SOCIETY | REVIEW ARTICLE

Review of factors affecting gender disparity in higher education

Zakee Saadat¹*, Sultana Alam¹ and Mobashar Rehman²

Abstract: Gender disparity in higher education is changing whereby female are dominating male students. This paper is an attempt to identify the factors that are causing less male participation in higher education based on a systematic review of the literature. To conduct a systematic review, PRISMA statement guidelines are used. Electronic databases were searched resulting in retrievals of 4050 articles. Due to the limited literature on male disparity, 18 highly relevant peer-reviewed studies were selected from 2010 to 2019. The review of selected studies suggested factors that are categorized into eight segments. Based on the identified factors, a comprehensive conceptual framework has been developed. The findings of this paper are substantial and identified factors that can be used strategically to comprehensively study the gender disparity in higher education as a future way forward.

Subjects: Gender; Gender Inequality; Education Studies; Higher Education

Keywords: gender; disparity; higher education; factors

1. Introduction

The higher education sector is going through major changes in terms of gender participation. Historically, male students dominated higher education. In the early 1900s, male students were in

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PUBLIC INTEREST STATEMENT

Higher education strives to get gender equality globally. Currently, females are outnumbering males in higher education institutions, which has resulted in the “reversal of the gender gap” in most countries of the world. This changing gender gap poses the questions regarding low male enrollments in higher education institutions, thus raising a sheer need to study the factors that are affecting the decision of male and female students to pursue higher education. The existing literature is very limited regarding the male students failing to pursue higher education. In this context, this study has conducted a comprehensive review of the literature to identify personal, social, financial and educational factors that affect the students’ decision to pursue higher education. A comprehensive conceptual model has been established to help understand the decision process of male and female students. The findings of this study will serve pathway for studying low male participation in higher education institutions.
majority in higher education, and there were very few female students. This scenario changed in the mid-1990s and females rapidly started gaining strength in higher education (Morris, 2011; Parvazian et al., 2017). As a result, at the end of 1990, the gender gap has been more disadvantaged for males (Vincent-Lancrin, 2008). Female participation reached more than 55% in higher education (Broeke & Hamed, 2008). Male students started falling behind in early 1992 and the gap between male and female participants started increasing with each passing year (National Center for Educational Statistics, 2010). It was referred to as reversing the gender disparity scenario whereby females are more inclined toward higher education and are more interested to pursue higher education. Van Bavel et al. (2018) referred to it as reversed gender gap dilemma in higher education institutions. The trend of reverse gender dilemma was firstly observed in educational institutions of developed countries (Esteve et al., 2012).

In developed countries, evidence of the female majority in higher education is prevailing over the last three decades. Vincent-Lancrin (2008) found the changing gender gap in developed countries from 1980 to 2007. The study stated that for the year 1985 only five countries out of 18 OECD countries have a female majority in higher education while in 2005, 16 countries have more female participation as compared to male participation in higher education. This study also referred to 1.3 women as compared to 01 male in higher education institutions of OECD countries.

The trend of changing gender participation in higher education is not limited to some countries only, even countries like the UK are having the same gender dynamics. Female participation has increased by six-fold in the last decade as the Higher Education Policy Institute in the UK referred to it as a “national scandal”. This engaged a completely new policy debate on changing gender participation in higher education where the boys are at stake for being left out of higher education.

The United States has observed the same reversal of gender participation in higher education. Female students are dominating in higher education, especially in the south and north America including 56% of female participation in Higher education (ASSAF, 2016). US Census Bureau (2018) published stats on age and education group, which reflects that from the age group of 25–40 there are more females with higher education degrees. Similarly, Ireland has a gender imbalance in higher education as 64% of females transit to higher education, whereas, only 36% of males go for higher education degrees (O'Connor et al., 2015). This trend of changing gender participation is not limited to the developed world, some developing countries have also started facing the same results in higher education.

Developing countries in Asia also have similar distributions of males and females in higher education. The countries that are facing less male participation in HEIs are Indonesia, Malaysia and the Philippines. Particularly, in Malaysia, females are higher in number in the education sector and this situation started prevailing in the last decade. The term “lost boys” was coined for disadvantaged male students in HEIs of Malaysia (Wan, 2018). Statistics show that those females are continuously outnumbering male students in higher education institutions in Malaysia. UNESCO (2018), published the statistics of the education distribution among gender, in which females count for 56% of participation in higher education institutions of Malaysia for the year 2016–2017. In the same year, the gross enrollment of female students was 45% as compared to 35% of males. The statistics show that female participation in higher education increased persistently in later years (Ministry of Education, 2017).

