Where are Women Engineering Faculty in Ethiopia? The Stubborn Gender Disparity in Engineering Faculty in Ethiopian Universities

Jemal Bedane Halkiyo, Arizona State University

Jemal Halkiyo is a Ph.D. Candidate in Engineering Education and Graduate Teaching Assistant at Arizona State University. Mr. Halkiyo has a Bachelor of Science from Hawassa University, and a Master of Science degree in Civil Engineering from Arba Minch University, both in Ethiopia. Mr. Halkiyo uses mixed methods to study his primary research interest: engineering education equity and inclusivity among diverse student groups: international and domestic undergraduate students in focus in the United States higher education institutions. In addition, Mr. Halkiyo is interested in broadening the participation of engineering education in Ethiopian universities to increase the diversity, inclusivity, equity, and quality of Engineering Education. He studies how different student groups such as women and men, rich and poor, students from rural and urban, and technologically literate and less literate can have quality and equitable learning experiences and thrive in their performances. In doing so, he focuses on engineering education policies and practices in teaching and learning processes, assessments, laboratories, and practical internships. Mr. Halkiyo has been teaching different Civil Engineering courses at Bule Hora University, Ethiopia, where he also served as a department head and conducted various research and community projects.

Sultan Bedane Halkiyu, Bule Hora University

Sultan Bedane Halkiyu pursued his Master of Science degree in Road and Transport Engineering and Bachelor's degree in Civil Engineering at Hawassa University (2017) and Jimma University (2015) respectively. Mr. Halkiyu is working as a lecturer at Bule Hora University, Ethiopia, and teaching different Civil Engineering courses. He is a mixed methods researcher and pursuing his research interests: quality of road construction, and transport/traffic mobility in urban areas. He is also interested in broadening the participation of engineering education in Ethiopian universities. Mr. Halkiyu has conducted some research in engineering education ecosystems and community service projects.

Abdisa Bedane Halkiyu, Bule Hora University

Abdisa Halkiyu is a Senior Lecturer in the Computational Science and Engineering College at Bule Hora University. He holds a Bachelor of Science degree in Applied Physics and a Master of Science degree in Astronomy, both obtained from Jimma University in Ethiopia. With a focus on learning theories, Mr. Halkiyu employs mixed methods to investigate how individuals can enhance their knowledge and skills through diverse learning approaches. His research primarily centers on creating equitable learning experiences in undergraduate physics and engineering education. In addition to his teaching and research endeavors, Mr. Halkiyu has actively engaged in various community service projects.

Roma Bedane Halkiyu, Arba Minch University

Roma Bedane Halkiyu holds a Bachelor's degree in Civil Engineering from Waliata Sodo University and a Master's degree in Construction Technology and Management from Arba Minch University in Ethiopia. Her research is centered on enhancing female involvement in STEM disciplines, with a specific focus on engineering. Roma is dedicated to breaking down obstacles that impede women's active participation in engineering and higher education, advocating for inclusivity and diversity in academic environments. Moreover, Roma currently holds managerial roles and leads Extreme Building, Road, and Bridge Construction PLC, contributing to construction projects in the Shashemene district of Ethiopia.

Demitu Geda, Bule Hora University

Demitu Geda is a graduate of Waliata Sodo University with a Bachelor's degree in Electrical and Computer Engineering and holds a Master's degree in the same field from Bule Hora University. Currently, Demitu is a faculty member, instructing electrical and computer engineering courses at Bule Hora University in Ethiopia. Her research enhances accessibility, quality, and equity in engineering education, ensuring inclusivity for all students irrespective of gender, religion, ethnicity, beliefs, or cultural backgrounds.

Dr. Nadia N. Kellam, Arizona State University

Nadia Kellam (she/they) is Associate Professor of Engineering and the Associate Director for Research Excellence within The Polytechnic School of the Ira A. Fulton Schools of Engineering at Arizona State University. She is a faculty in the Engineering Education Systems and Design PhD program. Dr. Kellam is an engineering education researcher and a mechanical engineer. She is also deputy editor of the Journal of Engineering Education and co-chair of ASEE's Committee on Scholarly Publications. In her research, she is broadly interested in developing critical understandings of the culture of engineering education and, especially, the experiences of marginalized undergraduate engineering students and engineering educators.

