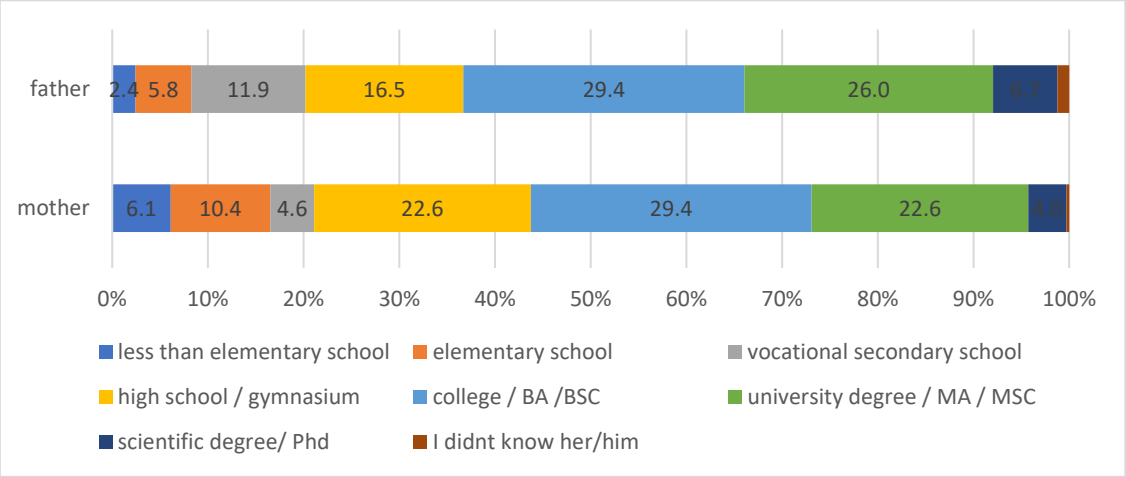
also above 5%. The least represented fields are law (3.4%), social sciences (3.4%), public health (1.5%) and sport (0.6%). Therefore, related to the major, we can see that 41.0% of students learn in STEM area and 59.0% of them in non-STEM area.

Regarding the academic year of the respondents, students from 1st grade are overrepresented (33.9%), but the proportion of those studying in 2nd grade is high too (28.7%). The ratio of students learning in higher grades shows a decreasing tendency: the proportion of students from 3rd grade is (18.3%), those in 4th grade is (14.1%), that of 5th-graders is (2.8%), and that of 6th-graders is only (2.1%).

The education obtained by the respondents' fathers was as follows: the highest percentage of fathers with a BSc/BA/college level degree is (29.4%), followed by the proportion of those with an MSc/MA level degree (26.0%). The proportion of students who had a father with a high-school level education (school-leaving exam) is (16.5%), followed by those with a vocational education certificate (without a school-leaving certificate, 11.9%), those having a doctoral degree (6.7%), and a small percentage of the students had a father with primary level certificate (5.8%) or less than primary education (2.4%). Also, (1.2%) had not met their father. Overall, most of the respondents have a father with a tertiary-level degree (62.1%), less than one-third of them had a father with a secondary-level certificate (28.4%), and the lowest proportion had a father with only a primary-level certificate (8.2%).

Concerning the mother's education, the highest proportion can be detected among students having a mother with a BSc/BA/college level degree (29.4%), followed by those having a high-school certificate (school-leaving exam) (22.6%) and those having an MSc/MA level degree (22.6%). The proportion of students who had a mother with a primary level certificate is higher compared to the father's education (10.4%), which is true for those having an education less than primary level (6.1%), but the percentage of those with a vocational certificate (4.6%) or doctoral degree (4.0%) is much lower compared to the fathers. The proportion of those who had not met their mother is low (0.3%). Most respondents have a mother with a tertiary degree (56.0%), and less than one-third have a father with a secondary-level certificate (27.2%). The lowest proportion had a mother with only a primary level certificate (16.5%), which is almost twice as much as fathers.

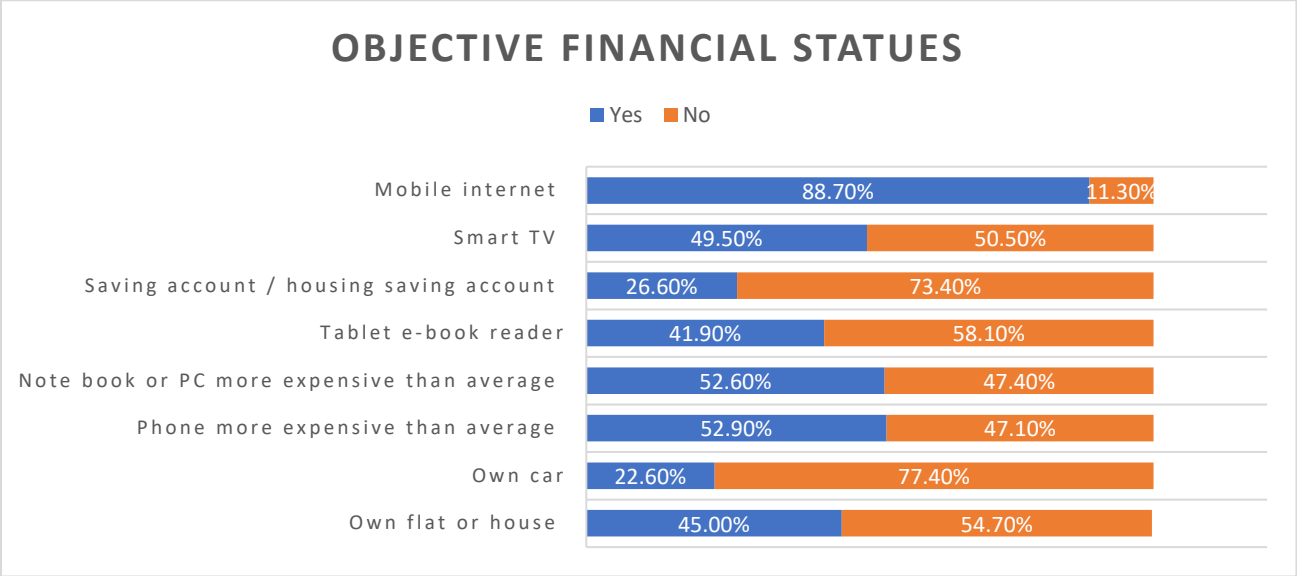
Figure 2. The educational level of the fathers and mothers of the respondents (%, N=327)



Concerning the student's family's economic situation most of the students/ respondents reported average status (48.3%), followed by those reporting better than average status (31.2%), worse than average status (11.0%), much better than average (8.0%), and much worse than average status was the least typical (1.5%).

The objective financial situation of the respondents was detected too. The percentages of respondents who do not have their own cars, houses, saved money, smart TV or tablets are higher than the percentage of those who own these. In contrast, respondents usually report having access to mobile internet, and an expensive phone, and notebook (Figure 6). Overall, students with an objective financial status below average 45.9%, and for those living in above-average conditions this number is 56.3%. We can see from the subjective financial status of the respondents that most of them (58.1%) have got everything they need but cannot afford big expenditures. The percentage of people living in the best situation (have everything they need and have some money left over for material expenditures) is quite high (23.2%). The proportion of those living in a worse-than-average situation is 15.3%, while that of those who often do not have enough money for everyday needs is low (3.4%).

Figure 3. Items of the objective financial status and presence in the sample (%, N=327)



Regarding the religiosity of the respondents, the percentage of those who are religious and follow the regulation of their religion is the highest at 37.0%, followed by those who are religious in their own way (34.9%). Meanwhile, the proportion of non-religious participants is the lowest with 28.1%.

6.4. Applied methods

During the research, we applied various simple and complex analysing methods. Data were collected in an Excel file and transformed into an SPSS database. Thus, statistical analysis was carried out in SPSS 24.0 for Windows. For between-group comparisons, compare means statistics were performed. In the case of categorical variables, crosstabulation analyses with chi-square tests were performed. To create weighted indexes, factor analysis was applied (see 6.4.1.-6.4.5.). To create student groups, cluster analysis was performed (see Chapter 9).

6.4.1. Factors affecting the further education of the respondents

Using factor analysis with the most effective factors influencing subject choice is a powerful data reduction technique that allows the study of concepts that cannot be easily measured directly. By breaking down multiple variables into a handful of understandable underlying factors, factor analysis provides easily understood, actionable data.

To analyse factors influencing participation in further education, we used the following items of the block of questions '*How did the following factors play a role in your decision to participate in further education?*':

- To find a well-paying job
- To have a knowledgeable profession
- Geographical proximity of higher education institution

- To gain knowledge
- To find my profession—Because it is easier to find a job with a degree
- To make all kinds of connection
- Because I didn't want to work yet
- To follow family tradition
- I could afford it
- There was no tuition fee
- It was a job requirement
- In hopes of social mobility

Using factor analysis with maximum likelihood method to detect the relevant factors influencing the further education of the respondents, four factors emerged concerning the variables influencing students' further education: profession orientation (15.627%), social mobility and communication (13.411%), family background (7.518%) and job orientation (3.512%) with a cumulative variance of (40.068%). Students are more interested in their professional future and preparation for work. Social transition and interest playing an important role in inhomogeneity and the mixing of different atmospheres are also important factors that motivate students to study further. KMO statistics is 0.695, which is appropriate; the model is significant ($\chi 2$=836.012; df =78). The created factors are presented in Table 9 below.

Table 7. Factors created from the variables influencing participation in further education (N=327)

	Profession orientation	**Social mobility and communication**	**Family back-ground**	**Job orientation**
To have a knowledgeable profession?	**0,825**	-0,018	0,050	0,150
To gain knowledge	**0,820**	0,100	-0,129	-0,070
To find my profession	**0,586**	0,007	-0,139	0,141
To make all kinds of connection	0,123	**0,699**	0,092	0,066
In hopes of social mobility	-0,053	**0,627**	0,185	0,052
Geographic proximity of higher education institution	0,236	**0,302**	0,212	0,103

It was a job requirement	0,095	**0,287**	0,193	0,027
There was no tuition fee	-0,051	**0,208**	0,153	0,088
To follow family tradition	-0,031	0,150	**0,696**	-0,037
Because I didn't want to work yet	-0,135	0,258	**0,510**	0,010
I could afford it	-0,109	0,320	**0,340**	0,099
To find a well-paying job	0,208	0,100	-0,033	**0,851**
Because it is easier to find a job with a degree	0,027	0,294	0,087	**0,304**

6.4.2. The persons or contacts affecting respondents' study choice

To analyse factors from people influencing the choice of study, we used the following items of the block of questions: '*The following is a list of people or references who may have affected you when choosing a university to attend. Please show the grade of the importance of each item according to the following scale*.'

- My teachers
- Mother
- Father
- Friends
- Relatives / siblings
- High school counsellors
- Religious adviser (e.g., pastor)
- Recommendation of a former student
- College publication
- Personal letters from university
- Telephone calls from university
- University representatives
- Visits to campus

Using factor analysis with maximum likelihood method to detect the relevant factors in the choice of a university to attend, three factors (groups of people) emerged: people belonging to the higher educational environment (37.454%), those belonging to the high school environment (16.278%), and finally those belonging to the family environment (6.202%) with the cumulative variance of (59.935%). People belonging to the school and family environment and higher

education are the most powerful factors that influence the process of academic decision-making. KMO statistics is (0.877), which is appropriate; the model is significant ($\chi 2$=2410.714; df=78). The created factors are presented in Table 10 below.

Table 8. Factors created from the variables influencing participation in further education (N=327)

	Higher educational environment	**High school environment**	**Family environment**
Personal letters from institution	**0,813**	0,306	0,055
University representatives	**0,799**	0,139	0,150
Telephone calls from institution	**0,767**	0,354	0,081
Visits to campus	**0,644**	0,230	0,140
College publication	**0,642**	0,367	0,058
High school counsellors	0,236	**0,812**	0,152
Religious adviser (e.g. Pastor)	0,340	**0,620**	0,133
My teachers	0,280	**0,603**	0,168
Friends	0,246	**0,522**	0,213
Recommendation of former student	0,418	**0,449**	0,179
Mother	0,110	0,148	**0,937**
Father	0,094	0,194	**0,844**
Relatives / siblings	0,153	0,416	**0,461**

6.4.3. Factors students considered when making their choice of a university to attend

To analyse factors contributing to the choice of a university, we used the following items of the block of questions '*The following is a list of factors you may have considered when you were choosing a university to attend. Please indicate the degree of importance of each item according to the following scale.*':

- closeness to home
- location (e.g., town or city)
- availability of housing
- cost of living
- tuition costs

- scholarship available
- reputation of institution
- reputation of program
- athletics opportunities
- religious environment
- size of the student population
- variety of courses offered
- specialised program offered
- student instructor
- traditions of family
- preparation for graduate school

Factor analysis with the maximum likelihood method was applied to create the factors. Based on the results, four factors were made known as institutional climate (25.662%), financial factors (12.300%), geographical factors (7.590%) and reputation and ranking of the university (4.258%) with a cumulative variance of (49.810%). These factors are all very important and directly affect academic choice. KMO statistics is (0.815), which is appropriate; the model is significant ($\chi 2$=1989.407; df=120). The created factors are presented in Table 11 below.

Table 9. Factors created from the variables contributing to the choice of a university to attend (N=327)

	Institutional climate	**Financial factors**	**Reputation and ranking**	**Geographical factors**
Variety of courses offered	**0,729**	0,116	0,139	0,055
Specialized program offered	**0,682**	0,089	0,317	-0,027
Student professor	**0,622**	0,157	0,192	0,118
Size of student population	**0,552**	0,256	0,139	0,106
Athletics opportunities	**0,415**	0,067	0,165	0,274
Preparation for graduate school	**0,387**	0,194	-0,006	0,250
Religious atmosphere	**0,373**	-0,019	0,072	0,309
Cost of living	0,180	**0,827**	0,086	0,140
Tuition costs	0,100	**0,699**	0,089	0,094

Availability of housing	0,128	**0,656**	0,080	0,391
Scholarship available	0,221	**0,319**	0,273	0,014
Reputation of institution	0,222	0,135	**0,864**	-0,037
Reputation of program	0,249	0,108	**0,813**	-0,057
Closeness to home	0,037	0,174	-0,106	0,768
Location (e.g. town or city)	0,130	0,310	0,055	0,712
Family tradition	0,326	0,020	-0,110	0,420

6.4.4. How do gender stereotypes determine student's academic choice?

To analyse factors of gender stereotyping determining the students' academic choice, we used the following items of the block of questions '*Do you think, does gender stereotyping determines a students' academic choice?*':

- The existence of gender stereotyping depends on society.
- We should get rid of gender stereotyping thoughts.
- I don't believe in differences between males and females.
- I am against gender differences in choosing a major.
- Women are more likely to be stereotyped than men in academic choices.
- The responsibility for gender stereotyping rests with the family.
- Educated families do not espouse gender stereotyping ideas.

Using factor analysis with the maximum likelihood method to identify opinions about the extent to which gender stereotypes affect school choice has been divided into two groups, one of which is liberal ideas about gender stereotyping (30.075%). At the same time, the other was the family involvement and traditions of the society (8.290%), with a cumulative variance of 38.365%. Respondents still hold traditional ideas, which criticize the group's ideas, and some contain progressive ideas, which reject traditional beliefs linked to tradition and society. KMO statistics is 0.728, which is appropriate; the model is significant ($\chi 2=469.850$; df=21).

Table 10. Factors created from the variables of gender stereotyping determining the students' academic choice (N=327)

	Liberal ideas	**Family involvement and traditions**
I am against gender differences in choosing a major.	**0,741**	0,137
We should get rid of gender stereotyping thoughts	**0,694**	0,268
I do not believe in differences between males and females.	**0,625**	0,189
Women are more likely to be stereotyped than men on academic choice	0,039	**0,604**
The responsibility for gender stereotyping rests with the family.	0,197	**0,484**
Educated families do not espouse gender stereotyping ideas.	0,210	**0,462**
The existence of gender stereotyping depends on society.	0,303	**0,385**

6.4.5. Possibility of eliminating gender stereotyping from society

Lastly, we aimed to create an index from the variables used for measuring the possibility of eliminating gender stereotyping from society. We used the following items of the block of questions '*Do you think it is possible to eliminate gender stereotypes in your lifetime?*':

- Society should take steps to change the fate of stereotypical behaviour.
- International media could recreate an essential role in reducing the use of stereotypes.
- Imposing embargoes on media outlets and ensuring there is no biased material from which people may develop stereotypical ideas.
- We are striving to better regulate the existing laws to combat gender discrimination.
- The new generation is more open-minded and can change gender stereotypes.
- Society's perception of giving females equal education is changing as males and women are now both allowed to study the subject of their choice.

We used factor analysis; the principal component methods revealed one principal component that clarifies the role of media, social media, community and family, and with the encouragement of governments, may lead to eliminating gender stereotypes from societies. The total variance explained by the principal component is 55.961%. KMO statistics is 0.822, which

is appropriate; the model is significant ($\chi 2$=736.084; df=15). The created factors are presented in Table 13 below.

Table 11. The principal components of the possibility of eliminating gender stereotyping from society (N=327)

Factors	**Eliminating old ideas about gender stereotypes**
International media could play a vital role in diminishing the use of stereotypes.	0,818
Striving to better regulate the existing laws aimed at combating gender discrimination.	0,815
Society should take action to alter the fate of stereotypical behaviour.	0,770
The new generation is more open-minded and has the potential to change gender stereotypes.	0,755
Society is changing its perception about giving women equal education, as men and women are now both allowed to study the subject of their choice.	0,700
Imposing sanctions on media outlets, making sure that there is no biased material from which people may develop stereotypical thoughts.	0,609

Chapter 7. Between-group comparisons of the main variables of the research alongside the demographic background variables

First, we planned to explore who the international students learning at the University of Debrecen are.

7.1. The sociodemographic characteristics of the student groups categorised by area

We grouped respondents' countries by continent. However, comparisons were made difficult by the small number of respondents for some continents (America) and the too high number for others (Asia). For reasons of cultural proximity, Europe and America were grouped together, while Asian countries were split into two: Middle East and Far East.

First, gender differences were explored. The results of the Chi-square test show significant differences in the distribution of the student groups (p=0,008). Female students are overrepresented among those from Europe and America and underrepresented among student from Africa. On the other hand, male students are underrepresented among the European and American candidates and overrepresented among the African ones.

Table 12. Distribution of students by continent and gender (N=327)

Gender		Continent				
		Europe and America	**Asia (Middle East)**	**Africa**	**Asia (Far East)**	**Total**
Female	**N**	38	50	41	58	187
	Row%	20,3%	26,7%	21,9%	31,0%	100,0%
	Column%	**73,1%**	50,5%	**48,2%**	64,4%	57,4%
	Adj. Res.	2,5	-1,7	-2,0	1,6	
Male	**N**	14	49	44	32	139
	Row%	10,1%	35,3%	31,7%	23,0%	100,0%
	Column%	**26,9%**	49,5%	**51,8%**	35,6%	42,6%
	Adj. Res.	-2,5	1,7	2,0	-1,6	
Total	**N**	52	99	85	90	326
	Row%	16,0%	30,4%	26,1%	27,6%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%	100,0%

We then examined the distribution of the students by the majors they are learning. The Chi-square test shows significant differences in the distribution of the student groups (p<0.001). European and American students were overrepresented in the Pedagogy, teacher training and sports majors and underrepresented in majors in IT and medicine compared to the rest of the continents. Asian students coming from the Middle East were overrepresented in social science

while those coming from the Far East were underrepresented in this area. Asian students coming from the Far East were overrepresented in Medical and public health-related majors.

Table 13. Distribution of students by continent and major (N=327)

Major		Continent				Total
		Europe and America	Asia (Middle East)	Africa	Asia (Far East)	
Agricultural	**N**	4	7	11	7	29
	Row%	13,8%	24,1%	37,9%	24,1%	100,0%
	Column%	7,7%	7,1%	12,9%	7,8%	8,9%
	Adj. Res.	-0,3	-0,8	1,5	-0,4	
Arts and humanities	**N**	6	11	3	4	24
	Row%	25,0%	45,8%	12,5%	16,7%	100,0%
	Column%	11,5%	11,1%	3,5%	4,4%	7,4%
	Adj. Res.	1,3	1,7	-1,6	-1,2	
Economics	**N**	1	10	7	10	28
	Row%	3,6%	35,7%	25,0%	35,7%	100,0%
	Column%	1,9%	10,1%	8,2%	11,1%	8,6%
	Adj. Res.	-1,9	0,6	-0,1	1,0	
Engineering	**N**	7	15	14	17	53
	Row%	13,2%	28,3%	26,4%	32,1%	100,0%
	Column%	13,5%	15,2%	16,5%	18,9%	16,3%
	Adj. Res.	-0,6	-0,4	0,1	0,8	
Health	**N**	1	7	7	4	19
	Row%	5,3%	36,8%	36,8%	21,1%	100,0%
	Column%	1,9%	7,1%	8,2%	4,4%	5,8%
	Adj. Res.	-1,3	0,6	1,1	-0,7	
IT	**N**	0	7	8	7	22
	Row%	0,0%	31,8%	36,4%	31,8%	100,0%
	Column%	**0,0%**	7,1%	9,4%	7,8%	6,7%
	Adj. Res.	-2,1	0,2	1,1	0,5	
Law	**N**	2	3	2	4	11
	Row%	18,2%	27,3%	18,2%	36,4%	100,0%
	Column%	3,8%	3,0%	2,4%	4,4%	3,4%
	Adj. Res.	0,2	-0,2	-0,6	0,7	
Medical	**N**	5	19	22	28	74
	Row%	6,8%	25,7%	29,7%	37,8%	100,0%
	Column%	**9,6%**	19,2%	25,9%	**31,1%**	22,7%
	Adj. Res.	-2,5	-1,0	0,8	2,2	
Natural sciences	**N**	4	11	8	6	29
	Row%	13,8%	37,9%	27,6%	20,7%	100,0%

	Column%	7,7%	11,1%	9,4%	6,7%	8,9%
	Adj. Res.	-0,3	0,9	0,2	-0,9	
Pedagogy, teacher training	**N**	19	0	0	0	19
	Row%	100,0%	0,0%	0,0%	0,0%	100,0%
	Column%	**36,5%**	**0,0%**	**0,0%**	**0,0%**	5,8%
	Adj. Res.	10,3	-3,0	-2,7	-2,8	
Public health	**N**	0	1	1	3	5
	Row%	0,0%	20,0%	20,0%	60,0%	100,0%
	Column%	0,0%	1,0%	1,2%	**3,3%**	1,5%
	Adj. Res.	-1,0	-0,5	-0,3	1,6	
Social sciences	**N**	1	8	2	0	11
	Row%	9,1%	72,7%	18,2%	0,0%	100,0%
	Column%	1,9%	**8,1%**	2,4%	**0,0%**	3,4%
	Adj. Res.	-0,6	3,1	-0,6	-2,1	
Sport	**N**	2	0	0	0	2
	Row%	100,0%	0,0%	0,0%	0,0%	100,0%
	Column%	**3,8%**	0,0%	0,0%	0,0%	0,6%
	Adj. Res.	3,3	-0,9	-0,8	-0,9	
Total	**N**	52	99	85	90	326
	Row%	16,0%	30,4%	26,1%	27,6%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%	100,0%

If we see the majors in a merged way when STEM and non-STEM majors are grouped, we can see that the chi-square test shows no significant differences in the distribution of student groups (p=0.335) (see Table in appendix).

In the next step of our analysis, we also investigated the possible differences regarding training levels. The Chi-square test showed significant differences in the distribution of the student groups (p<0.009). Students from Europe and America were underrepresented at BSc/Ba training level. They are overrepresented in the undivided trainings. African students are underrepresented in undivided training but overrepresented in PhD studies.

Table 14. Distribution of students by continent and the training level (N=327)

Training level		**Continent**				**Total**
		Europe and America	**Asia (Middle East)**	**Africa**	**Asia (Far East)**	
BSC/BA	**N**	13	44	33	36	126
	Row%	10,3%	34,9%	26,2%	28,6%	100,0%
	Column%	**25,0%**	44,4%	38,8%	40,4%	38,8%

	Adj. Res.	-2,2	1,4	0,0	0,4	
MSC/MA	**N**	11	20	13	11	55
	Row%	20,0%	36,4%	23,6%	20,0%	100,0%
	Column%	21,2%	20,2%	15,3%	12,4%	16,9%
	Adj. Res.	0,9	1,0	-0,5	-1,3	
Undivided	**N**	18	14	10	23	65
	Row%	27,7%	21,5%	15,4%	35,4%	100,0%
	Column%	**34,6%**	14,1%	**11,8%**	25,8%	20,0%
	Adj. Res.	2,9	-1,7	-2,2	1,6	
PhD	**N**	10	21	29	19	79
	Row%	12,7%	26,6%	36,7%	24,1%	100,0%
	Column%	19,2%	21,2%	**34,1%**	21,3%	24,3%
	Adj. Res.	-0,9	-0,9	2,5	-0,8	
Total	**N**	52	99	85	89	325
	Row%	16,0%	30,5%	26,2%	27,4%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%	100,0%

Then, we explored the distribution following the financial form. The Chi-square test showed significant differences in the distribution of the student groups ($p<0.001$). According to Table, overall, students from all continents are more represented in the state-funded/scholarship financial form. Students from Europe and America were overrepresented in state-funded/ scholarship groups and less represented in fee-paying groups, unlike those from Africa, who were overrepresented in fee-paying forms and underrepresented in state-funded/scholarship forms.

Table 15. The distribution of the students by continent and the financial form (N=327)

Financial form		**Continent**				**Total**
		Europe and America	**Asia (Middle East)**	**Africa**	**Asia (Far East)**	
state funded/ scholarships	**N**	49	75	48	68	240
	Row%	20,4%	31,3%	20,0%	28,3%	100,0%
	Column%	**94,2%**	75,8%	**56,5%**	75,6%	73,6%
	Adj. Res.	3,7	0,6	-4,2	0,5	
fee paying	**N**	3	24	37	22	86
	Row%	3,5%	27,9%	43,0%	25,6%	100,0%
	Column%	**5,8%**	24,2%	**43,5%**	24,4%	26,4%
	Adj. Res.	-3,7	-0,6	4,2	-0,5	
Total	**N**	52	99	85	90	326

	Row%	16,0%	30,4%	26,1%	27,6%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%	100,0%

We also investigated the role of student' objective financial situation by continent. The Chi-square test showed no significant differences in the distribution of students by continent and objective financial situation (p=0.161) (see Table in the appendix).

Then, we analysed the role of parents1 educational levels regarding the mother's education. The Chi-square test showed significant differences in the distribution of the student groups (p<0.001). The ratio of mothers of students coming from Europe and America having secondary educational level was higher while the ratio of those having a mother with only primary educational attainment is lower among students coming from this area. The case of the African students was controversial: the ratio of students having a mother with primary educational level was higher and that of those with secondary educational level was lower. This result differed for the mothers of students from the Far East, where the overrepresentation of mothers with tertiary educational level and the underrepresentation of primary educational level was observed.

Table 16. Distribution of the students by continent and the educational level of the mother (N=327)

Mother's educational level		**Continent**				**Total**
		Europe and America	**Asia (Middle East)**	**Africa**	**Asia (Far East)**	
primary level	**N**	1	22	22	9	54
	Row%	1,9%	40,7%	40,7%	16,7%	100,0%
	Column%	**1,9%**	22,2%	**26,2%**	**10,0%**	16,6%
	Adj. Res.	-3,1	1,8	2,7	-2,0	
secondary level	**N**	25	28	14	22	89
	Row%	28,1%	31,5%	15,7%	24,7%	100,0%
	Column%	**48,1%**	28,3%	**16,7%**	24,4%	27,4%
	Adj. Res.	3,7	0,2	-2,6	-0,7	
tertiary level	**N**	26	49	48	59	182
	Row%	14,3%	26,9%	26,4%	32,4%	100,0%
	Column%	50,0%	49,5%	57,1%	**65,6%**	56,0%
	Adj. Res.	-1,0	-1,6	0,2	2,1	
Total	**N**	52	99	84	90	325
	Row%	16,0%	30,5%	25,8%	27,7%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%	100,0%

Concerning the father's educational attainment, we could see that the Chi-square test showed significant differences in the distribution of the student groups ($p<0.001$). Regarding primary education, fathers with only primary educational certificate were generally underrepresented, but this was different for parents on the African continent. Fathers in the European and American continents were overrepresented in secondary education and underrepresented in tertiary education, contrary to the students coming from the Far East where the ratio of those having a father with tertiary educational attainment was overrepresented and that of those with a secondary level education was underrepresented.

Table 17. The distribution of the students by continent and the educational level of the father (N=327)

Father's educational level		**Continent**				**Total**
		Europe and America	**Asia (Middle East)**	**Africa**	**Asia (Far East)**	
primary level	**N**	3	6	12	6	27
	Row%	11,1%	22,2%	44,4%	22,2%	100,0%
	Column%	5,9%	6,1%	**14,3%**	6,7%	8,4%
	Adj. Res.	-0,7	-1,0	2,3	-0,7	
secondary level	**N**	27	30	18	18	93
	Row%	29,0%	32,3%	19,4%	19,4%	100,0%
	Column%	**52,9%**	30,6%	21,4%	**20,2%**	28,9%
	Adj. Res.	4,1	0,5	-1,8	-2,1	
tertiary level	**N**	21	62	54	65	202
	Row%	10,4%	30,7%	26,7%	32,2%	100,0%
	Column%	**41,2%**	63,3%	64,3%	**73,0%**	62,7%
	Adj. Res.	-3,5	0,1	0,3	2,4	
Total	**N**	51	98	84	89	322
	Row%	15,8%	30,4%	26,1%	27,6%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%	100,0%

The role of religiosity was also investigated. The results suggest that the Chi-square test shows significant differences in the distribution of the student groups ($p<0.001$). European and American students were overrepresented in the group of students being religious in their own way and underrepresented in being religious, following the rules of their religion. In contrast, African students were overrepresented in the group of students who are religious following the rules of the religion and underrepresented in the not religious group.