UNESCO (2018) data set also states that females count for 58% whereas males are 44% for the year 2017. Tienxhi (2017), found that most public sector universities have more female participation as compared to private universities. This study also found the Gender Parity Index (GPI) for the year 2017, which counts for 1.34 in public sector institutions referring females way more advantageous in public sector Universities of Malaysia. Similarly, Wan (2018) also found similar trends in female participation stating that this imbalance in participation of males and females can be a major cause of social imbalance in the society. The severity of this gender reversal was also highlighted in a government study where the term “lost boys” was coined in
Malaysia Education Blueprint 2013–2015. It was also emphasized to have a deep understanding of this gender reversal in higher education as leftover boys can result in societal instability for the country (Ministry of Education, 2013).

To find out the factors affecting gender disparity in higher education institutions, it is crucial to understand the decision-making process that students undergo for pursuing higher education. It is equally important to look for the factors that affect the decision process of students. For this purpose, the present work aims to conduct a contemporary literature review of factors that affect the decision process of students for transmitting to higher education programs. Moreover, this study also aims to highlight the factors that affect students’ decisions extensively in Malaysian higher education and another context as well. For the said purpose, following question has been formed to answer the present research gap.

2. Research question

- What are the factors identified through literature that affect the gender’s decision in pursuing higher education?

- What are the factors causing gender disparity in HEIs of Malaysia?

3. Method

This systematic research analysis is conducted by following the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) statement (Moher et al., 2015). The PRISMA method allows for conducting systematic research through quality enhancement and bias reduction. These two are significant for the selection of the PRISMA technique in this particular systematic review analysis.

4. Search strategy

To select the relevant articles, the databases of ERIC, Science Direct, Scopus, ACM and Publons (web of science) were searched. The timeline selected for these studies was 2010 to 2019. The studies from both qualitative and quantitative techniques were searched for the inclusion of all possible articles. During this search, wide range of explorations were used (see, Figure 1) for enhanced inclusiveness and then sorted based on the sensitivity of searches. The focus of the search was to look for peer-reviewed articles only, as it will be more authentic to have a balanced review of relevant literature. The studies were selected based on prescribed inclusion and exclusion criteria and selected articles were reviewed comprehensively (Table 1).

*articles did not include higher education/related to other publication

** Based on Inclusion/Exclusion Criteria

Figure 1. Data sources selection criteria.
Table 1. Inclusion/exclusion criteria

Inclusion Criteria

- Studies on factors affecting gender disparity in higher education or factor affecting student intention to pursue higher education.
- Studies including both qualitative and quantitative methods and the research design section were independent (any research design).
- Studies published only in English as a language.
- Studies include all the higher education and higher secondary school level.
- Studies in the subject of social sciences.
- Studies from all the countries
- Studies Published from the year 2010 to 2019

Exclusion Criteria

- Studies where education level was not determined
- Studies with variables other than social sciences
- Studies conducted on single subjects like Physics, economics and medical

Table 2. Overview of data sources

| Databases Accessed (electronic) | ERIC | Science Direct | Scopus | Web of Science | Emerald | ACM |
|---------------------------------|------|----------------|--------|----------------|---------|-----|
| Timeline                        | 2010–2019 | 2015–2019 | 2015–2019 | 2015–2019 | 2015–2019 | 2015–2019 |
| Language                        | English | English | English | English | English | English |
| Search Field                    | Social Sciences/Management Sciences | Social Sciences/Management Sciences | Social Sciences/Management Sciences | None (Due to limited results) | None (Due to limited results) | None (Due to limited results) |
| Search Sting                    | (Gender And Higher Education) OR (Gender Disparity AND Higher Education) OR (Gender Differences AND Higher Education) OR (Factors AND Affecting AND Gender Disparity AND Higher Education) OR (Male AND Disparities AND Higher Education) OR (Changing AND (Gender AND ROLE) AND (Higher education OR (Changing AND Gender AND Disparities AND Higher Education) OR (Factors AND Causing Gender Disparity AND Higher Education) OR (Gender AND Decision AND Higher Education)) |

5. Study validation

To ensure the validation of selected articles, three individual research experts were consulted. All the relevant articles were included or excluded with the consent of three area experts. The retrieved articles were shared among all three area experts and a discussion was conducted to have a good opinion on the articles. A comprehensive session of discussion led to the shortlisting of articles after complying with the inclusion/exclusion criterion.

