

Overcoming Gender Stereotypes in the Process of Social Development and Getting Higher Education in Digital Environment

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Abstract—Social development and higher education are among the essential tools for overcoming gender stereotypes. The changes in education associated with the digitalization of learning and work, studies show, have little changed the gender landscape. Studying the opinion of students on the problem of gender relations and stereotypes is relevant in terms of the need to determine the impact of higher education in digital environment on changes in perceptions of behavioural patterns and social roles of men and women. This study examines the impact of gender stereotypes, manifested even in online learning and communication and when working in the new digital economy on student's choice of a life path, profession, education. The research aims to study the influence of students' social development in the learning process on the formation of gender stereotypes among them. An anonymous written survey was the most suitable method of the study. The survey involved 350 students of socio-humanitarian, technical and natural specialities (60% – women, 40% – men). It was found that getting higher education in digital environment is crucial to social development, as this stage of life helps individuals overcome gender stereotypes. Yet, gender stereotypes continue to dominate among students anyway. To which extent do students agree that the primary purpose of a woman is the role of wife and mother? Most students (44%) agreed with this view of a woman's role, with varying degrees of confidence. Besides, approximately one in four who answered this question (24%) expressed complete agreement with this statement. On the other hand, about a quarter of respondents (26%) strongly or somewhat disagree with this statement. The results of the study can be used in international practice to overcome gender stereotypes. Social development of a person through higher education in digital environment plays a more critical role in overcoming gender stereotypes than previously thought.

Keywords—Stereotypes; Gender; Education; Social Development; Culture; Digital Environment

1 Introduction

Stereotypes are persistent and pervasive in society. They are mental prejudices that enable us to process information quickly, albeit sometimes the results of this processing may be biased. Stereotypes can form without our conscious awareness, and social category stereotypes are built on years of exposure to stereotypical portrayals of groups in society [1]. It reflects general expectations about members of particular social groups. However, even if there is an overall difference between these groups, not all individual exemplars in these groups will necessarily differ from each other [2].

Gender is one of the basic dimensions of the social structure of society, which, together with other socio-demographic and cultural characteristics (race, class, age), organises the social system. The social reproduction of gender consciousness at the individual level supports a gender-based social structure. Gender provides a social role status of a person, which determines the possibilities in education, professional activity, and social production [3-5].

The formation of Industry 4.0 and the formation of new types of employment and work, as expected, will create conditions for a new meritocracy and equalization of the existing relations between men and women. Recent research shows that the promises of digital meritocracy and gender equality in Web 2.0 are largely superficial and out of touch with reality [6,7].

The fact of bodily differences between men and women does not determine all the differences, because, in addition to the body habitus, a sociocultural context also arises. The latter reflects what is specific for men and what for women at the present time and in a given society [8]. In separate studies, masculinity and femininity, on the one hand, are considered as phenomena expressed in ideas, attitudes, stereotypes that form the gender identity in the process of socialisation. On the other hand, they are realised in the form of individual gender identity— masculine, feminine, androgynous [9-11]. A number of researchers of both modern social groups and intrasocial cultures express their confidence that the perception of readiness for different types of work depends on primary education and further school and university training. For example, girls traditionally do not play with automatics, mechanical toys and wrenches, which does not make them less talented in the field of STEM [11]. Manifestations of gender identity are formed into gender roles as a set of norms, standards, expected patterns of human behaviour, depending on their biological gender, which a person realises, implements in his/her behaviour model, style characteristics of activities, etc. [12,13].

Gender roles, on the one hand, are declared by external factors and social environment. On the other, they become internalised in the process of becoming a person and acquiring life experience [14]. In particular, the cultivation of gender roles through the formation of gender role stereotypes occurs in elementary school. An open digital environment, offering a wider range of possible roles and areas of knowledge for development, should gradually erode the gender traditional role-playing predisposition [15]. Gamification and the orientation of student training towards solving real-life problems also contributes to a more equitable division of gender roles. At the same time, a different biological substrate and self-identification forms, as studies show,

different Styles of Learning [16]. However, the implementation of such individual and gender-sensitive learning styles is only possible in a rich digital environment that provides a wider choice of learning paths.