Meanwhile, Asian students were overrepresented in the not religious group and underrepresented in the group of students who are religious, following the rules of their religion. On the other hand, the European and American students were overrepresented in the group of students being religious in their own way, and the African students were underrepresented in this regard.

Table 18. Distribution of students by continent and religiosity (N=327)

Religiosity		Continent3				Total
		Europe and America	Asia (Middle East)	Africa	Asia (Far East)	
Yes, I follow the regulation of my religion	**N**	6	35	59	20	120
	Row%	5,0%	29,2%	49,2%	16,7%	100,0%
	Column%	**11,5%**	35,4%	**69,4%**	**22,2%**	36,8%
	Adj. Res.	-4,1	-0,4	7,2	-3,4	
Yes, I am religious in my way	**N**	25	36	18	35	114
	Row%	21,9%	31,6%	15,8%	30,7%	100,0%
	Column%	**48,1%**	36,4%	**21,2%**	38,9%	35,0%
	Adj. Res.	2,2	0,3	-3,1	0,9	
No, I am not religious	**N**	21	28	8	35	92
	Row%	22,8%	30,4%	8,7%	38,0%	100,0%
	Column%	**40,4%**	28,3%	**9,4%**	**38,9%**	28,2%
	Adj. Res.	2,1	0,0	-4,5	2,6	
Total	**N**	52	99	85	90	326
	Row%	16,0%	30,4%	26,1%	27,6%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%	100,0%

Lastly, the distribution by the type of settlement was explored. The results, suggest that the Chi-square test shows significant differences in the distribution of the student groups (p=0.002). The students from Europe and America were overrepresented in villages and small towns and less represented in bigger cities or capitals. On the contrary, students from the Middle East were more likely to come from bigger cities and capitals and less likely from villages and small towns.

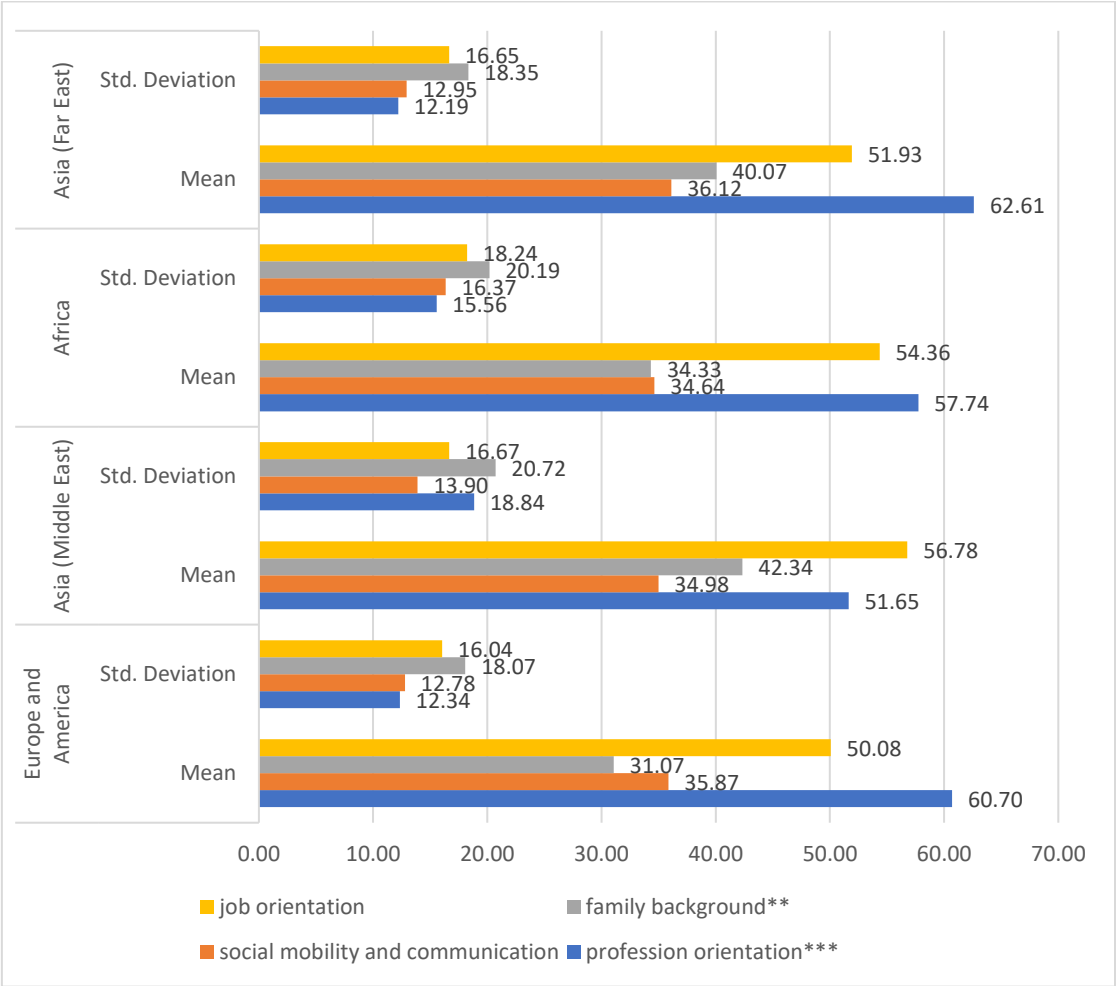
Table 19. Distribution of students by continent and type of settlement (N=327)

Type of settlement		Continent				Total
		Europe and America	Asia (Middle East)	Africa	Asia (Far East)	
village or small town	N	31	28	33	30	122
	Row%	25,4%	23,0%	27,0%	24,6%	100,0%
	Column%	**59,6%**	**28,3%**	39,3%	33,3%	37,5%
	Adj. Res.	3,6	-2,3	0,4	-1,0	
bigger city or capital	N	21	71	51	60	203
	Row%	10,3%	35,0%	25,1%	29,6%	100,0%
	Column%	**40,4%**	**71,7%**	60,7%	66,7%	62,5%
	Adj. Res.	-3,6	2,3	-0,4	1,0	
Total	N	52	99	84	90	325
	Row%	16,0%	30,5%	25,8%	27,7%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%	100,0%

7.2. Gender stereotyping characteristics of the student groups categorised by geographical area

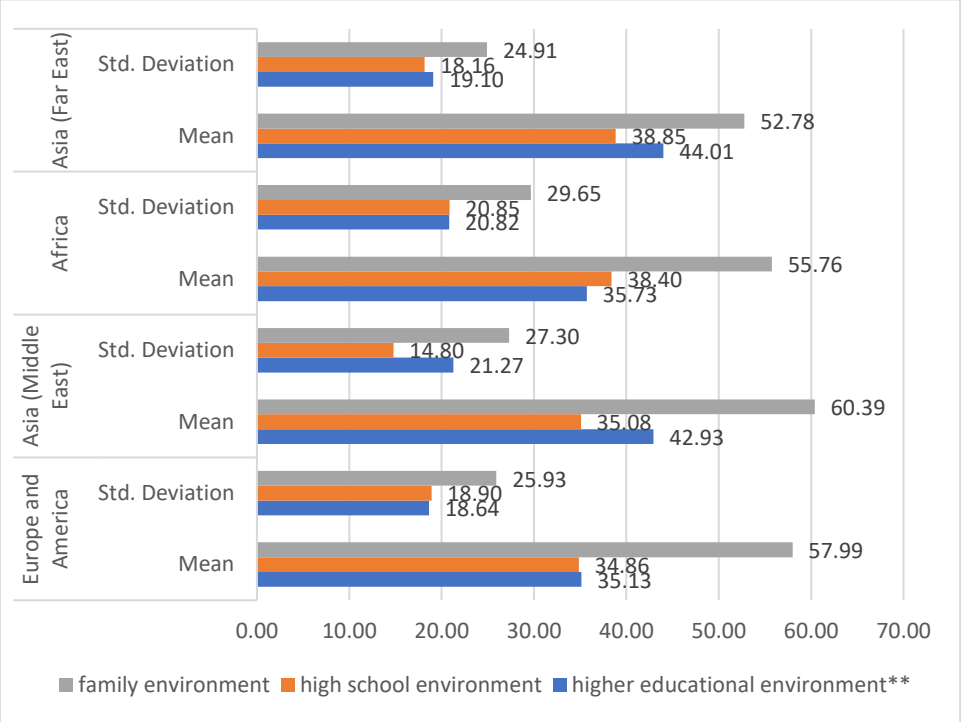
After investigating the distribution of the students by their origin and sociodemographic background, the factors influencing their academic career and attitudes toward stereotyping were explored. First, the differences in the values of the factors influencing taking part in education were assessed. The results show that significant differences can be seen in case of profession orientation ($p<0.001$) and family background ($p=0.002$). Profession orientation is the most typical among Asian students coming from the Far East while the least typical among those from the Middle East. Family background is the most characteristic of students from the Middle East while the least typical among the European and American students. Regarding social mobility and communication ($p=0.893$) and job orientation ($p=0.083$), no significant difference was detected.

Figure 4. Values of the factors influencing participation in education by the student groups created by area (N=327)



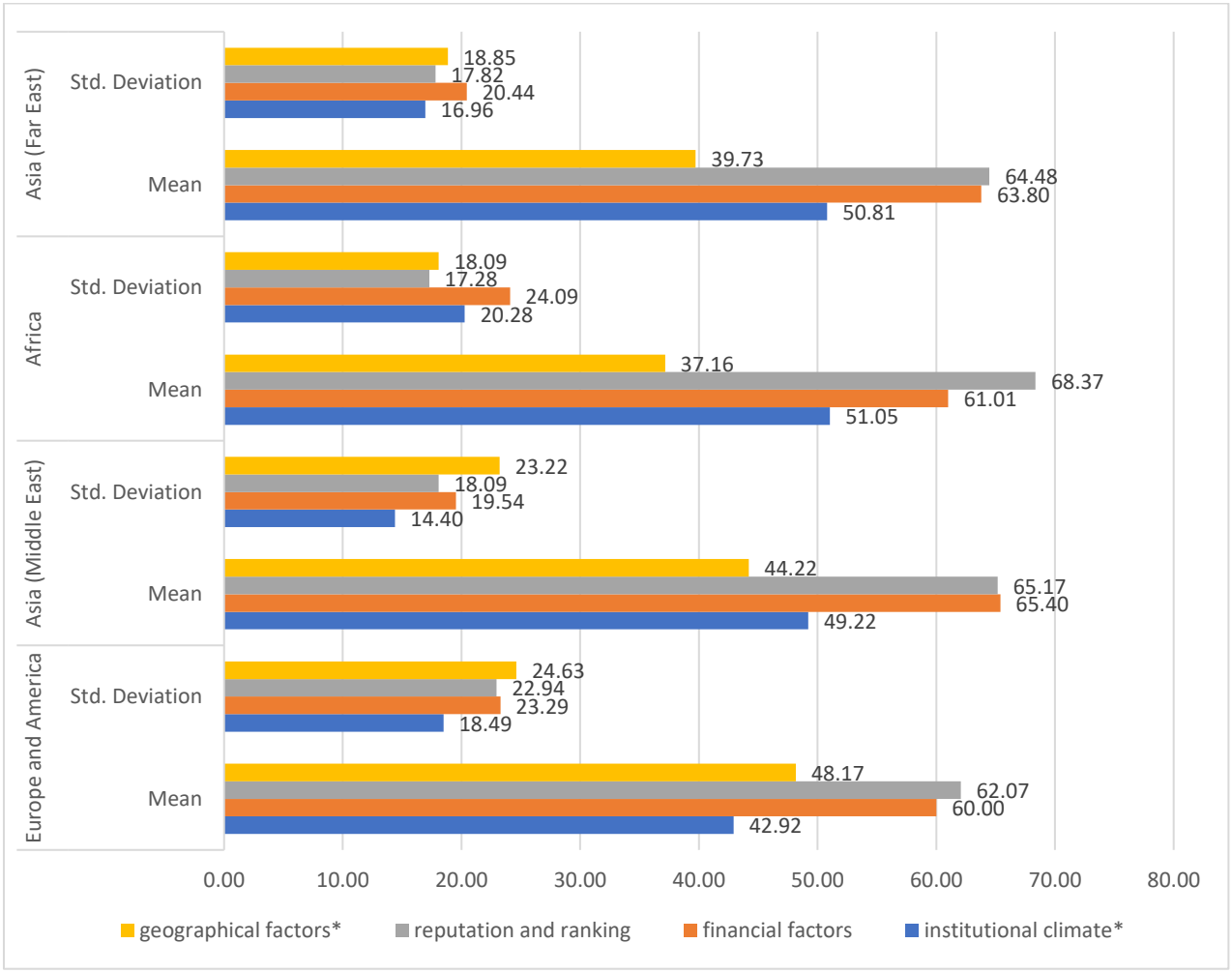
Then, the values of the factors created by the people influencing the choice of a university to attend were compared by the student groups created by the area from which they come. The results show significant differences in the case of a higher educational environment (p=0.006), which was most typical among students from the Far East and least typical among European and American students. Regarding high school environment (p=0.351) and family environment (p=0.269), no significant differences could be detected.

Figure 5. Values of the people influencing the choice of a university to attend by the student groups created by area (N=327)



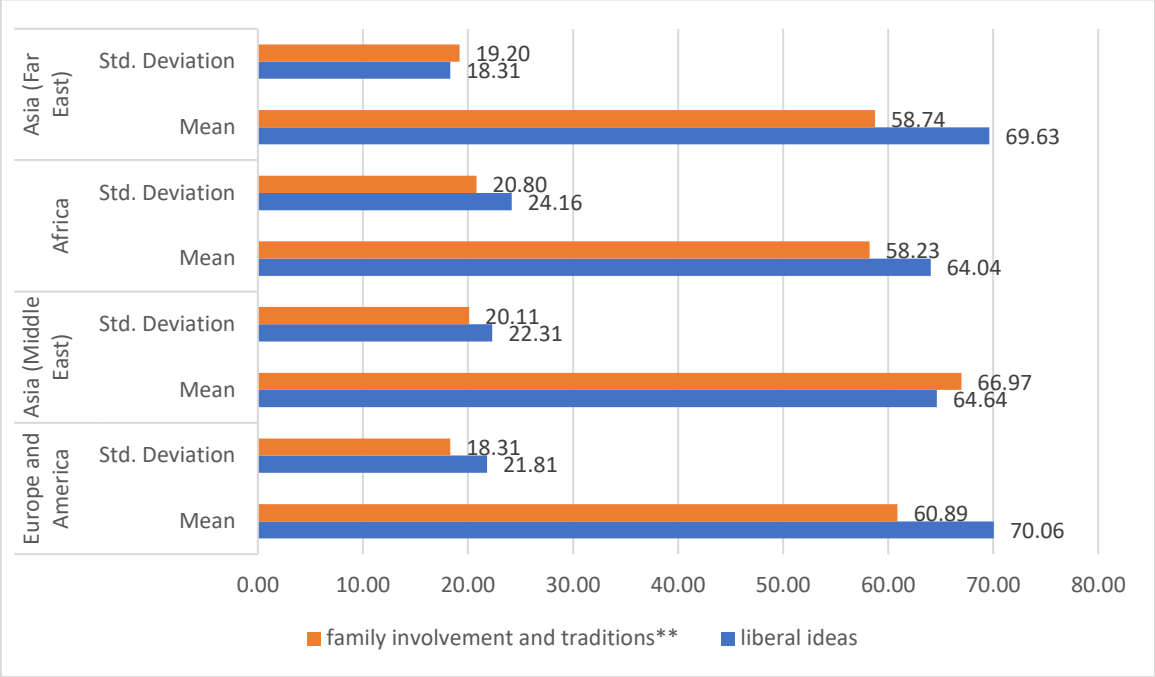
As a next step, we checked the values of the different student groups' contribution to the choice of a university to attend. According to the results, there is a significant difference in institutional factor (p=0.039) and geographical factor (p=0.012). The institutional factor was most typical among students from the Far East and the least characteristic among European and American students. The geographical factor was the most typical among European and American students and the least typical among African students. Regarding the financial factor (p=0.385) and reputation and ranking (p=0.261), no significant differences were found.

Figure 6. Values of the factors contributing to the choice of a university to attend by the student groups created by area (N=327)



Regarding the values of the gender stereotyping factors that determine the academic choice, we could see a significant difference in the family involvement and tradition factor (p=0.009), which was most typical for students from the Middle East and the least distinctive for African students, while no significant differences were detected in liberal ideas about the gender stereotyping factor (p=0.171).

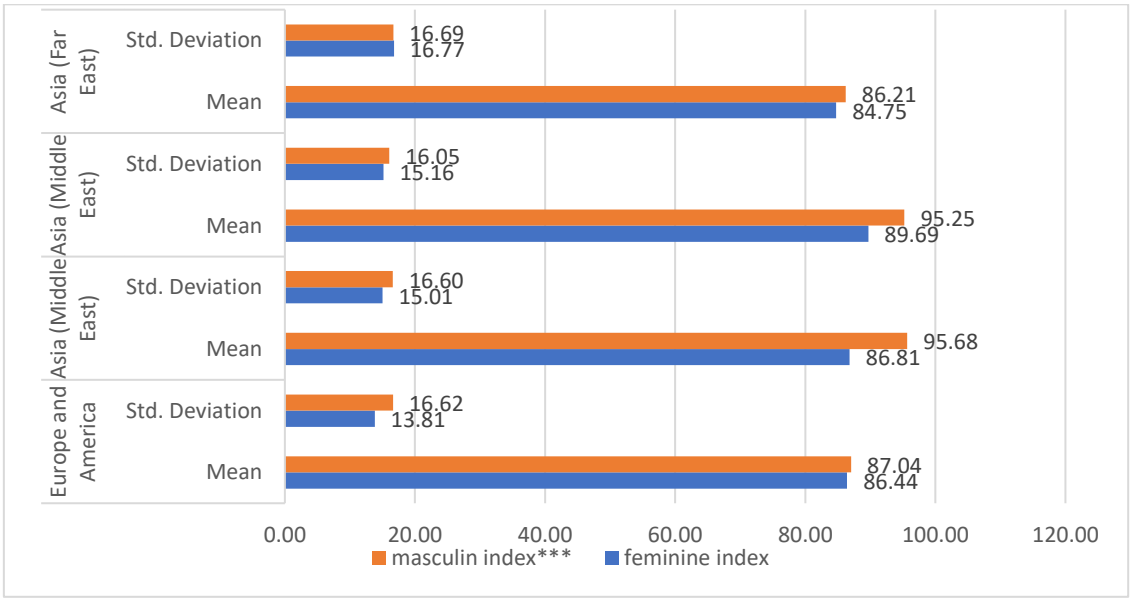
Figure 7. Values of the gender stereotyping factors determining academic choice by the student groups created by area (N=327)



Then, elimination of gender stereotyping from society was assessed in the student groups. Overall, the differences were not significant (p=0.618).

Finally, the values of the Bem indexes (feminine and masculine) were explored. The results showed significant differences in the masculine index (p=0.000), which was the most typical among Asian students from the Middle East and the least typical among Asian students from the Far East. Regarding the feminine index (p=0.206), no significant differences were found.

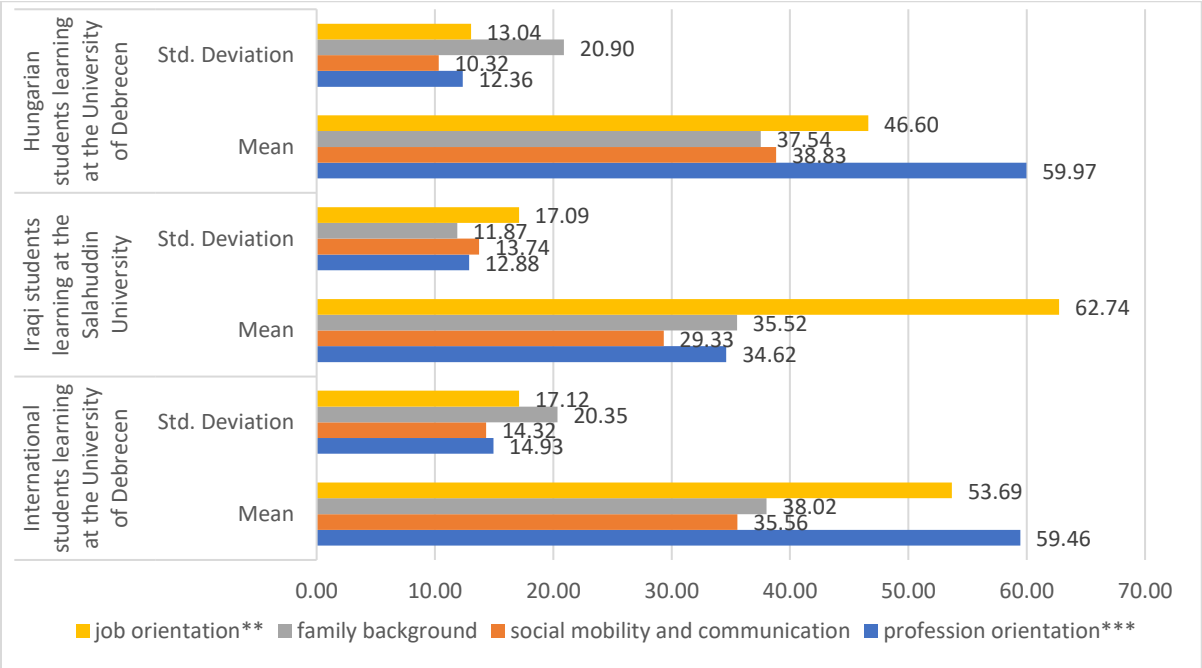
Figure 8. Values of Bem's masculine and feminine indexes by the student groups created by area. (N=327)



7.3. Comparison with the control groups

To put international students into context, we compared them with our two control groups: the Hungarian students studying at the University of Debrecen (Hungary) and the Iraqi students studying at the Salahaddin University (Iraq). First, the differences in the values of the factors that influenced participation in education were assessed. The results show that significant differences can be seen in case of profession orientation (p=0.000) and job orientation (p=0.004). Profession orientation is the most typical among Hungarian students learning at the University of Debrecen, only a little more typical compared to the international students learning at the University of Debrecen while it was least typical among the Iraqi students learning at the Salahaddin University. Job orientation was most characteristic of the Iraqi students while the least typical among the Hungarian students. Regarding social mobility and communication (p=0.055) and family background (p=0.844), no significant differences were found.

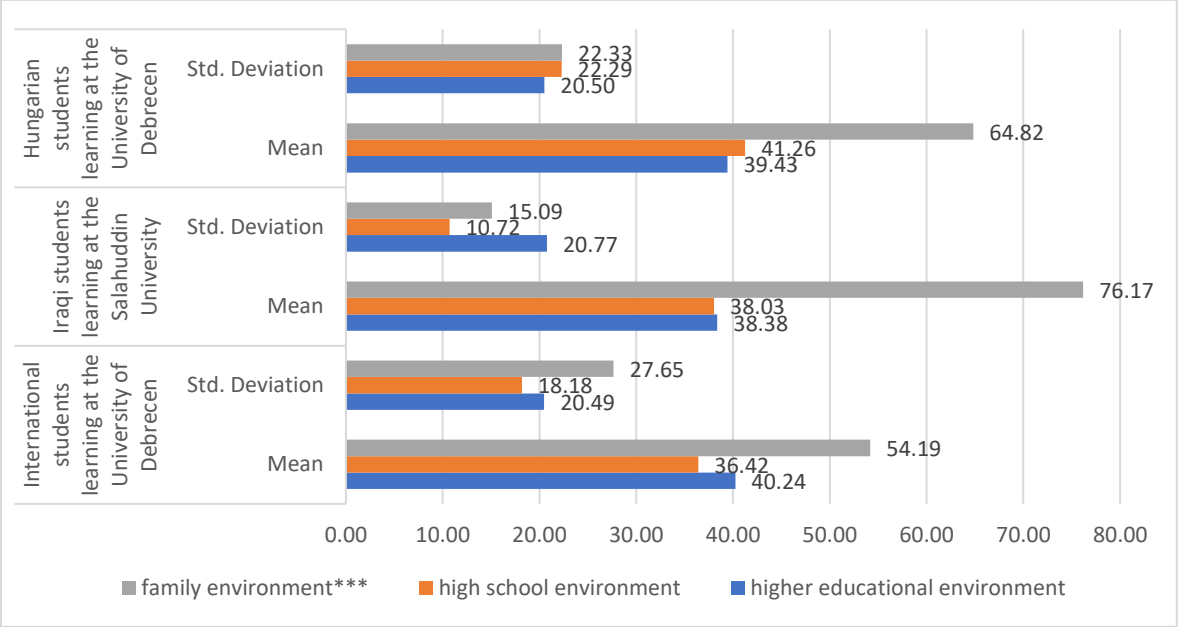
Figure 9. Values of the factors that influenced participation in education by the three student groups (N=327)



Then, the values of the factors created by the people influencing the choice of a university to attend were compared for the student groups created by the area where they come from. The results show that there are significant differences in family environment (p<0.001), since it was most typical among Iraqi students learning at Salahuddin University and least distinctive among international students learning at the University of Debrecen, with no

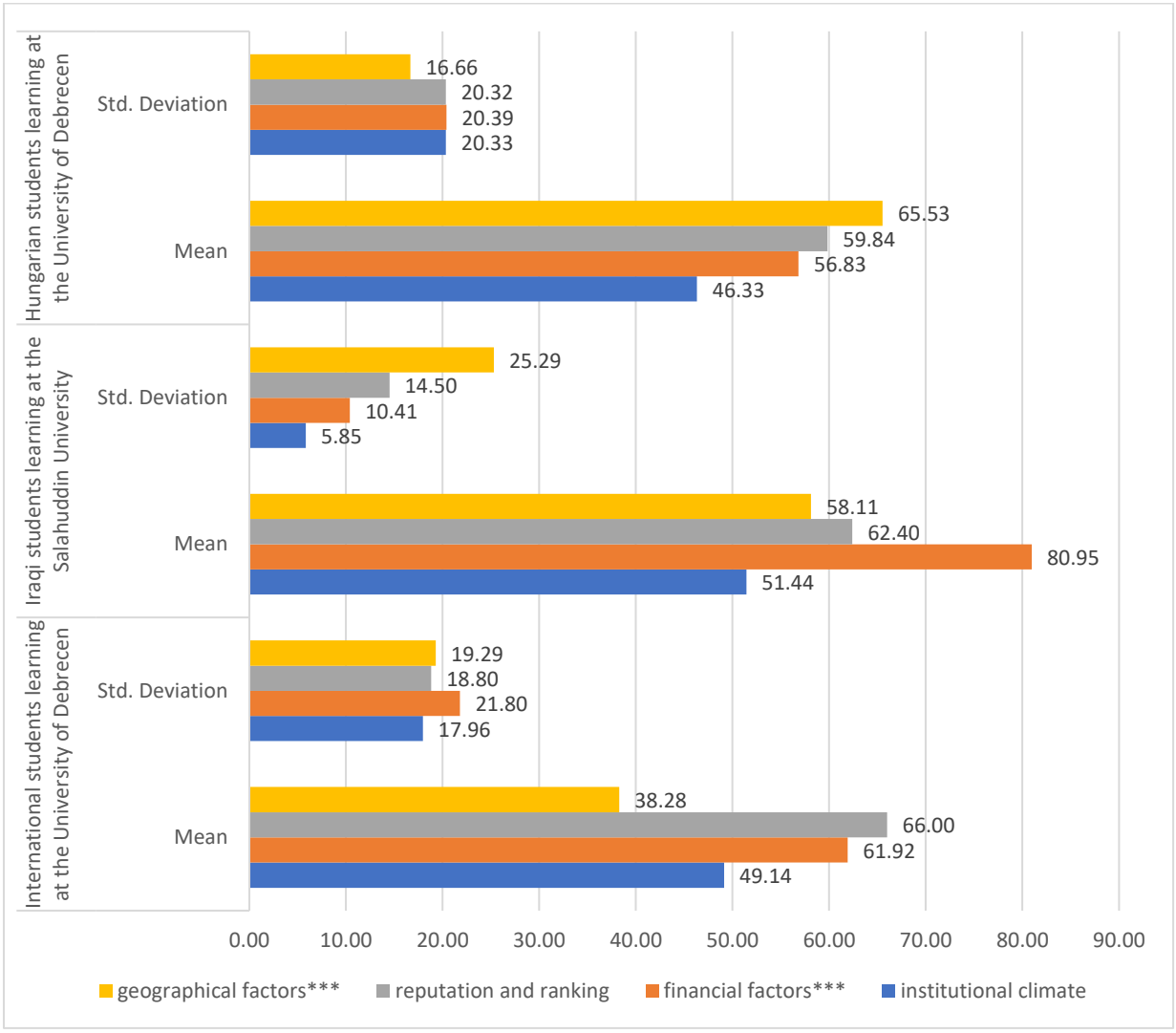
significant differences in higher education environment (p=0.905) and high school environment (p=0.421).