Figure 2 shows the details of selected publications. These are categorized based on search venues. The majority of accessed articles are from ERIC, Science Direct, Web of Science and Emerald, whereas relatively fewer articles were found in ACM and Scopus.

Figure 3 further shows the details of articles selected and categorized yearly. The majority of studies are from the years 2019, 2018 and 2016 whereas a relatively less percentage of studies are from 2010 to 2015. This shows that 70% of the studies are from recent times and contemporary.

6. Findings from review of literature

The systematic review of literature has led to interesting findings. In these findings, many diverse themes have emerged. To classify these themes, some general categories have been extracted from these themes, and actual themes have been categorized as sub-themes. This classification will make
themes more understandable. Figure 4 above shows the formulation of themes based on sub-themes by referring to several studies. These sub-themes extracted during this review are discussed in detail below in table 2. Whereas, the summary of selected studies is given in table 3, table 4.

7. Gender role

Gender role refers to an individual’s beliefs and attitudes about men and women. It is the level of judgment by which a person assesses the appropriateness of characteristics and behavior of men and women, it is also known as gender role ideology (Korabik et al., 2008). These gender roles fall in a unidirectional continuum that ranges from traditional to egalitarian which traditionally refers to more conventional roles and egalitarian refers to equal role distribution of males and females, respectively. These roles often define interests that influence the decisions of males and females (FAO 2013). Similar is the case for higher education and gender. Male and females decide on higher education differently and gender roles tend to influence these decisions (El Kharouf & Daoud, 2019).

In southeast Asia, similar results were found with gender’s decision toward higher education. Historically gender participation was very skewed in Asian countries, and females were less in
| Author            | Region of Study                  | Sector                   | Aim                                           | Study Technique | Study Methodology | Factors Studied                                                                 |
|-------------------|----------------------------------|--------------------------|-----------------------------------------------|-----------------|-------------------|---------------------------------------------------------------------------------|
| (Rughoobur-       | Small Island developing countries| Higher education         | Factors affecting student choice in tertiary education | Causal study    | Secondary data    | Gender, support facility, environment, education quality                        |
| Seetah, 2019)    |                                  |                          |                                               |                 |                   |                                                                                  |
| (Husain & Sarkar, | India                            | Higher education         | Gender disparities in HE; female robustness at HE studies | Exploratory study | Survey             | Gender, age, family, religion, socioeconomic status                              |
| 2011)             |                                  |                          |                                               |                 |                   |                                                                                  |
| (Wan, 2018)       | Malaysia                          | Higher education         | Gender disparities in HEIs                    | Exploratory study | Secondary data    | Gender, household spending, job expectations, field of study, achievement, role of government |
| (Tienxhi, 2017)   | Malaysia                          | Higher education         | Gender gap in Malaysian public sector universities | Exploratory study | Secondary data    | Gender Parity expected returns in terms of job, academic performance, socialization |
| (Castro et al.,   | Peru                             | Higher education         | Association of finances, skills, family background on HE decision | Causal study    | Survey             | Gender, family background, parental education, financial resources              |
| 2016)             |                                  |                          |                                               |                 |                   |                                                                                  |
| (Afar & Rashid,   | Pakistan                         | Higher education         | Higher education in Asian context; attitude towards HE in Pakistani universities | Causal study    | Survey             | Gender, attitude, self-trait, higher education, educational achievement          |
| 2018)             |                                  |                          |                                               |                 |                   |                                                                                  |
| (Sá & Tavares,    | Portugal                         | Higher education         | Choice, consistency in success of higher education | Causal study    | Secondary data    | Gender, age, consistency, GPA                                                   |
| 2018)             |                                  |                          |                                               |                 |                   |                                                                                  |
| (Nausheen et al., | Pakistan                         | Higher education         | Motivational belief, discipline and its relationship with gender | Causal study    | Survey             | Gender, motivational belief, subjects                                            |
| 2019)             |                                  |                          |                                               |                 |                   |                                                                                  |
| (Shields & Peruta| USA                              | Higher education         | Social media and university decision          | Exploratory study | Survey             | Gender, social media, choice of university                                       |
| 2019)             |                                  |                          |                                               |                 |                   |                                                                                  |
| (Carlhed, 2017)   | Scandinavian Countries           | Higher education         | Student enrolment, efficiency and completion  | Exploratory study | Secondary data    | Efficiency, gender subject selection, completion                                 |
| (Menon, 2010)     | Cyprus                           | Higher education         | Factor influence students’ decision to enter higher education | Causal study    | Mix-method         | Parents, peers, economic factors, non-economics factors, career counselors, grades |
| (Edannur & Firsad,| India                            | Higher education         | Determinants of higher education (Theory of Planned Behavior) | Cross-sectional | Survey             | Gender, attitude subjective norms, perceived behavioral control                  |
| 2015)             |                                  |                          |                                               |                 |                   |                                                                                  |
| (Jung & Lee, 2019)| South Korea                      | Higher education         | Factors affecting pursuing master’s degree in South Korea | Causal study    | Secondary data    | Gender, age, family, SES status, discipline                                     |