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Abstract

In developing countries, workforce diversity, such as faculty diversity in higher education, is important to drive key social justice and positively impact students' academic experiences. Despite Ethiopia's goal of transitioning to an industry-led economy and implementing a higher education policy emphasizing science fields, including engineering and technology, there is a significant gender gap in faculty representation. This study examines the issue regarding the limited gender diversity among engineering faculty in developing countries, focusing on gender disparities in Ethiopian higher education institutions. In addition, the study explores factors contributing to Ethiopian women's faculty underrepresentation. A mixed-methods approach was employed, including a quantitative analysis of the faculty gender composition of seven years and a qualitative analysis of interviews with faculty members. The findings suggest that key factors such as societal norms, cultural beliefs, gender biases, and work-life balance challenges hinder women's participation and advancement in engineering. The paper discusses research-informed recommendations to promote greater gender diversity and gender equity among engineering faculty and university faculty, hence contributing to the broadening of the participation of women faculty in engineering and Ethiopian higher education.

Keywords: engineering education, faculty, diversity, mixed methods, gender bias, cultural beliefs, Ethiopia

Introduction & Background

Gender diversity in academic institutions, particularly in engineering, is increasingly concerning worldwide [1], [2], [3]. Achieving gender equality in higher education is not only a matter of social justice but also crucial for fostering innovation, creativity, and diverse perspectives in academic research and teaching [4], [5], [6]. However, many countries continue to face challenges in ensuring equal representation of men and women in faculty positions, especially in Science, Technology, Engineering, and Mathematics (STEM) fields [7], [8], [9], [10]. This study focuses on the limited gender diversity in the engineering faculty at Bule Hora University, one of the public universities located in Ethiopia. As a developing country, Ethiopia has set ambitious goals to transform its economy from agriculture to industry [11], [12]. To achieve this transformation, the Ethiopian government formulated a higher education policy known as the "70% to 30%" policy. Under this policy, 70 percent of overall university enrollment is expected to be in science fields, while the remaining 30% is allocated to the social sciences [11]. Of 70 percent dedicated to science fields, 40 percent is specifically designated for engineering and technology.

Implementing the 70 percent to 30 percent policy has resulted in a significant increase in the enrollment of students in science, engineering, and technology schools across the country [11], [12]. However, examining whether there has been a corresponding increase in the representation of women faculty members in these fields is essential. Literature, available data, and personal experiences indicate that the number of women faculty members in Ethiopian higher education, particularly in STEM disciplines, remains very low compared to their male counterparts [11], [13], [14], [15], [16], [17]. This raises concerns about the gender gap in the faculty composition

and the potential negative impact on the academic environment, campus climate, and academic achievements, especially for female students in Ethiopian higher education.

This study aims to shed light on the gender diversity issues within the engineering faculty at one public university in Ethiopia. By examining the trends and statistics related to the representation of women faculty members in engineering and technology, the study seeks to identify the factors contributing to the gender imbalance and propose strategies to address the issue effectively. More specifically, the study addresses the following two research questions:

1. According to women faculty, what factors contribute to persistent gender disparity in engineering faculty in Ethiopian engineering colleges?
2. What strategies and interventions can be implemented to address the persistent gender disparity in engineering faculty and women's career advancement in engineering fields?

This study's significance lies in informing Ethiopian policy and decision-makers within the higher education systems. Highlighting the gender disparities among the engineering faculty at Bule Hora University (BHU) can shed light on gender disparity among the engineering faculty and university faculty in general, paving the way for more targeted interventions. Moreover, the findings of this study may serve as a basis for comparative analysis with engineering faculty in other universities in Ethiopia, which could facilitate a broader understanding of the gender composition of the faculty workforce in Ethiopia [11], [14], [18]. By exploring insights and perspectives from women faculty in Ethiopian higher education, the study adds to the existing knowledge about broadening the participation of women faculty in engineering and higher education from the context of engineering faculties in developing countries. By examining the

case of BHU, the study provides a microcosmic view of the broader challenges Ethiopian universities face in achieving gender parity in faculty positions.