Figure 10. Values of the people influencing the choice of a university to attend by the three student groups (N=327)



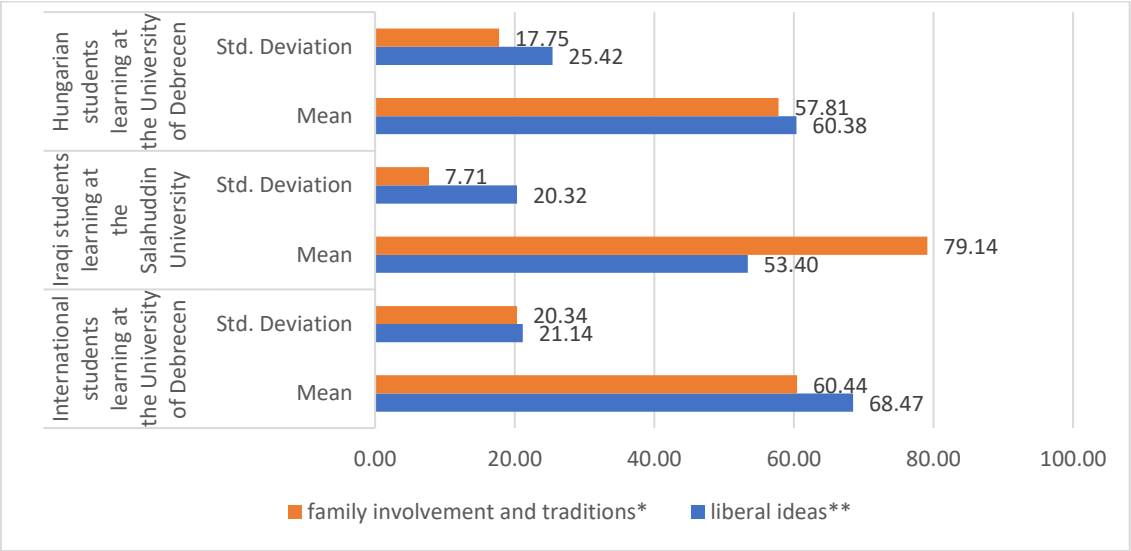
As a next step, we checked the values of the factors contributing to the choice of a university to attend by the different student groups. According to the results, there was a significant difference in two factors, namely the financial factors and the geographical factors. Financial factors (p<0.001) were most typical among Iraqi students learning at the Salahuddin University, and the least typical among Hungarian students learning at Debrecen university. Geographical factors (p<0.000) were the most characteristic of among Hungarian students learning at the University of Debrecen and least typical among international students learning at the University of Debrecen. According to institutional climate (p=0.599) and reputation and ranking (p=0.215), no significant differences were found.

Figure 11. The values of the contributing to the choice of a university to attend by the three student groups



Regarding the values of the gender stereotyping factors determining academic choice, we could see that there is a significant difference in liberal ideas about gender stereotyping ($p=0.002$) and family involvement and tradition ($p<0.001$). Family involvement and tradition were most typical among Iraqi students learning at the Salahuddin University and least distinctive among Hungarian students studying at the University of Debrecen. Liberal ideas about gender stereotyping were most typical among international students at the University of Debrecen and the least specific among Iraqi students at Salahuddin University.

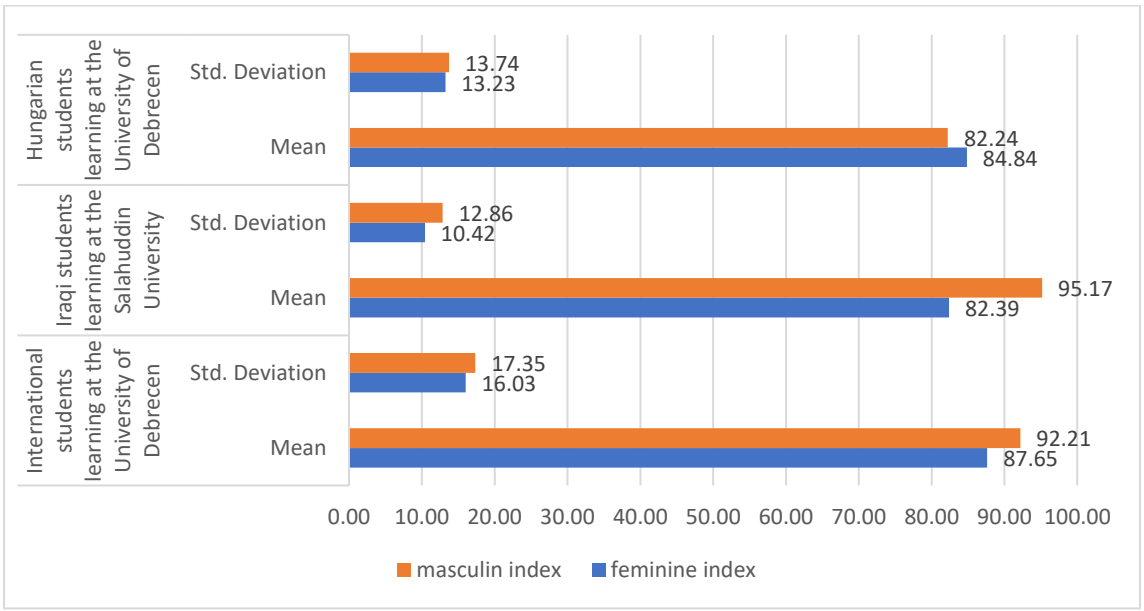
Figure 12. Values of the gender stereotyping factors determining academic choice by the three student groups



Then, eliminating gender stereotyping from society was assessed in the student groups. Overall, no significant differences were detected in eliminating gender stereotyping (p=0.121).

Last, the values of the Bem indexes (feminine and masculine) were explored. The results showed no significant differences in the Bem indexes masculine index (p=0.011): it was the most relevant for the Iraqi students studying at the Salahaddin University and the least typical for the Hungarian students studying at the University of Debrecen. Regarding the feminine index, no significant difference could be detected (p=0.225).

Figure 13. Values of Bem's masculine and feminine indexes by the three student groups



7.4. Summary

This chapter analyses the demographic background of international students studying at the University of Debrecen through between-group comparisons. The study categorized respondents' countries by continent, focusing on Europe and America due to cultural proximity, and Asian countries into the Middle East and the Far East. The research examined the characteristics of international students at the University of Debrecen and their differences compared to control groups. The sociodemographic characteristics of the student groups were categorized by area. The research found a significant gender difference, with most males from Africa while females were from Europe and America. Far Eastern Asian students dominated medical and public health majors, while European and American students had higher proportions in pedagogy, teacher training, and sports. The research found that students from Europe and America are more represented in undivided training, while African students are more represented in PhD studies. Additionally, students from all continents were more represented in state-funded scholarship financial forms. Parents from the Far East were overrepresented in higher education, while African parents were more represented in primary education.

The research analysed factors influencing students' academic choices and attitudes towards stereotyping. It found significant differences in profession orientation and family background among Far Eastern Asian and Asia Middle Eastern students. Higher educational environments and institutional climate were more typical among Far Eastern students, geographical factors were more important among European and American students, while Middle Eastern students showed more family involvement and tradition in gender stereotyping factors. Additionally, the Bem indexes showed a significant difference in masculine indexes among Middle Eastern and Far Eastern Asian students.

The research compared international students to Hungarian and Iraqi students at the University of Debrecen and Salahaddin University. It found that profession orientation is more common among Hungarian students, while job orientation is more prevalent among Iraqi students. The family environment was most typical among Iraqi students at Salahuddin University. Financial and geographical factors influenced university choices, with Iraqi students preferring financial factors and Hungarian students choosing geographical factors. Gender stereotyping factors influenced academic choices, with family involvement and tradition being more prevalent among Iraqis.

Chapter 8. Factors influencing the choice of a university to attend

In our research, we deemed it overall generally important to measure the factors influencing the choice of a university to attend and their components. We introduced these results through four linear regression analyses, which focus on the dimensions of factors influencing the choice of a university to attend. To test the impact of the factors, we used linear regression analysis, where six models were created in each situation. In our first model, we tested the effects of the demographic background variables (gender, age, financing form, academic year, type of settlement, parents' educational level, objective financial status, subjective financial status, religiosity, study a STEM major and being an international student). In our second model, we considered people influencing the choice of a university to attend (higher educational environment, high school environment and family environment). Our third model focuses on the effects of the factors contributing to the choice of a university to attend (institutional climate, financial factors, geographical factors, and reputation and ranking). In our fourth model, we measured the role of gender stereotyping factors (liberal ideas, family involvement and traditions). In our fifth model, the principal component of eliminating old ideas about gender stereotypes was involved. Finally, our sixth model focused on the feminine and masculine types of Bem.

8.1. Factors affecting institutional climate among factors influencing the choice of a university to attend

In the first model (Table 84) investigating the role of sociodemographic variables on the institutional factors that influence the choice of a university to attend, a significant effect was observed in the cases of the age of the students (β=0.209; p=0.001), the academic year (β= -0.132; p=0.023) and the type of settlement (β=0.137; p=0,016). The impact of age and type of settlement was positive, which means that being older and living in a bigger city increases the importance of institutional climate. At the same time, the effect of the academic year was negative, which means learning in higher grades reduces the impact of institutional climate. The role of the other variables was not relevant (gender: β=0.029; p=0.609; financing form: β=0.020; p=0.760; mother's educational level: β= -0.037; p=0.608; father's educational level: β=-0.032; p=0.663; objective financial status: β=-0.083; p=0.171; subjective financial status: β=0.053; p=0.402; religiosity: β=0.053; p=0.338; STEM_ non_ STEM majors β=0.103; p=0.095; and being an international student: β= -0.063 p= 0.306). This model, with an R-value of 0.317 and an R-square of 0.100, suggests that sociodemographic variables only account for 10.0 %. The adjusted R-square is also too small to be considered.

In the second model, we investigated the effect of the factor of participation in further education. We found a significant impact in the case of profession orientation (β=0.142; p=0.012), family background (β=0.175; p=0.002) and job orientation (β=0.116; p=0.036). All had a positive influence, meaning that these factors significantly strengthened the role of the institutional climate. However, social mobility and communication's impact was irrelevant (β=0.020; p=0.724). Again, there was an important effect of the sociodemographic variables in the case of age (β=0.229; p<0.000), academic year (β=-0.150; p=0.009) and type of settlement (β=0.121; p=0.030). In this model, the R-value changed from 0.317 to 0.402, and the R-square changed from 0.100 to 0.161, which means that the model accounts for 16.1% of the variance.

In the third model, involving the impact of people influencing academic choice, there was an important role of these factors in the case of the higher educational environment (β=0.120; p=0.024) and high school environment (β=0.324; p<0.000), unlike in the case of the family background environment (β=0.086; p=0.123). Higher educational and high school environment have a positive impact; thus, the higher relevance of the higher educational and high school environments leads to the higher importance of the institutional climate. The significant role of the previously introduced sociodemographic variables remained unchanged (age, β=0.202; p<0.001; academic year, β=-0.128; p=0.017; the type of settlement, β=0.113: p=0.035). Concerning the factors taking part in further education, the role of profession orientation (β=0.141; p=0.008) remained significant; however, this important role disappeared in the cases of job orientation (β=0.087; p=0.092), and family background (β=0.078; p=0.152). In this model, the R-value changed from 0.402 to 0.524 and the R-square from 0.161 to 0.275, which means that the model accounts for 27.5% of the variance.

The fourth model investigated the role of factors created from the opinion of students about gender stereotyping, which was not significant concerning either factor element (liberal ideas: β=-0.021; p=0.713; family involvement and tradition: β=0.004; p=0.945). The considerable role of sociodemographic variables in the cases of age (β=0.201; p<0.001), academic year (β=-0.130; p=0.016) and type of settlement (β=0.113; p= 0.032) are repeated in this model too. As previously mentioned, the role of factors of participation in further education was significant in the case of profession orientation (β=0.145; p=0.008). People's influence on academic choice appeared in two cases like in the previous model (higher educational environment: β=0.117; p<0.032; high school environment: β=0.323; p<0.000). In the fourth model, R-value changed from 0.524 to 0.525 while R-square remained at the same value of 0.275, which means that the model accounts for 27.5 % of the variance.

In the fifth model, the role of eliminating the old ideas about gender serotyping was investigated in this model, but no significant change was observed due to this factor (β=-0.045; p=0.469). The impact of the sociodemographic variables did not change compared to the previous models. Age (β=0.198; p<0.001; academic year; β=-0.134; p=0.014 and type of settlement β=0.112; p=0.035). Also, the impact of factors taking part in further education was proven in the case of profession orientation (β=0.148; p=0.007). The impact of the people influencing academic choice appeared the same as in the previous models (high school environment β=0.115; p<0.000; and higher educational environment: β=0.317; p=0.035). In this model, R-value changed from 0.525 to 0.526, and R-square changed from 0275 to 0.277, which means that this model also accounts for 27.7% of the variance.

In our sixth model, we examined the role of masculine and feminine indexes. These factors had no significant effect (feminine index: β=-0.100; p=0.869; masculine index: β=-0.011; p=0.121) on the institutional factors. The previously stated impact of the sociodemographic variables remained. The factors taking part in further education have a significant effect (profession orientation: β=0.149; p=0.007) and people influencing the academic choice (high school environment: β=0.323; p<0.000; higher educational environment: β=0.111; p=0.043). Also, the factors created by the student's opinions about gender stereotyping still had no impact. At the same time, no significant effect was observed in eliminating old ideas about gender stereotyping. In this model, the R-value changed from 0.526 to 0.533, while the R-square changed from 0.277 to 0.284, which means that the model accounts for 28.4% of the variance. Based on the results, this model best interprets the factor of profession orientation from the factors influencing taking part in education.

Table 20. Variables affecting factors influencing institutional climate among factors influencing the choice of a university to attend (N=327)

	Model1	**Model2**	**Model3**	**Model4**	**Model5**	**Model6**
Gender	0,029	0,025	0,003	0,000	0,001	-0,012
Age	0,209**	0,229***	0,202**	0,201**	0,198**	0,197**
Financing form	0,020	0,035	0,012	0,010	0,006	0,002
Academic year	-0,132*	-0,150*	-0,128*	-0,130*	-0,134*	-0,132*
Type of settlement	0,137*	0,121*	0,113*	0,113*	0,112*	0,107*
Mother's educational level	-0,037	-0,025	0,012	0,013	0,018	0,030

Father's educational level	-0,032	-0,041	-0,009	-0,008	-0,010	-0,007
Objective financial status	-0,083	-0,091	-0,095	-0,095	-0,094	-0,094
Subjective financial status	0,053	0,051	0,015	0,015	0,012	0,023
Religiosity	0,053	0,036	0,022	0,021	0,021	0,020
STEM	0,103	0,089	0,088	0,089	0,086	0,083
Being an international student	-0,063	-0,105	-0,066	-0,062	-0,060	-0,069
Profession orientation		0,142*	0,141**	0,145**	0,148**	0,149**
Social mobility and communication		0,020	-0,032	-0,034	-0,029	-0,034
Family background		0,175**	0,078	0,079	0,078	0,085
Job orientation		0,116*	0,087	0,088	0,087	0,085
Higher educational environment			0,120*	0,117*	0,115*	0,111*
High school environment			0,324**	0,323**	0,317**	0,323**
Family environment			0,086	0,088	0,089	0,073
Liberal ideas				-0,021	-0,004	-0,009
Family involvement and traditions				0,004	0,017	0,010
Eliminating old ideas about gender stereotypes					-0,045	-0,055
Feminine index						-0,011
Masculine index						0,100
R	0.317	0.402	0.524	0.525	0.526	0.533
R square	0.100	0.161	0.275	0.275	0.277	0.284
Adjusted R square	0.065	0.117	0.229	0.224	0.223	0.226

Note: * p<0.05; ** p<0.01; *** p<0.001. Dummy variables were coded as follows: gender: 0= female, 1=male; financial form: 0=state-funded/scholarship. 1=fee-paying; type of settlement: 0=small town. 1=bigger city or capital; mother's and father's educational level: 0=primary or secondary level. 1=tertiary level; religiosity: 0=not religious, 1=religious; STEM: 0=studying

a non-STEM major, 1=studying a STEM major; being an international student: 0=not international student, 1=international student. The other variables were measured on scales.

8.2. Factors affecting financial factors in case of factors influencing the choice of a university to attend

Investigation of the role of financial factors revealed six models (Table 85). The first model examined the role of sociodemographic variables on financial factors. No significant effect was observed (gender: β=0.076; p=0.169; age: β=-0.060; p=0.360; financing form: β=-0.014; p=0.829; academic year: β=0.005; p=0.935; type of settlement: β=-0.067; p=0.249; mothers' education (β=-0.111; p=0.135), fathers' education (β=0.143; p=0.058) objective financial status (β=0.076; p=0.227), subjective financial index (β=-0.128; p=0.051), religiosity (β=0.048; p=0.400), STEM_ non_ STEM majors (β=-0.000;p=0.995) and being an international student at the University of Debrecen (β=-0.092; p=0.147). In this model, the R-value was 0.220, and the R-square was 0.048, suggesting that sociodemographic variables account only for 4.8%. The adjusted R-square was also too small to be considered.

The second model focused on the factors of participation in further education, which was significantly negative in the case of profession orientation (β=-0.124; p=0,034) and positive in job orientation (β=0.201; p<0.001). This means that profession orientation reduces the role of financial factors, unlike job orientation, which strengthens the position of financial factors. Meanwhile, the impact of the family background (β=-0.028; p=0,625) and social mobility and communication (β=-0.080; p=0,169) was insignificant. The effect of the previously introduced sociodemographic variables was negligible, too. In this model, the R-value changed from 0.220 to 0.318, and the R-square changed from 0.048 to 0.101, which means that the model accounts for 10.1% of the variance.

In the third model we investigated the effect of people influencing academic choice. No significant impact was detected on any the factors (high school environment: β=0.009; p=0.876; higher educational environment: β=0.059; p=0.134; family environment: β=0.119; p=0.054). The role of the sociodemographic variables was not significant. The observable role of factors taking part in further education remained in the cases (profession orientation: β=-0.125; p=0.032; job orientation: β=0.197; p<0.001), while it was not the same in the cases of family background and social mobility and communication. In this model, the R-value changed from 0.318 to 0.340, and the R-square from 0.101 to 0.115, which means that the model accounts for 11.5% of the variance.

In our fourth model, we examined the effect of factors created by the opinion of students about gender stereotyping. The investigation revealed no significant impact concerning either element

(liberal ideas: β=0.019; p=0.762; family involvement and tradition: β=0.103; p=0.082). Regarding the sociodemographic factors, no significant role could be observed. There was a considerable impact of factors of participating in further education in cases of profession orientation (β=-0.133; p=0.027) and job orientation (β=0.189; p<0.001). Concerning the effect of people influencing academic choice, again, no significant role of all factors could be observed. In the fourth model, the R-value changed from 0.340 to 0.354, and the R-square changed from 0.115 to 0.125, which means that the model accounts for 12.5% of the variance. In the fifth model, we investigated the effect of eliminating old ideas about gender stereotyping. This factor had no significant impact on institutional factors (β=-0.001; p=0.987). The role of sociodemographic variables remained insignificant. Concerning the factors taking part in further education, no changes could be found since the impact of profession orientation (β=-0.132; p=0.027) and job orientation (β=0.189; p<0.001) remained significant. However, people's influence on academic choice did not change this model; the effects are insignificant in all cases. Also, no significant impact was detected in the cases of liberal ideas, family involvement and tradition factors. In the fifth model, the R-value remained at 0.354, and the R-square also remained at 0.125, which means that this model accounts for 12.5% of the variance. In our last model, we investigated the role of gender indexes. We detected a significant effect of the masculine index (β=0.175; p=0.013), in contrast to the feminine index, which was not outstanding (β=-0.045; p=0.537). This means that higher level of masculine characteristics increases the relevance of the financial factors. Again, no significant impact was detected in the sociodemographic factors. Concerning the effect of factors taking part in further education, the previously considerable impact of profession orientation (β=-0.132; p=0.033) and job orientation (β=0.189; p<0.001) was still detectable. No significant effect could have been seen in all the cases regarding the people influencing the academic choice factor. Like in the previous models, the impact of the factors created by the opinion of the students about gender stereotyping was not significant in both cases. Also, no detected effect of eliminating the old ideas about gender stereotyping could be seen. In this model, the R-value changed from 0.354 to 0.382, while the R-square changed from 0.125 to 0.146, which means that the model accounts for 14.6% of the variance. Therefore, this model best interprets the factor of profession orientation from the factors influencing participation in education.

Table 21. Variables affecting factors influencing financial factors among factors influencing the choice of a university to attend (N=327)

	Model1	**Model2**	**Model3**	**Model4**	**Model5**	**Model6**

Gender	0,076	0,075	0,079	0,100	0,100	0,074
Age	-0,060	-0,051	-0,036	-0,029	-0,029	-0,030
Financing form	-0,014	-0,029	-0,042	-0,033	-0,033	-0,038
Academic year	0,005	0,001	0,001	0,011	0,011	0,013
Type of settlement	-0,067	-0,099	-0,106	-0,117*	-0,117*	-0,128*
Mother's educational level	-0,111	-0,060	-0,050	-0,040	-0,040	-0,022
Father's educational level	0,143	0,135	0,116	0,096	0,096	0,102
Objective financial status	0,076	0,092	0,100	0,091	0,091	0,088
Subjective financial status	-0,128	-0,092	-0,097	-0,093	-0,093	-0,075
Religiosity	0,048	0,041	0,030	0,023	0,023	0,025
STEM	0,000	-0,022	-0,018	-0,018	-0,019	-0,023
Being an international student	-0,092	-0,050	-0,018	-0,008	-0,008	-0,023
Profession orientation		-0,124*	-0,125*	-0,133*	-0,132*	-0,128*
Social mobility and communication		0,080	0,076	0,073	0,073	0,064
Family background		-0,028	-0,059	-0,067	-0,067	-0,054
Job orientation		0,201***	0,197**	0,189**	0,189**	0,185**
Higher educational environment			0,059	0,074	0,074	0,071
High school environment			0,009	0,017	0,017	0,030
Family environment			0,119	0,108	0,108	0,083
Liberal ideas				0,019	0,019	0,013
Family involvement and traditions				0,103	0,103	0,092
Eliminating old ideas about gender stereotypes					-0,001	-0,015
Feminine index						-0,045
Masculine index						0,175*
R	0.220	0.318	0.340	0.354	0.354	0.382

R square	0.048	0.101	0.115	0.125	0.125	0.146
Adjusted R square	0.011	0.053	0.059	0.064	0.061	0.077

Note: * p<0.05; ** p<0.01; *** p<0.001. Dummy variables were coded as follows: gender: 0= female, 1=male; financial form: 0=state-funded/scholarship. 1=fee-paying; type of settlement: 0=small town. 1=bigger city or capital; mother's and father's educational level: 0=primary or secondary level. 1=tertiary level; religiosity: 0=not religious, 1=religious; STEM: 0=studying at non-STEM major, 1=studying at STEM major; being an international student: 0=not international student, 1=international student. The other variables were measured on scales.

8.3. Factors affecting geographical factors regarding factors influencing the choice of a university to attend

Table 86 introduces the results related to reputation and ranking. In the first model, we examined the role of sociodemographic variables. A negative significant impact was detected in the case of the status of being an international student at Debrecen University (β=-0.378; p<0.001), which means being an international student at Debrecen University weakens the relevance of geographical factors. No significant impact was observed in the other variables: gender (β=0.031; p=0.560; age (β=-0.029; p=0.633) academic year (β=-0.046; p=0.397) financial form (β=-0.079; p=0.199), type of settlement (β=0.084; p=0.116), mother's education (β=-0.052; p=0.444), fathers' education (β=-0.098; p=0.156), objective financial status (β=-0.002;p=0.976), subjective financial status (β=-0.045; p=0.450), religiosity(β=0.026; p=0.621), STEM_ non_ STEM majors (β=0.-040; p=0.490). The R-value was 0.447 in this model, while the R-square value was 0.200, suggesting that sociodemographic variables only account for 20.0%. The adjusted R-square was also too small to be considered.

In the second model, we investigated the impact of factors influencing participation in further education, which was significant in social mobility and communication (β=0.247; p<0.001) and family background (β=-0.173; p=0.001). Geographical factors are positively affected by family background factors. For example, wealthy families can send their children to study in areas far from their places of residence. Also, social mobility and communication positively affect geographical factors. No significant impact was detected in profession orientation (β=-0.080; p<0.118; p=0.118) or job orientation (β=-0.048; p=0.337). Also, among the sociodemographic variables, the significant impact of being an international student at the University of Debrecen (β=-0.372; p<0.001) remained significant. The model explains that the R-value changed from 0.558 to 0.647 and the R-square value from 0.200 to 0.311, which means that the model accounts for 31.1% of the variance.

In the third model, we examined the impact of people influencing academic choice. Significant impacts were detected (higher educational environment: β=0.216; p<0,001; high school environment: β=0.232; p<0.001; family environment: β=0.131; p=0.009). This means that people from the family, school and university environment increase the relevance of geographical factors. No changes can be seen in the sociodemographic factors (being an international student at the UD: β=0.329; p<0.001). Regarding the factors taking part in further education, there was a significant effect of social mobility and communication detected (β=0.192; p<0.001), and the family background effect disappeared in this model (β=-0.065; p=0.183) and similarly to the previous model, no significant impact could be seen in the case of profession orientation (β=-0.084; p=0.077) or job orientation (β=0.071; p=0.115). The model explains that the R-value changed from 0.558 to 0.647 and the R-square value from 0.311 to 0.419, which means that the model accounts for 41.9% of the variance.

In our fourth model, we investigated the effect of the factors created by the opinion of students about gender stereotyping. No significant impact was detected in either case, liberal ideas (β=0.000; p=0.996) and family involvement and tradition (β=-0.037; p=0.447). No changes can be seen concerning sociodemographic factors. The active role of the status of being an international student at UD continued to play an active role (β=-0.334; p<0.001). According to the factors, taking part in further education was important again in the case of social mobility and communication (β=0.194; p<0.001). The role of people influencing academic choice was active again in all cases: higher educational environment (β=0.230; p<0.001; high school environment (β=0.212; p<0.001) and family environment (β=0.134; p=0.008). The model explains that the R-value changed from 0.647 to 0.648 and the R-square value from 0.419 to 0.420, which means that the model accounts for 42.0% of the variance.

In the fifth model, we examined the role of eliminating old ideas about gender stereotyping, which was not significant (β=-0.065; p=0.245). Concerning the sociodemographic variables, no changes could be experienced; therefore, the role of being an international student at the UD is still significantly negative (β=-0.331; p<0.000). According to the factors, participation in further education was important again in the case of social mobility and communication (β=0.202; p<0.001). The role of people influencing academic choice was active again in all cases: higher educational environment (β=0.209; p<0.001; high school environment (β=0.222; p<0.001) and family environment (β=0.136; p=0.007). At the same time, concerning the opinion of students about gender stereotyping, no significant impacts were observed. In this model, the R-value changed from 0.648 to 0.650 and the R-square value from 0.420 to 0.423, which means that the model accounts for 42.3% of the variance.

In the last model, Bem indexes were involved. The role of the gender stereotyping factors masculine index (β=0.003; p=0.663) and feminine index (β=0.026; p=0.963) were insignificant. No changes seen concerning the sociodemographic factors, the factors taking part in further education, and people influencing academic choice. Also, elimination of old gender stereotyping ideas was not significant, similarly to the factors of the opinion of students about gender stereotyping. In this model, the R-value changed from 0.650 to 0.651and the R-square value was the same at 0.423, which means that the model accounts for 42.3% of the variance.

Table 22. Variables affecting factors influencing geographical factors among factors influencing the choice of a university to attend (N=327)

	Model1	**Model2**	**Model3**	**Model4**	**Model5**	**Model6**
Gender	0,031	0,054	0,043	0,037	0,040	0,041
Age	0,029	0,011	-0,007	-0,009	-0,014	-0,014
Financing form	0,079	0,045	0,029	0,026	0,021	0,019
Academic year	0,046	0,054	0,070	0,067	0,061	0,062
Type of settlement	-0,084	-0,094	-0,101*	-0,097*	-0,099*	-0,097*
Mother's educational level	-0,052	-0,014	0,019	0,016	0,024	0,027
Father's educational level	-0,098	-0,069	-0,057	-0,051	-0,054	-0,054
Objective financial status	0,002	-0,032	-0,031	-0,028	-0,027	-0,024
Subjective financial status	0,045	0,039	0,018	0,016	0,013	0,013
Religiosity	0,026	0,039	0,018	0,021	0,022	0,017
STEM	-0,040	-0,055	-0,047	-0,047	-0,052	-0,053
Being an international student	-0,378***	-0,372***	-0,329***	-0,334***	-0,331***	-0,333***
Profession orientation		-0,080	-0,084	-0,082	-0,078	-0,081
Social mobility and communication		0,247*******	0,192***	0,194***	0,202***	0,202***
Family background		0,173******	0,065	0,068	0,066	0,067
Job orientation		-0,048	-0,073	-0,070	-0,072	-0,071

Higher educational environment			0,216***	0,212***	0,209***	0,205***
High school environment			0,232***	0,230***	0,222***	0,220***
Family environment			0,131**	0,134**	0,136**	0,132**
Liberal ideas				0,000	0,024	0,022
Family involvement and traditions				-0,037	-0,017	-0,019
Eliminating old ideas about gender stereotypes					-0,065	-0,069
Feminine index						0,026
Masculine index						0,003
R	0.447	0.558	0.647	0.648	0.650	0.651
R square	0.200	0.311	0.419	0.420	0.423	0.423
Adjusted R square	0.168	0.275	0.382	0.379	0.380	0.378

Note: * p<0.05; ** p<0.01; *** p<0.001. Dummy variables were coded as follows: gender: 0= female, 1=male; financial form: 0=state-funded/scholarship. 1=fee-paying; type of settlement: 0=small town. 1=bigger city or capital; mother's and father's educational level: 0=primary or secondary level. 1=tertiary level; religiosity: 0=not religious, 1=religious; STEM: 0=studying at non-STEM major, 1=studying a STEM major; being an international student: 0=not international student, 1=international student. The other variables were measured on scales.