(Continued)
terms of participation in higher education (Olson-Strom & Rao, 2020). Over time, female participation has increased many folds in Asian countries. (Mukerji & Tripathi, 2016) noted considerable change in enrollment in higher education institutions in Asia. This transition of the female is due to changing consideration of gender roles in the society as females are no more considered to be only housewives or staying at home. Females have realized that education can change their role for advancement towards jobs, thus responding to the changing needs of society and reducing the opportunity cost for their families. Similar to some other Asian countries, Wan (2018) found the changing gender participation in Malaysia where females are outnumbering male students for the last two decades. Wisowski et al. (2017) also discussed the role of decision-making and gender in which gender does vary in their decision to pursue higher education thus leading to more female participation in Malaysian HEIs. Some other studies have also evidently shown a significant relationship between gender roles and the decision to take higher education (Husain & Sarkar, 2011; Jung & Lee, 2019; Menon et al., 2017; Rughoobur-Seetah, 2019). All these spheres concluded that gender roles do have an impact on the decision to take higher education and it varies for both males and females so it should be considered an important determinant of educated decision for future studies.

8. Attitude

Attitude exerts a dynamic response on individuals’ decisions based on mental state. In this mental state, individuals tend to influence by experiences, situations and interactions with the system (Afzal & Rashid, 2018). Similar is the case for students and education. Students tend to develop themselves in the education system and attitude plays a pivotal role in this decision process (Md Talib et al., 2019). (Lovelace & Brickman, 2013) referred to attitude as positive or negative feeling towards education and it is an inclination towards learning. Attitude is not easy to measure due to its abstract nature, while it is equally difficult to measure in the case of students (Afzal & Rashid, 2018). Clark and Hair et al. (2019) highlighted the abstract nature of attitude measurement by addressing the validity and limitations of gauging attitude. To meet the challenges of attitude measurement, many studies consider subcomponents like efficacy and motivation to measure
| Themes extracted | GENDER | PERSONAL FACTORS | SOCIAL FACTORS | SOCIO-ECONOMIC BACKGROUND | CAREER EXPECTATION | EDUCATIONAL ACHIEVEMENT | DISCIPLINE | INSTITUTIONAL FACTORS |
|------------------|--------|-----------------|----------------|---------------------------|-------------------|-------------------------|------------|----------------------|
|                  | Gender | Attitude, motivation | Parental influence, peer influence, Socialisation | Economic background, financial resources, financial affordability | Career prospects, career expectancy outcome, career expectations | Previous academic performance, academic achievement, academic record | Subject selection, discipline of Interest, area of specialization | Institutional factors, university and governmental involvement |

Note: Themes are extracted on the basis of selected studies.
attitude for higher education (Darwish, 2016; Menon et al., 2017; Nausheen et al., 2019). While some studies have considered an attitude scale to measure student attitudes towards higher education (Afzal & Rashid, 2018; Darwish, 2016). These studies have shown a significant impact on attitude towards higher education decisions making, and it is an important determinant. Students with a positive attitude toward education tend to pursue higher degrees as compared to their counterparts (Nausheen et al., 2019). These findings conclude that attitude is an important factor when deciding on pursuing higher education so, in this context, it should be considered an important factor in the student decision process.