The findings from the research inform policies and practices aimed at promoting gender equality in Ethiopian higher education and beyond. This study utilized a mixed method with quantitative data from various sources, including official reports and records from BHU, and the Ethiopian Ministry of Education. These data were analyzed to provide a comprehensive overview of the gender distribution within the engineering faculty over a specific period. Additionally, qualitative data collected through interviews with women faculty provided insider insights from women faculty members regarding their perceptions, experiences, and recommendations for addressing challenges related to gender diversity.

Methodology

Research Site, Participants, and Data Collection Procedures

This study used a mixed-methods approach to examine the limited gender diversity among engineering faculty in Ethiopian higher education. The design was meant to understand gender imbalance and its underlying factors comprehensively. The researchers collected quantitative data from the Ethiopian Ministry of Education. The data collected covered multiple academic years: 2011/12 - 2017/18 to identify trends and patterns. Quantitative data was analyzed through two descriptive statistics, frequencies, and percentages to examine the representation of engineering faculty members in Ethiopian higher education institutions. In addition, the qualitative data was collected through structured interviews with four women engineering faculty members at BHU, one of the mid-sized public universities in Ethiopia during the fall of 2023.

The interviews were to gather insights into their perceptions, experiences, and recommendations regarding gender diversity in the engineering faculty. Key demographics of the participants such as each participant's major, years of experience, and role [positions] were collected. We used purposive sampling to recruit participants based on inclusion and exclusion criteria such as job title– being a faculty in an engineering college; gender– need to be identified as a woman; prior educational discipline– those who studied engineering field; and willingness to participate. The recruitment strategies included professional networks and campus posting.

Table 1. Participants' demographic characteristics: women faculty in engineering (n = 4*)

Participants (pseudonyms)	Major (discipline)
Fayaa	Chemical Engineering
Kitabe	Electrical Engineering
Talile	Civil Engineering
Biftu	Civil Engineering

* = All participants are engineering faculty with an average of four years of experience in public higher education.

With regard to faculty gender diversity in engineering, the interview focused on exploring faculty perspectives and insider insights from the women engineering faculty themselves. With an interview protocol composed of 15 questions, we asked the following sample interview questions: What factors contribute to the persistent gender disparity in engineering faculty in

engineering colleges? What strategies and interventions can be implemented to address the gender disparity among engineering faculty? What support systems or resources are necessary to facilitate the success and retention of women engineering faculty in Ethiopian universities? What factors facilitate and/or hinder women faculty in engineering disciplines' career choice? What should engineering colleges and universities do to improve gender disparity in engineering faculty? Do you feel there is gender diversity in engineering faculty? Could you give me an example of when you did not think that gender diversity does not exist in the engineering faculty? Following the approval of IRB, we conducted the interviews in English via Zoom technology. The first author of this paper provided the participants with interview questions in advance and gave them a range of ideas about some concepts, e.g., what was meant by gender diversity in engineering faculty. Before we started interviewing, we described the goal of our study and how the information would be used, obtained consent from participants, and collected their demographic characteristics. Then, the participants were interviewed for 60 to 90 minutes. We audio-recorded the interviews, which facilitated the transcriptions.

Data Coding and Analytical Approach

We used an exploratory qualitative inquiry to facilitate qualitative data analysis that emphasized subjective meaning-making [19], [20]. Thus, the analysis followed an inductive iterative approach, with ongoing reading and coding of emergent insights. Additionally, researchers developed a codebook with ten codes for deductive coding. The sample analytics data processes that portray emerging themes and patterns are indicated in Table 2. We read the transcript excerpts and inserted codes as shown in column two of Table 2. Examples of preliminary codes included: society has lower expectations for women, engineering education is not for women and engineering work is for men. For more examples of preliminary codes alongside excerpts, refer

to column two of Table 2. Dedoose software facilitated coding and thematic analysis [21]. Then, we combined conceptually similar codes to form themes [20], [21], [22]. At this step, we used the consistency of code names with research questions across all interviews and organized codes of similar meaning into categories. For example, the three preliminary codes mentioned earlier were combined into themes of societal norms and cultural beliefs. For more examples, refer to column three in Table 2. This analysis provided rich insights into the experiences and perspectives of participants, complementing the quantitative findings. To enhance the quality and trustworthiness of the study, we solicited feedback from the research team on all steps of the study. This included but was not limited to revising the interview protocol and codebook, piloting interviews, and soliciting feedback from co-authors and other colleagues with expertise in exploratory qualitative research as coding and analysis progressed [19].

