NOTIONS OF PATRIARCHY AND GENDER-BIAS, FROM THE PERSPECTIVE OF ENGINEERING STUDENTS

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Abstract

Gender plays a significant role in social structures, including education, where patriarchal beliefs contribute to gender disparities and biased treatment. This qualitative study aims to understand the intensity of patriarchal beliefs among students in contemporary times. A focus group of 10 engineering students from a private technological institute discussed topics such as patriarchy, social stratification, gender roles, and bias. The discussion aimed to generate ideas on how to transition from patriarchal beliefs to a gender-neutral society. The findings indicate a strong presence of patriarchal values in social and family settings, influenced by ancient culture and religion. However, progress is being made by breaking these barriers, although challenges and threats, such as pseudo-feminism or over-radicalization, still hinder progress. The study emphasizes the need for a more inclusive and equitable society, despite the presence of patriarchal values in social and family structures.

Keywords: Gender Studies, Gender Equality, Patriarchy, STEM.

INTRODUCTION

Gender has a significant impact on various aspects of society, including education, employment, and social roles. The Science, Technology, Engineering, and Mathematics (STEM) fields continue to be predominantly male-dominated and associated with masculinity. The traditional perception of engineering as a field dominated by men leads to a unique decision-making process for women compared to men when considering a career in engineering (Henwood, 1998). Efforts to promote girls' interest in STEM subjects and the adoption of inclusive curriculum have played a role in this change (Holth & Mellström, 2011). STEM education, research, and study have become increasingly crucial due to the growing global interest in STEM fields and the abundance of job opportunities available (Li et al., 2019). There is a concerning trend where girls and women are often steered away from pursuing science and maths in their education, limiting their opportunities to thrive in these fields later in life. It is concerning that women make up only 34% of the workforce in science, technology, engineering, and math (STEM), while men tend to outnumber women in most STEM disciplines during their college education.

There is a clear and significant gap between genders in certain high-growth and highly paid professions of the future, including computer science and engineering (Riley, 2013). Women often encounter obstacles such as bias, prejudice, unfair treatment, discrimination, and subordination in engineering departments and higher education institutions. They often feel excluded and uninvolved in the academic environment (Sonnert et al., 2007). Cultural stereotypes about gender differences perpetuate the pervasive segregation of women and men across professional fields. Nevertheless, individuals feel compelled to conform to societal expectations of gender norms,

resulting in the modification of their behavior to avoid social consequences and adhere to traditional ideals of masculinity and femininity (Blosser, 2017). It seems that women engineers may not always fit into the traditional engineering culture and their status as engineers is sometimes overlooked (Tonso, 2007). The power dynamics between individuals and technology intersect with the social framework, with traditional normative contexts perpetuating a dominant masculine influence in campus life. These biases have a significant impact on both individuals' opportunities and experiences, as well as societal perceptions and expectations regarding gender roles and capabilities (Sonnert et al., 2007). There are multiple ways in which sexism is evident on the college campuses. One important aspect of sexism is the unequal power dynamic between the group in power and the marginalized group, where gender is one major aspect (Bearman et al., 2009). The academic culture prevalent in engineering departments and higher education institutions may not be as inclusive and welcoming to women as it should be (Gupta, 2015). There has been a strong connection between patriarchy and STEM fields (Davies et al., 2018). Throughout history, women have consistently been underrepresented in these fields and have encountered numerous obstacles when trying to enter them. The concept of patriarchy encompasses a social structure that grants privileges to men and perpetuates traditional gender roles and power dynamics (Garcia, 2021). It is a fundamental aspect of numerous cultures and can greatly influence individuals' perceptions and interactions with their surroundings. Education and patriarchy are deeply connected, as the way education is approached can either uphold or question traditional gender roles (Buckley, 1986). Many Asian countries, particularly those in the Indian Subcontinent, have traditionally followed a patriarchal model of family and cultural system (Singh et al., 2022). The presence of a predominantly masculine culture in engineering workplaces often leads to the marginalization of women (Faulkner, 2009). It is evident that certain engineering students still adhere to traditional beliefs regarding gender roles and capabilities. Unfortunately, these beliefs often result in women facing unequal opportunities and treatment within the field. By addressing these perceptions and questioning traditional norms (Gupta, 2019).