9. Motivation
Motivation is the desire for achieving any goal, it simulates the set of purposive actions for achieving future goals (Koch et al., 2015). It is also referred to as a process by which goal-directed activity is initiated and maintained (Menon et al., 2017). Motivation can lead to individuals' wants and intentions. Yilmaz et al. (2017) have shown that motivation has a significant impact on the intentions of students. Similarly, motivation has strong significance with career orientation and this career orientation leads to the development of education interest (Edgar et al., 2019). Studies have also shown a significant relationship between motivation and student achievement (Wibrowski et al., 2017). Similarly, Darwish (2016) finds out that there is a significant relationship between motivation, achievement and intention. These findings show that motivation has its significant impact on students' decisions to pursue higher education, although there are numerous studies on motivational belief and educational achievement, but very limited on motivation and decision to pursue higher education specifically in context of gender.

10. Parent influence
The most important determinant of student decisions is family influence (Husain & Sarkar, 2011). Family influence mainly refers to parental influence on the decision-making of the student. It is stated as individuals' educational decision-making based on parents (Jung & Lee, 2019). Parental influence refers to the characteristics like level of parent education, parent support, approach towards education, religious affiliations and occupation. These are considered directly relatable to the parent's influence (Rughoobur-Seetah, 2019).

In an educational environment, parent influence does have strong implications on students' decisions. Studies have suggested that there is a strong association between education and parental influence (Castro et al., 2016; Jung & Lee, 2019; Menon, 2010; Rughoobur-Seetah, 2019). It is due to this fact that students spend most of the time with their parents at an early age and parents are an integral part of the student's decision-making process. Husain and Sarkar (2011) considered parental support as the encouragement for children to pursue higher education accompanied by making financial savings and planning for children's tertiary education qualifications. When the family expects their children's tertiary education, it encourages them to obtain a good educational qualification. Family or parents' encouragement and support directly affect the student's decision on pursuing higher education (Koe et al., 2012). Behavioral economics studies have also suggested a strong association between parents’ influence on the educational decision of their children (Koch et al., 2015). Students who decided to pursue tertiary education were to
fulfill their parents’ hope. Students feel an obligation to promote well-being, morale or the status of their family by entering tertiary education institutes.

11. Peer influence
Peer influence is among the strongest determinants of individual decisions making, especially from a sociological perspective (Andrew & Flashman, 2017). Peer influence plays a crucial role in shaping the social, emotional and educational attitudes of the students (Bankole Adeyemi, 2019). Peers exert strong association on shaping the choices of individuals, especially at an early age and they decide things like fashion, education attainment, and academic performance based on these choices (Rughoobur-Seetah, 2019). Many other studies have shown a strong impact of peer influence on education performance, and achievement (Menon, 2010; Sánchez & Singh, 2018). It can be implicit that peers’ influence has an impact on students’ decisions making in higher education.

Socio-Economic Status

While studying the decision process in education it is important to consider the socioeconomic status of students. Studies have used multiple indicators for assessing socioeconomic status (SES) including family income, family size, family structure and parental occupation (Darwish, 2016; Sánchez & Singh, 2018; Thomson, 2018). It is evident from research that the socioeconomic background effect intention of students in many ways, especially educational achievement and performance (Thomson, 2018). Referring to the financial prospects of the socioeconomic status of students, Castro et al. (2016) noted the significant impact on educational intention. Sánchez and Singh (2018) found similar results for socioeconomic status and educational achievement. Further to these, Darwish (2016) & Menon et al. (2017) studied the impact of socioeconomic status and found that it has a significant association with student attitude towards persuasion of higher achievement in education and more educational achievement leads to a higher level of education. In continuation, Thomson (2018) also showed in his study that students with the less privileged or poor economic backgrounds are less likely to perform in higher education and they are less likely to pursue education. Thus, all of these findings from the literature lead to the understanding that socioeconomic status does have an impact on the decision to take higher education for students.