8.4. Factors affecting reputation and ranking within factors influencing the choice of a university to attend

Table 87 summarizes the results of the linear regression analysis concerning the factors influencing reputation and ranking. In the first model, we investigated the effect of the sociodemographic variable on reputation and ranking. The significant impact of financing form (β=-0.152; p=0.022) could be seen while the role of the other factors was not substantial (gender: β=-0.101; p=0.083; age: β=-0.072; p=0.268; academic year: β=-0.004; p=0.947; type of settlement: β=0.003; p=0.961; mother's education: β=-0.063; p=0.395; fathers education: β= 0.138;p=0.067; objective financial status: β=-0.058; p=0.355; subjective financial status: β=-0.027; p=0.689; religiosity: β=0.095; p=0.091; STEM _non_ STEM: β=-0.016; p=0.793 and being an international student at the University of Debrecen: β=0.096;p=0.127). In this model, the R-value was 0.250, and the R-square was 0.063, which suggests that sociodemographic variables only account for 6.3%. The adjusted R-square was also too small to be considered.

In the second model, we examined the effect of factors influencing the decision to attend further education. There is a significant impact of these factors on reputation and ranking in the cases of profession orientation (β=0.307; p<0.001) and family background (β=0.133; p=0.017). The impact of profession orientation and family background is positive; therefore, these factors increase the relevance of the reputation and ranking. The effect of job orientation (β=0.071; p=0.191) and social mobility and communication (β =-0.02; p=0.648) was irrelevant. In this model, the impact of the sociodemographic factors changed. The impact of financial form disappeared (β=-0.106; p=0.094). The R-value changed from 0.250 to 0.419, and the R-square changed from 0.063 to 0.175, which means that the model accounts for 17.5% of the variance.

In the third model, the investigation focused on people's influence on academic choice. We found an insignificant impact in all cases (β=0.020; p=0.724 for high school; β=0.014; p=0.807 for higher educational; β=0.082; p=0.168 for family environment). Concerning the sociodemographic variables, no changes could be observed. Regarding the factors influencing participation in further education, the effect of profession orientation (β=0.307; p<0.001) and family background (β=0.150; p=0.010) remained unchanged. In the third model, the R-value changed from 0.419 to 0.426 and the R-square from 0.175 to 0.181, which means that the model accounts for 18.1% of the variance.

The target factors in the fourth model were the factors created from the opinion of students about gender stereotyping. A positive significant impact was observed (liberal ideas: β=0.139; p=0.020), unlike family involvement and tradition: β=0.020; p=0.403). This result suggests liberal ideas strengthen the reputation and ranking factor. No significant impact was detected in sociodemographic variables. Concerning the factors influencing taking part in further education, the active role of profession orientation (β=0.27; p<0.001) and family background (β=0.156; p=0.006) remained unchanged. Also, no significant role of people influencing academic choice was detected. In the fourth model, the value of R changed from 0.426 to 0.447 and R-square from 0.181 to 0.200, which means that the model accounts for 20.0% of the variance.

In the fifth model, we examined the effect of eliminating old ideas about gender stereotyping, which turned out not to be important in this model (β=0.073; p=0.172). Concerning the sociodemographic variables, no significant effect was detected in all variables. Regarding the factors influencing participation in further education, the impact of profession orientation (β=-0.270; p<0.001) and family background (β=0.156; p=0.007) remained significant. Like in the previous models, the role of people influencing academic choice is still insignificant. At the same time, the factors created by the opinion of students about gender stereotyping were still

not significant. In this model, the substantial role of liberal ideas disappeared, and family involvement and tradition were not significant, either. The R-value changed from 0.447 to 0.452, and R-square changed from 0.200 to 0.205, suggesting that the model accounts for 20.5% of the variance.

In the sixth model, the investigation centred around the Bem indexes. However, no significant effect was detected concerning its factors (feminine index: $\beta=0.027$; $p=0.696$; masculine index: $\beta=-0.120$; $p=0.075$). Like in the previous model, no significant impact was detected regarding sociodemographic factors. Similar to the previous models, a significant effect was seen concerning factors influencing participation in further education in the case of profession orientation ($\beta=-0.266$; $p<0.001$) and family background ($\beta=0.144$; $p=0.013$). No significant effect was observed in all cases regarding people influencing academic choice. The role of the factors created from the opinions of students about gender stereotyping, as well as eliminating old ideas about gender stereotyping, is still irrelevant. In this model, the R-value changed from 0.452 to 0.470 and the R-square from 0.205 to 0.221, which means that the model accounts for 22.1% of the variance.

Table 23. Variables affecting factors influencing reputation and ranking factors among factors influencing the choice of a university to attend (N=327)

	Model1	**Model2**	**Model3**	**Model4**	**Model5**	**Model6**
Gender	0,101	0,095	0,095	0,130	0,127*	0,113*
Age	-0,072	-0,061	-0,050	-0,043	-0,037	-0,039
Financing form	-0,152*	-0,106	-0,118	-0,101	-0,094	-0,101
Academic year	-0,004	-0,009	-0,008	0,011	0,019	0,022
Type of settlement	0,003	0,027	0,021	0,013	0,016	0,014
Mother's educational level	-0,063	-0,111	-0,103	-0,098	-0,108	-0,088
Father's educational level	0,138	0,124	0,113	0,091	0,095	0,099
Objective financial status	-0,058	-0,039	-0,034	-0,044	-0,046	-0,042
Subjective financial status	-0,027	0,002	-0,005	0,000	0,004	0,016
Religiosity	0,095	0,065	0,058	0,059	0,058	0,050
STEM	-0,016	-0,033	-0,032	-0,041	-0,035	-0,039

Being an international student	0,096	0,021	0,044	0,030	0,026	0,012
Profession orientation		0,307***	0,307***	0,275***	0,270***	0,266***
Social mobility and communication		-0,025	-0,025	-0,016	-0,027	-0,034
Family background		-0,133**	-0,150**	-0,158**	-0,156**	-0,144**
Job orientation		0,071	0,068	0,056	0,058	0,058
Higher educational environment			0,014	0,044	0,048	0,039
High school environment			0,020	0,036	0,047	0,052
Family environment			0,082	0,060	0,058	0,033
Liberal ideas				0,139*	0,106	0,097
Family involvement and traditions				0,047	0,020	0,009
Eliminating old ideas about gender stereotypes					0,090	0,073
Feminine index						0,027
Masculine index						0,120
R	0.250	0.419	0.426	0.447	0.452	0.470
R square	0.063	0.175	0.181	0.200	0.205	0.221
Adjusted R square	0.026	0.132	0.129	0.143	0.146	0.157

Note: * p<0.05; ** p<0.01; *** p<0.001. Dummy variables were coded as follows: gender: 0= female, 1=male; financial form: 0=state-funded/scholarship. 1=fee-paying; type of settlement: 0=small town. 1=bigger city or capital; mother's and father's educational level: 0=primary or secondary level. 1=tertiary level; religiosity: 0=not religious, 1=religious; STEM: 0=studying a non-STEM major, 1=studying a STEM major; being an international student: 0=not international student, 1=international student. The other variables were measured on scales.

8.5. Summary

This chapter aimed to measure the factors influencing university choice and their components using four linear regression analyses. Six models were created in each situation; our first model focuses on demographic background variables influencing university choice. In the second model, the factors contribute to the choice of a university to attend. In the third model, people influencing taking part in education were involved. In our fourth model, we measured the role

of gender stereotyping factors, and in our fifth one, the principal component of eliminating old ideas about gender stereotypes. Finally, our sixth model focused on Bem's feminine and masculine types.

The research explores the influence of sociodemographic variables on university choice, and finds that age, settlement type, and academic years significantly affect influence university choice. International students at Debrecen University weaken the relevance of geographical factors. The role of financing form weakens reputation and ranking. Factors influencing further education, such as professional orientation, family background, and job orientation, positively influence institutional climate. However, professional orientation has a negative, while job orientation has a positive effect. Geographical factors also positively affect social mobility, communication, and family background factors. People influencing academic choice significantly positively affect higher educational and high school environments, highlighting the importance of institutional climate. Geographical factors also play a significant role in these environments.

Students' opinions on gender stereotyping liberal ideas significantly positively enhance the university's ranking and reputation. Masculinity indexes greatly influence financial factors, with higher masculine characteristics influencing relevance.

Chapter 9. Student clusters created based on the stereotypical attitudes and behaviour of the students

9.1. Creation of clusters

We aimed to detect student groups following the different patterns of stereotypical attitudes and behaviour. Therefore, we selected the most important stereotyping-related variables of the database. During the study, the following variables were investigated:

- I haven't experienced any gender stereotyping situation. (yes/no)
- I have experienced gender stereotyping at the university. (yes/no)
- I have had bad experiences with gender stereotyping in my society. (yes/no)
- I have experienced gender stereotyping in my personal life. (yes/no)
- I have experienced gender stereotyping in my professional life. (yes/no)
- Do you think there is a difference in the effects of gender stereotyping in males and females when choosing the major of study? (10-point Likert scale)
- Do you believe that there are masculine specialisations and feminine specialisations? (10-point Likert scale)
- Liberal ideas factor concerning gender stereotyping determining the students' academic choice (100-point Likert scale)
- Family involvement and traditions factor concerning gender stereotyping determining students' academic choice (100-point Likert scale)
- The principal component of eliminating old ideas about gender stereotypes (100-point Likert scale)

Based on the previously mentioned variables, cluster analysis (K-means clustering, iteration: 100) was made to categorise students concerning their stereotyping attitudes and behaviour. To use unique scales, variables were standardised before creating the clusters. The student clusters were compared regarding gender, major, academic year, training level, financing type, parents' educational attainment, type of settlement, objective financial status and religiosity. Cluster characteristics were also compared concerning factors influencing participation in further education, the list of persons influencing higher educational studies and factors contributing to the choice of a university to attend.

9.2. Differences in the cluster membership according to sociodemographic variables

First, we created the student clusters following the above-mentioned method. The best pattern followed the three-cluster version, meaning that three clusters could be formulated based on the above-mentioned variables concerning stereotyping attitudes and behaviour (Table24).

Students belonging to the first cluster (**experienced coping style**) reported more experience in gender stereotyping in all life situations (the value is positive in case of the experiences and negative in case of the lack of experience). They think that gender stereotyping impacts the choice of the study and major, and they also think that there are masculine specialisations and feminine specialisations. Finally, the importance of the factor of liberal ideas and family involvement and traditions concerning gender stereotyping is visible among them, much like eliminating old ideas about gender stereotyping. Based on these characteristics, this student group has experience with gender stereotyping, and it seems that they can use their experience to cope with the phenomenon. Therefore, due to the experience of gender stereotypes and the importance of reducing them in society, we can call such students **experienced copers.**

The second student cluster (**inexperienced optimistic style**) consists of students having no or less experience with gender stereotyping, which can be seen from the negative values of experiencing gender stereotyping in different contexts and the positive value of the lack of experience, they think that gender stereotyping does not impact the choice of study and major, and they do not believe in masculine and feminine specialisations. However, the factors of liberal ideas and family involvement and traditions concerning gender stereotyping are essential for them also, in the same way as eliminating old ideas about gender stereotyping. Therefore, this group with no authentic experience and positive vision concerning the reduction of the phenomenon can be called **inexperienced optimistic students**.

Finally, the third student group (**inexperienced denying type)** consists of students having no or less experience with gender stereotyping, just like in the case of the second cluster. However, in this case, we can see that these students think that gender stereotyping impacts the choice of study and major. They also think that there are masculine and feminine specialisations, which is in contrast with the former cluster. However, compared with the two former clusters, liberal ideas and family involvement and traditions are not important for them, and they also do not regard eliminating old ideas about gender stereotyping as important factors. Therefore, these students have no concrete experience concerning gender stereotyping and maybe, for this reason, they see no need to solve the problems belonging to the phenomenon. Therefore, we can call them **inexperienced denying students.**

Concerning the number of cases, the group of experienced coping students consists of 109 students, the group of inexperienced optimistic students consists of 124 students, while the group of inexperienced denying students consists of 93 students. Therefore, concerning the total sample, 326 students could be categorised into one group, and only one student has missing data. See (Table 88).

Table 24. Characteristics of the clusters (N=327)

	Clusters		
	Experienced coping style/ ***Experienced coping students***	**Inexperienced optimistic style/** ***Inexperienced optimistic students***	**Inexperienced denying type/** ***Inexperienced denying students***
I have not experienced any gender stereotyping situation.	-0,916	0,442	0,485
I have experienced gender stereotyping at the university	0,893	-0,484	-0,402
I have bad experiences with gender stereotyping in my society.	0,804	-0,481	-0,301
I have experienced gender stereotyping in my personal life.	0,726	-0,298	-0,454
I have experienced gender stereotyping in my professional life.	0,496	-0,275	-0,215
Do you think there is a difference in the effects of gender stereotyping in males and females when choosing the major of study?	0,449	-0,438	0,057
Do you believe that there are masculine specialisations and feminine specialisations?	0,055	-0,565	0,690
The factor of liberal ideas concerning gender stereotyping determining the students' academic choice	0,131	0,583	-0,930
The factor of family involvement and traditions concerning gender stereotyping determining the students' academic choice	0,392	-0,053	-0,388
Eliminating old ideas about gender stereotypes	0,384	0,375	-0,950

Table 89 shows the differences between the clusters regarding gender. We can see that female students are overrepresented in the group of experienced coping students, which shows well that female students often have to face and cope with gender stereotyping. At the same time, male students are overrepresented in the group of inexperienced denying students since they often do not experience gender stereotyping. The difference in the distribution of the groups is significant ($p<0.001$).

Table 25. Differences between the clusters regarding gender (N=327)

		Experienced coping students	Inexperienced optimistic students	Inexperienced denying students	Total
Female	**N**	78	69	40	187
	Row%	41,7%	36,9%	21,4%	100,0%
	Column%	**71,6%**	55,6%	**43,0%**	57,4%
	Adj. Res.	3,7	-0,5	-3,3	
Male	**N**	31	55	53	139
	Row%	22,3%	39,6%	38,1%	100,0%
	Column%	**28,4%**	44,4%	**57,0%**	42,6%
	Adj. Res.	-3,7	0,5	3,3	
Total	**N**	109	124	93	326
	Row%	33,4%	38,0%	28,5%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%

Note: The underlined and bold values indicate that there are far more or fewer people in the given cells in the table than would be expected in a random ordering (Adj.Resid.>2.0 or Adj.Resid. <-2.0)

Table 90 shows the differences between the clusters regarding majors. The results show a significant difference in the distribution of the groups (p=0.131). Experienced coping students are underrepresented among students learning in the agricultural field. Meanwhile, experienced coping students are overrepresented among students learning in the social sciences, while inexperienced optimistic students are underrepresented.

Table 26. Differences between the clusters regarding major (N=327)

Majors		**Clusters**			**Total**
		Experienced coping students	**Inexperienced optimistic students**	**Inexperienced denying students**	
Agricultural	**N**	4	14	11	29
	Row%	13,8%	48,3%	37,9%	100,0%
	Column%	**3,7%**	11,3%	11,8%	8,9%
	Adj. Res.	-2,3	1,2	1,2	
	N	9	9	5	23

Arts and humanities	**Row%**	39,1%	39,1%	21,7%	100,0%
	Column%	8,3%	7,3%	5,4%	7,1%
	Adj. Res.	0,6	0,1	-0,7	
Economics	**N**	9	11	8	28
	Row%	32,1%	39,3%	28,6%	100,0%
	Column%	8,3%	8,9%	8,6%	8,6%
	Adj. Res.	-0,2	0,1	0,0	
Engineering	**N**	15	24	14	53
	Row%	28,3%	45,3%	26,4%	100,0%
	Column%	13,8%	19,4%	15,1%	16,3%
	Adj. Res.	-0,9	1,2	-0,4	
Health	**N**	9	9	1	19
	Row%	47,4%	47,4%	5,3%	100,0%
	Column%	8,3%	7,3%	1,1%	5,8%
	Adj. Res.	1,3	0,9	-2,3	
IT	**N**	5	8	9	22
	Row%	22,7%	36,4%	40,9%	100,0%
	Column%	4,6%	6,5%	9,7%	6,7%
	Adj. Res.	-1,1	-0,2	1,3	
Law	**N**	2	5	4	11
	Row%	18,2%	45,5%	36,4%	100,0%
	Column%	1,8%	4,0%	4,3%	3,4%
	Adj. Res.	-1,1	0,5	0,6	
Medical	**N**	27	27	20	74
	Row%	36,5%	36,5%	27,0%	100,0%
	Column%	24,8%	21,8%	21,5%	22,7%
	Adj. Res.	0,6	-0,3	-0,3	
Natural sciences	**N**	12	9	9	30
	Row%	40,0%	30,0%	30,0%	100,0%
	Column%	11,0%	7,3%	9,7%	9,2%
	Adj. Res.	0,8	-1,0	0,2	
Pedagogy, teacher training	**N**	5	6	8	19
	Row%	26,3%	31,6%	42,1%	100,0%
	Column%	4,6%	4,8%	8,6%	5,8%
	Adj. Res.	-0,7	-0,6	1,4	
Public health	**N**	2	2	1	5
	Row%	40,0%	40,0%	20,0%	100,0%
	Column%	1,8%	1,6%	1,1%	1,5%
	Adj. Res.	0,3	0,1	-0,4	
Social sciences	**N**	9	0	2	11
	Row%	81,8%	0,0%	18,2%	100,0%
	Column%	**8,3%**	**0,0%**	2,2%	3,4%

	Adj. Res.	3,5	-2,6	-0,8	
Sport	**N**	1	0	1	2
	Row%	50,0%	0,0%	50,0%	100,0%
	Column%	0,9%	0,0%	1,1%	0,6%
	Adj. Res.	0,5	-1,1	0,7	
Total	**N**	109	124	93	326
	Row%	33,4%	38,0%	28,5%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%

Note: The underlined and bold values indicate that there are far more or fewer people in the given cells in the table than would be expected in a random ordering (Adj.Resid.>2.0 or Adj.Resid. <-2.0)

Table 91 shows the differences between the clusters regarding the mothers' education. The results show a significant difference in the distribution of the groups (p=0.029). We can see that experienced coping students are overrepresented among those with a mother with a tertiary-level certificate, while inexperienced denying students are underrepresented in this educational level.

Table 27. The differences between the clusters regarding the mother's educational attainment (N=327)

		Clusters			**Total**
		Experienced coping students	**Inexperienced optimistic students**	**Inexperienced denying students**	
Primary level	**N**	17	18	19	54
	Row%	31,5%	33,3%	35,2%	100,0%
	Column%	15,6%	14,5%	20,7%	16,6%
	Adj. Res.	-0,4	-0,8	1,2	
Secondary level	**N**	20	37	32	89
	Row%	22,5%	41,6%	36,0%	100,0%
	Column%	18,3%	29,8%	34,8%	27,4%
	Adj. Res.	-2,6	0,8	1,9	
Tertiary level	**N**	72	69	41	182
	Row%	39,6%	37,9%	22,5%	100,0%
	Column%	**66,1%**	55,6%	**44,6%**	56,0%
	Adj. Res.	2,6	-0,1	-2,6	
Total	**N**	109	124	92	325
	Row%	33,5%	38,2%	28,3%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%

Note: The underlined and bold values indicate that there are far more or fewer people in the given cells in the table than would be expected in a random ordering (Adj.Resid.>2.0 or Adj.Resid. <-2.0).

Then, we investigated the differences between the student's cluster membership groups according to nationality and the university. The results show a significant difference in group distribution (p=0.005). International students studying at the University of Debrecen were the most represented in the inexperienced optimistic students' group; at the same time, they were underrepresented in the inexperienced denying students' group, in contrast to Iraqi students studying at Salahuddin University, who were underrepresented in the inexperienced optimistic students' group.

Table 28. Differences between the clusters regarding the student groups based on nationality and university (N=327)

		Clusters			**Total**
		Experienced coping students	**Inexperienced optimistic students**	**Inexperienced denying students**	
International students studying at the University of Debrecen	**N**	90	116	72	278
	Row%	32,4%	41,7%	25,9%	100,0%
	Column%	82,6%	**93,5%**	**77,4%**	85,3%
	Adj. Res.	-1,0	3,3	-2,5	
Iraqi students studying at the Salahuddin University	**N**	11	1	11	23
	Row%	47,8%	4,3%	47,8%	100,0%
	Column%	10,1%	**0,8%**	**11,8%**	7,1%
	Adj. Res.	1,5	-3,5	2,1	
Hungarian students studying at the University of Debrecen	**N**	8	7	10	25
	Row%	32,0%	28,0%	40,0%	100,0%
	Column%	7,3%	5,6%	10,8%	7,7%
	Adj. Res.	-0,2	-1,1	1,3	
Total	**N**	109	124	93	326
	Row%	33,4%	38,0%	28,5%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%

Note: The underlined and bold values indicate that there are far more or fewer people in the given cells in the table than would be expected in a random ordering (Adj.Resid.>2.0 or Adj.Resid. <-2.0)

Concerning the other sociodemographic variables, no significant differences were detected (academic year: p=0.180; training level: p=0.401; financing form: p=0.551; fathers' education: p=0.130; type of settlement: p=0.665; objective financial status: p=0.432; religiosity: p=0.775; STEM and non-STEM majors: p=0,721, see Appendix).

9.3. Differences in the attitudes toward higher educational studies according to cluster membership

Figure 14. shows the means and values of the different clusters concerning the factors influencing participation in further education. Concerning profession orientation, the highest value could be seen in the case of students belonging to the inexperienced optimistic group, while the lowest was observed among those belonging to the inexperienced denying group (p=0.000). Regarding social mobility and communication, the group called inexperienced denying students owned the highest scores, while the inexperienced optimistic group owned the lowest scores (p=0.842). In the case of the family background, the highest values belong to the inexperienced denying group while the lowest values belong to the inexperienced optimistic students (p=0.518). Concerning job orientation, the highest value could have been experienced among students in the inexperienced optimistic group, while the lowest could be seen among those in the experienced coping group (p=0.671). From the p-values we can see that the differences are significant only in the case of profession orientation.

Figure 14. Differences in the factors affecting participation in further education between the student clusters

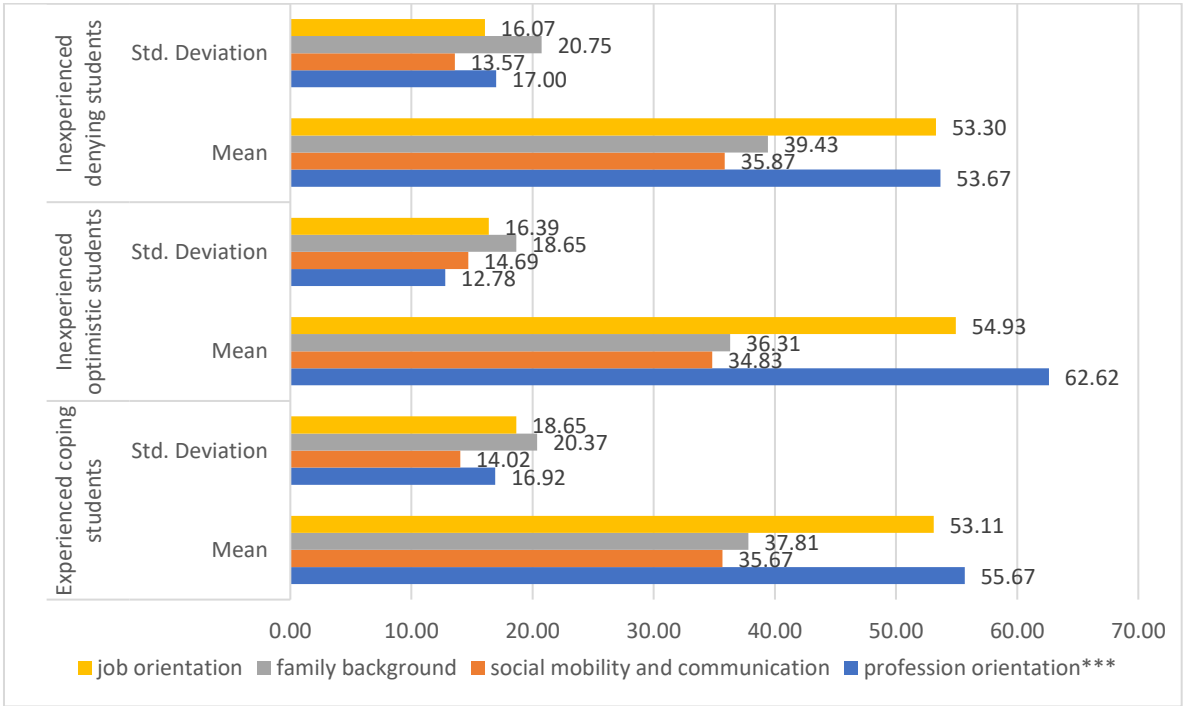


Figure 15. shows the values of the different clusters concerning the list of people influencing higher educational studies. Concerning the higher educational environment, the highest value could be seen in the case of students belonging to the inexperienced denying group. In contrast, the lowest could be seen among those with the experienced coping style (p=0.297). Regarding the high school environment, the inexperienced denying type students group owned the highest scores, while the experienced coping style group owned the lowest scores (p=0.128). In the case of the family environment, the highest values belonged to the inexperienced optimistic style group. At the same time, the lowest values belonged to the inexperienced denying type students (p=0.663). From the p-values, we can see no significant differences in any cases.

Figure 15. The differences in the people influencing higher educational studies between the student clusters

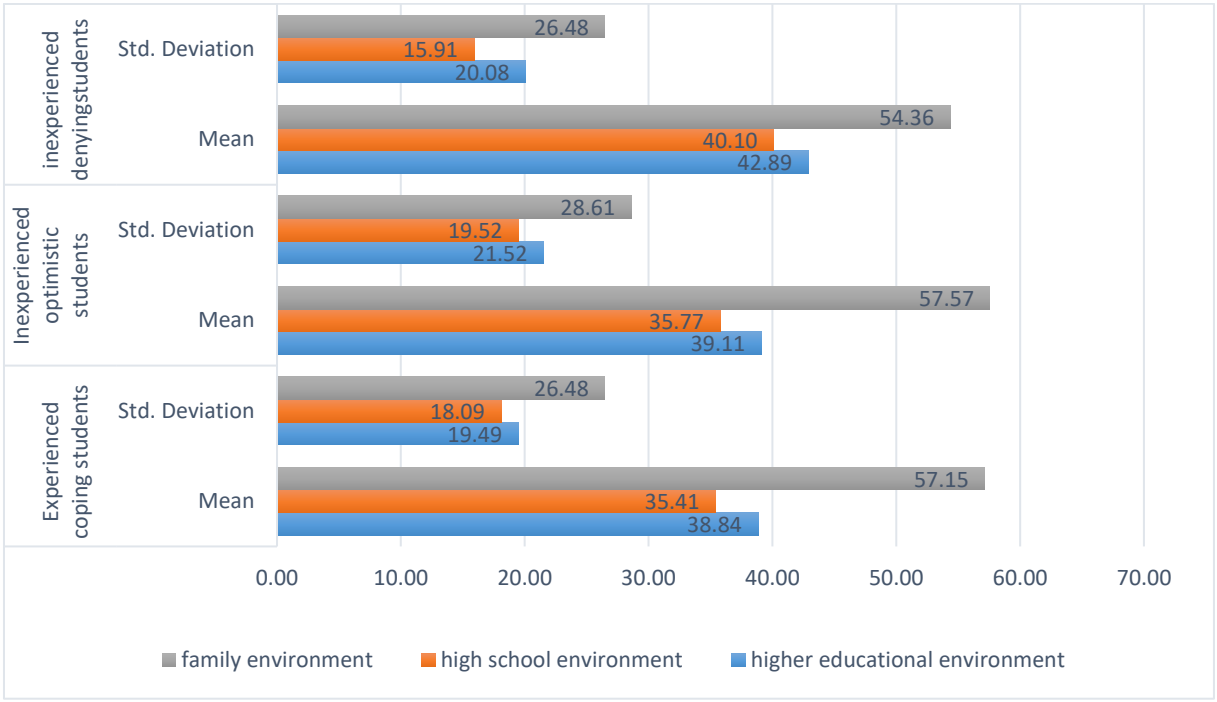
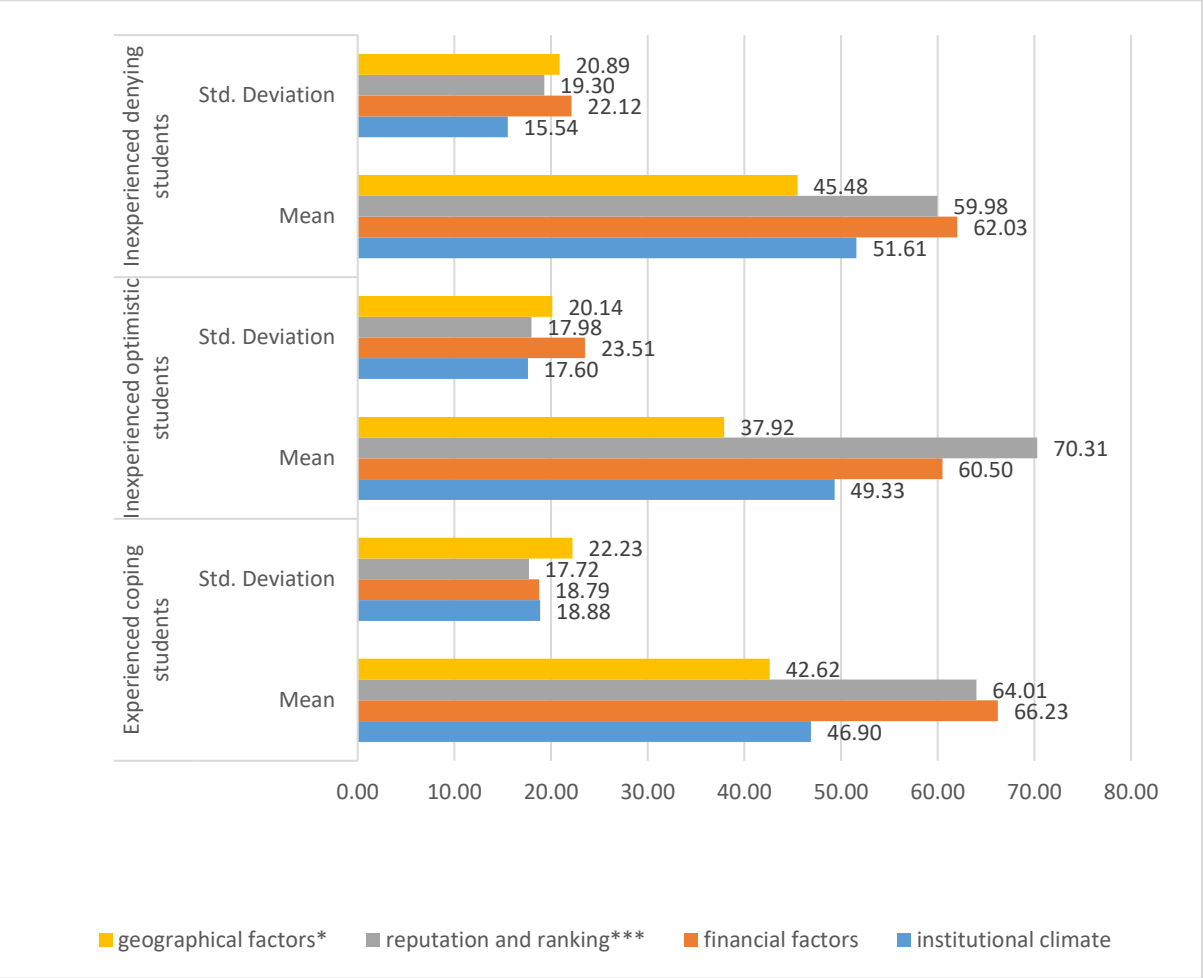


Figure 16. shows the means and values of the different clusters concerning the factors contributing to the choice of a university to attend. In the case of geographical factors, a significant difference could be detected: the highest values belong to the inexperienced denying type, while the lowest values belong to the inexperienced optimistic style (p=0.029). Concerning institutional climate, the highest value was observed in the case of students belonging to the inexperienced denying type group. In contrast, the lowest value was seen among those in the experienced coping style group (p=0.163). Regarding financial factors, the experienced coping style group had the highest scores, while the inexperienced optimistic style group had the lowest scores (p=0.120). Concerning reputation and ranking, the highest value was experienced among students from the inexperienced optimistic group. At the same time,

the lowest could be seen among those belonging to the inexperienced denying group ($p<0.001$). From the p-values we can see that the differences are significant only in the case of geographical factors and reputation and ranking factors.