Table 2. Example analytic process for data excerpts

Interview Excerpts [1]	**Preliminary Codes [2]**	**Themes [3]**
….. [1] The way society thinks impacts gender disparity in engineering faculty…[2] society has low expectations for women, think like we [women] cannot do as like men in education… [3] also, in engineering works….e.g., women cannot work as men in site construction, engineering installation, mechanics, etc, so why do women study engineering? Society thinks of such like ideas and did not want them to go to engineering school. due to this, women students also prefer to avoid going to engineering and stay engineering professionals….	[1] Society has lower expectations for women [2] Engineering education is not for women [3] Engineering works is for men [5] Nature of job itself impact gender diversity [6] Men engineering candidates	Work-life balance challenges (11, 12) Gender biases and discriminations (8, 10, 15)

[5] The second challenge that influences gender diversity in engineering is faculty job characteristics …faculty jobs are competitive…. they need few people … and [6] I think male candidates have better records in academic credentials help them [men candidate] during interviews….they have more job information, and exams compared to women…. [7] Yes, even many biases happen to women faculty in engineering departments. For example, even in my department, last year when my boyfriend scheduled for birthday gift, I left the office during the afternoon working hours of the day…college dean told me that I did not go to work yesterday, provided me a warning, and wrote a letter to cut 15 days salary benefits of a month from me. This is a problem. There are biases and discrimination in our department….[8] The first factor contributing to faculty diversity in engineering is the challenge of society's thinking...the girls [women] also [9] believe engineering faculty is for men…[10] we [women] have little flexibility in the working environments….I feel like such experiences influence my changes in living arrangements… [11]women faculty showed less efficiency in performing faculty responsibility due to having caregivers at their homes and… [12] we [women] receive lower pay for departmental overload tasks…. To improve diversity in	match to join faculty [7] Biased in engineering faculty [8] Society's thinking impacting women to join engineering career [9] Engineering faculty job is for men [10] Officers control women in a working environment [11] Women faculty's home and school responsibilities impact their efficacy [12] Women receive lower benefits for extra tasks [13] Training and mentorship programs for women [14] Additional professional development opportunities for women faculty [15] Create society awareness	Societal norms and cultural beliefs (1, 2, 3, 4) Recommendations to address faculty gender disparity [7, 13, 14, 15]

engineering, [13] implementing mentoring programs…. [14]another the university has to work to provide additional professional development opportunities…and [15] raising awareness to resist biases between men and women is good for engineering faculty diversity.		

Positionality*, credibility, and trustworthiness*

Jemal Bedane Halkiyo, the lead author, is a senior doctoral student in Engineering Education at a prominent public research university in the United States. His research is dedicated to enhancing equity and inclusivity in engineering education for diverse learners. Halkiyo's innovative work in instructional design addresses the specific challenges faced by international engineering students, aiming to cultivate diverse perspectives within the engineering learning community. Furthermore, Halkiyo has actively participated in projects focused on instigating impactful change and promoting inclusivity within engineering departments. His commitment to educational improvement extends to offering recommendations to enhance the sense of belonging among Ethiopian women students in engineering. Co-author Sultan Bedane Halkiyu, is an Ethiopian-born and raised engineering faculty member at a public university in Ethiopia, also serving as the department head at a private college. With a master's degree in Road and Transport Engineering and a bachelor's degree in civil engineering from prominent Ethiopian universities. Halkiyu teaches various Civil Engineering courses and conducts research on the quality of road construction and transport/traffic mobility in urban areas. He is also actively engaged in broadening the participation of engineering education in Ethiopian universities, contributing valuable insights to the field. Roma Bedane Halkiyu, another co-author, holds

degrees in engineering from reputable Ethiopian universities and focuses her research on expanding female participation in STEM fields, particularly in engineering. Roma's work aims to dismantle barriers hindering women's full engagement in engineering and higher education, emphasizing inclusivity and diversity in academic settings.