12. Career expectations
Career expectation in educational settings refers to the expectations of students for future work. Students pursue higher education to secure their future jobs (Tomlinson, 2008). This shows the concern for job prospects for students. When deciding on higher education, students do consider career prospects as an important catalyst (Donald et al., 2018). Some studies have also referred to it as returns to the education that the student will expect to earn after getting a higher education degree (Menon et al., 2017; Rughoobur-Seetah, 2019). Students do consider career prospects as an important count for higher education decisions as it also refers to their future financial returns to them. Tienxhi (2017), discussed the importance of expected returns to education from a Malaysian perspective. The study referred to it as an important component of higher education decision as male prefers to choose a career at an early age for development as independent individuals whereas female tend to act differently in this sphere. This shows that while studying the decision of higher education from a Malaysian student’s perspective, it is crucial to have a career prospect as an important determinant.

13. Academic performance
Academic performance refers to the achievement of students in previous education. From the perspective of the student higher education counts as an important factor in determining educational achievement because whatsoever a student possesses is reflected through previous educational qualifications (Maziah Wan Ab Razak et al., 2019). Valli Jayanthi et al. (2014) observed a similar trend while observing the relationship between academic performance and education. Additionally, Valli Jayanthi et al. (2014) also found the significant impact of gender on academic
performance that varies both for males and females. (Wan, 2018) observed the same pattern of academic achievement among males and females, particularly in Malaysian undergraduate students. Numerous other studies have also indicated a similar trend in gender and academic performance while studying the higher education intentions of the student (Afzal & Rashid, 2018; Darwish, 2016; Menon, 2010). Other studies have also found that male has been disadvantageous in their academic performance, whereas female excel ahead in performance leading to their increasing numbers in higher education institutions (Wan, 2018). Ismail (2015) found the similar results, showing significant impact of academic achievement on academic qualification of students further to that female are more augmented in their academic achievement. As most of the universities consider the model of meritocracy, while inducting students so previous academic achievement counts as a crucial factor towards achieving higher education. These findings suggest that previous academic achievement can be considered as an important factor while studying students’ decision towards higher education.

14. Area of study
Area of study refers to the specialized subject that students have selected for studies. Choice of the subject has its implications for higher education. Students’ choice to pursue higher education significantly depends on their choice of subject (Wan, 2018). Some subjects are different where it is easy for students to go out for market jobs early in their education, whereas all the subjects are not the same (Menon et al., 2017). Tienxhi (2017) has also addressed a similar trend in Malaysian students addressing that some of the students leave early in their education as it is easy for them to find jobs whereas for some other subjects it is important to have higher education. In this context, discipline can be considered a determinant of the decision to take higher education.

15. Institutional factors
Institutional factors refer to the institutional support of the student. In this term role of educational institutions and the role of government, both are considered. Wan (2018) and Alcaine (2016), considered the role of the university and the role of government as an important determinant of students’ decisions toward higher education in Malaysia. Students from low socioeconomic backgrounds particularly need institutional support for their higher education. This is determined by what students are perceiving from institutions and government as they get help towards higher education otherwise they are left behind with no other option to leave their education for earning their livings. Similarly, scholarship programs from the institution can help the students who need them. This encourages them to pursue their education for a better future. Students from different socioeconomic backgrounds require changing needs from the institution (Tienxhi, 2017). Afzal and Rashid (2018), found that the higher education commission a government governed department has significantly changed the preferences of the student toward postgraduate studies. Students feel much more confident and secured while pursuing higher education. These findings tend to consider the institutional factor as an important count in the decision to pursue higher education.

16. Conceptual model
This extensive review of literature has resulted in some important extraction as a conclusion for the student’s decision of higher education. A comprehensive conceptual model has been developed based on this review of the literature. It will help identify the factors that affect the decision process of students in higher education studies and understand the disparities among gender. This conceptual model further entails the relationship between factors and decisions of students for higher education that vary among males and females (see, Figure 5).

This conceptual model is developed based on the above systematic review of the literature. It determines the factors that influence the decision of students about higher education. It represents that there are multi-dimensional factors that are involved in the decision process of higher education. Based on the review it has been found that factors including gender roles, attitude, motivation, family influence, peer influence, career expectations, academic performance,
institutional role and discipline play important role in determining the decision of gender to pursue higher education (Afzal & Rashid, 2018; Andrew & Flashman, 2017; Edannur & Firsad, 2015; Rughoobur-Seetah, 2019).