Figure 16. Differences in the factors contributing to the choice of a university to attend between the student clusters



9.4. Summary

This chapter tests our third hypothesis by creating student groups based on stereotypical attitudes and behaviour. The best group follows a three-group versioning pattern. Students with experienced coping styles reported more gender stereotyping experiences. In contrast, inexperienced optimistic students had no experience but a vision for its elimination, and the inexperienced denying type were students having no or less experience with gender stereotyping.

The results show significant gender differences in experienced copying clusters, with female students overrepresented due to increased experience. The research found significant differences between the clusters regarding majors in the representation of experienced coping students in agricultural and social sciences majors. Significant differences in mothers' educational levels were observed in clusters, with mothers of experienced coping students overrepresented in tertiary-level certificates while inexperienced denying students were underrepresented in this education level. The findings reveal significant differences in student cluster membership groups based on nationality and university, with international students at the University of Debrecen predominantly in the inexperienced optimistic group.

The research found that the factors influencing participation in further education were significant only in profession orientation, with the inexperienced optimistic group showing the highest value in these areas, according to the differences in attitudes towards higher education. The clusters reveal disparities in factors influencing university choice, with geographical factors affecting inexperienced denying students and reputation ranking among inexperienced optimistic students.

Chapter 10. Summary

The research problem lies in gender stereotyping, which results from individual differences in preferences and abilities or reflects biological differences. These gender differences are ingrained in people's beliefs and deeply rooted in the growth of society, reflecting the different roles of men and women (Ellemers, 2018). These gender stereotypes affect different aspects of an individual's life, and one of these is the choice of university major, which is the focus of our investigation, later creating the educational gender gap which affects the future careers of people. Therefore, this thesis aims to investigate the phenomenon of gender stereotyping from the aspects of sociodemographic, socioeconomic, institutional, and personality characteristics.

The investigation used a quantitative method. We used factor analysis to reach the most influential factors that affect students' academic participation and characteristics. The verification yielded three groups of factors: factors affecting participation in further education of students, people influencing students' academic choice, and factors contributing to students' choices of the university to attend. In addition, the principal component of eliminating gender stereotyping from society was created. We also developed two indexes from the personality characteristics connected to gender from the BEM inventory scale, known as the feminine and masculine index. The research used between-group comparisons to meet the characteristics of the international students learning at the University of Debrecen and linear regression to investigate the effect of factors contributing to the choice of university. We also created student clusters based on the stereotypical attitudes and behaviour of the students to investigate the differences in the cluster membership according to the sociodemographic variables and differences in the attitudes toward higher educational studies according to cluster membership.

In our first hypothesis, we aimed to investigate the characteristics of international students studying at the University of Debrecen and their differences compared to the control groups. The research found a significant gender difference regarding student groups categorised by area, with most males from Africa and females overrepresented from Europe and America. Far Eastern Asian students dominated medical and public health majors. Socioeconomic disparities, individual characteristics, abilities, talents, awareness and professional knowledge influence the career orientation of medical students. Social status within society also plays an important role in shaping student's career orientation (Algadheeb, 2015). Asian families are fully prepared to invest in their children's abilities to compete for prestigious university places, and the children's success in this competition reflects parental ambition and financial resources. It is not surprising that the Asian students who achieve well often come from professional and administrative

families. Thus, their achievement is as much a product of social class than distinctive ethnic values. This result is in line with the results of Dobson and Birrell (2005), while European and American students had higher proportions in pedagogy, teacher training, and sports. Most female students come from Europe and America, leading to overrepresentation in teaching and pedagogy programs. This result is due to social and cultural factors, particularly gender stereotyping, which often results in females being overrepresented in humanities, arts, education, and pedagogy. This result is in line with the results of Shafina (2020) and Saleh (2022).

The research found that students from Europe and America were more represented in undivided training, while African students were represented in PhD studies. International students' decision-making in Hungary is primarily influenced by their chosen course; low living costs, quality education, and internationally recognised certificates attract students whose academic grades do not allow them to study disciplines with limited polarisation, such as medicine, pharmacy, and engineering, in their countries. They turn to European countries to pursue these fields (Zoltán, 2019). Additionally, students from all continents were more represented in state-funded scholarship financial forms. Most students seek public educational institutions without fees or scholarships and prefer institutions with positive impact, like the University of Debrecen, especially when searching for work, as they believe higher education is essential for their future (Gaspar & Soares, 2021). Parents having higher educational certificates were overrepresented among students from the Far East, while African parents were more represented among parents having primary education attainment.

Family cultural capital significantly influences students' engagement in education and higher education. Universities should consider both the economic conditions of the family and the cultural capital of parents when assessing students' backgrounds. The government should emphasise universal education, particularly basic education, to raise the number of years spent in education increase cultural capital acquisition among disadvantaged groups, and narrow the gap between generations. This form of family cultural capital can enhance students' learning habits, motivation, and educational expectations (Wang & Huang, 2021). **The research examined the factors influencing students' academic choices and attitudes towards stereotyping**. First, the differences in the values of the factors influencing participation in education were assessed. The results reveal a significant difference in profession orientation among Far Eastern Asian students and family background among Asian Middle Eastern students. Asian students were overrepresented in medical and health specialisations; they must

be more serious in their professional orientation. In contrast, students from the Middle East were more influenced by their family background, family connections and relationships, and had a greater influence on their orientations and decisions. Social and economic disparities, individual traits, capacities, talents, awareness, and professional knowledge influence medical students' professional orientation. Community, especially family and social situations, recognition of talents, and preference for special training also impact orientation (Algadheeb, 2015).

The research analysed factors of the people influencing university choices among student groups based on region, revealing significant differences in higher educational environments among Far Eastern students experiencing the most typical environment. Our research concludes that students from the Far East are more adaptable to their new educational environments, resulting in increased satisfaction in European universities. These international students, filled with lifestyle and social contacts, contribute to the satisfaction of their institutions (Azzone & Soncin, 2019; Kéri & Révész, 2019). Factors influencing the University of Debrecen's attractiveness to Far Eastern students include the quality of programs, scholarships, teaching staff, university reputation, and geographical location in Europe, ultimately leading to student satisfaction and social integration (Fenyves et al., 2019; Zoltán, 2019; Saleh, 2022).

Regarding the factors contributing to the choice of university to attend, the results revealed significant differences among Far Eastern students, with the most typical institutional factor versus European and American students with the most typical geographical factor. Individuals' beliefs and perspectives are influenced by their geographical location, family, and societal culture. For example, students with Eastern and Asian backgrounds may have different perspectives than those from African or European backgrounds. Societal culture encompasses societal norms, arts, and institutions passed down through generations. Inherited customs and gender roles also shape these beliefs (Bourdieu & Ness, 1977).

Regarding the values of the gender stereotyping factors that determine academic choice, Middle Eastern students show more family involvement and tradition. The family plays a crucial role in a child's educational achievements, regardless of their social background. Education is an essential channel for social reproduction, and Eastern families show increased interest and involvement in their children's future, particularly in education (Wang & Huang, 2021; Casas et al., 2022).

The research compared international students with Hungarian students studying at the University of Debrecen and Iraqi students at the Salahaddin University. First, the

differences in factors influencing participation in further education. Profession orientation is more typical among Hungarian students at the University of Debrecen, while job orientation is more prevalent among Iraqi students. The research compared factors of people affecting university choice among student groups, and found significant differences in family environment, most common among Iraqi students at Salahuddin University.

The research checked the values contributing to the different student groups' choice of a university to attend. There were significant differences in financial factors in favour of Iraqi students at Salahuddin University and geographical factors among Hungarian students at Debrecen University. Iraqi students prioritise financial factors due to privatisation and capitalisation in education, and are able to access university and speciality opportunities only at a significant financial cost (World Bank, 2017). That is why Iraqi students are highly selective about scholarships and universities that offer free or low tuition fees. Hungarian students may be interested in travelling to other countries to study, exposure to new cultures, or higher-income career opportunities (Marbuah, 2016).

Regarding the values of the gender stereotyping factors determining academic choice, family involvement and tradition are more typical among Iraqis, with liberal ideas most prevalent among international students. Iraqi students prioritise family involvement and traditions due to cultural and family backgrounds, contributing to gender stereotyping. Unlike international students at the University of Debrecen, liberal ideas affect future progress and social mobility (Rainsford et al., 2018).

Last, the values of the Bem indexes were explored. The Bem indexes showed no significant differences, with the masculine index being the most relevant for Iraqi students at Salahaddin University. Iraqi society is more familiar with masculinity because it is patriarchal and traditional and adheres more to societal norms and traditions that impose gender stereotypes. Iraqi students often exhibit masculine characteristics due to their commitment to societal principles and frameworks, which facilitate their integration and natural separation of personal characteristics based on gender. Societal stereotypes often assign qualities like courage, flexibility, and generosity to men, while traits like empathy, weakness, cowardice, and toughness are attributed to women (Yahyawi & Ali, 2018).

In our **second hypothesis**, we examined the impact of the different variables on the factors created from the variables contributing to the choice of a university to attend.

First, we investigated the role of sociodemographic variables. Age and type of settlement significantly affect university choice, with older students and larger cities highlighting their importance of institutional climate, while the academic year reduces its impact. Institutional factors significantly impact the psychological and physical stabilities of older students, who often balance work and study simultaneously, highlighting the importance of diverse courses and extracurricular activities (Rudhumbu et al., 2017; Gaspar & Soares, 2021). A negative significant impact of the sociodemographic variables was detected in the case of being an international student at Debrecen University, which means being an international student at Debrecen University weakens the relevance of geographical factors. Geographical factors, such as students moving to different countries for education, can also impact career opportunities. These factors, combined with other factors like family, community, environmental, and economic factors, can limit individuals' ability to achieve their career goals (Coetzee et al., 2010). There was a negative significant impact of sociodemographic variables on reputation and ranking in the form of financing, which means that the role of the financing form weakens reputation and ranking. Elite universities often have high tuition fees, making them unaffordable for most students. Students' environments also influence their academic specialisation and professional choice. After high school, socially disadvantaged kids often choose not to pursue further education. At the same time, scholarships, connections, and financial support from wealthy families increase the chances of joining universities and choosing their desired career path (Fizer, 2013).

We found a significant impact of the factors of participation in further education regarding professional orientation, family background, and job orientation significantly influence the institutional climate of universities. Students' passion for a stable career and a high-paying professional life, supported by their families, significantly impacts their harmony with the university institutional climate. They need to fit in psychologically, professionally, and socially, feel self-confident, appreciate, and accept, ensure a dignified life financially and morally, work under humane conditions, and seek security, particularly regarding the future of their profession and the sense of belonging to the institution. The academic and social climate of higher education institutions can positively impact student outcomes by reflecting the current perceptions, attitudes, and expectations of the institution and its members (Lee, 2002). The effect of factors of participation in further education was significantly negative in the case of profession orientation and positive in job orientation. Profession orientation reduces the role of financial factors, unlike job orientation, which strengthens the position of financial factors.

When choosing an educational major, professional orientation enables the students to make the best professional decisions, select a career that fits their skills and interests, get ready for it, and enter it in a way that promotes professional compatibility and raises the likelihood of success, advancement, and development on both a personal and societal level. Here, the program prepares students for professional specialization, focusing on gained experiences rather than material factors, preparing them for the future. Job orientation through education and career counselling aids students in acquiring the necessary knowledge and credentials for their chosen job path, providing a realistic view of the job market and the need for specific training and credentials. This result is in line with the results of (Khattab et al., 2022). The impact of factors affecting participation in further education, which was significant in social mobility and communication, and family background factors are positively affected by geographical factors. Social capital theory suggests that a family's socio-economic status significantly impacts a student's educational progress and level, as previous achievements influence future steps, highlighting the importance of family investment and parental involvement as a combination of personal and systemic factors (Shahidul et al., 2015; Elster, 1985). High-quality educational opportunities are often attractive for students from different regions, leading to social mobility and students' movement to new geographical areas. Privileged students are more mobile, allowing them to obtain a high-quality education even if they are far from home. Geographical mobility is typical among students in marginalized areas characterized by limited options and limited quality, resulting in mobility for high-quality education (Shahidul et al., 2015).

The impact of people influencing academic choice was positive in higher educational and high school environments. Thus, the higher relevance of the higher educational and high school environments leads to the higher importance of institutional climate. Media quality, specialisation advertisements, campus promotion, and the school atmosphere of professors, friends, and advisors influence ideal climate in higher education institutions. Our research identifies multiple factors, including high school environment, higher education environments, and institutional climate, as human capital and institutional factors, forming social capital. This resource is crucial for capital owners to gain reputation, trust, and interest (Azzone & Soncin, 2019; Kéri & Révész, 2019). The impact of people influencing academic choice was Significant in all cases (higher educational environment, high school environment, and family environment), which means that people from the family, school and university environment increase the relevance of geographical factors. Students' academic choice and transition to institutions with convenient geographical location are significantly affected by factors such as

family, school, and university over other college preferences, retention, academic competition, and long-term educational goals (Nelson, 1971; Smith et al., 2010; Aylesworth & Bloom, 1976).

The factors created from the opinions of students about gender stereotyping had a positive significant impact in the case of liberal ideas, which means liberal ideas increase the ranking and reputation of a university. The new generation holds progressive ideas about abandoning gender stereotypes in academic choice so that gender stratification can be addressed by promoting equal access to resources and social power. The gender gap in education is an important issue, and education must influence social origin characteristics to achieve status. Higher academic expectations lead to higher educational levels, breaking down social inequality (Kancaniku, 2015).

Investigating the role of gender indexes revealed a significant effect of the masculine index, which means that a higher level of masculine characteristics increases the relevance of the financial factors. Financial factors are positively correlated with the masculine index, and gender differences can be attributed to glass ceilings in organisational cultures and perceptions of shared values. Hegemonic masculinity is expressed in language and metaphors in academia, where male images are associated with masculine traits like power, money, and competitiveness. This patriarchal system reproduces its mental and social structure despite women's intellectual, economic, and political independence (Yahyawi & Ali, 2018).

The research reveals that some sociodemographic factors, namely age and settlement type, influence university choice in the case of institutional climate, and being an international student at Debrecen University affects geographical factors; financial form positively impacts reputation and ranking. Professional orientation, family background, and job orientation affect institutional climate factors. Geographical factors are more relevant in higher educational and high school environments. People from family, school, and university environments have a positive influence on institutional and geographical factors. Masculine characteristics positively impact financial factors. Liberal ideas positively impact the university's ranking and reputation.

Lastly, we have created student clusters to test our **third hypothesis**. The best one follows a three-group versioning pattern: three groups were formed based on the above elements related to stereotypical attitudes and behaviour. Students with the experienced coping style reported more experience with gender stereotyping in all life situations (N=110). Students with no or less experience with gender stereotyping but positing a vision concerning its elimination were called inexperienced optimistic students (N=135). In contrast, those belonging to the

inexperienced denying type were students who had no or less experience with gender stereotyping, like in the case of the second cluster, but denying the phenomenon (N=96).

We investigated the differences in the clusters regarding the sociodemographic variables (gender, major, academic year, training level, financial status, parents' education, type of settlement, objective financial form and religiosity). There was a significant difference between the clusters regarding gender since female students were overrepresented in the experienced coping clusters due to their increased experience. Female students` experience and knowledge of gender stereotypes increase due to their increased direct exposure to types of gender stereotyping in the various environments to which they are exposed, such as family, the different treatment of girls and boys and school, by enhancing boys` self-confidence and discouraging girls` confidence in solving mathematical problems, as well as in the higher education environment and after graduation. This result is in line with the results of Olsson and Martiny (2018) and Kancaniku (2015).

Significant differences were seen between the clusters regarding majors. Experienced coping students were underrepresented among students studying in the agricultural field. Meanwhile, experienced coping students were overrepresented among students learning in the social sciences. Since the majority of females belonged to the group of Experienced Coping Students, we also notice that the majority of this group belong to social specialisations that are far from scientific specialisations, a finding in line with Gneezy & Rustichini (2004) and Olsson & Martiny (2018). Also, significant differences were found in the clusters regarding the mothers' education. We can see that experienced coping students are overrepresented among those with a mother with a tertiary-level certificate, while inexperienced denying students are underrepresented at this educational level. Therefore, encountering and dealing with gender stereotypes is more frequent when a student's mother has a higher education degree, and the mother is also likely to have experienced this phenomenon. Parents' beliefs about education are likely to be expressed through behaviours that communicate children's perceptions and expectations, which may influence children's academic beliefs and motivations. All tasks assigned to women require special types of activity, which can only be obtained through education (Shaheen & Awan, 2020). No significant differences were detected in the clusters regarding the academic year, training level, financial form, father’s educational level, type of settlement, objective financial status and religiosity.

The results revealed significant differences in student cluster membership groups based on nationality and university, with international students at the University of Debrecen most

represented in the inexperienced optimistic group. However, they do not support gender stereotyping in academic selection, offer diverse ideas to eliminate outdated ideas, and believe in freedom of educational choice. The fact that international students belong to an inexperienced and optimistic group comes from the diversity of students and their nationalities. These findings are consistent with previous results (Bhatia & Bhatia, 2021; Eagly et al., 2020; Lopez-Zafra & Garcia-Retamero, 2021).

Differences in the attitudes toward higher educational studies according to cluster membership showed that the different clusters concerning the factors affecting participation in further education were significant only in the case of profession orientation, with the inexperienced optimistic group showing the highest value in these areas. Since students who are inexperienced with gender stereotypes are simultaneously optimistic about and rejecting gender stereotypes in choosing academic majors and careers, they seek to develop behaviours that lead to greater freedom in decision-making regarding career choices (Algadheeb, 2015).

The clusters reveal differences in factors contributing to the choice of university to attend, with geographical factors among inexperienced denying students and reputation and ranking among inexperienced optimistic students. Students who have no experience with gender stereotypes but have a positive outlook and seek to improve the university's reputation and ranking are more likely to accept and reduce gender stereotypes, regardless of geographical location, as they can obtain internationally recognised degrees and secure employment opportunities after graduation (Fenyves et al., 2018; Zoltán, 2019; Saleh, 2022).

Recommendations and suggestions

The results of this research will be an important resource for male and female students to help them choose their academic specialisation according to their talents and abilities and not because of gender stereotypes or societal behaviour patterns that fit their gender. We hope this research will help teachers correct imbalances in the educational process and provide strategies to help improve the academic choices of male and female students to make the best decision.

It is crucial to reduce gender stereotyping thoughts in various social institutions, including the home, classroom, and schools, to eliminate the negative ideas about what women and children should be, allowing them to live freely and enjoy their lives. Because stereotyping can affect how children feel about themselves and how they relate to others, they must learn to recognise and understand gender stereotypes in different media. Images of men and women in the media are often based on stereotypical male and female societal roles. In the school environment, it

can affect young people's classroom experience, academic performance, subject choice, and well-being. The assumptions that are made about boys and girls may be conscious or unconscious and can lead to students being treated differently or offered different opportunities based on their gender.

This research investigated the manifestation of gender stereotyping and the most important factors affecting academic choice, including sociodemographic factors among university students. The applied aspect of the research was interesting because the results showed the importance of the family and school environment and higher education in students' personalities and academic choices, which prepares them for future professions. What is interesting is that institutional factors, geographical factors, ranking factors, and the university's reputation, in addition to family background, were no less important than those mentioned previously. It is worth noting that professional orientation, work, social mobility and communication factors, as well as family background effectively impacted the students' academic choices. In addition to the factors of gender stereotyping, such as family involvement and traditions, and liberal ideas, which shaped the identities of the three groups of students (experienced coping clusters, inexperienced optimistic students and inexperienced denying type), in addition to the factor of eliminating gender stereotyping from society, which most students supported, and the factors of gender indexes (feminine and masculine), whose role changed according to the other research factors, but its mark was also clear in the results of the current research.

Suggestions for future research

The current research calls for future research on the topic and proposals for future studies related to the topic. Gender stereotypes in academic choices and generational gaps between students and their parents. The connection between university students' professional and employment orientation and gender stereotypes. Gender stereotyping among European and Eastern students at the University of Debrecen (comparative research). The academic specialities of university students and the narcissistic personality qualities of university faculty members are both particularly impacted by gender stereotypes.

Limitations

This research is considered research that combines two types of variables (educational and psychological). It has limitations and defects that are part of every research thesis and dissertation because, despite efforts, we can only cover some aspects and topics of the research. Some limitations facing this research need to be improved and controlled.

Among the most prominent limitations faced by the current research are:

1- Given that the research topic is broad, complex, and intertwined, there were some difficulties in formulating the objectives and hypotheses that the research strived to solve and present optimally. It is necessary to have a comprehensive and integrated overview first, then gradually narrow the aspects of the research to increase the focus on the desired objectives and avoid ambiguity.
2- The method of collecting data is essential, and as is clear to all researchers, the data represents the most crucial part of the thesis. One of the paradoxes that the researchers faced in the research was the data collection, which took place through a social media platform (Facebook). The research was conducted within the University of Debrecen's boundaries, so it was necessary to disregard data and answers from students who responded outside the university's scope. It is crucial to focus on collecting data rather than transcribing it until it is within the research's limits.
3- The literature related to the research is considered an important part of the theoretical side, which defines the research and presents it understandably and smoothly. There is a need for sources related to the history of female entry into higher education in English, which affected the research.
4- The major limitation of the current research is its need for more experience in producing research on the approach and method used in European countries, not to mention the difference between the approaches followed and how the theoretical framework and the applied aspect of the research are presented.

Overall, this research examines gender stereotypes in academic choice, highlighting the interconnectedness of sociodemographic, geographic, and institutional factors. It advocates for societal attitudes and policies to promote diverse career opportunities and understand students' experience, ultimately improving educational outcomes. Gender stereotypes and discrimination in STEM fields lead to the underrepresentation of women, affecting their ability to compete and secure employment opportunities. Early education is crucial for economic and social development, but gender equality remains challenging due to socialisation and cultural differences in educational systems. This research serves as a foundation for future studies on academic choice and its factors influencing diversity and difference. It is crucial to conduct similar studies to provide educational systems with a knowledge of more factors affecting academic choice, which are influenced by new developments and changes in society. The University of Debrecen's academic environment challenges the reality of gender patterns

influencing students' academic choices despite their diverse backgrounds and environments. This research is a model for addressing this challenge and making a significant impact in educational research, highlighting the diversity of students' backgrounds.

References

Absher, K., & Crawford, G. (1996). Marketing the community college starts with understanding students' perspectives. *Community College Review*, *23*(4), 59–68. https://doi.org/10.1177/009155219602300406

Adom, K. & Anambane, G. (2019). Understanding the role of culture and gender stereotypes in women entrepreneurship through the lens of the stereotype threat theory. *Journal of Entrepreneurship in Emerging Economies, 12*(1), 100–124. https://doi.org/10.1108/JEEE-07-2018-0070

Ahmed, W., Ejaz, M., Siddique, M., & Sadaf, S. (2022). Financial Factors Affecting Major Subject Choice. *International Journal of Business and Economic Affairs*, *7*(3), 29–38 https://doi.org/10.24088/ijbea-2022-73003

Algadheeb, N. A. (2015). Professional/career orientation, awareness, and their relationship to locus of Control. *Journal of College Teaching & Learning (TLC)*, *12*(1), 13–38. https://doi.org/10.19030/tlc.v12i1.9067

Alon, S., & DiPrete, T. A. (2015). Gender Differences in the Formation of a Field of Study Choice Set. *Sociological Science*, *2*(5), 50–81. https://doi.org/10.15195/v2.a5

Alpek B., L., Császár M., Z., Tóth, Á. D., & Czimre, K. (2022). Impacts of the international students' consumption expenditures on the national economy in Hungary, 2020. *Regional Statistics*, *12*(4), 176–199. https://doi.org/10.15196/rs120408

American Psychological Association. (2013). *American Psychologist*, 68(5, Suppl), S1–S48. https://doi.org/10.1037/h0094960

Ana-Andreea, M., Liviu, N. M., & Alina, M. C. (2013). Factors of Influence in the Choice of a Higher Education Specialization in Romania. *Procedia - Social and Behavioral Sciences*, *84*, 1041–1044. https://doi.org/10.1016/j.sbspro.2013.06.695

Archer, J., & Lloyd, B. (2002). *Sex and Gender*. Cambridge University Press. https://doi.org/10.1017/cbo9781139051910

Archer, L., Hutchings, M., & Ross, A. (2002). *Higher Education and Social Class: Issues of Exclusion and Inclusion* (1st ed.). Routledge. https://doi.org/10.4324/9780203986943

Archer, L. (2000). *Social Class and Access to Higher Education*. *Report from the Social Class and Widening Participation to Higher Education Project.* Institute for Policy Studies in Education, University of North London.

Asimaki, A. & Koustourakis, G. (2014). Habitus: An Attempt at a Thorough Analysis of a Controversial Concept in Pierre Bourdieu's Theory of Practice. *Social Sciences*, *3*(4), 121–131. https://doi.org/10.11648/j.ss.20140304.13

Aylesworth, L. S., & Bloom, B. L. (1976). College Experiences and Problems of Rural and Small-Town Students. *Journal of College Student Personnel*, *17*(3), 236-242. https://eric.ed.gov/?id=EJ142642

Azzone, G. & Soncin, M. (2019). Factors driving university choice: A principal component analysis on Italian institutions. *Studies in Higher Education*, *45*(12), 2426–2438. https://doi.org/10.1080/03075079.2019.1612354

Bajzát, T. (2017). International Students' Preconceptions of Hungarian Culture. *The Publications of the MultiScience - XXXI. MicroCAD International Scientific Conference*. https://doi.org/10.26649/musci.2017.128

Bandura, A., & Walters, R.H. (1959*). Adolescent Aggression*. Ronald Press.

Bandura, A. (1972). Modeling Theory: Some Traditions, Trends, and Disputes. In R. D. Park (Ed.): *Recent Trends in Social Learning Theory* (pp. 35–61). Academic Press. https://doi.org/10.1016/b978-0-12-545050-8.50008-0

Bandura, A. (1977a). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1977b). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. https://doi.org/10.1037//0033-295x.84.2.191

Bandura, A. (1986). Fearful expectations and avoidant actions as coeffects of perceived self-inefficacy. *American Psychologist*, *41*(12), 1389–1391. https://doi.org/10.1037/0003-066X.41.12.1389

Bandura A. (2001). Social cognitive theory: an agentic perspective. *Annual review of psychology*, *52*, 1–26. https://doi.org/10.1146/annurev.psych.52.1.1

Barone, C., & Assirelli, G. (2020). Gender segregation in higher education: an empirical test of seven explanations. *Higher Education, 79,* 55-78. https://doi.org/10.1007/s10734-019-00396-2

Banwet, D. K., & Datta, B. (2002). Effect of service quality on post-visit intentions over time: The case of a library. *Total Quality Management*, *13*(4), 537–546. https://doi.org/10.1080/09544120220149322

Barna, L.M. (2017). Stumbling Blocks in Intercultural Communication. In M. J. Bennett (Ed.) *Basic concepts of intercultural communication; Paradigms, Principles & Practices* (2nd ed., pp. 235-257). Intercultural Press.

Bauer, J. E. (2017). Mead, Margaret. In B.S. Turner (Ed.) *The Wiley-Blackwell Encyclopedia of Social Theory*, 1–2. Wiley-Blackwell. https://doi.org/10.1002/9781118430873.est0486

Beggs, J. M., Bantham, J. H., & Taylor, S. (2008). Distinguishing the factors influencing college students' choice of major. *College Student Journal*, *42*(2), 381-394.

Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology*, *42*(2), 155–162. https://doi.org/10.1037/h0036215

Bem, S. L. (1981). Gender schema theory: A cognitive account of sex typing. *Psychological Review*, 88(4), 354-364. https://doi.org/10.1037/0033-295X.88.4.354

Benavot, A. (1989). Education, Gender, and Economic Development: A Cross-National Study. *Sociology of Education*, *62*(1), 14-32. https://doi.org/10.2307/2112821

Bender, S. (1994). *Female students' career aspirations in science. SSTA Research Centre Report #94-04*. SSTA Research in Brief.

Bertaux, D., & Thompson, P. (2007). *Pathways to Social Class: A Qualitative Approach to Social Mobility* (1st ed.). Routledge. https://doi.org/10.4324/9781315126128

Bhatia, N., & Bhatia, S. (2020). Changes in Gender Stereotypes Over Time: A Computational Analysis. *Psychology of Women Quarterly*, *45*(1), 036168432097717. https://doi.org/10.1177/0361684320977178

Bian, L., Leslie, S.-J., & Cimpian, A. (2017). Gender stereotypes about intellectual ability emerge early and influence children's interests. *Science*, *355*(6323), 389–391. https://doi.org/10.1126/science.aah6524

Blackstone, A. (2003). Gender Roles and Society. In. Miller, J.P., Lerner R. M., & Schiamberg L. B. (Eds.) *Human Ecology: An Encyclopaedia of Children, Families, Communities, and Environments* (pp 335-338). Santa Barbara, CA: ABC-CLIO. ISBN I-57607-852-3

Blazar, D., & Kraft, M. A. (2017). Teacher and Teaching Effects on Students' Attitudes and Behaviors. *Educational Evaluation and Policy Analysis*, *39*(1), 146–170. https://doi.org/10.3102/0162373716670260

Blondel, J. (1981). Review of Questions de sociologie, by P. Bourdieu. *Revue Française de Sociologie, 22*(4), 642–647. https://doi.org/10.2307/3320819

Borodina, D., & Estrela, Á. (2023). The decision to study abroad at Hungarian university: for what benefits International students are looking for?. *GILE Journal of Skills Development*, *3*(2), 114–130. https://doi.org/10.52398/gjsd.2023.v3.i2.pp114-130

Bouchey, H. A. (2004). Parents, teachers, and peers: Discrepant or complementary achievement socializers? *New Directions for Child and Adolescent Development*, *2004*(106), 35–53. https://doi.org/10.1002/CD.115

Bourdieu, P., & Nice, R. (1977). *Outline of a Theory of Practice*. Cambridge University Press https://doi.org/10.1017/cbo9780511812507

Bourdieu, P. (1986). The forms of capital. In: Richardson, J., *Handbook of Theory and Research for the Sociology of Education* (pp. 241–258). Greenwood.

Bourdieu, P. (1999). Scattered Remarks. *European Journal of Social Theory*, *2*(3), 334–340. https://doi.org/10.1177/13684319922224563

Brennan, J. (2008). Higher education and social change. *Higher Education*, 56(3), 381–393. https://doi.org/10.1007/s10734-008-9126-4

Briggs, S., & Wilson, A. (2007). Which university? A study of the influence of cost and information factors on Scottish undergraduate choice. *Journal of Higher Education Policy and Management*, *29*(1), 57–72. https://doi.org/10.1080/13600800601175789

Buddeberg-Fischer, B., Klaghofer, R., Abel, T., & Buddeberg, C. (2003). The influence of gender and personality traits on the career planning of Swiss medical students. *Swiss medical weekly*, *133*(39-40), 535–540. https://doi.org/10.4414/smw.2003.10418

Burgess, D., & Borgida, E. (1999). Who women are, who women should be: Descriptive and prescriptive gender stereotyping in sex discrimination. *Psychology, Public Policy, and Law*, *5*(3), 665–692. https://doi.org/10.1037/1076-8971.5.3.665

Butler, J. (1988). Performative Acts and Gender Constitution: An Essay in Phenomenology and Feminist Theory. *Theatre Journal*, *40*(4), 519–531. https://doi.org/10.2307/3207893

Cao, J., & Banaji, M. R. (2016). The base rate principle and the fairness principle in social judgment. *Proceedings of the National Academy of Sciences*, *113*(27), 7475–7480. https://doi.org/10.1073/pnas.1524268113

Casas Trujillo, J. P., Mohammed, P. J., & Saleh, S. T. (2020). Students' Motivations to Study Abroad: The Case of International Students at the University of Debrecen. *Central European Journal of Educational Research*, *2*(1), 76–81. https://doi.org/10.37441/cejer/2020/2/1/5760

Carroll, W. & Mills, A. (2006). Gender Identity, the Culture of Organizations, and Women's IT Careers. In *Encyclopedia of Gender and Information Technology* (pp 609-614). https://doi.org/10.4018/9781591408154.ch094

Ceci, S. J., & Williams, W. M. (2011). Understanding current causes of women's underrepresentation in science. *Proceedings of the National Academy of Sciences*, *108*(8), 3157–3162. https://doi.org/10.1073/pnas.1014871108

Chapman, D. W. (1981). A model of student college choice. *The Journal of Higher Education*, *52*(5), 490–505. https://doi.org/10.2307/1981837

Charles, K. K., & Luoh, M.-C. (2003). Gender Differences in Completed Schooling. *Review of Economics and Statistics*, *85*(3), 559–577. https://doi.org/10.1162/003465303322369722

Cheryan, S., Plaut, V. C., Handron, C., & Hudson, L. (2013). The Stereotypical Computer Scientist: Gendered Media Representations as a Barrier to Inclusion for Women. *Sex Roles*, *69*(1–2), 58–71. https://doi.org/10.1007/s11199-013-0296-x

Chopra, S., Khan, A., Mirsafian, M., & Golab, L. (2019). *Gender differences in science and engineering: A Data Mining Approach*. L Golab - EDBT/ICDT Workshops, University of Waterloo Waterloo, Ontario, Canada. Retrieved from: http://sunsite.informatik.rwth-aachen.de/Publications/CEUR-WS/Vol-2322/DARLIAP_7.pdf

Ciriaci, D., & Muscio, A. (2014). University Choice, Research Quality and Graduates' Employability: Evidence from Italian National Survey Data. *European Educational Research Journal*, *13*(2), 199–219. https://doi.org/10.2304/eerj.2014.13.2.199

Coetzee, M., Bergh, Z., & Schreuder, D. (2010). The influence of career orientations on subjective work experiences. *SA Journal of Human Resource Management*, *8*(1). Article 279. https://doi.org/10.4102/sajhrm.v8i1.279

Coffman, E. J. (2021). *Margaret Mead. A Twentieth-Century Faith.* Oxford University Press.

Cohen, C. C. de, & Deterding, N. (2009). Widening the Net: National Estimates of Gender Disparities in Engineering. *Journal of Engineering Education*, *98*(3), 211–226. https://doi.org/10.1002/j.2168-9830.2009.tb01020.x

Cole G. A. (2002). *Personnel and human resource management* (5th ed.). Continuum Publisher.

Conover, P. J., & Sapiro, V. (1993). Gender, Feminist Consciousness, and War. *American Journal of Political Science*, *37*(4), 1079–1099. https://doi.org/10.2307/2111544

Correll, S. (2001). Gender and the Career Choice Process: The Role of Biased Self-Assessments. *American Journal of Sociology*, *106*(6), 1691–1730. https://doi.org/10.1086/321299

Crespi, I. (2004). *Socialization and gender roles within the family: a study on adolescents and their parents in Great Britain*. MCFA Annals, 3, 1-8.

Crossley, Nick. (2001). The Phenomenological Habitus and Its Construction. *Theory and Society*. 30. 81-120. https://doi.org/10.1023/A:1011070710987

Császár, Zs., Tarrosy, I., Dobos, G., Varjas, J., & Alpek, L. (2022). Changing geopolitics of higher education: economic effects of inbound international student mobility to Hungary. *Journal of Geography in Higher Education*, *47*(2), 285-310. https://doi.org/10.1080/03098265.2022.2045572

Cubillo, M., J., Sánchez, J., & Cerviño, J. (2006). International students' decision-making process. *International Journal of Educational Management*, *20*(2), 101–115. https://doi.org/10.1108/09513540610646091

Dalmau Valls, X., Sitges i Puy, G.; Tort Alier, M. (2018). Influence of gender stereotypes on career choice: A cross-sectional study on Catalan adolescents. Bachelor Thesi. Universitat Pompeu Fabra. Aviable at: https://repositori.upf.edu/bitstream/handle/10230/35333/1718DalmauSitgesTortInfluence.pdf?sequence=1&isAllowed=y

Dasgupta, N. (2011). Ingroup Experts and Peers as Social Vaccines Who Inoculate the Self-Concept: The Stereotype Inoculation Model. *Psychological Inquiry*, *22*(4), 231–246. https://doi.org/10.1080/1047840x.2011.607313

David, M. E, Ball, S. J., Davies, J. & Reay, D. (2003). Gender Issues in Parental Involvement in Student Choices of Higher Education. *Gender and Education, (15)*1, 21–36. https://doi.org/10.1080/0954025032000042121

Davies, J. C. (1979). Conflict in Perspective. Understanding Conflict and War, Vol. 3. By R. J. Rummel. (Beverly Hills, Calif.: Sage Publications, 1977. Pp. 200. $12.95.). *American Political Science Review*, *73*(2), 695–696. https://doi.org/10.2307/1955033

Davies, K. (1999). Time, Gender, Science and Everyday Life. *Journal of the European Society of Women in Theological Research*, 7, 91–103. https://doi.org/10.2143/eswtr.7.0.2002942

Davies, P. G., Spencer, S. J., Quinn, D. M., & Gerhardstein, R. (2002). Consuming images: How television commercials that elicit stereotype threat can restrain women academically and professionally. *Personality and Social Psychology Bulletin*, *28*, 1615-1628.

Dawson-Amoah, Gifty (2015). *Factors that affect female participation to tertiary education: a case study of odompo and ayeldo communities*. Thesis, Master of Philosophy Degree. University of Cape Coast. Retrieved from: http://hdl.handle.net/123456789/2660

Declercq, K., Ghysels, J., & Varga, J. (2018). *Gender differences in applying for STEM programs in higher education: Evidence from a policy shift in Hungary*. Budapest Working Papers on the Labour Market No. BWP - 2018/6. Hungarian Academy of Sciences, Institute of Economics, Centre for Economic and Regional Studies. Retrieved from: http://hdl.handle.net/10419/200352

Del Río, M. F., & Strasser, K. (2012). Preschool Children's Beliefs about Gender Differences in Academic Skills. *Sex Roles*, *68*(3–4), 231–238. https://doi.org/10.1007/s11199-012-0195-6

Deming, W. E. (1982). *Quality, productivity, and competitive position*. Massachusetts Inst Technology; 1st Edition, ISBN-10: 0911379002 ISBN-13: 978-0911379006. http://ci.nii.ac.jp/ncid/BA10661614

De Soto, W., Tajalli, H., Pino, N., & Smith, C. L. (2018). The Effect of College Students' Religious Involvement on Their Academic Ethic. *Religion & Education*, *45*(2), 190–207. https://doi.org/10.1080/15507394.2018.1425077

Devine, A., Fawcett, K., Szűcs, D., & Dowker, A. (2012). Gender differences in mathematics anxiety and the relation to mathematics performance while controlling for test anxiety. *Behavioral and Brain Functions*, *8*(1), Article: 33. https://doi.org/10.1186/1744-9081-8-33

Đỗ, L. T. H., Nguyễn, H. T. N., & Nguyễn, A. T. L. (2015). Factors Influencing VNU-IS Students' Choice of University. *VNU Journal of Science: Social Sciences and Humanities, 31*(4), 67–76. https://js.vnu.edu.vn/SSH/article/view/243

Dobson, I. R., & Birrell, B. (2005). Are Asians Over-Represented in Training in the Health Professions? *People and Place, 13*(4), 60–66. https://doi.org/10.4225/03/590bf19f04db9

Drewes, T. & Michael, C. (2006). How Do Students Choose a university: An Analysis of Applications to Universities in Ontario, Canada. *Research in Higher Education*, *47*, 781-800. https://doi.org/10.1007/s11162-006-9015-6

Dubois-Shaik, F., & Fusulier, B. (2015). *Academic Careers and Gender Inequality: Leaky Pipeline and Interrelated Phenomena in Seven European Countries*. Research Report. University of Trento. https://eige.europa.eu/sites/default/files/garcia_working_paper_5_academic_careers_gender_inequality.pdf

Duflo, E. (2012). Women Empowerment and Economic Development. *Journal of Economic Literature, 50*(4), 1051–1079. https://doi.org/10.1257/jel.50.4.1051

Eagly, A. H., & Crowley, M. (1986). Gender and helping behavior: A meta-analytic review of the social psychological literature. *Psychological Bulletin*, *100*(3), 283-308. https://doi.org/10.1037/0033-2909.100.3.283

Eagly, A. H., & Steffen, V. J. (1984). Gender stereotypes stem from the distribution of women and men into social roles. *Journal of Personality and Social Psychology*, *46*(4), 735–754. https://doi.org/10.1037/0022-3514.46.4.735

Eagly, Alice & Wood, Wendy. (1999). The Origins of Sex Differences in Human Behavior: Evolved Dispositions Versus Social Roles. *American Psychologist, 54*(6), 408-423. https://doi.org/10.1037/0003-066X.54.6.408

Eagly, A. H., Nater, C., Miller, D. I., Kaufmann, M., & Sczesny, S. (2020). Gender stereotypes have changed: A cross-temporal meta-analysis of U.S. public opinion polls from 1946 to 2018. *American Psychologist, 75*(3), 301–315. https://doi.org/10.1037/amp0000494

Eccles, J., Midgley, C. & Adler, T. (1984). *Grade-Related Changes in the School Environment: Effects on Achievement Motivation*. JAI Press

Eccles, J. S. Jacobs, J. E. & Harold, R. D. (1990). Gender Role Stereotypes, Expectancy Effects, and Parents' Socialization of Gender Differences. *Journal of Social Issues, 46*(2), 183–201. https://doi.org/10.1111/j.1540-4560.1990.tb01929.x

Eccles, J. S. (1994). Understanding Women's Educational and Occupational Choices: Applying the Eccles et al. Model of Achievement-Related Choices. *Psychology of Women Quarterly*, *18*(4), 585–609. https://doi.org/10.1111/j.1471-6402.1994.tb01049.x

Eccles, J. S., & Wang, M.-T. (2016). What motivates females and males to pursue careers in mathematics and science? *International Journal of Behavioral Development, 40*(2), 100–106. https://doi.org/10.1177/0165025415616201

Edwards, L. N., & Pasquale, M. K. (2003). Women's higher education in Japan: Family background, economic factors, and the Equal Employment Opportunity Law. *Journal of the Japanese and International Economies*, *17*(1), 1–32. https://doi.org/10.1016/s0889-1583(03)00004-2

Eisenchlas, S. A. (2013). *Gender Roles and Expectations*. *SAGE Open*, *3*(4), 215824401350644. https://doi.org/10.1177/2158244013506446

El-Masri, S. (2015). Tunisian Women at a Crossroads: Cooptation or Autonomy? *Middle East Policy*, *22*(2), 125–144. https://doi.org/10.1111/mepo.12133

Ellemers N. (2018). Gender stereotypes. *Annual Review of Psychology*, *69*, 275–298. https://doi.org/10.1146/annurev-psych-122216-011719

Elster, J. (1985). *Making Sense of Marx.* Cambridge University Press. https://philpapers.org/rec/ELSMSO-2

Endendijk, J. J., Groeneveld, M. G., van der Pol, L. D., van Berkel, S. R., Hallers-Haalboom, E. T., Mesman, J., & Bakermans-Kranenburg, M. J. (2014). Boys Don't Play with Dolls: Mothers' and Fathers' Gender Talk during Picture Book Reading. *Parenting*, *14*(3-4), 141–161. https://doi.org/10.1080/15295192.2014.972753

Epstein, J. L. (2010). School/Family/Community Partnerships: Caring for the Children We Share. *Phi Delta Kappan*, *92*(3), 81–96. https://doi.org/10.1177/003172171009200326

Ertl, B., Luttenberger, S., & Paechter, M. (2017). The Impact of Gender Stereotypes on the Self-Concept of Female Students in STEM Subjects with an Under-Representation of Females. *Frontiers in Psychology, 8*. Article 703. https://doi.org/10.3389/fpsyg.2017.00703

Erturk, S., & Nguyen Luu, L. A. (2022). Adaptation of Turkish international students in Hungary and the United States: A comparative case study. *International Journal of Intercultural Relations*, *86*, 1–13. https://doi.org/10.1016/j.ijintrel.2021.10.006

Ethington, C. A., & Woffle, L. M. (1988). Women's Selection of Quantitative Undergraduate Fields of Study: Direct and Indirect Influences. *American Educational Research Journal*, *25*(2), 157–175. https://doi.org/10.3102/00028312025002157

Eurostat (online data code: educ_uoe_entr01) Number of tertiary educations by gender and level of education 2017.

Ewert, S. L. (2010). *The determinants of gender inequality in higher education. PhD Dissertation, Department of Sociology, University of Washington*. Retrieved from: https://soc.washington.edu/research/graduate/determinants-gender-inequality-higher-education

Fagot, B. I. (1978). The Influence of Sex of Child on Parental Reactions to Toddler Children. *Child Development*, *49*(2), 459–465. https://doi.org/10.2307/1128711

Faitar, G.M., & Faitar, S. (2013). Teachers' Influence on Students' Science Career Choices. *American International Journal of Social Science, (2)*5, 10 –16.

Faubl, N., Pótó, Z., Marek, E., Birkás, B., Füzesi, Z., & Németh, T. (2021). Kulturális különbözőségek elfogadása a külföldi orvostanhallgatók beilleszkedésében [Accepting cultural differences in the integration of foreign medical students]. *Orvosi hetilap*, *162*(25), 978–987. https://doi.org/10.1556/650.2021.32104

Favara, M. (2012). *The Cost of Acting 'Girly': Gender Stereotypes and Educational Choices*. IZA Discussion Paper No. 7037, Available at SSRN: https://ssrn.com/abstract=2189775 or http://dx.doi.org/10.2139/ssrn.2189775

Feld, J., & Zölitz, U. (2017). Understanding Peer Effects: On the Nature, Estimation, and Channels of Peer Effects. *Journal of Labor Economics*, *35*(2), 387–428. https://econpapers.repec.org/article/ucpjlabec/doi_3a10.1086_2f689472.htm

Fenyves, V., Bács, Z., Kovács, B., Tarnóczi, T., Nemeslaki, A., & Böcskei, E. (2019). Analysis of Factors Influencing Studies-Strategic Decisions-Results of a Hungarian Survey. *Journal of Entrepreneurship Education*, *22*(5). https://www.abacademies.org/articles/analysis-of-factors-influencing-foreign-studies45strategic-decisions45results-of-a-hungarian-survey-8609.html

Fényes H. (2010). Horizontal and Vertical Segregation in Education by Gender in the Hungarian – Romanian - Ukrainian Border Region. *Journal of Social Research and Policy, (1)*1. 49–68.

Fényes, H. (2015). Gender Differences in Higher Education Efficiency and the Effect of Horizontal Segregation by Gender. *Journal of Social Research and Policy*, *6*(2), 21–42.

Feldman, K. A., Smart, J. C., & Ethington, C. A. (2004). What Do College Students Have To Lose? Exploring the Outcomes of Differences in Person-Environment Fits. *The Journal of Higher Education*, *75*(5), 528–555. https://doi.org/10.1353/jhe.2004.0029

Fiske, E. B. (2012). *World Atlas of Gender Equality in Education*. UNESCO. ISBN: 978-92-3-104232-4

Fizer, D. (2013). *Factors Affecting Career Choices of College Students Enrolled in Agriculture. MSc. Thesis*, University of Tennessee. https://www.academia.edu/29898403/Factors_Affecting_Career_Choices_of_College_Students_Enrolled_in_Agriculture

Fleming, D., & Storr, J. (1999). The impact of lecture theatre design on learning experience. *Facilities*, *17*(7/8), 231–236. https://doi.org/10.1108/02632779910270186

Flores, A. (2007). Examining Disparities in Mathematics Education: Achievement Gap or Opportunity Gap? *The High School Journal*, *91*(1), 29–42. https://doi.org/10.1353/hsj.2007.0022

Fowler, B. (2003). Reading Pierre Bourdieu's Masculine Domination: Notes Towards An Intersectional Analysis Of Gender, Culture And Class. *Cultural Studies*, *17*(3-4), 468–494. https://doi.org/10.1080/0950238032000083908

Fong, A., & Finkelstein, N. (2014). *Math Placement: The Importance of Getting It Right for All Students*. Research Brief. WestEd. https://eric.ed.gov/?id=ED559619

Ford, J. B., Joseph, M., & Joseph, B. (1999). Importance-performance analysis as a strategic tool for service marketers: the case of service quality perceptions of business students in New Zealand and the USA. *Journal of Services Marketing*, *13*(2), 171–186. https://doi.org/10.1108/08876049910266068

Fordham, S., & Ogbu, J. U. (1986). Black students' school success: Coping with the burden of acting white. *The Urban Review*, *18*(3), 176–206. https://doi.org/10.1007/bf01112192

Fosu, F.F., & Poku, K. (2014). Exploring the Factors That Influence Students' Choice of Higher Education in Ghana. *European Journal of Business and Management*, *6*, 209–220.

Franklin, W., Steinberg, L., Brown, B. B., & Dornbusch, S. (1996). Beyond the Classroom: Why School Reform Has Failed and What Parents Can Do. *The Journal of Negro Education*, *65*(3), 396–398. https://doi.org/10.2307/2967358

Fry, R., Kennedy, B., & Funk, C. (2021, April 1). *STEM Jobs See Uneven Progress in Increasing Gender, Racial and Ethnic Diversity*. Pew Research Center. https://www.pewresearch.org/science/2021/04/01/stem-jobs-see-uneven-progress-in-increasing-gender-racial-and-ethnic-diversity/

Gardiner, M., & Tiggemann, M. (1999). Gender differences in leadership style, job stress and mental health in male - and female - dominated industries. *Journal of Occupational and Organizational Psychology*, *72*(3), 301–315. https://doi.org/10.1348/096317999166699

Garg, R., Kauppi, C., Lewko, J., & Urajnik, D. (2002). A structural model of educational aspirations. *Journal of Career Development*, *29*(2), 87–108. https://doi.org/10.1023/A:1019964119690.

Gaspar, A. M. C. S., & Soares, J. M. A. C. (2021). Factors influencing the choice of higher education institutions in Angola. *International Journal of Educational Administration and Policy Studies*, *13*(1), 23–39. https://doi.org/10.5897/ijeaps2020.0680

Geerdink, G., Bergen, T., & Dekkers, H. (2011). Diversity in primary teacher education gender differences in student factors and curriculum perception. *Teachers and Teaching*, *17*(5), 575–596. https://doi.org/10.1080/13540602.2011.602211

Gender Equality Commission of the Council of Europe (2015). *Gender Equality Glossary*. https://rm.coe.int/16805a1cb6

Gibbons, S., & Vignoles, A. (2009). *Access, choice and participation in higher education. CEE Discussion Papers 0101*. Centre for the Economics of Education, LSE. Retrieved from: https://ideas.repec.org/p/cep/ceedps/0101.html

Gingrich, P. (1999, September 28). *Marx's Theory of Social Class and Class Structure*. University of Regina, Department of Sociology and Social Studies. https://uregina.ca/~gingrich/s28f99.htm

Ginige, K, Amaratunga, D. & Haigh, R. P. (2007). *Gender stereotypes: A barrier for career development of women in construction. Conference paper.* Presented at 3rd Annual Built

Environment Education Conference of the Centre for Education in the Built Environment, 12–13 September 2007, University of Westminster, Central London.: http://usir.salford.ac.uk/id/eprint/9826/

Gneezy, U., & Rustichini, A. (2004). Gender and Competition at a Young Age. *American Economic Review*, *94*(2), 377–381. https://doi.org/10.1257/0002828041301821

Goldin, C., & Katz, L. F. (2002). The Power of the Pill: Oral Contraceptives and Women's Career and Marriage Decisions. *Journal of Political Economy*, *110*(4), 730–770. https://doi.org/10.1086/340778

Gorman, W. P. (1976). An Evaluation of Student-Attracting Methods and University Features by Attending Students. *College and University*, *51*(2), 220–225. https://eric.ed.gov/?id=EJ131217

Goyette, K. A., & Mullen, A. L. (2006). Who Studies the Arts and Sciences? Social Background and the Choice and Consequences of Undergraduate Field of Study. *The Journal of Higher Education*, *77*(3), 497–538. https://doi.org/10.1353/jhe.2006.0020

Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, *102*(1), 4–27. https://doi.org/10.1037/0033-295X.102.1.

Grossman, Philip J. (2012). Holding fast: the persistence and dominance of gender stereotypes. *Economic Inquiry*, *51*(1), 747–763. https://doi.org/10.1111/j.1465-7295.2012.00479.x

Gupta, V. K., Turban, D. B., & Bhawe, N. M. (2008). The effect of gender stereotype activation on entrepreneurial intentions. *Journal of Applied Psychology*, *93*(5), 1053–1061. https://doi.org/10.1037/0021-9010.93.5.1053

Hailu, Y. & Asfaw, D. (2013). *Factors affecting females' participation and practices in education. Assessment of factors affecting females' participation and practice in eduction a Case Of Applied Science Faculty in AMU*. Lambert Academic Publishing. ISBN: 978-3 659-43431-0

Harris, G. (2021). *Margaret Mead's gender theory*. WARBLETONCOUNCIL. Retrieved from: https://warbletoncouncil.org/teoria-genero-margaret-mead-6956

Hegedűs, A. (2022). Multilingualism, culture, museum learning. *Hungarian Educational Research Journal*, *13*(3), 443–456. https://doi.org/10.1556/063.2022.00154

Hentschel, T., Heilman, M. E. & Peus, C. V. (2019). The Multiple Dimensions of Gender Stereotypes: A Current Look at Men's and Women's Characterizations of Others and Themselves. *Frontiers in Psychology, 10,* Article: 11. doi: 10.3389/fpsyg.2019.00011

Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd ed.). Psychological Assessment Resources.

Holicza, P., Erdei, R. (2018). Factors Influencing International Students' University Choice: The Case of Hungarian Inbound Mobility. In Almádi, B., Garai-Fodor, M., Szemere, T. (Eds.) *Business as usual: Comparative socio-economic studies* (pp. 81–86). Vízkapu Kiadó.

Hort, B. E., Fagot, B. I., & Leinbach, M. D. (1990). Are people's notions of maleness more stereotypically framed than their notions of femaleness? *Sex Roles: A Journal of Research, 23*(3-4), 197–212. https://doi.org/10.1007/BF00289866

Hossler, D. & Gallagher, K. (1987). Studying Student College Choice. A Three-Phase Model and the Implications for Policymakers. *College and university, 62*(3), 207-221.

Hossler, D., Bean, J. P., & Associates (1990). The Strategic Management of College Enrollments. Jossey-Bass Inc. ISBN-13 978-1555422929 https://eric.ed.gov/?id=ED326147

Hunt, J. (2008). Make room for daddy… and mommy: Helicopter parents are here! *The Journal of Academic Administration in Higher Education*, 4(1), 9–11.

Hunter, L. A., & Leahey, E. (2010). Parenting and research productivity: New evidence and methods. *Social Studies of Science*, *40*(3), 433–451. https://doi.org/10.1177/0306312709358472

Ifegbesan, A. P. (2010). Gender-Stereotypes Belief and Practices in the Classroom: The Nigerian Post-Primary School Teachers. *Global Journal of Human-Social Science Research, 10*(4), 29-38.

Igbo, J. N., Onu, V. C., & Obiyo, N. O. (2015). Impact of Gender Stereotype on Secondary School Students' Self-Concept and Academic Achievement. SAGE Open, 5(1). https://doi.org/10.1177/2158244015573934

İlgan, A., Ataman, O., Uğurlu, F. & Yurdunkulu, A. (2018). *Factors Affecting University Choice: A Study on University Freshman Students*. Dokuz Eylül Üniversitesi Buca Eğitim

Fakültesi Dergisi, (46), 199-216. Retrieved from https://dergipark.org.tr/en/pub/deubefd/issue/41774/415296

Inglehart, R., & Norris, P. (2003). *Rising Tide: Gender Equality and Cultural Change Around the World*. Cambridge University Press. https://doi.org/10.1017/cbo9780511550362

Jackson, G. A. (1988). Did college choice change during the seventies? *Economics of Education Review*, *7*(1), 15–27. https://doi.org/10.1016/0272-7757(88)90069-6

Johnston, T. (2010). Who and what influences choice of university? Student and university perceptions. *American Journal of Business Education*, *3*(10), 15–24. https://doi.org/10.19030/ajbe.v3i10.484.