Abdisa Bedane Halkiyu, a Senior Lecturer in Computational Science and Engineering at Bule Hora University in Ethiopia utilizes mixed methods to investigate learning theories and create equitable learning experiences in undergraduate physics and engineering education. His research endeavors, coupled with his teaching experience, aim to enhance knowledge and skills development through diverse learning approaches, contributing to a more inclusive educational environment. Similarly, co-author Demitu Geda, an Ethiopian female faculty member teaching electrical and computer engineering courses at a public university in Ethiopia, brings a unique perspective as a former engineering student. With firsthand experience in engineering education, Demitu offers valuable insights into the experiences of women students in engineering and women engineering faculty in Ethiopian higher education. As a role model for female students in engineering, she is dedicated to expanding access, quality, and equity in engineering education for all students.

While their gender and experience differ, all authors share common characteristics. All researchers are Ethiopian and have experience in engineering as a student and/or as a faculty member. Additionally, their research agenda shares some patterns. For example, addressing gender equity in the engineering department and broadening women's participation in engineering majors and Ethiopian higher education may generally enhance the understanding

and interpretations of the experiences of the study participants [23]. The fact that two co-authors are women allowed one to hear from a relevant person–a person of the relevant gender. The fact that all authors are Ethiopian-born, educated, and raised in Ethiopia facilitates understanding the students' responses.

Findings and Discussion

The quantitative analysis examined the representation of women faculty members in engineering departments in Ethiopian Higher Education institutions over the years 2011/12 to 2017/18. As indicated in Figure 1 below, there is a gender imbalance in faculty composition in Ethiopian higher education institutions. Ethiopia's gender disparity in engineering and technology faculty is not new, but it mirrors the national trend: few women faculty and fewer women engineering faculty. According to Tamrat [24], "some progress has been made with regard to the number of women faculty, but the higher education sector still remains one of the areas where significant gender disparity exists" (p. 1). For example, among the public university staff at the bachelor level, women instructors represent only 24 percent, and their share drops to 12 percent and 8 percent at the master's and doctorate-PhD levels respectively [25].

Similarly, according to the Ethiopian Ministry of Education 2018, during the 2011/12 academic year, women's faculty in government institutions was 1631. However, men were 16, 359. What is more concerning is that even after six years, during the 2017/18 academic year, the number of women faculty was only 4,539. However, men faculty were 25,423, persisting gender disparity for years as indicated in Figure 1.