17. Conclusion
It is the fact that females are outnumbering male students thus causing gender imbalance in higher education institutions. To address this issue, it is important to determine the factors that are causing the imbalance in gender involvement whereby male students are being deprived of higher education. In quest of countering this gender imbalance, an extensive systematic review of the literature has been conducted that demonstrated the fact that the decision to pursue higher education plays a pivotal role in gender enrolment. This decision to pursue higher education relies on multi-dimensional factors. The literature about decision factors in pursuing higher education is characterized by diverse and heterogeneous research findings. Understanding these factors can serve as a critical source for understanding the higher education decision of male and female students. A total of 10 critical factors are identified and characterized in this study that serves as a basis for the decision to pursue higher education and varies among male and female students. The classification of factors through a conceptual framework provides a comprehensive understanding of decision analysis in higher education. The classification includes personal, social, financial and academic factors that affect the decision process for students to pursue higher education.

Personal factors involving attitude and motivation influence the students' decision to pursue higher education. Attitude reflects the intention that motivates the individual to pursue higher education. These attitudes and motivations vary among male and female students due to certain backgrounds that set the priorities for students (Fajčíková & Urbancová, 2019). The attitude is also translated by the understanding of an individual based on gender. In this context, gender roles are a preliminary mind mapping factor that reflects on male and female students' decisions to pursue higher education. The time has changed and awareness among societies has influenced more female involvement in higher education. This has resulted in greater female participation in higher education institutions (Parvazian et al., 2017). Similarly, males are assumed to work early this understanding will reflect male students' intention to leave education early and expedite career options (Cunningham, 2008). In most developing countries, it is the case that males are expected
to work early whereas over time females have gained access to higher education thus resulting in greater involvement of female participants in higher education.

The background of students tends to influence their decision to pursue higher education. It is largely categorized by social and financial factors (Britt et al., 2017; Terríquez & Gurantz, 2015). These factors demonstrate the attitude that translates the motivation for their children to pursue higher education. The social factors include parents and peer influence whereas financial factors include the financial conditions of the students. The parents are basic learning institutions for their children. They set up a belief system for their children that reflects largely on their educational decision. These beliefs are different for male and female students as parents tend to influence both differently (Ma, 2009). It has been observed that children of educated parents tend to have higher education in comparison to less-educated parents. The reason lies in the fact that educated parents guide and influence their children more proactively to pursue higher education by highlighting the importance of education. Similarly, this affects the academic achievement of the students. The students with higher academic achievement have greater chances of getting higher education.

In financial factors, the student’s income is largely translated as their parent’s income which is why it is gauged by the income level of their parents (Benner et al., 2016). The students with higher economic and better financial backgrounds have a greater tendency to pursue higher education whereas students with lower socioeconomic backgrounds tend to leave education (Naz et al., 2020). In this context, males are largely affected where they have to leave education early for their income generation thus reflecting largely on students’ intention to pursue higher education.

In a similar way, educational achievement and institutional role tend to have associated with the decision to pursue higher education. Male and female members have different tendencies to perform in their educational activities (Ghazvini et al., 2011; Lim et al., 2022). It has been observed that females and more keen to their educational goals in comparison to male students (Naz et al., 2020). Higher educational achievement tends to have a greater influence on student’s motivation to pursue higher education thus benefiting the female over the male students. In common understanding, this illustrates the mechanism that females due to their advanced educational achievement have a greater tendency to secure positions in higher education institutions based on merit. This entails that females are more likely to enter higher education institutions.

Thus, the study concludes that factors affecting the decision to pursue higher education are largely categorized as individual, social, financial, and educational. There is a sheer need to conduct research for analyzing these factors based on gender for understanding the causes of gender disparities in higher education institutions. It is equally needed to identify which of these above factors count most significantly for hindering male students toward higher education as existing literature largely focuses on female participants whereas there is a need for time to study these factors for male students.

**Funding**
The authors received no direct funding for this research.

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Saadat et al., Cogent Social Sciences (2022), 8: 2076794
https://doi.org/10.1080/23311886.2022.2076794

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**Disclosure statement**
No potential conflict of interest was reported by the author(s).

**Citation information**
Cite this article as: Review of factors affecting gender disparity in higher education, Zakee Saadat, Sultana Alam & Mobashar Rehman, Cogent Social Sciences (2022), 8: 2076794.

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