Although there has been some progress, there is still more work that needs to be done to dismantle patriarchal structures and ensure equal opportunities for everyone. The field of engineering has been marked by a persistent gender disparity, as societal norms and stereotypes have shaped how it is perceived and the expectations placed upon it. The field of engineering has been marked by a persistent gender disparity, as societal norms and stereotypes have shaped how it is perceived and the expectations placed upon it. Despite progress towards greater inclusivity, gender stereotypes continue to influence the experiences of students in engineering education (Sebastián-Tirado et al., 2023). By delving into the complexities of these stereotypes, one can strive to cultivate a greater comprehension of the obstacles that students, especially women, encounter in engineering. There are still deeply ingrained stereotypes and biases that continue to fuel inequality in classrooms and beyond (Gupta, 2020). Sociologists frequently highlight the potential harm of gender stereotypes, as they oversimplify the multifaceted identities of individuals into restrictive and confining labels (Deutsch, 2007). The progressiveness and inclusivity of engineering colleges about the gendered environment is still a work in progress. It is important to address the societal factors that hinder female students from fully participating in engineering fields, such as patriarchal notions, gender disparity, and harmful stereotypes perpetuated among male students.

METHODOLOGY

Methods and Tools

For this study, a qualitative approach was selected to investigate the strength of patriarchal beliefs among students in the modern era. We received the Institutional Ethical approval before conducting the study and Informed consent was received from each of the participant, after explaining the purpose of the study to them. 10 student volunteers with bachelor's degrees in engineering fields from a private technological institute participated in a focus group discussion. The participants were selected using a purposive sampling method, who volunteered to participate in the study to give their input on the topic. Purposive sampling is a suitable method for qualitative research as it allows researchers to connect with individuals who possess extensive knowledge or experience regarding the specific issues being investigated (Cohen et al., 2002). This approach enables researchers to gather valuable insights from these knowledgeable individuals. The discussion revolved around themes like patriarchy, social stratification, gender roles, and bias in their field and campus. The conversation was documented and transcribed for analysis. Common themes and patterns emerged from the participants' responses as the data was thematically analyzed. The study seeks to determine the level of patriarchal beliefs held by students in the modern era. The findings offered insights into the perspectives of the participants, revealing the intricate nature of societal norms and beliefs.

Participants

A group of students pursuing their bachelor's degree in engineering and technology from a private Technological University were approached to participate in a study after explaining the theme. There was a total of 10 participants who were finalized to participate in the FDG. All of them were in their 3rd year of the bachelor's programme, belonging to three different streams of engineering - CSC (Computer Science and Communication), ECE (Electronics and Communication Engineering), and EEE (Electrical and Electronics Engineering). The details of the participants are mentioned in the below table.

Table 1: Details of the participants

Participant No.	Gender	Age	Stream
1	Female	20	CSC
2	Male	19	EEE
3	Female	19	CSC
4	Female	21	CSC
5	Male	20	ECE
6	Male	22	ECE
7	Female	20	EEE
8	Male	21	CSC
9	Male	20	CSC
10	Female	20	ECE

RESULTS

The findings provided valuable insights into the perspectives of the participants, uncovering the complex nature of societal norms and beliefs. The participants' inputs provide valuable insights into the widespread presence of patriarchal norms in different areas of their lives, including their experiences on campus and within their chosen

professions. Many individuals voiced their frustration with the ongoing presence of gender roles and social stratification, emphasizing the importance of increased awareness and the necessity for change.

Views on Patriarchy

As the students engaged in a lively discussion, the first topic that emerged was their insightful analysis of patriarchy as a pervasive social system within families and society. There was a wide range of opinions on the matter, with some asserting its indispensability and intrinsic value, while others saw it as a repressive entity causing harm. The findings offered valuable insights into the perspectives of the participants, revealing the intricate nature of societal norms and beliefs. The participants' contributions offer profound insights into the pervasive influence of patriarchal norms across various aspects of their lives, encompassing their encounters on campus and within their respective careers.

A multitude of people expressed their discontent with the persistent existence of gender roles and social stratification, highlighting the significance of heightened awareness and the imperative for transformation. Certain individuals regarded patriarchy as essential, asserting that it provided structure and coherence within families and society through the establishment of distinct roles and responsibilities. They claimed that this was a logical outcome of natural biological differences between genders, which help maintain balance and harmony in relationships. Conversely, those who viewed patriarchy as oppressive highlighted the numerous ways in which it promotes inequality and restricts individual freedoms. They emphasized the concerning effect it has on the marginalization and silencing of women, impeding their ability to grow and thrive.

> "*Patriarchy restricts people's potential and keeps them from following their interests and abilities*," (Participant 1)

This statement highlights the pervasive influence of the patriarchal system within families, which not only perpetuates gender bias but also exerts significant pressure when it comes to choosing one's educational and career path. Her point was met with agreement from other participants, sparking a discussion on the influence of patriarchal parenting on students' decision-making.

This highlights the nuanced influence of patriarchy on the decisions made by young individuals. Her argument highlights how the hierarchical structure of society influences the life choices of students, particularly women, in both their personal lives and career paths. Participants also provided a counter statement, highlighting that not all families adhere to a patriarchal parenting style and emphasizing that this system does not necessarily impact students' decision-making.