Kahn, S., & Ginther, D. (2017). Women and Science, Technology, Engineering, and Mathematics (STEM). Are Differences in Education and Careers Due to Stereotypes, Interests, or Family? In S. L. Averett, L. M. Argys, & S. D. Hoffman (Eds.), *The Oxford Handbook of Women and the Economy* (pp. 766–798). Oxford Handbooks. https://doi.org/10.1093/oxfordhb/9780190628963.013.13

Kancaniku, F. (2015). *Gender and Selection of Undergraduate Programs: Factors Affecting Career Aspirations of Females in Prishtina District. Theses*. Rochester Institute of Technology. https://scholarworks.rit.edu/theses/8863

Kane, E. W. (1998). Men's and Women's Beliefs about Gender Inequality: Family Ties, Dependence, and Agreement. *Sociological Forum*, *13*(4), 611–637. https://www.jstor.org/stable/684866

Karcher, B. (2011). *Recruiting for higher education: The roles that print, web, and social media play in the decision process for prospective students* (Order No. 1510204). MSC Thesis. Purdue University. Available from ProQuest Dissertations & Theses Global. (1016187739). Retrieved from http://search.proquest.com/docview/1016187739?accountid=13965

Keller, C. (2001). Effect of Teachers' Stereotyping on Students' Stereotyping of Mathematics as a Male Domain. *The Journal of Social Psychology*, *141*(2), 165–173. https://doi.org/10.1080/00224540109600544

Kéri, A., & Révész, B. (2019). What do international students think after they finished their education in Hungary? Post-studies research with students from the field of economics. In G. F. Kováts & Z. Rónay (Eds), *In search of excellence in higher education* (pp. 267-

283). Corvinus University of Budapest Digital Press. ISBN 9789635037797 Retrieved October 26, 2022, from http://publicatio.bibl.u-szeged.hu/16276/1/Keri_Revesz_Danubepaper.pdf

Khattab, N., Madeeha, M., Modood, T., Samara, M., & Barham, A. (2022). Fragmented career orientation: the formation of career importance, decidedness and aspirations among students. *International Journal of Adolescence and Youth*, *27*(1), 45–59. https://doi.org/10.1080/02673843.2021.2025114

Khozaei, F., Ayub, N., Sanusi Hassan, A., & Khozaei, Z. (2010). The Factors Predicting Students' Satisfaction with University Hostels, Case Study, Universiti Sains Malaysia. *Asian Culture and History*, *2*(2), 148–158. https://doi.org/10.5539/ach.v2n2p148

Kim, M. (2011). The relationship between thinking style differences and career choices for high-achieving students. *Roeper Review*, *33*(4), 252–262. https://doi.org/10.1080/02783193.2011.603113

Kim, D. (2004). The Effect of Financial Aid on Students' College Choice: Differences by Racial Groups. *Research in Higher Education*, *45*(1), 43–70.

King, M. M., Bergstrom, C. T., Correll, S. J., Jacquet, J., & West, J. D. (2017). Men Set Their Own Cites High: Gender and Self-citation across Fields and over Time. *Socius*, *3*. https://doi.org/10.1177/2378023117738903

Kinzie, J., Gonyea, R., Kuh, G. D., Umbach, P., Blaich, C., & Korkmaz, A. (2007*). The relationship between gender and student engagement in college*. Conference presentation. Presented at the 2007 Association for the Study of Higher Education Annual Conference in Louisville, KY. Written presentation available: https://hdl.handle.net/2022/24272

Kipp, A. J. (2015). *The influence of sibling presence on grade point average*. Ed.S. Theses, Marshall University. https://mds.marshall.edu/etd/924/

Kite, M., Whitley, Jr., B. (2016). *Psychology of Prejudice and Discrimination*. Routledge. https://doi.org/10.4324/9781315623849

Koenig A. M. (2018). Comparing Prescriptive and Descriptive Gender Stereotypes about Children, Adults, and the Elderly. *Frontiers in Psychology*, *9*, Article 1086. https://doi.org/10.3389/fpsyg.2018.01086

Kohn & Charles, M. G., Mansk, F., & David, S. (1976). An Empirical Investigation of Factors Which Influence College-Going Behaviour. *Annals of Economic and Social Measurement*, *5*(4), 391–419.

Kotler, P., & Fox, K. F. A. (1995). *Strategic Marketing for Educational Institutions*. (2nd ed.) Prentice Hall.

Krais, B. (1999). On Pierre Bourdieu's Masculine Domination. *Travail, genre et sociétés, 1*(1), 214-221. https://doi.org/10.3917/tgs.001.0214

Kollmayer, M., Schober, B., & Spiel, C. (2018). Gender stereotypes in education: Development, consequences, and interventions. *European Journal of Developmental Psychology*, *15*(4), 361–377. https://doi.org/10.1080/17405629.2016.1193483

Kreuzer, B. K. (1992). *Women and Leadership: The Effect of Gender, Gender-Role Orientation, Socioeconomic Status, and Parental Influence on Women's Aspirations to Leader Roles*. Dissertation. Western Michigan University https://scholarworks.wmich.edu/dissertations/1922

Kusumawati, A., Yanamandram, V., & Perera, N. (2010). *University marketing and consumer behaviour concerns: the shifting preference of university selection criteria in Indonesia. Conference paper.* Asian Studies Association of Australia 18th Biennial Conference, Adelaide, South Australia. Centre for Health Service Development - CHSD, 1–16. https://ro.uow.edu.au/chsd/33/

Lachmann, R. (1990). Class Formation without Class Struggle: An Elite Conflict Theory of the Transition to Capitalism. *American Sociological Review*, *55*(3), 398–414. https://doi.org/10.2307/2095764

Lannert, J., & Derényi, A. (2021). Internationalization in Hungarian higher education. Recent developments and factors of reaching better global visibility. *Hungarian Educational Research Journal*, *10*(4), 346–369. https://doi.org/10.1556/063.2020.00034

Lannert, J. (2018). *International Students in Hungarian Higher Education Institutions Executive Summary.* Tempus Public Foundation. https://tka.hu/docs/palyazatok/international_students_in_hungarian_heis_cm_2018_web1902051528.pdf

Lányi, B. & Pozsgai, G. (2016). Driving Forces of International Students When Choosing a Non-traditional Destination: Hungary. In: T. Wu & V. Naidoo (Eds). *International*

Marketing of Higher Education (pp. 231–256). Palgrave Macmillan. https://doi.org/10.1057/978-1-137-54291-5_10

Lee, W.Y. (2002). Culture and Institutional Climate: Influences on Diversity in Higher Education. *The Review of Higher Education*, *25*(3), 359–368. https://doi.org/10.1353/rhe.2002.0014

Li, S. (2013). *Factors influencing international students' study destination decision abroad*. Master in Communication Thesis. University of Gothenburg. Report No. 2012:087 ISSN: 1651-4769.

Li, Z., & Qiu, Z. (2018). How does family background affect children's educational achievement? Evidence from contemporary China. *The Journal of Chinese Sociology*, *5*(1), Article number: 13. https://doi.org/10.1186/s40711-018-0083-8

Lin, Nan (1999). Building a network theory of social capital, *Connections*, *22*(1), 28–51.

Lindsey, L.L. (2015). *Gender Roles: A Sociological Perspective* (6th ed.). Routledge. https://doi.org/10.4324/9781315664095

Litten, L. H. (1982). Different Strokes in the Applicant Pool: Some Refinements in a Model of Student College Choice. *The Journal of Higher Education*, *53*(4), 383–402. https://doi.org/10.2307/1981605

Lockwood, P., & Kunda, Z. (1999). Increasing the salience of one's best selves can undermine inspiration by outstanding role models. *Journal of Personality and Social Psychology*, *76*(2), 214–228. https://doi.org/10.1037/0022-3514.76.2.214

Lopez-Zafra, E., & Garcia-Retamero, R. (2021). Are gender stereotypes changing over time? A cross-temporal analysis of perceptions about gender stereotypes in Spain (¿Están cambiando los estereotipos de género con el tiempo? Un análisis transtemporal de las percepciones sobre los estereotipos de género en España). *International Journal of Social Psychology*, *36*(2), 1–25. https://doi.org/10.1080/02134748.2021.1882227

Loury, L. D. (2004). Siblings and gender differences in African-American college attendance. *Economics of Education Review*, *23*(3), 213–219. https://doi.org/10.1016/j.econedurev.2003.06.003

Lynch, K., & O'riordan, C. (1998). Inequality in Higher Education: a study of class barriers. *British Journal of Sociology of Education*, *19*(4), 445–478. https://doi.org/10.1080/0142569980190401

Macarie, F. C. & Moldovan, O. (2015). Horizontal and Vertical Gender Segregation In Higher Education: Eu 28 Under Scrutiny. *Managerial Challenges of the Contemporary Society. 8*(1), 162-169.

Maccoby, E. E. & Jacklin, C. N. (1974). *The psychology of sex differences*. Stanford University Press.

Madsen, S. R. (2011). Women and Leadership in Higher Education. *Advances in Developing Human Resources, 14*(1), 3–10. https://doi.org/10.1177/1523422311429668

Makarova, E., Aeschlimann, B., & Herzog, W. (2019). The Gender Gap in STEM Fields: The Impact of the Gender Stereotype of Math and Science on Secondary Students' Career Aspirations. *Frontiers in Education*, *4*(60). https://doi.org/10.3389/feduc.2019.00060

Maloney, E. A., Ramirez, G., Gunderson, E. A., Levine, S. C., & Beilock, S. L. (2015). Intergenerational Effects of Parents' Math Anxiety on Children's Math Achievement and Anxiety. *Psychological Science*, 26(9), 1480–1488. https://doi.org/10.1177/0956797615592630

Mallinckrodt, B. (1988). Student retention, social support, and dropout intention: Comparison of Black and White students. *Journal of College Student Development, 29*(1), 60–64.

Malik, S., & Al-Emran, M. (2018). Social Factors Influence on Career Choices for Female Computer Science Students. *International Journal of Emerging Technologies in Learning (IJET), 13*(5), 56–70. http://dx.doi.org/10.3991/ijet.v13i05.8231

Mann, L., Beswick, G., Allouache, P., & Ivey, M. (1989). Decision workshops for the improvement of decision-making skills and confidence. *Journal of Counseling & Development, 67*(8), 478–481. https://doi.org/10.1002/j.1556-6676.1989.tb02122.x

Manz, C. C., & Sims, H. P., Jr. (1981). Vicarious learning: The influence of modeling on organizational behavior. *Academy of Management Review*, *6*(1), 105–113. https://doi.org/10.5465/amr.1981.4288021

Marbuah, D. A. (2016). *Influence of Parental Income and Educational Attainment on Children's Years of Schooling: Case of Ghana*. Dissertation. Uppsala University. Retrieved from http://urn.kb.se/resolve?urn=urn:nbn:se:uu:diva-32139

Martin, C. L., & Dinella, L. M. (2012). Congruence between gender stereotypes and activity preference in self-identified tomboys and non-tomboys. *Archives of Sexual Behavior*, *41*, 599–610. https://doi.org/10.1007/s10508-011-9786-5

Mesquita, C., & Lopes, R. (2018). Gender Differences in Higher Education Degree Choice. Conference Paper. 10th International Conference on Education and New Learning Technologies, Palma, Spain. *Edulearn18 Proceedings*. pp. 9794-9801 https://doi.org/10.21125/edulearn.2018.2358

McCracken, K., Unterhalter, E., Márquez S., & Chełstowska, A. (2015). *Empowering women and girls through education*. Policy Department C: Citizens' Rights and Constitutional Affairs. European Parliament, European Union, Brussels, https://www.europarl.europa.eu/RegData/etudes/STUD/2015/510022/IPOL_STU(2015)510022_EN.pdf

McDonnell, L. M. (1995). Opportunity to Learn as a Research Concept and a Policy Instrument. *Educational Evaluation and Policy Analysis*, *17*(3), 305–322. https://doi.org/10.3102/01623737017003305

McGinn, K. L., & Oh, E. (2017). Gender, social class, and women's employment. *Current Opinion in Psychology*, *18*, 84–88. https://doi.org/10.1016/j.copsyc.2017.07.012

McHale, S. M., Crouter, A. C., & Whiteman, S. D. (2003). The family contexts of gender development in childhood and adolescence. *Social Development*, *12*(1), 125–148. https://doi.org/10.1111/14679507.00225

McIntosh, B., McQuaid, R., Munro, A., & Dabir-Alai, P. (2012). Motherhood and its impact on career progression. Gender in Management: An International Journal 27(5), 346– 364. https://doi.org/10.1108/17542411211252651

Moncrieffe, J. (2006). The Power of Stigma: Encounters with "Street Children" and "Restavecs." *IDS Bulletin*, *37*(6), 34–46. https://doi.org/10.1111/j.1759-5436.2006.tb00321.x

Montmarquette, C., Cannings, K., & Mahseredjian, S. (2002). How do young people choose college majors? *Economics of Education Review*, *21*(6), 543–556. https://doi.org/10.1016/s0272-7757(01)00054-1

Mottier, V. (2002). Masculine domination: Gender and power in Bourdieu's writings. *Feminist Theory, 3*(3), 345–359. https://doi.org/10.1177/146470002762492042

Mugo, M. G. (2012). Impact of parental socioeconomic status on child health outcomes in Kenya. *African Development Review*, *24*(4), 342-357. https://doi.org/10.1111/1467-8268.12003

Mutekwe, E., Modiba, M., & Maphosa, C. (2011). Factors Affecting Female Students' Career Choices and Aspirations: A Zimbabwean Example. *Journal of Social Sciences*, *29*(2), 133–141. https://doi.org/10.1080/09718923.2011.11892963

National Association of School Psychologists. (2015). *School Psychology Review*, *44*(1), C3–C3. https://doi.org/10.1080/02796015.2015.12087399

Navarro, Z. (2006). In Search of a Cultural Interpretation of Power: The Contribution of Pierre Bourdieu. *IDS Bulletin*, *37*(6), 11–22. https://doi.org/10.1111/j.1759-5436.2006.tb00319.x

Nelson, J. K. (2009). *Impact of Parent Education on Student Success*. Utah Valley University. https://files.eric.ed.gov/fulltext/ED507263.pdf

Nelson, J. I. (1971). Educational Aspirations in Minnesota: Rural-Urban Comparisons. Minnesota Agricultural Experiment Station. Retrieved from the University of Minnesota Digital Conservancy, https://hdl.handle.net/11299/139387

Nicholls, J., Harris, J., Morgan, E., Clarke, K., & Sims, D. (1995). Marketing higher education: the MBA experience. *International Journal of Educational Management*, *9*(2), 31–38. https://doi.org/10.1108/09513549510082369

Nicholls, S. (2018). Influences on International Student Choice of Study Destination: Evidence from the United States. *Journal of International Students* *8*(2), 597–622. https://doi.org/10.5281/zenodo.1249043

Nicolao, J. S. (2014). The Effects of Gender Stereotyping on Career Choice Among Secondary Students in Dar Es Salaam. University of Tanzania. http://repository.out.ac.tz/574/1/DISSERTATION_-JUDITH_SIMON_NICOLAO-30-10-2014.pdf

Niu, L. (2017). Family Socioeconomic Status and Choice of STEM Major in College: An Analysis of a National Sample. *College Student Journal*, *51*(2). 298-312.

Ochsenfeld, F. (2016). Preferences, constraints, and the process of sex segregation in college majors: A choice analysis. *Social Science Research*, 56, 117–132. https://doi.org/10.1016/j.ssresearch.2015.12.008

O'Connor, P., Carvalho, T., Vabø, A., & Cardoso, S. (2015). Gender in Higher Education: A Critical Review. In J. Huisman, H. Boer, D. D. Dill, & M. Souto-Otero (Eds.) The

Palgrave International Handbook of Higher Education Policy and Governance, 569–584. Palgrave Macmillan https://doi.org/10.1007/978-1-137-45617-5_30

OECD (2007). *Education at a Glance 2007: OECD Indicators*. OECD Publishing, Paris, https://doi.org/10.1787/eag-2007-en.

OECD (2009). *Education at a Glance 2009: OECD Indicators*. OECD Publishing. www.oecd.org/publishing/corrigenda

OECD (2011). *Report on the Gender Initiative: Gender Equality in Education, Employment and Entrepreneurship*. Meeting of the OECD Council at Ministerial Level Paris, 25-26 May 2011. https://www.oecd.org/education/48111145.pdf

OECD (2012a). *Closing the Gender Gap: Act Now*. Retrieved October 2014, from http://www.oecd.org/gender/closingthegap.htm.

OECD (2012b). *Equity and Quality in education supporting disadvantaged students and schools*. https://doi.org/10.1787/9789264130852-en

OECD (2015). *The ABC of Gender Equality in Education Aptitude, Behaviour, Confidence*. OECD Publishing. http://dx.doi.org/10.1787/9789264229945-en

OECD (2017). *Education at a glance 2017 OECD indicators*. OECD Publishing. https://doi.org/10.1787/eag-2017-en

OECD (2019). *"Hungary", in Education at a Glance 2019: OECD Indicators*. OECD Publishing. https://doi.org/10.1787/bf9d4a08-en.

OCED (2021). *Education at a Glance 2021: OECD Indicators*. OECD Publishing. https://doi.org/10.1787/b35a14e5-en

OECD. (2023). *Education at a Glance 2023: OECD Indicators*. OECD Publishing. https://doi.org/10.1787/e13bef63-en

Ofuani, F. N. & Gbenedio, U. B. (2018). Socio-economic status, parental involvement, and students' achievement in reading comprehension. *Journal of Teaching and Teacher Education*, *6*(2), 149-157. https://doi.org/10.12785/jtte/060207

OHCHR. (2022). *Gender stereotyping*. OHCHR. https://www.ohchr.org/en/women/gender-stereotyping

Olsson, M., & Martiny, S. E. (2018). Does Exposure to Counter stereotypical Role Models Influence Girls' and Women's Gender Stereotypes and Career Choices? A Review of

Social Psychological Research. *Frontiers in Psychology*, *9*, Article: 2264. https://doi.org/10.3389/fpsyg.2018.02264

Ono, H. (2004). Are sons and daughters substitutable? *Journal of the Japanese and International Economies*, *18*(2), 143–160. https://doi.org/10.1016/s0889-1583(03)00049-2

Owino, J. O., & Odundo, P. A. (2016). Factors Influencing Bachelor of Education Arts Students' Selection of History as Career Subject: Case of University of Nairobi, Kenya. *Universal Journal of Educational Research*, *4*(10), 2236–2243. https://doi.org/10.13189/ujer.2016.041002

Oreopoulos, P., & Petronijevic, U. (2013). Making College Worth It: A Review of the Returns to Higher Education. *The Future of Children*, *23*(1), 41–65. https://doi.org/10.1353/foc.2013.0001

Paglin, M., & Rufolo, A. M. (1990). Heterogeneous Human Capital, Occupational Choice, and Male-Female Earnings Differences. *Journal of Labor Economics*, *8*(1), 123–144. http://www.jstor.org/stable/2535301

Paulsen, M. B. (2001). The economics of human capital and investment in higher education. In M. B. Paulsen & J. C. Smart (Eds.), *The finance of higher education: Theory, research, policy, and practice* (pp. 55-94). Agathon Press.

Parsons, J. E., Adler, T., & Meece, J. L. (1984). Sex differences in achievement: A test of alternate theories. *Journal of Personality and Social Psychology*, *46*(1), 26–43. https://doi.org/10.1037/0022-3514.46.1.26

Parvazian, S., Gill, J., & Chiera, B. (2017). Higher Education, Women, and Sociocultural Change: A Closer Look at the Statistics. *SAGE Open*, *7*(2), 215824401770023. https://doi.org/10.1177/215824401770023

Perry, D. G., & Bussey, K. (1979). The social learning theory of sex differences: Imitation is alive and well. *Journal of Personality and Social Psychology*, *37*(10), 1699–1712. https://doi.org/10.1037/0022-3514.37.10.1699

Perna, L. W., & Titus, M. A. (2005). The Relationship between Parental Involvement as Social Capital and College Enrolment: An Examination of Racial/Ethnic Group Differences. *The Journal of Higher Education*, *76*(5), 485–518. https://doi.org/10.1353/jhe.2005.0036

Porter, S. R., & Umbach, P. D. (2006). College major choice: An analysis of person–environment fit. *Research in Higher Education*, *47*(4), 429–449. https://doi.org/10.1007/s11162-005-9002-3

Prentice, D. L., & Carranza, E. (2004). Sustaining Cultural Beliefs in the Face of Their Violation: The Case of Gender Stereotypes. In M. Schaller & C. S. Crandall (Eds.), *The psychological foundations of culture* (pp. 259–280). Lawrence Erlbaum Associates Publishers.

Price, I., Matzdorf, F., Smith, L. & Agahi, H. (2003). The impact of facilities on student choice of university. *Facilities*, *21*(10), 212–222. https://doi.org/10.1108/02632770310493580

Pusztai, G., Fekete, I. D., Dusa, Á. R., & Varga, E. (2016). Knowledge Brokers in the Heart of Europe: International Student and Faculty Mobility in Hungarian Higher Education. *Hungarian Educational Research Journal*, *6*(1), 60–75. https://doi.org/10.14413/herj.2016.01.04

Pusztai, G., Róbert, P., & Hajnalka, F. (2023). Parental Involvement and School Choice in Hungarian Primary Schools, *Journal of School Choice*, *17*(1), 118-135, DOI: 10.1080/15582159.2023.2169812

Quadlin, N. (2020). From Major Preferences to Major Choices: Gender and Logics of Major Choice. *Sociology of Education*, *93*(2), 91–109. https://doi.org/10.1177/0038040719887971

Rafnsdóttir, G. L., & Heijstra, T. M. (2011). Balancing work-family life in academia: The power of time. *Gender, Work & Organization*, *20*(3), 283-296. https://doi.org/10.1111/j.1468-0432.2011.00571.x

Raiden, A. B., & Räisänen, C. (2013). Striving to achieve it all: men and work-family-life balance in Sweden and the UK. *Construction Management and Economics*, *31*(8), 899–913. https://doi.org/10.1080/01446193.2013.802364

Rainsford, E., Rawlings, L., & Mistry, L. (2018). *The Role of Family in Social Mobility. Impact of Family Resources on Young People's Progression*. Newcastle University https://www.youthemployment.org.uk/dev/wp-content/uploads/2018/03/family-Social-Mobility-Final3.pdf

Ramachandran, V. (2010). *Gender issues in higher education: advocacy brief UNESCO Office Bangkok and Regional Bureau for Education in Asia and the Pacific*. UNESCO Asia and Pacific Regional Bureau for Education. ISBN: 978-92-9223-346-4

Ramaci, T., Pellerone, M., Ledda, C., Presti, G., Squatrito, V., & Rapisarda, V. (2017). Gender stereotypes in occupational choice: a cross-sectional study on a group of Italian adolescents. *Psychology Research and Behavior Management*, *Volume 10*, 109–117. https://doi.org/10.2147/prbm.s134132

Régner, I., Smeding, A., Gimmig, D., Thinus-Blanc, C., Monteil, J.-M., & Huguet, P. (2010). Individual Differences in Working Memory Moderate Stereotype-Threat Effects. *Psychological Science*, *21*(11), 1646–1648. https://doi.org/10.1177/0956797610386619

Reskin, B. (1993). Sex Segregation in the Workplace. *Annual Review of Sociology*, *19*(1), 241–270. https://doi.org/10.1146/annurev.so.19.080193.001325

Ridgeway, C. L. (2001). Small-group Interaction and Gender. In N. J. Smelser, & P. B. Baltes (Eds.), *International Encyclopedia of the Social & Behavioral Sciences* (pp. 14185–14189). Pergamon, https://doi.org/10.1016/b0-08-043076-7/03999-1

Riddel, S., Wilson, A., & Baron, S. (2001). Gender, social capital and lifelong learning for people with learning difficulties. *Studies in Sociology of Education*, *11*(1), 3–24. https://doi.org/10.1080/09620210100200069

Rudhumbu, N., Tirumalai, A., & Kumari, B. (2017). Factors that Influence Undergraduate Students' Choice of a University: A Case of Botho University in Botswana. *International Journal of Learning and Development*, *7*(2), 27–37. https://doi.org/10.5296/ijld.v7i2.10577

Rudman, L. A., & Glick, P. (2001). Prescriptive Gender Stereotypes and Backlash Toward Agentic Women. *Journal of Social Issues*, *57*(4), 743–762. https://doi.org/10.1111/0022-4537.00239

Rudman, L. A., Moss-Racusin, C. A., Phelan, J. E., & Nauts, S. (2012). Status incongruity and backlash effects: Defending the gender hierarchy motivates prejudice against female leaders. *Journal of Experimental Social Psychology*, *48*(1), 165–179. https://doi.org/10.1016/j.jesp.2011.10.008

Ryherd, L. M. (2018). Predictors of academic achievement: The role of older sibling and peer relationship factors. *Iowa State University Digital Repository (Iowa State University)*. https://doi.org/10.31274/etd-180810-2991

Sáinz, M., & Eccles, J. (2012). Self-concept of computer and math ability: Gender implications across time and within ICT studies. *Journal of Vocational Behavior*, *80*(2), 486–499. https://doi.org/10.1016/j.jvb.2011.08.005

Saleh, S. T. (2022). The influence of gender stereotyping and demographic factors on academic choice: The case of the University of Debrecen. *Hungarian Educational Research Journal*, *12*(2), 145-163. https://doi.org/10.1556/063.2021.00056

Sarwar, A. & Masood, R. (2015). Factors Affecting Selection of Specialization by Business Graduates. *Sci.Int.(Lahore)*, *27*(1), 489-495.

Sánchez, B., Reyes, O., & Singh, J. (2006). Makin' It in College. *Journal of Hispanic Higher Education*, *5*(1), 48–67. https://doi.org/10.1177/1538192705282570

Sanday, P. R. (1980). Margaret Mead's View of Sex Roles in Her Own and Other Societies. *American Anthropologist*, *82*(2), 340–348. https://doi.org/10.1525/aa.1980.82.2.02a00060

Schechter, K. (2006). *Gender Equity in Education: Meanings and Practices*. MA Thesis. University of Pittsburgh, Department of Education. https://core.ac.uk/download/pdf/16509315.pdf

Schein, V. E. (1975). Relationships between sex role stereotypes and requisite management characteristics among female managers. *Journal of Applied Psychology*, *60*(3), 340–344. https://doi.org/10.1037/h0076637

Schnabel, K. U., Alfeld, C., Eccles, J. S., Köller, O., & Baumert, J. (2002). Parental Influence on Students' Educational Choices in the United States and Germany: Different Ramifications—Same Effect? *Journal of Vocational Behavior*, *60*(2), 178–198. https://doi.org/10.1006/jvbe.2001.1863

Schøne, P., Simson, K.v. & Strøm, M. (2020). Peer gender and educational choices. *Empircal Economics 59*, 1763–1797. https://doi.org/10.1007/s00181-019-01697-2

Schreiber, F. R. (1988). The career psychology of women. Nancy E. Betz and Louise F. Fitzgerald, Academic Press, Inc. Harcourt, Brace, Jovanovich, Publishers San Diego 1987. *Stress Medicine*, *4*(3), 178–178. https://doi.org/10.1002/smi.2460040312

Scott, J., & Marshall, G. (2009). *A Dictionary of Sociology*. Oxford University Press. https://doi.org/10.1093/acref/9780199533008.001.0001

Shafina, A. (2020). Exploring gender differences in selection of subjects at higher education levels in the Maldives. *The International Education Journal: Comparative Perspectives, 19*(2), 2020. https://files.eric.ed.gov/fulltext/EJ1293116.pdf

Shi, Y. (2018). The puzzle of missing female engineers: Academic preparation, ability beliefs, and preferences. *Economics of Education Review*, *64*, 129–143. https://doi.org/10.1016/j.econedurev.2018.04.005

Shaheen, N & Awan, A. G. (2020). The impacts of mother's education on theacademic achievements of her child. *Global Journal of Management, Social Sciences and Humanities, 6*(4), 735-756. DOI: https://orcid.org/0000-0001-5767-6229735

Shahidul, S. M., Karim, A. H. M. Z., & Mustari, S. (2015). Social Capital and Educational Aspiration of Students: Does Family Social Capital Affect More Compared to School Social Capital? *International Education Studies*, *8*(12), 255–260. https://doi.org/10.5539/ies.v8n12p255

Sia, J., & Ming, K. (2010). Institutional Factors Influencing Students' College Choice Decision in Malaysia: A Conceptual Framework. *International Journal of Business and Social Science*, *1*(3), 53–58. http://www.ijbssnet.com/journals/Vol._1_No._3_December_2010/6.pdf

Sianou-Kyrgiou, E. (2010). Stratification in Higher Education, Choice and Social Inequalities in Greece. *Higher Education Quarterly*, *64*: 22-40. doi:10.1111/j.1468-2273.2009. 00427.x

Smith, C. M. (2020). In the Footsteps of Siblings: College Attendance Disparities and the Intragenerational Transmission of Educational Advantage. *Socius*, *6*. https://doi.org/10.1177/2378023120921633

Smith, M. H., Beaulieu, L. J., & Seraphine, A. (2010). Social Capital, Place of Residence, and College Attendance1. *Rural Sociology*, *60*(3), 363–380. https://doi.org/10.1111/j.1549-0831.1995.tb00578.x

Solbes-Canales, I., Valverde-Montesino, S., & Herranz-Hernández, P. (2020). Socialization of Gender Stereotypes Related to Attributes and Professions Among Young Spanish School-Aged Children. *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.00609

Spence, J. T., & Buckner, C. E. (2000). Instrumental and expressive traits, trait stereotypes, and sexist attitudes. *Psychology of Women Quarterly*, *24*(1), 44–62. https://doi.org/10.1111/j.1471-6402.2000.tb01021.x

Stangor C. (2009). The study of stereotyping, prejudice, and discrimination within social psychology: A quick history of theory and research. In Nelson T. D. (Ed.), *Handbook of prejudice, stereotyping, and discrimination* (pp. 3–27). Psychology Press. https://doi.org/10.4324/9780203361993

Stock, Paul & Stock, Eileen. (2019). Factors that Influence a College Student's Choice of an Academic Major and Minor. *Journal of Scholastic Inquiry: Business, 9*(1), 56-78.

Stout, J. G., Dasgupta, N., Hunsinger, M., & McManus, M. A. (2011). STEMing the tide: Using ingroup experts to inoculate women's self-concept in science, technology, engineering, and mathematics (STEM). *Journal of Personality and Social Psychology*, *100*(2), 255–270. https://doi.org/10.1037/a0021385

Tabassum, N., & Nayak, B. S. (2021). Gender Stereotypes and Their Impact on Women's Career Progressions from a Managerial Perspective. *IIM Kozhikode Society & Management Review*, *10*(2), 192–208. https://doi.org/10.1177/2277975220975513

Tabassum, R., & Akhter, N. (2020). Effect of Demographic Factors on Academic Performance of University Students. *Journal of Research & Reflections in Education 14*(1), 64–80.