As studies have shown, there is a gender asymmetry in the primary and secondary characters in the figures for the tasks in school textbooks [17]. Hence, the majority of the characters in the figures are boys, who are attributed to the traits of active, courageous doers, whilst the girls are seen as passive individuals, who expect help and support. Such a stereotypical image of a female sets limits on her behaviour models, on the one hand, and results in lower social status and, accordingly, lower life claims, on the other hand [18]. Traditional educational content often conflicts with the real information environment, which can lead to personal conflicts [19]. Women suffer most from this, whose role in today's digital, media business and remote self-employment is influenced by traditional gender stereotypes even in developed countries [5,19].

Gender stereotypes should be considered in a wider theoretical framework. For example, within the framework of the concept of gender identity [20]. Gender identity is one of the most essential forms of a person's social identity, where the sociocultural parameters of the "male" and "female" categories dominate. With the latter, a person identifies him/herself with a certain gender group and constructs his/her identity as a representative of a particular gender [4].

A modern understanding of gender identity is methodologically justified in a socially constructionist approach to understanding reality. Most researchers share the view that gender identity is "self-awareness in the context of zero definitions of masculinity and femininity" [11]. At the same time, some researchers understand gender identity already - as "a personal perception of their gender in accordance with the functions of the employee and family member" [3]. That is, it is precisely the areas of professional and family self-realisation that are considered key for this phenomenon - including in those age periods when a person is just starting to enter the sphere of professional activity [21]. Therefore, the statements chosen for student surveys focus on areas of family life and professional activity.

Gender identity manifests and reproduces itself through gender stereotypes. The gender stereotype is a simplified, schematised, emotionally depicted image of a man and a woman [8]. Gender stereotypes are also defined as "simplified, standardised, stable, emotionally saturated, value-determined polar evaluations, rigidly fixed images of men and women that encourage a certain attitude" [14]. All existing gender stereotypes can be divided into three groups. The first group is the stereotypes of masculinity-femininity - normative ideas about somatic, mental, behavioural properties of men and women— namely, men are competent, dominant, independent, aggressive, self-confident, tend to think logically, tend to control their feelings; women are more passive, dependent, emotional, caring and gentle [22].

The second group of stereotypes relates to the content of labour of men and women. Females are traditionally seen as servants and executive force, whilst males are set to instrumental and creative activities. Also, men are viewed as better leaders [11,22]. A number of studies show that in today's digital environment and online employment, these stereotypes prevail over self-employed women, since in media practices they

must meet the expectations of stereotypes in order to have contact with their consumers [19,23].

The third group of stereotypes is associated with the consolidation of family and professional roles in accordance with gender. For men, the leading roles are professional, for women - family. A “normal” man seeks to build a career, professional success; a “normal” woman wants to get married and have children, to manage a household [21,22]. It should be noted that in eastern gender studies, the problem of gender identity in connection with professional and family attitudes has repeatedly been the focus of sociological research [4]. However, such a target group as students remains still poorly studied in the context of this issue. Therefore, this sociological research is very relevant and new.

The study of gender stereotypes is the foundation for strategies’ development to overcome gender inequality and implementing a model of gender parity, which we term as an egalitarian model. This model assumes that the change must take place on both sides: the impact on people’s behaviour by laws prohibiting discrimination, providing financial support and openings for women students; and changes in belief prevailing in the society by initiating discussions in media, educational institutions, and community organisations with a reasoned positioning of gender equality importance [24].

In higher education in digital environment, gender issues are discussed more often than in secondary school. About one out of every three students have discussed gender equality issues at a university or academy [6,25]. Much more often, gender issues are discussed with students of social and humanities faculties [26]. It can be said that girls rather than boys are more likely to participate in the discussion of gender issues in universities, but this difference is statistically insignificant and is due to the fact that girls are more likely to study at faculties of social and humanities areas [11].

This article aims to study the influence of students’ social development in the learning process on the formation of gender stereotypes among them. The objectives of the study are as follows:

- To determine the presence of gender stereotypes in the students’ perceptions of choosing a life path, profession, education in digital environment.
- To examine the impact of reaching social development and getting higher education in digital environment on changes in the gender-based perceptions of male and female behaviour patterns and their social roles in higher education institutions.
- Assessing the effectiveness of gender education in high school and university.

At the beginning of the study, the authors examine the gender stereotypes that exist in society, as well as the issues of overcoming gender inequality and the model of implementing gender parity. The next section illustrates the research methods deployed for this study. Following this, it discusses the results of the study based on a statistical and critical analysis of the data of the survey.

2 Methods

The study uses a mixed-methods approach with multiple case studies to address the research question.