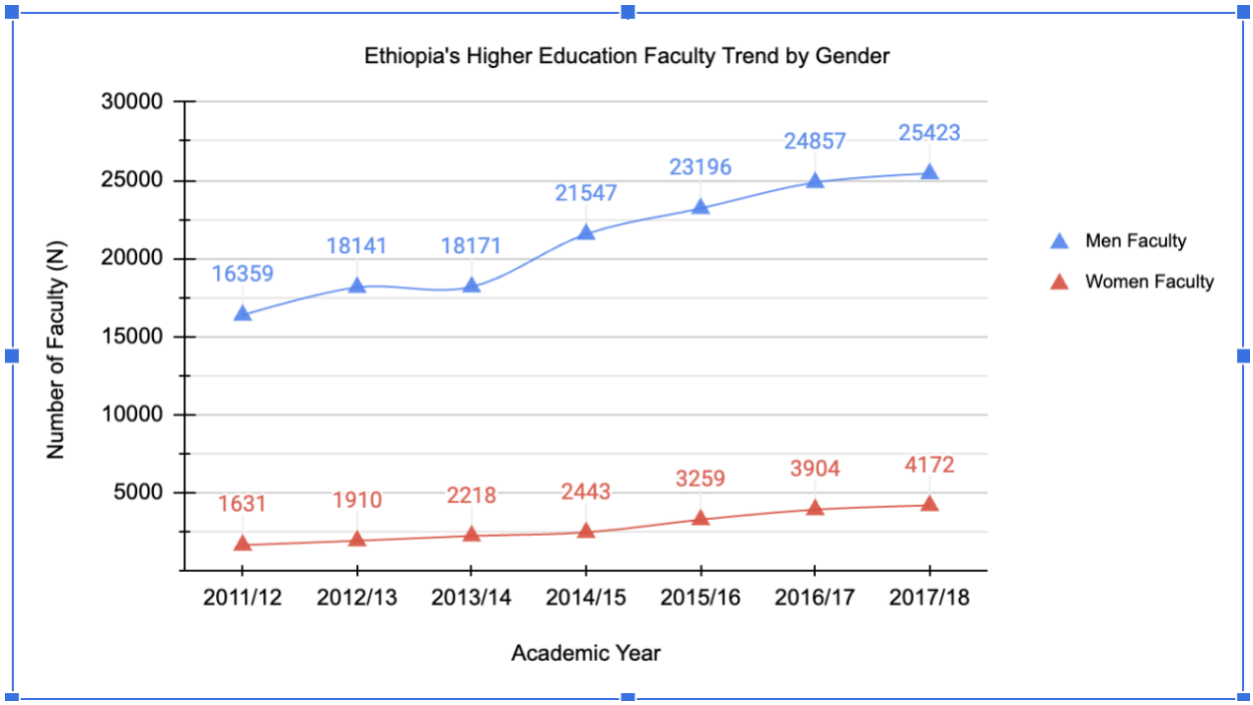

Figure 1. Ethiopian higher education institutions' faculty trend gender-wise

The gender disparity in engineering and technology is even wider. Given the Ethiopian government's implementation of the 70% to 30% education policy, which added more students to engineering schools, the gender disparity among engineering faculty is more concerning. For example, Table 1 presents data on the trends in the number of academic staff in the Engineering and Technology field in Ethiopian higher education institutions for the academic years of 2016/17 and 2017/18. The data was further categorized by gender and sector as government and non-government institutions. In the government sector of 42 Ethiopian public universities, there were 7013 men academic staff in engineering and technology during the 2016/17 academic year, slightly decreasing to 6847 in 2017/18. The number of women faculty, on the other hand, increased from 991 in 2016/17 to 1028 in 2017/18. Within the non-government sector, which consists of over 70 private colleges and universities, there were 342 men academic staff members in engineering and technology in 2016/17, which decreased to 290 in the 17/18

academic year. Meanwhile, female academic staff slightly increased from 35 in 2016/17 to 41 in 2017/18. In combining both sectors during 2016/17, the number of women engineering faculty in Ethiopia, including in public and private institutions, was 1026, whereas for men, 7355 [12, p. 153]. During 2017/18, the numbers were 1069 for women but 7137 for men [12, pp. 131–132], showing the persistence of significant gender disparity across years. This finding is consistent with studies conducted in other Ethiopian universities, such as Addis Ababa University [26] and Bahir Dar University [27], which have reported low levels of gender disparity in academic staff composition. These findings collectively suggest a systemic issue within the Ethiopian higher education system that hinders women's participation and advancement in engineering careers.

Table 1. Sample of trends in engineering and technology faculty by sex and sector during 2016/17 and 2017/18.

Ethiopian Higher Education		Engineering & Technology Faculty	
		Academic year 2016/17	Academic year 2017/18
Government	M	7,013	6,847
	F	991	1,028
	T	8,004	7,875
Non-government	M	342	290
	F	35	41
	T	377	331
Grand Total	M	7355	7137
	F	1026	1069
	T	8381	8206

Note: The data was sourced Ethiopian Ministry of Education's EMIS and ICT Directorate (p. 131-132) for 2016/17 and 2017/18 years.

The qualitative analysis conducted through interviews provided valuable insights into the experiences and perspectives of four faculty members (two women faculty members and two stakeholder members) in the engineering college. The interviews revealed several factors contributing to the limited representation of women faculty members in the Ethiopian engineering and technology colleges. Societal norms and cultural beliefs were identified as significant barriers that deter women from pursuing and advancing in engineering careers.

> The way society thinks impacts gender disparity in engineering faculty. Society has low expectations for women and thinks we cannot do as much as men in education and engineering work. For example, women cannot work as men in site construction, engineering installation, mechanics, etc, so why do women study engineering? Society believed in similar ideas and did not want them to attend engineering school. Due to this, female students also prefer to avoid going into engineering. They consider engineering majors a difficult discipline and think they do not complete the program from an early age…..The first challenge society has is thinking. The girls also believe in engineering faculty for men…. They are not interested in studying the faculty... The second challenge that impacts gender diversity in engineering is job opportunities. The faculty job is competitive, and they need few people. I think men have better opportunities in many aspects. I think male candidates have better records in academic credentials during interviews and have more information about jobs and exams than female candidates. (Faya)

According to Faya (one of the women faculty participants), societal norms and cultural belief is the first barrier followed by the women and girls themselves who, after long cultural beliefs, think that engineering was not for them but for men: *" The first challenge society has is thinking. The girls also believe in engineering faculty for men. They are not interested in studying the faculty"* (Faya). These findings align with studies that have examined gender disparities in

STEM fields globally, indicating the pervasive influence of societal and cultural factors [10], [28], [29]. In Ethiopia, traditional gender roles and expectations can shape women's perceptions and their sense of belonging to engineering fields, which in turn, discourage women from entering male-dominated fields like engineering [10], [11].