Tanenbaum, C (2016). *STEM 2026: A Vision for Innovation in STEM Education*, Report. Office of Innovation and Improvement, US Department of Education, Washington. https://oese.ed.gov/files/2016/09/AIR-STEM2026_Report_2016.pdf

Tansel, A. (2002). Determinants of school attainment of boys and girls in Turkey: individual, household and community factors. *Economics of Education Review*, *21*(5), 455–470. https://doi.org/10.1016/s0272-7757(01)00028-0

Teachman, J. D., & Paasch, K. (1998). The Family and Educational Aspirations. *Journal of Marriage and the Family*, *60*(3), 704. https://doi.org/10.2307/353539

Thapar-Björkert, S., Samelius, L., & Sanghera, G. S. (2016). exploring symbolic violence in the everyday: misrecognition, condescension, consent and complicity. *Feminist Review*, *112*(1), 144–162. https://doi.org/10.1057/fr.2015.53

Tiedemann, J. (2000). Parents' gender stereotypes and teachers' beliefs as predictors of children's concept of their mathematical ability in elementary school. *Journal of Educational Psychology*, *92*(1), 144–151. https://doi.org/10.1037/0022-0663.92.1.144

Tong, L. (2021). Higher education internationalization and diplomacy: Successes mixed with challenges. A case study of Hungary's Stipendium Hungaricum scholarship program.

Hungarian Educational Research Journal, *10*(4), 382–400. https://doi.org/10.1556/063.2020.00036

Torres, I. L., Collins, R.-N., Hertz, A., & Martta Liukkonen. (2023). *Policy proposals to promote inclusion of caregivers in the research funding system: a call for change*. https://doi.org/10.31235/osf.io/n473p

Trusz, S. (2020). Why do females choose to study humanities or social sciences, while males prefer technology or science? Some intrapersonal and interpersonal predictors. *Social Psychology of Education*, *23*, 615–639 https://doi.org/10.1007/s11218-020-09551-5

Turner, S. E., & Bowen, W. G. (1999). Choice of Major: The Changing (Unchanging) Gender Gap. *ILR Review*, *52*(2), 289–313. https://doi.org/10.1177/001979399905200208

Uhlmann, A. J., Bourdieu, P., & Nice, R. (2002). Masculine Domination. *Contemporary Sociology*, *31*(4), 407. https://doi.org/10.2307/3089075

UNESCO (2012). *World Atlas of Gender Equality in Education*. Paris: UNESCO.

UNESCO (2010). *Global Education Digest 2010. Special focus on gender* (Montreal, Quebec: UNESCO I), Retrieved September 11, 2014, from www.uis.unesco.org/publications/GED2010.

UNESCO (2015). SDG4-Education 2030, Incheon Declaration (ID) and Framework for Action. For the Implementation of Sustainable Development Goal 4, Ensure Inclusive and Equitable Quality Education and Promote Lifelong Learning Opportunities for All, ED-2016/WS/28.

UNESCO (2017). *Cracking the code girls' and women's education in science, technology, engineering and mathematics (STEM)*. UNESCO.

Unterhalter, E. (2012). Mutable meanings: gender equality in education and international rights frameworks. *The Equal Rights Review*, *8*, 67-84. https://doi.org/10.35648/20.500.12413/11781/ii228

Valent, Á. (2019). Analysis Of the Motivational Factors Affecting University Choice of Ethnic Hungarian Secondary School Students from Slovakia. *Acta Oeconomica Universitatis Selye*, *8*(2), 68–78. https://www.ceeol.com/search/article-detail?id=881544

Van den Besselaar, P. & Sandström, U. (2016). Gender differences in research performance and its impact on careers: a longitudinal case study. *Scientometrics. 106*, 143–162. https://doi.org/10.1007/s11192-015-1775-3

Vincent-Lancrin, S. (2008). *The Reversal of Gender Inequalities in Higher Education: An On-going Trend*. In Higher Education to 2030 Volume 1: Demography, OECD 2008(265-298) Retrieved from https://www.oecd.org/education/ceri/41939699.pdf

Vincze, S., & Bács, Z. (2020). International students in Hungarian higher education. *Applied Studies in Agribusiness and Commerce*, *14*(3-4), 113-132. https://doi.org/10.19041/APSTRACT/2020/2-3/13

Wacquant, L. (2013). Symbolic power and group-making: On Pierre Bourdieu's reframing of class. *Journal of Classical Sociology*, *13*(2), 274–291. https://doi.org/10.1177/1468795x12468737

Waite, C. L. (2001). The Segregation of Black Students at Oberlin College after Reconstruction. *History of Education Quarterly*, *41*(3), 344–364. https://doi.org/10.1111/j.1748-5959.2001.tb00092.x

Wajeeh, E. M., & Micceri, T. (1997). Factors Influencing Students' College Choice at Traditional and Metropolitan Universities. Research Report. University of South Florida In *ERIC*. https://eric.ed.gov/?id=ED416727

Wall-Wieler, E., & Roos, L. L. (2017). Family Matters: High School Graduation and Sibling Influence. *International Journal of Population Data Science*, *2*(1). https://doi.org/10.23889/ijpds.v2i1.407

Wang, S., & Huang, C. (2021). Family Capital, Learning Engagement, and Students' Higher Education Gains: An Empirical Study in Mainland China. *International Journal of Environmental Research and Public Health*, *18*(21), 11571. https://doi.org/10.3390/ijerph182111571

Ward, L. M., & Aubrey, J. S. (2017). *Watching gender: How stereotypes in movies and on TV impact kids' developmen*t. Common Sense.

Webb, M.S. (1993) Variables influencing graduate business students' college selections. *College and University*, *68*(1), 38-46 Available at: https://eric.ed.gov/?id=EJ457747

Weerasinghe, I. M. S., & Fernando, R. L. S. (2018). Critical factors affecting students' satisfaction with higher education in Sri Lanka. *Quality Assurance in Education*, *26*(1), 115–130. https://doi.org/10.1108/qae-04-2017-0014

Wille, E., Gaspard, H., Trautwein, U., Oschatz, K., Scheiter, K., & Nagengast, B. (2018). Gender Stereotypes in a Children's Television Program: Effects on Girls' and Boys'

Stereotype Endorsement, Math Performance, Motivational Dispositions, and Attitudes. *Frontiers in Psychology*, *9*. https://doi.org/10.3389/fpsyg.2018.02435

Wildman, M., & Torres, R. M. (2001). Factors Identified When Selecting a Major in Agriculture. *Journal of Agricultural Education*, *42*(2), 46–55. https://doi.org/10.5032/jae.2001.02046

World Bank (2002). *Constructing Knowledge Societies: New Challenges for Tertiary Education*. *Directions in Development.* World Bank http://hdl.handle.net/10986/15224

World Bank (2017). *Iraq - Systematic Country Diagnostic (English).* Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/542811487277729890/Iraq-Systematic-Country-Diagnostic

Wright, C. (2018). *Choose Wisely: A Study of College Major Choice and Major Switching Behavior*. RAND Corporation. https://doi.org/10.7249/rgsd414

Wright, R., Ellis, M., & Townley, M. (2016). The Matching of STEM Degree Holders with STEM Occupations in Large Metropolitan Labor Markets in the United States. *Economic Geography*, *93*(2), 185–201. https://doi.org/10.1080/00130095.2016.1220803

Xie, Y., Fang, M., & Shauman, K. (2015). STEM Education. *Annual Review of Sociology*, *41*, 331–357. https://doi.org/10.1146/annurev-soc-071312-145659.

Yahyaoui, Y. & Ali, M.. (2018). Gender Representations among Arab Youth: Between Social and Academic. *Journal of Arab Future, 475*, 90-108.

Yenilmez, Meltem, I. (2010). How the education affects female labor force? Empirical evidence from Turkey. *Procedia - Social and Behavioral Sciences. 2,* 634–639. https://doi.org/10.1016/j.sbspro.2010.03.076

Yerken, A., Urbán, R., & Nguyen Luu, L. A. (2022). Sociocultural Adaptation Among University Students in Hungary: The Case of International Students From Post-Soviet Countries. *Journal of International Students*, *12*(4). https://doi.org/10.32674/jis.v12i4.4076

Yost, M., & Tucker, S. L. (1995). Tangible evidence in marketing a Service. *Journal of Marketing for Higher Education*, *6*(1), 47–68. https://doi.org/10.1300/j050v06n01_04

Yousaf, R., Schmiede, R. (2017). Barriers to women's representation in academic excellence and positions of power. *Asian Journal of German and European Studies* 2, 2. https://doi.org/10.1186/s40856-017-0013-6

Zafar, B. (2009). *How do College Students Form Expectations? FRB of New York Staff Report No. 378*. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.1432526

Zafar, B. (2013). College Major Choice and the Gender Gap. *Journal of Human Resources*, *48*(3), 545–595. https://doi.org/10.1353/jhr.2013.0022

Zoltán, V. (2019). *How To Make Hungarian Universities' Branding Compelling For The Purpose Of Recruiting American Students*. Tempus Public Foundation, Budapest. https://tka.hu/docs/palyazatok/hungarian-universities-branding-for-recruiting.pd

Zosuls, K. M., Miller, C. F., Ruble, D.N., Martin, C. L., & Fabes, R. A. (2011). Gender Development Research in Sex Roles: Historical Trends and Future Directions. *Sex Roles 64*(11-12), 826–842 (2011). https://doi.org/10.1007/s11199-010-9902-3

Appendix

Additional tables

Table A1. Distribution of students by continent and merged majors

Major		Continent				Total
		Europe and America	Asia (Middle East)	Africa	Asia (Far East)	
Not STEM	N	41	66	55	60	222
	Row%	18,5%	29,7%	24,8%	27,0%	100,0%
	Column%	78,8%	66,7%	64,7%	66,7%	68,1%
	Adj. Res.	1,8	-0,4	-0,8	-0,3	
STEM	N	11	33	30	30	104
	Row%	10,6%	31,7%	28,8%	28,8%	100,0%
	Column%	21,2%	33,3%	35,3%	33,3%	31,9%
	Adj. Res.	-1,8	0,4	0,8	0,3	
Total	N	52	99	85	90	326
	Row%	16,0%	30,4%	26,1%	27,6%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%	100,0%

Table A2. Distribution of students by continent and the objective financial status

Objective financial status		Continent				Total
		Europe and America	Asia (Middle East)	Africa	Asia (Far East)	
below average	N	19	43	47	43	152
	Row%	12,5%	28,3%	30,9%	28,3%	100,0%
	Column%	36,5%	43,4%	55,3%	47,8%	46,6%
	Adj. Res.	-1,6	-0,8	1,9	0,3	
above average	N	33	56	38	47	174
	Row%	19,0%	32,2%	21,8%	27,0%	100,0%
	Column%	63,5%	56,6%	44,7%	52,2%	53,4%

	Adj. Res.	1,6	0,8	-1,9	-0,3	
Total	N	52	99	85	90	326
	Row%	16,0%	30,4%	26,1%	27,6%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%	100,0%

Table A3. Differences between the clusters regarding academic year

		Clusters			**Total**
		Experienced coping students	**Inexperienced optimistic students**	**Inexperienced denying students**	
1st	**N**	36	51	24	111
	Row%	32,4%	45,9%	21,6%	100,0%
	Column%	33,0%	**41,1%**	**25,8%**	34,0%
	Adj. Res.	-0,3	2,1	-2,0	
2nd	**N**	31	32	31	94
	Row%	33,0%	34,0%	33,0%	100,0%
	Column%	28,4%	25,8%	33,3%	28,8%
	Adj. Res.	-0,1	-0,9	1,1	
3rd	**N**	20	24	16	60
	Row%	33,3%	40,0%	26,7%	100,0%
	Column%	18,3%	19,4%	17,2%	18,4%
	Adj. Res.	0,0	0,3	-0,4	
4th	**N**	16	13	17	46
	Row%	34,8%	28,3%	37,0%	100,0%
	Column%	14,7%	10,5%	18,3%	14,1%
	Adj. Res.	0,2	-1,5	1,4	
5th	**N**	5	3	1	9
	Row%	55,6%	33,3%	11,1%	100,0%
	Column%	4,6%	2,4%	1,1%	2,8%
	Adj. Res.	1,4	-0,3	-1,2	
6th	**N**	1	1	4	6
	Row%	16,7%	16,7%	66,7%	100,0%

	Column%	0,9%	0,8%	**<u>4,3%</u>**	1,8%
	Adj. Res.	-0,9	-1,1	2,1	
Total	**N**	109	124	93	326
	Row%	33,4%	38,0%	28,5%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%

Note: The underlined and bold values indicate that there are far more or fewer people in the given cells in the table than would be expected in a random ordering (Adj.Resid.>2.0 or Adj.Resid. <-2.0)

Table A4. Differences between the clusters regarding training level

		Clusters			**Total**
		Experienced coping students	**Inexperienced optimistic students**	**Inexperienced denying students**	
BSC/BA	**N**	49	41	37	127
	Row%	38,6%	32,3%	29,1%	100,0%
	Column%	45,4%	33,1%	39,8%	39,1%
	Adj. Res.	1,6	-1,7	0,2	
MSC/MA	**N**	16	20	19	55
	Row%	29,1%	36,4%	34,5%	100,0%
	Column%	14,8%	16,1%	20,4%	16,9%
	Adj. Res.	-0,7	-0,3	1,1	
Undivided	**N**	21	26	18	65
	Row%	32,3%	40,0%	27,7%	100,0%
	Column%	19,4%	21,0%	19,4%	20,0%
	Adj. Res.	-0,2	0,3	-0,2	
PhD	**N**	22	37	19	78
	Row%	28,2%	47,4%	24,4%	100,0%
	Column%	20,4%	29,8%	20,4%	24,0%
	Adj. Res.	-1,1	1,9	-1,0	
Total	**N**	108	124	93	325
	Row%	33,2%	38,2%	28,6%	100,0%

	Column%	100,0%	100,0%	100,0%	100,0%

Table A5. Differences between the clusters regarding financing type

		Clusters			**Total**
		Experienced coping students	**Inexperienced optimistic students**	**Inexperienced denying students**	
State funded/ scholarship	**N**	77	91	72	240
	Row%	32,1%	37,9%	30,0%	100,0%
	Column%	70,6%	73,4%	77,4%	73,6%
	Adj. Res.	-0,9	-0,1	1,0	
Fee-paying	**N**	32	33	21	86
	Row%	37,2%	38,4%	24,4%	100,0%
	Column%	29,4%	26,6%	22,6%	26,4%
	Adj. Res.	0,9	0,1	-1,0	
Total	**N**	109	124	93	326
	Row%	33,4%	38,0%	28,5%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%

Table A6. The differences between the clusters regarding the father's educational attainment

		Clusters			**Total**
		Experienced coping students	**Inexperienced optimistic students**	**Inexperienced denying students**	
Primary level	**N**	7	13	7	27
	Row%	25,9%	48,1%	25,9%	100,0%
	Column%	6,4%	10,7%	7,7%	8,4%
	Adj. Res.	-0,9	1,1	-0,3	
Secondary level	**N**	29	29	35	93
	Row%	31,2%	31,2%	37,6%	100,0%
	Column%	26,6%	23,8%	**38,5%**	28,9%
	Adj. Res.	-0,6	-1,6	2,4	

Tertiary level	**N**	73	80	49	202
	Row%	36,1%	39,6%	24,3%	100,0%
	Column%	67,0%	65,6%	**53,8%**	62,7%
	Adj. Res.	1,1	0,8	-2,1	
Total	**N**	109	122	91	322
	Row%	33,9%	37,9%	28,3%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%

Note: The underlined and bold values indicate that there are far more or fewer people in the given cells in the table than would be expected in a random ordering (Adj.Resid.>2.0 or Adj.Resid. <-2.0)

Table A7. Differences between the clusters regarding type of settlement

		Clusters			**Total**
		Experienced coping students	**Inexperienced optimistic students**	**Inexperienced denying students**	
Village or small town	**N**	42	43	38	123
	Row%	34,1%	35,0%	30,9%	100,0%
		38,5%	35,0%	40,9%	37,8%
	Adj. Res.	0,2	-0,8	0,7	
Bigger city or capital	**N**	67	80	55	202
	Row%	33,2%	39,6%	27,2%	100,0%
		61,5%	65,0%	59,1%	62,2%
	Adj. Res.	-0,2	0,8	-0,7	
Total	**N**	109	123	93	325
	Row%	33,5%	37,8%	28,6%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%

Table A8. Differences between the clusters regarding objective financial status

	Clusters	**Total**

		Experienced coping students	Inexperienced optimistic students	Inexperienced denying students	
Below average	**N**	51	63	39	153
	Row%	33,3%	41,2%	25,5%	100,0%
		46,8%	50,8%	41,9%	46,9%
	Adj. Res.	0,0	1,1	-1,1	
Above average	**N**	58	61	54	173
	Row%	33,5%	35,3%	31,2%	100,0%
		53,2%	49,2%	58,1%	53,1%
	Adj. Res.	0,0	-1,1	1,1	
Total	**N**	109	124	93	326
	Row%	33,4%	38,0%	28,5%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%

Table A9. Differences between the clusters regarding religiosity

		Clusters			Total
		Experienced coping students	Inexperienced optimistic students	Inexperienced denying students	
Yes, I follow the regulation of my religion	**N**	36	49	36	121
	Row%	29,8%	40,5%	29,8%	100,0%
		33,0%	39,5%	38,7%	37,1%
	Adj. Res.	-1,1	0,7	0,4	
Yes, I am religious on my way	**N**	39	44	30	113
	Row%	34,5%	38,9%	26,5%	100,0%
		35,8%	35,5%	32,3%	34,7%
	Adj. Res.	0,3	0,2	-0,6	
No, I am not religious	**N**	34	31	27	92
	Row%	37,0%	33,7%	29,3%	100,0%
		31,2%	25,0%	29,0%	28,2%
	Adj. Res.	0,8	-1,0	0,2	

Total	**N**	109	124	93	326
	Row%	33,4%	38,0%	28,5%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%

Table A10. Differences between the clusters regarding STEM and Non-STEM majors

Majors		**Clusters**			**Total**
		Experienced coping students	**Inexperienced optimistic students**	**Inexperienced denying students**	
STEM	**N**	77	83	61	221
	Row%	34,8%	37,6%	27,6%	100,0%
	Column%	70,6%	66,9%	65,6%	67,8%
	Adj. Res.	0,8	-0,3	-0,5	
Non-STEM	**N**	32	41	32	105
	Row%	30,5%	39,0%	30,5%	100,0%
	Column%	29,4%	33,1%	34,4%	32,2%
	Adj. Res.	-0,8	0,3	0,5	
Total	**N**	109	124	93	326
	Row%	33,4%	38,0%	28,5%	100,0%
	Column%	100,0%	100,0%	100,0%	100,0%

Questionnaire about gender stereotypes and academic choice among university students

dear student

As a doctoral student Sanaa Taher Saleh, a PhD student at the doctoral school of educational sciences at the University of Debrecen, we ask you to answer the questions of this survey to obtain opinions and experiences of students in higher education about the impact of the most critical factors that contribute to the academic choices of university students and the influence of gender stereotyping factors. The data we collect will be used for the purposes of this research only. Your responses will remain completely anonymous.

Questions marked with an asterisk (*) are required.

If you have any questions about the survey, please email us: sanasalh29@gmail.com

1- Sex: male female other

2- How old are you? *

3- Where are you from? (country)*

4- What is your major? *

- Agriculture
- Art
- Art meditation
- Arts and humanities
- Economic
- Engineering
- Health
- It
- Law
- Medical
- Natural science
- Pedagogy, teacher training
- Public administration, police, military
- Social science
- Sport
- Other

5- In which academic year are you studying? *

- First year
- Second year
- Third year
- Fourth year
- Fifth year
- Sixth year

6- Level of studying

- BSc/BA
- MSc/MA
- Undivided (e.g. General medicine/Dentistry/Law)
- PHD (doctoral studies)
- Others

7- Current financing form of your education*

- state-funded/scholarship
- fee-paying
- others

8- What is the highest certificate obtained by your mother in education? *

- less than elementary school
- elementary school
- vocational secondary school
- high school / gymnasium
- college / BA/ BSC
- university degree / MA/MSC
- scientific degree / PhD
- I didn't know my mother

9- What is the highest certificate obtained by your father in education? *

- less than elementary school
- elementary school
- vocational secondary school
- high school / gymnasium
- college / BA/ BSC
- university degree / MA/MSC

- scientific degree / PhD
- I didn't know my mother

10- How do you describe your parents' attitude related to your studies ? *

- They always consider studying important
- They let me to decide what to study
- I never was able to fulfil their expectations
- They never had expectations, they never regulated me
- The knowledge gained at school was not important for them
- I do not know; we have never talked about

11- How would you describe your family income? *

- Much better than the average of my country
- Better than the average of my country
- Average for my country
- Worse than the average of my country
- Much worse than the average of my country

12- Do you have these? * Yes or no

- Own flat or house
- Own car
- Phone (more expensive than average)
- Notebook or pc (more expensive than average)
- Tablet, e-book reader
- Building savings account / housing saving account
- Smart TV
- Mobile internet

13- What is your current economic situation?

- I have everything I need and have some left over for material expenditures (e.g. travel, restaurants)
- I have got everything I need but I can't afford big expenditures
- Sometimes I can't afford my everyday expenditures (food, transport)
- I often don't have enough money for everyday needs

14- Which phrase below best describes the area where your family lives? *

- Capital
- A big city

- The suburbs of a big city
- A town or a small city
- urban area

15- Are you religious?

- Yes, I am following the regulation of my religion
- Yes, I am religious in my way
- No, I am not religious

16- What is your religion?

- Christian
- Muslim
- Jewish
- I do not follow any religion
- I do not want to answer
- Other

17- How did the following factors play a role in your further education? (1- Absolutely not, 2 - rather not, 3 - rather yes, 4 - absolutely yes). *

- To find a well-paying job
- Having a knowledgeable profession
- Geographic proximity of higher education institution
- To gain knowledge
- Finding my profession
- Because it easier to find a job if one has a degree
- To make all kinds of connections
- Because I didn’t want to work yet
- To follow family tradition
- I can afford the tuition costs
- There was no tuition fee
- It was a job requirement
- In hopes of social mobility

18- Did your plans concerning graduation affect your choice of this university? * Yes or No

19- Was your choice of a university affected by your knowledge of future employment opportunities? (Yes or no, if yes, please specify)

20- The following is a list of persons or contacts that may have influenced you when making a choice of a university to attend. Please indicate the degree of importance of each item according to the following scale. The Alternatives are 1 – not important at all 2 – less important 3 – Neutral 4 – very important 5 – Extremely important.

- My teachers
- Mother
- Father
- Friends
- Relatives / siblings
- High school counsellors
- Religious adviser (e.g. pastor)
- Recommendation of former student
- College publication
- Personal letters from institution
- Telephone calls from institution
- University representatives
- Visits to campus
- Others (please specify!) if the answer was others, please identify who the person was?

21- The following is a list of factors you may have considered when you were making your choice of a university to attend*. Please indicate the degree of importance of each item according to the following scale. The Alternatives are 1 – not important at all 2 – less important 3 – rather important 4 – important 5 – very important

- Closeness to home
- Location (e.g. town or city)
- Availability of housing
- Cost of living
- Tuition costs
- Scholarship available
- Reputation of institution
- Reputation of program
- Athletics opportunities
- Religious atmosphere

- Size of student population
- Variety of courses offered
- Specialized program offered
- Student professor
- Family tradition
- Preparation for graduate school

22- What factor was the most influential in your academic choice? *

- I listened to my parents' expectations and advice
- I listened to my teacher's? / teachers' ? advice
- It was my own decision
- I followed my brothers' / sister's example
- I followed my frien's' and classmates' examples
- Career adviser helped me
- Other (If your answer was others, please specify).

23- What was the single most determining factor in the selection of your major you are currently attending? *

24- If you are not attending your first choice of universities, please explain the most important reason from the following options. *

- This was my first option
- GPA was low
- Lacking academic prerequisites
- Too far from home
- Cost factors
- Other (If your answer to the previous question is "others", please specifyy what the other reasons were)?

25- How do you feel now about your choice of the University of Debrecen or your University? * (1 to 5).

	◯	◯	◯	◯	◯	
Not satisfied at all	1	2	3	4	5	Very satisfied

26- How do you feel about your choice of your major? * (1 to 5).

	◯	◯	◯	◯	◯	
Not satisfied at all	1	2	3	4	5	Very satisfied

27- Do you intend to complete graduate studies (PhD) or only get the current certificate? *

- Yes, I would like to get my PhD
- No
- I do not know

28- Rate yourself on each item on a scale from 1 (never or almost never true, 2 rather true, 3 almost true, 4 sometimes true, 5 rarely true, 6 often true to 7 almost always true).

◯ ◯ ◯ ◯ ◯ ◯ ◯

Never or almost never true 1 2 3 4 5 6 7 almost always true

- Self-Reliant
- Yielding
- Helpful
- Defends Own Beliefs
- Cheerful
- Moody
- Independent
- Shy
- Conscientious
- Athletic
- Affectionate
- TheatricalAssertive
- Flatterable
- Happy
- Strong Personality
- Loyal
- Unpredictable
- Forceful
- Feminine
- Reliable
- Analytical
- Sympathetic
- Jealous
- Has Leadership Abilities

- Sensitive To The Needs Of Others
- Truthful
- Willing To Take Risks
- Understanding
- Secretive
- Makes Decisions Easily
- Compassionate
- Sincere
- Self-Sufficient
- Eager To Soothe Hurt Feelings
- Conceited
- Dominant
- Soft-Spoken
- Likable
- Masculine
- Warm
- Solemn
- Willing To Take A Stand
- Tender
- Friendly
- Aggressive
- Gullible
- Inefficient
- Acts As A Leader
- Childlike
- Adaptable
- Individualistic
- Does Not Use Harsh Language
- Unsystematic
- Competitive
- Loves Children
- Tactful

- Ambitious
- Gentle
- Conventional

29- Do you think gender stereotyping determines students' academic choice? * (1 absolutely not, 2 rather not, 3 rather yes 4 absolutely yes)

- The existence of gender stereotyping depends on society.
- We should get rid of gender stereotyping thoughts
- I don't believe in differences between males and females
- I am against gender differences in choosing a major.
- Women are more likely to be stereotyped than men on academic choice
- The responsibility for gender stereotyping rests with the family.
- Educated families do not espouse gender stereotyping ideas.

30- What is your experience about gender stereotyping? *

- I have not experienced any gender stereotyping situation.
- I have experienced gender stereotyping at the university
- I have bad experience with gender stereotyping in my society.
- I have experienced gender stereotyping in my personal life.
- I have experienced gender stereotyping in my professional life.

31- Do you think there is a difference in the effects of gender stereotyping between males and females when choosing the major of study? *

○ ○ ○ ○ ○ ○ ○ ○ ○ ○

Strongly disagree 1 2 3 4 5 6 7 8 9 10 strongly agree

32- Do you believe that there are masculine specializations and feminine specializations? *

○ ○ ○ ○ ○ ○ ○ ○ ○ ○

Strongly disagree 1 2 3 4 5 6 7 8 9 10 strongly agree

33- Do you think that the masculine majors that females choose at the university will cause them problems in the labour market after graduation? *

Yes ○ No ○

34- Do you think it's possible to eliminate gender stereotypes in your lifetime? * (1 strongly disagree, 2 disagree, 3 neutral, 4 agree, 5 strongly agree)

- Society should take action to alter the fate of stereotypical behaviour.
- International media could play a vital role in diminishing the use of stereotypes.

- Imposing sanctions on media outlets and makes sure there is no biased material from which people may develop stereotypical thoughts.
- striving to regulate better the existing laws aimed at combating gender discrimination.
- The new generation is more open-minded and has the potential to change gender stereotypes.
- Society is changing its perception about giving women equal education, as men and women are now allowed to study the subject of their choice.

35- How stereotypical are you? *

○ ○ ○ ○ ○

Not at all stereotypical 1 2 3 4 5 extremely stereotypical

36- How stereotypical is your father? *

○ ○ ○ ○ ○

Not at all stereotypical 1 2 3 4 5 extremely stereotypical

37- How stereotypical is your mother? *

○ ○ ○ ○ ○

Not at all stereotypical 1 2 3 4 5 extremely stereotypical

38- Do you think it is socially acceptable for females to choose masculine specialization and males to choose feminine specialization? *

○ ○ ○ ○ ○

Strongly disagree 1 2 3 4 5 strongly agree

39- Do you believe gender stereotypes, like all girls are good at humanities and languages and all boys are good at science and technology will remain in society in the long term? *

○ ○ ○ ○ ○

Strongly disagree 1 2 3 4 5 strongly agree

40- Please classify the following jobs according to your opinion, whether they are feminine, masculine or neutral jobs! * (feminine, masculine and neutral).

- Baby sitter
- Scientist
- Politician
- Film director
- Fireman

- Dressmaker
- Pilot
- Traffic warden
- Judge
- Sweeper
- Teacher
- Secretary
- Ballet dancer
- Belly dancer
- Truck driver
- Waiter
- Journalist
- Policeman
- Dentist
- Gynaecologist
- Astronaut
- Postman
- Florist
- Mechanic
- Grocer
- Mason
- Labourer

41- Please classify the following toys according to your opinion whether they are feminine, masculine or neutral toys! * (feminine, masculine and neutral).

- Airplane
- Ring / necklace/ bracelet / earring
- Kite
- Hairdryer
- Disney character dolls
- Marvel character dolls
- Staffed dolls
- Toy boat

- Bicycle
- Gun
- Truck
- Pram
- Rocking horse
- Play station
- Constructions
- Sewing machine
- Car
- Teddy bear
- Football
- Skates
- Pots
- Puzzle
- Brush/mirror
- Chess
- Tea set
- Drum
- Train
- Make-up set

Thank you for your help.