To achieve the study's objectives, an anonymous written survey was conducted for achieving reliable data and establishing the most trusting relationships with the respondents.

The survey was conducted on a three-stage sampling, which provides data representativeness for students. First, a randomised selection of faculties was conducted. The selection at this stage was stratified by the type of faculty (social and humanities, natural and technical). The next step was a randomised selection of student groups. The third stage is the random selection of respondents in groups. The survey involved 370 students.

2.1 Participants

The sample constituted 39% of boys and 61% of girls aged 16 to 32 years (average age 19.6, standard deviation 1.8 years). 54% of the respondents receive social and humanities education (including legal or economic), 46% study at the faculties of natural or technical areas at Al-Farabi Kazakh National University. The University offers students a rich digital environment and extensive use of online communication technologies and methodologies in all specialties. All study participants received training in a digital environment to one degree or another, starting from the first year. In addition, the surveyed students are evenly distributed among the courses: 21% are in their first year, 27% in their second year, 25% in their third year, 27% in their fourth and fifth years.

Statistical errors with a probability of 95% do not exceed:

- 3.5% for indicators near to 50%
- 3.0% for indicators near to 25% or 75%
- 2.1% for indicators near to 10% or 90%
- 1.5% for indicators near to 5% or 95%
- 0.7% for indicators near to 1% or 99%.

2.2 Data analysis

The questionnaire consisted of several blocks of questions. In the first block of the questionnaire, students were asked to express their agreement or disagreement with twelve statements. Three statements are expressions of gender-egalitarian attitudes; one statement is the so-called "Counterstereotype," that is, a complete inversion of one of the gender stereotypes [9,13,21].

The student responses mirrored their worldview. A factor analysis of the twelve statements was carried out [26]. As a result, three factors have been identified that distinguish (outline) the three underlying worldviews. The first factor with high factor loadings includes signs of gender bias. The primary purpose of the woman is house-

hold and family; girls need to be prepared precisely for these roles and the like. Each statement of this group emphasises the fact of inequality between men and women. This factor can be called traditionalism [12]. The second factor gathered signs that affirm the idea of gender equality - a woman's freedom to choose her life path, the opportunity to realise herself in work on a par with men and the like. This factor can be called gender equality [21]. The third factor includes a single variable: if a woman can earn more than her husband, a man should be engaged in managing the household and looking after children. This factor has some signs of an active feminist position. Therefore, it can be called "feminism" factor [27].

The second and third factors are similar as they both represent opposition to traditionalist views. It is logical either to draw a clear border between them or to unite in a single anti-traditional position.

The survey took 30 to 45 minutes to complete. The data were processed by using the Excel software.

2.3 Study limitations

This study of examining problem of overcoming gender stereotypes was limited to the study of students' opinions from one university in the Republic of Kazakhstan. The study should also reflect to a large extent the influence of ethnic and traditional local values on the behavior of the respondents.

3 Results

Studying at the university and getting a higher education is one of the critical stages of social development, which is also perceived as a way to overcome gender stereotypes. However, gender stereotypes dominate among students even students in the conditions of the prevalence of the digital environment and in the conditions of the gradual prevalence of the digital economy. The survey data evidence this.

In response to the question, to what extent do students agree that the primary purpose of a woman is the role of wife and mother? – 44% students agreed that the key role of a woman is that of a wife and a mother, with varying degrees of confidence. Besides, approximately one in four who answered this question (24%) expressed complete agreement with this statement. On the other hand, about a quarter of respondents (26%) strongly or rather disagree with this statement. The views were divided, and the widespread response (29%) was the dual position - "both agree and disagree to some extent". This option can be called the most typical answer since it is the median of the distribution of all answers.

Students comprehend women's assignment differently. Most young men are convinced that the central role of women is in housekeeping and raising children (63%), while more than a third of students (36%) express unconditional agreement with the proposed statement. There are relatively few young men who disagree (12%). The "agree" and "disagree" responses of the girls are divided into three approximately equal parts. 33% of the girls with this state of affairs agree entirely, 35% do not agree,

32% have not decided on the final choice (“both agree and disagree to some extent”). The gender of the participants is noticeable in the responses of the survey questions. The responses were different for the students of the faculties of social and humanities, when compared to the faculties and students of natural and technical faculties. According to the methodology, they might be called conditionally “lyricists” and “physicists”. At first glance, the “physicists” are more likely to agree with the fact that the primary purpose of the woman is connected with the house and family (50%, while among the “lyricists” – only 40%). The reasons for variations observed were due to the influence of the gender of the respondents, since there are much more girls among the “lyricists” than among the “physicists” (70% and 49%, respectively).