Gender biases and discrimination were also identified as factors hindering women's advancement within the academic environments. Participants in the study reported instances of unequal treatment and gender-based stereotypes, which can negatively impact women's career progression in engineering fields by limiting their access to opportunities, resources, and mentorship. According to Kitabe (one of the faculty participants), gender bias led to the department head being harsh on punishment, including warning letters and salary cuts:

> ….many biases happen to many women faculty in engineering departments. For example, even in my department, when my boyfriend scheduled a birthday gift last year, I left the office in the afternoon, the working hour of the day. The college dean told me that I did not go to work the following day. He provided me with a warning and wrote a letter to cut 15 days' salary benefits of a month from me. This is a problem. There are biases and discrimination in our department... (Kitabe)

Kitabe highlights instances of biases and discrimination faced by women faculty in engineering departments, citing a specific incident where a warning and salary deduction were imposed for leaving work early due to personal commitment. This underscores the systemic issue of unfair treatment and highlights the need to address biases and discrimination within the department. These findings also align with studies that have documented the presence of implicit biases and gender-based discrimination in academic settings [5], [7], [28].

Additionally, work-life balance challenges were identified as a key concern for women faculty members. Many reported juggling caregiving responsibilities along with their professional commitments. For example, Biftu reported *"little flexibility in the working environment,*" and she feels like such experiences influence her *"changes in living arrangement.*" Talile suggested women faculty showed less efficiency in performing faculty responsibility due to caregivers at their home and they *"receive lower pay"* for departmental opportunities. Similarly, Kitabe suggested that the department experiences "hostile work environments" due to caregiving responsibilities. In Biftu's words:

> Engineering faculty members often juggle caregiving responsibilities with their [professional] work. Some challenges they face include little flexibility, changes in living arrangements, cultural taboos regarding caregiving responsibilities, and conflicts regarding department responsibilities 1. Caregivers are often passed over [overlooked, weigh less] for promotion or new positions, receive lower pay, and experience harassment, hostile work environments, and even job loss 2. To juggle caregiving responsibilities and professional work, it is important to be honest with your boss and colleagues about your role as a caregiver and the time and energy it takes 3. Facilitating cooperative care efforts among faculty and staff members, such as a pair and shared childcare system with one or two other colleagues. Also, give more time for birth [maternity] leave and pregnancy to create a more inclusive working environment and help women remain in the engineering faculty. We need networking programs with different seniors and stakeholders so that they can hear our challenges and find opportunities for women faculty in engineering departments. (Biftu)

Biftu indicating faculty members in engineering face challenges balancing caregiving and work responsibilities leading to issues such as promotions being overlooked and facing hostile work

environments. This finding is consistent with Fouad [3] and Shen [9] studies exploring the impact of work-family conflicts on women's career progression.

Based on the results, it's evident that targeted interventions and policy measures are needed to promote gender diversity in engineering faculty. Participants expressed support for initiatives such as mentoring programs and professional development opportunities that provide support and guidance to advance in engineering careers. These initiatives can also help challenge gender biases and promote more inclusive and equitable working and learning environments [28]. Additionally, efforts have to be made to address societal norms and beliefs that discourage women from pursuing engineering fields and careers. Collaboration with community leaders, such as "Jaarsa Biyyaa," and "Abbaa Gadaa," religious leaders– Sheik and Ques, etc, and outreach programs can raise awareness, challenge stereotypes, promote a more diverse and inclusive perception of engineering as a viable career choice for women [17]. Furthermore, Ethiopian universities should consider implementing family-friendly policies and support systems that help alleviate work-life balance challenges for women faculty members. Flexible work arrangements, on-campus childcare facilities, and parental leave policies can create a supportive environment that enables women to excel in engineering careers while managing their caregiving responsibilities [26]. In conclusion, the faculty underrepresentation of women faculty members, coupled with societal norms, gender biases, and work-life balance challenges emphasize the need for targeted interventions and policy measures. By addressing these factors, Ethiopian universities can work towards promoting greater gender diversity and inclusivity within engineering faculty, contributing to the broader goal of fostering gender equality in Ethiopian higher education institutions.