A recent study by Cho and Jang (2021), states that many individuals, regardless of their gender, come from families that value equality and make choices about their personal lives and careers based on their passions and goals. Therefore, while patriarchy may have an impact on some individuals, it does not necessarily determine the life decisions of all students across the board. The participants highlighted the pervasive presence of patriarchy in society, noting that families often adhere to it without resistance as it is perceived as a natural order. Opinions on the matter vary, with some viewing patriarchy as a mere social system, while others see it as a powerful tool for control and discrimination.

Gender Stereotypes and misconceptions

The conversation shifted to a fresh topic, delving into the prevalent stereotypes surrounding engineering campuses. Participants noted the presence of gender disparity in specific areas. Participant 4 has provided their perspective on how boys and girls interact as friends and whether there are any social stigmas or restrictions associated with it.

> "*Male students are too eager to have girlfriends, that they haven't interacted with girls much in two years of studying in high school*" (Participant 4)

Although establishing initial friendships with them is easy, continuing the relationship can be quite challenging, as many of them desire more than just friendship. Women are not inclined to reach such a level. Participant 4 emphasized the impact of social stigmas and limitations that impede the natural interaction and formation of friendships between boys and girls. This emphasizes the lasting influence of patriarchal beliefs on social dynamics and relationships, often appearing in subtle ways. There is much work to be done to challenge these societal norms and create a more equitable society that benefits all genders. Initiating connections with them may seem effortless at the beginning, but maintaining those relationships can prove to be challenging as some individuals desire more than mere friendship. According to a study by Dunlap et al. (2019), many women do not find that stage to be appealing. They are focused on cultivating a harmonious connection. Highlighting the importance of breaking down traditional gender norms and expectations, this promotes genuine and non-romantic connections between people. Promoting mutual respect and fostering empathy among individuals can pave the way for deep and lasting friendships that transcend societal expectations. Establishing clear lines of communication and defining personal limits are crucial for cultivating strong and satisfying friendships among individuals. This has the potential to dismantle barriers and challenge conventional gender norms.

> "*There is always a thin line that divides chores that are considered "women's work" and "men's work,"*" (Participant 5)

Participant 5 states that anyone should possess the ability to accomplish any task, irrespective of their gender. It is essential to recognize that every person has unique strengths and abilities, regardless of their gender. By championing equality and inclusivity, we can foster an environment that empowers individuals to freely pursue their passions. We can create a more equitable and inclusive environment free from traditional gender norms by challenging these stereotypes and expectations. This can help foster a more cohesive and compassionate community where individuals are valued for their abilities rather than being confined by societal norms. Effective communication and breaking down obstacles are crucial for cultivating a just society where friendships and relationships flourish through mutual respect and comprehension.

Feminism and student approach

During the FGP, the conversation revolved around feminism and the viewpoints of the participants. They highlighted the impact of gender stereotypes on their interactions with peers and classmates.

> "Most *young people in the present trend have misconceptions about feminism, even though it is crucial for identifying gender bias in a variety of contexts where it is generally normalized*" (Participant 6)

According to Participant 6, more than half of the participants expressed acceptance of his viewpoint by acknowledging these biases and actively working to address them. Their goal is to create a more inclusive and supportive environment for everyone in their field. They expressed a strong dedication to deepening their knowledge of feminism and its impact on society, underscoring the importance of ongoing education and activism in advancing true gender equality. Feminism plays a crucial role in promoting equality and challenging the societal norms that unfairly limit individuals based on their gender. Adopting a feminist perspective can empower students to challenge stereotypes and biases that may hinder the formation of genuine friendships. By advocating for respect, equality, and understanding in all relationships, we can cultivate a more inclusive and supportive community (Zhang & Rios, 2022).

> "*By embracing feminist principles, we shall be able to challenge traditional gender roles and expectations in our field*" (Participant 3)

Participant 3 strongly believes that promoting diversity and inclusion can create an environment that is both innovative and equitable for all. In addition, they emphasized the empowering impact of feminism, which has enabled them to advocate for themselves and others, creating a more cohesive and collaborative atmosphere within their academic programme. They emphasized the importance of incorporating feminist principles into all aspects of their lives, striving to create a more just and equitable society.

Another counterview was raised by Participant 7,

> "There *are also threats, where fake allegations are made by women in the name of feminism, which can harm the reputation and careers of innocent individuals.*" (Participant 7)

Notwithstanding this concern, most participants think that incorporating feminist ideals in academic and professional settings can ultimately foster a more inclusive and equitable society for all. In the end, the discussion highlighted the importance of promoting diversity, inclusion, and feminist values to create a just and peaceful atmosphere for everyone.