Regarding the statement as to whether a woman must determine for herself to pursue a professional career or remain simply a housewife, the responses were staggering. While 79% of students agree that women have the full right to self-determination in choosing a life path, only 8% of students think differently, while 12% think that the truth is somewhere in between (Fig. 1).

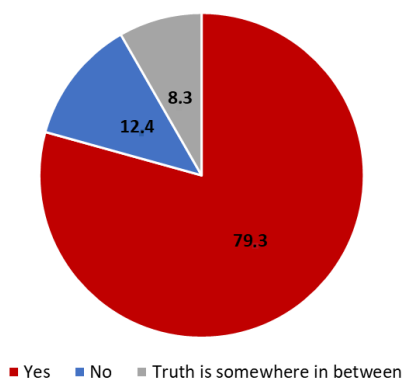


Fig. 1. Survey Results. Do women have the full right to self-determination when choosing a life path (source: developed by the authors).

Source: Elaborated by the Authors

Comparing the above two questions, one can deduce that a woman’s place is in the family, and at home. However, the woman is left with the decision whether or not to devote herself to housework and in raising children.

To a certain extent, the gender of the respondent influences the idea of free self-determination of women. Girls are much more likely than boys to agree that the choice of “home or work” belongs to the women themselves (85% and 71%). Differences in the responses of female and male students are small but statistically significant.

Another statement that continues the theme of women’s self-determination is as follows: A woman needs education and career no less than her family. The majority of respondents (62%) agree that the profession and the family should be of equal importance for women. The most common answer is “totally agree” (mode). The

typical answer is “rather agree” (median distribution of all answers). Almost one in five (19%) believes that the family is more important for women. However, another 17% see arguments in favour of each of the positions.

Comparing the three considered statements, the following can be concluded. A woman, according to many, should be primarily concerned with the household and children, but at the same time, a woman should decide between home and career. In any case, it is certainly impossible to limit a woman’s life only to household chores. However, although the woman chooses her life path herself, a significant part of the respondents doubt that profession and family are interchangeable.

In general, based on the results of factor analysis, the following are the observations. The responses expressed by the participants are not unpredictable and spontaneous – the responses are primarily dictated by several basic philosophical positions that students are guided by when answering questions. However, these basic orientations were not clearly defined in the thoughts of the respondents; the answers are often contradictory. This is evidenced by the fact that the three factors together explain only about half of the entire range of responses (see Table 1). Therefore, further research should be aimed at improving the tools for identifying basic worldview positions and studying the differences in student groups with different orientations.

Table 1. Factor Analysis Results

Factor 1: Traditionalism	Factor 2: Gender equality	Factor 3: Feminism
Girls need to be prepared for the role of mother and housewife, and boys - for the profession that can provide material support to the family. (0.746)	A woman must independently choose between a career and the role of a housewife (0.571)	If a woman can earn more than a man, then a man should manage the household and look after children (0.731)
The primary purpose of a woman is to be a good mother and a diligent wife (0.692)	Education for women is as essential as family (0.558)	
A girl should be neater than a boy (0.625)	The wife should work equally with the husband (0.552)	
Males are top executives (0.616)		
The rudeness of girls is less excusable than that of boys (0.593)		
Girls are more likely to study humanities, while boys - STEM disciplines and natural sciences (0.590)		
Professions are divided by gender into female and male (0.540)		
A married woman should not work (0.531)		

Source: Elaborated by the Authors

Based on the results of factor analysis, three groups of students can be distinguished under three factors. In each group, signs of one factor are revealed, and signs of the other two factors are weakly expressed. The students who made up these groups are called “traditionalists”, "supporters of gender equality" and "feminists" (Table 1).

Traditionalists are constituted mostly of boys, and not girls; but among the supporters of gender equality and “feminists,” the reverse is the situation. Students of

social and humanities and natural/technical faculties in all three groups are represented quite evenly, except that, among the “feminists” there are much more “lyricists”. In addition, “feminists” differ in terms of “locality” – among them there are more residents of regional centres (61%) than among the supporters of gender equality (35%) and traditionalists (30%). There are no other socio-demographic differences between these groups.