Conclusion and Recommendations

The findings of this study reveal a significant gender disparity within engineering faculty in Ethiopian universities, with women being underrepresented in faculty positions. The quantitative analysis indicated that only 16% of the faculty members in the engineering department were women, highlighting the scope of gender imbalance of women in STEM fields as a systemic issue. Qualitative analysis provided valuable insights into the underlying factors contributing to the limited representation of women in the engineering faculty. Societal norms, cultural beliefs, and gender biases were identified as significant barriers discouraging women from pursuing engineering careers. These findings emphasize the need for targeted interventions to challenge stereotypes, raise awareness, and promote a more inclusive perception of engineering as a viable career choice for women. The study analysis revealed the presence of gender biases and discrimination within academic ecosystems, hindering women's advancement in engineering careers. These biases and discrimination can limit women's access to opportunities, resources, and mentorship, further exacerbating the gender disparity. Addressing these biases and fostering an inclusive and equitable academic environment is vital for promoting gender diversity. Work-life balance challenges were also identified as a significant concern for women faculty diversity. Juggling caregiving responsibilities alongside professional commitments can hinder women's career progression. Implementing family-friendly policies and support systems within the university can help alleviate these challenges and create a supportive environment that enables women to excel in their careers.

Based on the findings, several recommendations can be made to address gender disparity in engineering faculty in Ethiopian universities. These include implementing mentoring programs,

providing professional development opportunities, challenging gender biases, raising awareness, and promoting a diverse and inclusive perception of engineering. Family-friendly policies and support systems, such as flexible work arrangements and on-campus childcare facilities, can help women balance their personal and professional lives. Furthermore, by promoting a more inclusive and equitable academic environment, Ethiopian universities can pave the way for greater gender diversity and contribute to advancing women in STEM disciplines in Ethiopia.

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Appendix: interview protocol and probing questions

1. Can you tell us about your educational journey to an engineering faculty position at your university? Including you, how many women faculty members are there in your department and engineering college?
2. What factors contribute to the persistent gender disparity in engineering schools? What should engineering colleges and universities do to improve gender disparity in engineering faculty?
3. Do you feel there is gender diversity in engineering faculty? If so, how did this happen, and can you tell me how this can be further continued? If not, why did you believe in gender disparity? Could you give me an example of when you did not feel gender diversity in the engineering faculty?
4. What strategies and interventions can be implemented to address gender diversity in engineering faculty at your department? What factors can hinder or facilitate women faculty diversity in engineering schools?
5. How would you describe the current gender diversity in the engineering faculty in (e.g., Bedane State University)?
6. What challenges do you think contribute to the gender disparity in the engineering faculty in Ethiopia?
7. In your opinion, what are the perceptions and attitudes towards women in engineering in Ethiopian society?
8. Have you personally experienced any gender-related biases or discrimination in your career as a woman engineering faculty member in Ethiopia?

9. What strategies or initiatives do you think can be implemented to encourage more women to pursue careers in engineering and join the faculty?
10. Are there any existing policies or programs aimed at addressing gender disparity in the engineering faculty? If so, how effective do you think they have been?
11. What kind of support systems or resources do you believe are necessary to facilitate the success and retention of women engineering faculty members in your university, e.g., Bule Hora University?
12. How can the curriculum and teaching methods be modified to create a more inclusive environment for women studying engineering?
13. Do you think there is a need for mentorship or networking programs specifically targeted at female engineering students and faculty members in your university?
14. Are there any cultural or societal factors that you believe contribute to the gender disparity in the engineering faculty? If so, what are they and could you give an example you perceived? Also, how can such societal factors be addressed?
15. Based on your experiences and observations, what recommendations would you provide to address the gender disparity in the engineering faculty in Ethiopian public universities?