DISCUSSION AND CONCLUSION

The results clearly show patriarchal traditions continue to exert influence, limiting opportunities for individuals and perpetuating inequality. The participants' issues serve as a powerful reminder that to transcend the limitations imposed by gender roles and social hierarchies, we must enact reform and foster greater awareness. In a study by Raabe et al. (2019), it was found that the increased representation of women in prestigious engineering colleges could potentially have an impact on the traditionally male-dominated atmosphere. Regardless of differing opinions, it is crucial to acknowledge that the patriarchy perpetuates harmful gender stereotypes and hinders individuals from reaching their full potential. The analysis of the study emphasizes that despite some advancements, patriarchal beliefs persist, albeit in more nuanced forms. These findings emphasize the importance of continuous efforts to challenge and deconstruct long-standing societal norms. Through a thorough analysis and breakdown of deeply ingrained societal norms, we can foster a society that is more inclusive and empowering. This society will prioritize and provide support for individuals, irrespective of their gender. Students have shared a wide range of viewpoints regarding the impact of patriarchal beliefs on their experiences on campus.

It is crucial to address this issue. To promote equal opportunities for everyone, it is essential to address and find solutions to issues surrounding discrimination, social inequality, and gender bias. Gender disparities persist in the field of engineering, with women facing bias and a lack of equal opportunities when compared to their male counterparts. This could potentially be attributed to long-standing biases within the industry and systemic barriers that impede the achievement of true gender equality, emphasizing the need for comprehensive structural changes rather than solely relying on individual efforts. Despite the advancements made in the cause of gender equality, structural obstacles still prevent women from advancing in traditionally male-dominated fields. Merely challenging stereotypes and advocating for change on an individual level is not enough to address the deep-rooted inequalities that continue to exist. Implementing structural changes within industries and institutions is crucial for fostering a fair environment that ensures equal opportunities for success, irrespective of gender. It is crucial to persevere in educating, advocating, and collaborating to overcome these barriers and achieve true gender equality in all areas of society.

Promoting open and respectful communication can assist individuals in effectively navigating their interpersonal connections with thoughtfulness and compassion. This approach not only strengthens the bond between friends but also challenges the prevailing societal norms and expectations surrounding gender roles. Authentic relationships thrive when built on mutual respect and encouragement rather than being constrained by outdated stereotypes. Ultimately, overcoming these barriers can lead to more profound and significant connections that transcend traditional gender norms.

There is a common tendency for misunderstandings and misrepresentations to arise when discussing feminism, leading to misconceptions about its core objectives and principles. Having a solid grasp of feminism and its principles is essential for individuals who want to understand how it plays a vital role in promoting gender equality. By challenging common misconceptions surrounding feminism and advocating for its genuine principles, we can work towards creating a just and equitable society that benefits all individuals. Baseless accusations and twisted interpretations are incongruent with the genuine principles of feminism, which seek to uplift and empower marginalized genders. Accurately discerning between legitimate claims of discrimination and harassment and baseless accusations is essential for upholding the progress made in achieving gender equality. Genuine advocacy champions the rights and voices of every individual, highlighting the significance of backing and empowering those who have endured historical marginalization and oppression. Through the power of collective action and the promotion of authentic feminist principles, we can construct an equitable and inclusive society that benefits all individuals. Participating in thoughtful and considerate discussions about feminism is crucial for dismantling obstacles and fostering a more inclusive community.

Furthermore, educational institutions and organizations must establish policies that proactively promote diversity and inclusion within the STEM sector. These policies must be promptly implemented. By ensuring equal opportunities and resources for all interested individuals, we can cultivate a diverse and highly skilled talent pool that will drive advancements in the fields of science, technology, engineering, and mathematics. Ultimately, it is crucial to recognize that gender equality is not solely a women's issue but a societal issue that demands collective commitment and determination. In a recent study conducted by Zhang and Rios (2022), the authors state that recognizing the importance of diversity and challenging traditional gender

norms can foster a more inclusive and progressive society that values individuals based on their unique qualities and capabilities rather than relying on preconceived stereotypes. Ultimately, cultivating a culture of equality and dismantling barriers can result in a more united and inclusive community where every individual is valued and respected. Considering the qualitative nature and limited sample size, these are the primary limitations of the study. The document skilfully integrates students' perceptions and ideas derived from their everyday experiences and knowledge. Nevertheless, to bolster these findings and theories, additional concrete evidence, quantitative values, and thorough analysis are necessary. Although the study delves into various concepts and perspectives, there is still potential for further exploration through future research on gender, patriarchal beliefs, and STEM fields. By delving into uncharted territories and adopting a comprehensive perspective, one can unlock a wealth of innovative concepts and remedies for gender-related challenges within these domains. This has the potential to ignite a wave of powerful feminist creations and forward-thinking ideologies in the years to come. The study explores various facets of gender dimensions, the impact of patriarchal norms, the significance of gender in campus relationships, and the perspectives of students on feminism. It delves into how students confront and overcome obstacles, working towards a more inclusive and equitable environment by championing diversity within their field.

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