Now, filling in the questionnaire for the question – Do men or women have more rights and opportunities? Almost half of all the participants (47%) believe that in some areas, rights and opportunities are more significant for men, in others, it is for women. This is the most typical answer (mode). A significant part of the respondents (28%) believe that in most spheres of life, men and women have equal rights and opportunities. One in five believes that men have greater rights and opportunities. The position of female dominance is unpopular.

Boys more often than girls talk about male dominance (24% and 18%, respectively), and girls more often than boys say that the world is divided into spheres of male and female dominance (48% and 43%). However, these differences are not significant enough to say that the views of male and female students differ.

As a result of the processing of personal data, it turned out that for most of the surveyed participants, it is essential how the group perceives them. The perception of a member of the group is affected by the following factors:

- The behaviour of the object of perception (75%)
- Personal features of the object of perception
- The degree of openness to the group, originality, level of intelligence (49%)
- External characteristics - attractiveness, style, etc. (14% of respondents).

These findings correlate with the findings conducted by Sechenov University. The study at Sechenov University underscores the combination of behavioural characteristics (67%) and personal characteristics (59%) of classmates pursuing pharmacy, which is much more important than external characteristics (21%).

There are some differences in the views of the participants with different worldviews on gender equality. “Feminists” often speak about the dominance of men over women. Supporters of gender equality speak of it less often than others. The most widespread responses in all groups (except for “feminists”) is that in some areas of life men have more rights and opportunities, while in others, it is women. However, both “feminists” and supporters of gender equality support the idea of equal rights and opportunities for men and women in Kazakhstan. In general, there are differences, but they are not significant enough to state the diametrically opposite views of the participants who have different worldview orientations.

Based on the results of the research, it can be argued that the educational process in a digital environment at the university to some extent reduces the manifestations of gender stereotypes and contributes to the social development of women and men regardless of gender and culture.

4 Discussion

Even though this study is performed among students with different opinions on gender equality, most of the respondents support the right of women to self-determination in choosing a life path, considering this an internal matter of a family. The trend of this attitude among new generations who have grown up in a digital environment is confirmed by many studies [6,28,29]. The results also show that men and women have the same social expectations of a traditional women's role. However, such an attitude is supported mainly by women, who consider that specific behavioural patterns and areas in which women are dominant exist. Many investigators indicate that such an attitude is more likely a tribute to the social mythology that hides the woman's lower social status and her lack of a socially approved right to behaviour [30,31]. Over the past decades, this situation has been gradually changing for the better. The understanding of the women's right to choose is an indicator of these changes.

A number of researchers even point to the "feminization" of the professional space due to an increase in the number of services in the economy and types of employment, traditionally more consistent with female behavioral characteristics (communication skills, reflection, group interaction, etc.) [6,28].

The stereotype of social experience is common in all traditional societies of most countries of Central Asia, the Middle East, India, Indochina, and other regions [30,32]. The greater effect of the influence of such stereotypes coincides with a lesser penetration of modern technologies into different strata of society and a lesser coverage of all spheres of life with a digital environment [5]. The gender stereotype challenges specific to India and other South Asian countries are a topic of major concern to those societies. These stereotypes relate to the role of women in the family and the age of marriage. Depending on the socio-cultural practices, economic condition, and level of educational attainment, the age at marriage varies among the religious groups. The proportion of women getting married at a younger age is an indication of advancement in the educational scenario. The mind-sets of women and girls have changed in due course of time, and they are more inclined towards economic independence rather than the social custom of getting married at a specific age as prescribed by the society [33].

In the current research, the main focus is on the social aspect of studying the problem of gender stereotypes stemming primarily from cultural relations. The cultural relations of the development of tolerance and gender relations are considered in the work of Jarrah and Serhan [34]. Tolerance can be regarded as an ethical, social and psychological virtue practised by all religions in spreading their messages to elevate humankind to excellence [34]. Within the present study, tolerance towards women behaviour is biased. Only men talked about their dominant position, which is typical. Moreover, tolerance towards the women's right to combine work and family is not balanced by a similar issue with regard to men.

Furthermore, the position of men is not even discussed. Thus, the subsequent hypothesis may look as follows: if a woman chooses social independence and abandons family responsibilities in favour of career, she risks being in a position of social ostra-

cism and under intense public pressure [35,36]. This pressure can also be exerted by those females, who adhere to a more traditional point of view than expected. This pressure is also projected on the web environment and online business, which fully reflect the characteristics of social communication in the respective society [7].

The authors' research approaches are aimed at analysing the causes of this phenomenon at a local level. Other scientists, such as Tripathy [37], pay more attention to global aspects. Gender inequality remains a global issue since it appears in different societies at different scales. Many of its manifestations are identified by the current research, for example, the absence of a clearly defined position regarding women's dominance or rights among most of the surveyed females.

The term gender inequality delineates any prejudice or discrimination and the biased attitude towards one gender so much that individuals are treated disadvantageously [37]. Ellemers [2], and Chang and Milkman [1] consider that the connection exists between the varying degrees of manifestation of certain convictions of “physicists and lyricists”, or the people with a humanitarian and physical or mathematical background. This connection may be global and manifest itself in other countries. It is necessary to perform further research to identify the relevant differences in opinions related to the nature of greater or lesser employment, the type of thinking inculcated by profession, familiarity with specific philosophical and artistic ideas, or other factors [1,2].

Based on a large number of studies, the most relevant way to achieve gender equality is to increase women's leadership in all social groups and situations [2,21,23,38]. Although this work does not directly address this topic, its results are consistent with other studies. While women tend to accept a more subordinate position in society, they rarely claim leadership positions even in informal groups [14,15,22,26,28].

The researchers of the current study are confident that social development through higher education plays a more important role in overcoming gender stereotypes [30,39].

Nonetheless, Sur [40] unveils the gender stereotypes linked to Indian Muslim women. In doing so, Sur [40] argues that Muslim women, the subject of her research symbolises the plight of the community and provides a critique of their own marginalisation. However, she also argues that Muslim women have their own ways to define gender equality within the Islamic framework [40]. Arguably, gender equality is accelerated by the false perception that women are solely responsible for the state of the house and family-related matters [37].

Furthermore, the results of the current study regarding the importance of the social role of higher education in digital environment in overcoming gender problems are confirmed by other multiple research. Asy'ari et al. [29] shows that The Science Process Skills for all stages of scientific research are more developed in men, but does not investigate the reasons for this result. The reasons may have a social origin, restrictions associated with a greater burden of motherhood and housekeeping, etc. To align gender roles and employment, one should take into account not only higher education itself and the digital environment, but also the quality of use of these factors, in particular by women. Thus, Kharouf and Daoud [38] argue that the attitudes towards gender roles tend to be gender-balanced among older youth who live in urban

areas, study in humanitarian colleges, and whose mother's educational level is high. However, we argue that the role of the family in promoting women's independence has not yet been sufficiently studied. Though, researchers indicate that the higher educational status of the mother, as well as her status of work, income level and social position, are crucial in the gradual accumulation of positive changes in traditional and post-traditional societies [17,24,35]. Our research highlights the importance of institutionalising the concept of gender in higher educational institutions.

Achieving gender equality even in digital environment requires changes in socialisation of all institutions, especially higher education. Therefore, the results of this research highlight the need to review the patterns of socialisation inherited through the educational system in general and in universities in particular, and to use a balanced educational approach that seeks to reproduce unbiased social structures [38].

5 Conclusion

The key purpose of the study was to overcome gender stereotypes in the process of social development and higher education in digital environment amongst the students of Al-Farabi Kazakh National University. The findings indicate that the university studies and higher education in digital environment are among the critical stages of social development and help to overcome gender stereotypes among students. An analysis of the studies stipulates the following. The choice of future professional activity is determined by the existing gender stereotypes of male and female types of professional activity regardless of the influence of modern digital content. While other qualities (which are necessary for particular professional activity) are not taken into account, students' attitudes, to some extent, depend on the type of faculty. Thus, "lyricists" more often than "physicists" accept the thesis about the importance of education and career for a woman (66% and 57% - the difference is significant at the 5% level). However, the respondent's gender remains the primary criterion for differences.

Nevertheless, further research needs to be conducted to establish a more robust understanding of studying the impact of social development and higher education in digital environment on transformation in gender perceptions of male and female behaviour patterns and social roles in higher education institutions. Thus, the social development of a person attaining higher education plays a more critical role in overcoming gender stereotypes than previously thought.

6 References

- [1] Chang, E.H., Milkman, K.L. (2020). Improving decisions that affect gender equality in the workplace. *Organizational Dynamics*, 49(1): 100709. <https://doi.org/10.1016/j.orgdyn.2019.03.002>
- [2] Ellemers, N. (2018). Gender stereotypes. *Annual review of psychology*, 69: 275-298.
- [3] Alimo-Metcalfe, B., Alban-Metcalfe, J. (2005). Leadership: time for a new direction? *Leadership*, 1(1): 51-71. <https://doi.org/10.1177/1742715005049351>

- [4] Brackett, M.A., Rivers, S.E., Salovey, P. (2011). Emotional intelligence: Implications for personal, social, academic, and workplace success. *Social and Personality Psychology Compass*, 5(1): 88-103. <https://doi.org/10.1111/j.1751-9004.2010.00334.x>
- [5] Malik, S.I., Al-Emran, M. (2018). Social factors influence on career choices for female computer science students. *International Journal of Emerging Technologies in Learning*, 13(05): 56-70. <https://doi.org/10.3991/ijet.v13i05.8231>
- [6] Dy, A.M., Marlow, S., Martin, L. (2017). A Web of opportunity or the same old story? Women digital entrepreneurs and intersectionality theory. *Human Relations*, 70(3): 286-311. <https://doi.org/10.1177/0018726716650730>
- [7] Maric, J. (2018). The gender-based digital divide in maker culture: features, challenges and possible solutions. *Journal of Innovation Economics Management*, 3: 147-168. <https://doi.org/10.3917/jie.027.0147>
- [8] Bar-On, R. (2010). Emotional intelligence: an integral part of positive psychology. *South African Journal of Psychology*, 40(1): 54-62. <https://doi.org/10.1177/008124631004000106>
- [9] Goleman, D., Boyatzis, R.E., McKee, A. (2013). *Primal leadership: Unleashing the power of emotional intelligence*. Harvard Business Press, Brighton, USA.
- [10] Kennie, T. (2010). Academic leadership: Dimensions and dynamics. http://www.bristol.ac.uk/medialibrary/sites/staffdevelopment/documents/AcademicLeadership_Dimension&Dynamics.pdf
- [11] Mayer, J.D., Salovey, P., Caruso, D.R. (2008). Emotional intelligence: New ability or eclectic traits? *American psychologist*, 63(6): 503-517. <https://doi.org/10.1037/0003-066x.63.6.503>
- [12] Nadim, A., Singh, P. (2005). Leadership styles and gender: A re-examination and extension. *International Journal of Human Resources Development and Management*, 5(3): 333-340. <https://doi.org/10.1504/ijhrdm.2005.007108>
- [13] Northouse, P.G. (2016). *Leadership: Theory and Practice 7-th edition*. Western Michigan University, Kalamazoo, USA.
- [14] Purvanova, R.K., Bono, J.E. (2009). Transformational leadership in context: Face-to-face and virtual teams. *The Leadership Quarterly*, 20(3): 343-357. <https://doi.org/10.1016/j.leaqua.2009.03.004>
- [15] Bernik, A., VusiÄ, D., Milkovic, M. (2019). Evaluation of gender differences based on knowledge adaptation in the field of gamification and computer science. *International Journal of Emerging Technologies in Learning*, 14(08): 220-228. <https://doi.org/10.3991/ijet.v14i08.9847>
- [16] Navarro, O., Sanchez-Verdejo, F.J., Anguita, J.M., Gonzalez, A.L. (2020). Motivation of university students towards the USE of information and communication technologies and their relation to learning styles. *International Journal of Emerging Technologies in Learning*, 15: 202-218. <https://doi.org/10.3991/ijet.v15i15.14347>
- [17] Kent, T.W., Blair, C.A., Rudd, H.F., Schuele, U. (2010). Gender differences and transformational leadership behavior: Do both German men and women lead in the same way. *International Journal of Leadership Studies*, 6(1): 52-66.
- [18] Grint, K. (2000). *The arts of leadership*. Oxford University Press, Oxford.
- [19] Duffy, B.E., Pruchniewska, U. (2017). Gender and self-enterprise in the social media age: A digital double bind. *Information, Communication & Society*, 20(6): 843-859. <https://doi.org/10.1080/1369118x.2017.1291703>
- [20] Christopher, B. (2008). Selected Topic-Why Are Women So Strange and Men So Weird? *Business Credit*, 110(2): 4.

- [21] Klenke, K. (2017). *Women in leadership: Contextual dynamics and boundaries*. Emerald Group Publishing, Bingley, UK.
- [22] Jameson, J., McNay, I. (2007). *Ultimate FE leadership and management handbook*. Continuum International Publishing Group, New York, USA.
- [23] Singh, S. (2017). Bridging the gender digital divide in developing countries. *Journal of Children and Media*, 11(2) 245-247.
- [24] Mollaeva, E.A. (2017). Gender Stereotypes and the Role of Women in Higher Education (Azerbaijan Case Study). *Education and Urban Society*, 50(8): 747-763. <https://doi.org/10.1177/0013124517713613>
- [25] Mohr, G., Wolfram, H.J. (2008). Leadership and effectiveness in the context of gender: The role of leaders' verbal behaviour. *British Journal of Management*, 19(1): 4-16. <https://doi.org/10.1111/j.1467-8551.2007.00521.x>
- [26] Gritton, J. (2011). Leadership lessons from Pandora and beyond. In *Experiential Learning in Virtual Worlds: Opening an Undiscovered Country*. Inter-Disciplinary Press, pp. 93-105.
- [27] Jameson, J. (2013). *Leadership in post-compulsory education: Inspiring leaders of the future*. David Fulton Publishers.
- [28] Arcy, J. (2016). Emotion work: considering gender in digital labor. *Feminist Media Studies*, 16(2): 365-368. <https://doi.org/10.1080/14680777.2016.1138609>
- [29] Asy'ari, M., Fitriani, H., Zubaidah, S., Mahanal, S. (2019). The Science Process Skills of Prospective Biology Teachers in Plant Cell Material Based on Gender. *International Journal of Emerging Technologies in Learning*, 14(19): 168-178. <https://doi.org/10.3991/ijet.v14i19.11208>
- [30] Cleuziou, J., Drenberger, L. (2016). Gender and nation in post-Soviet Central Asia: from national narratives to women's practices. *Nationalities Papers*, 44(2): 195-206. <https://doi.org/10.1080/00905992.2015.1082997>
- [31] Urbaeva, J. (2019). Opportunity, social Mobility, and women's views on gender roles in Central Asia. *Social work*, 64(3): 207-215. <https://doi.org/10.1093/sw/swz011>
- [32] Hoskins, J. (2012). "God's Chosen People": Race, Religion and Anti-colonial Struggle in French Indochina. Asia Research Institute, National University of Singapore.
- [33] Das, K. Das, M. (2018). Women and Wedlock: A Study on Female Marital Status among the Hindus, Muslims and Christians of Assam, India. *Space and Culture, India*, 6(1): 107-119. <https://doi.org/10.20896/saci.v6i1.294>
- [34] Jarrah, H.Y., Serhan, H.S. (2019). The Role of Cultural and Artistic Institutions in Promoting the Values of Tolerance and Coexistence in the United Arab Emirates. *Space and Culture, India*, 7(3): 254-265. <https://doi.org/10.20896/saci.v7i3.536>
- [35] Kudaibergenova, D.T. (2016). Between the State and the Artist: Representations of Femininity and Masculinity in the Formation of Ideas of the Nation in Central Asia. *Nationalities Papers*, 44(2): 225-246. <https://doi.org/10.1080/00905992.2015.1057559>
- [36] Moghadam, Z.B., Khiaban, M.O., Esmacili, M., Salsali, M.A. (2018). Review of the High Level of Education and Reduced Fertility in Iranian Women: Have Women Been Empowered. *International Journal of Women's Health and Reproduction Sciences*, 1(6): 2. <https://doi.org/10.15296/ijwhr.2018.18>
- [37] Tripathy, M. (2018). Breaking the Code of Gender Barrier to Leverage the Position of Women in Indian Workplaces. *Space and Culture, India*, 6(3): 180-193. <https://doi.org/10.20896/saci.v6i3.328>
- [38] Kharouf, A.E., Daoud, N. (2019). Gender Role Attitudes among Higher Education Students in Jordan. *Mediterranean Journal of Social Sciences*, 10(4): 63-75. <https://doi.org/10.2478/mjss-2019-0053>

- [39] Murtaza, K.F. (2012). Women empowerment through higher education in Gilgit-Baltistan. *International Journal of Academic Research in Business and Social Sciences*, 2(9): 343.
- [40] Sur, E. (2015). Politics of Locating Muslim Women in Islamic Discursive Tradition in India. *Space and Culture, India*, 3(1): 4-16. <https://doi.org/10.20896/saci.v3i1.135>

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