

Results of Gender Inequality Study for Science and Engineering Professionals in Nepal (2014)

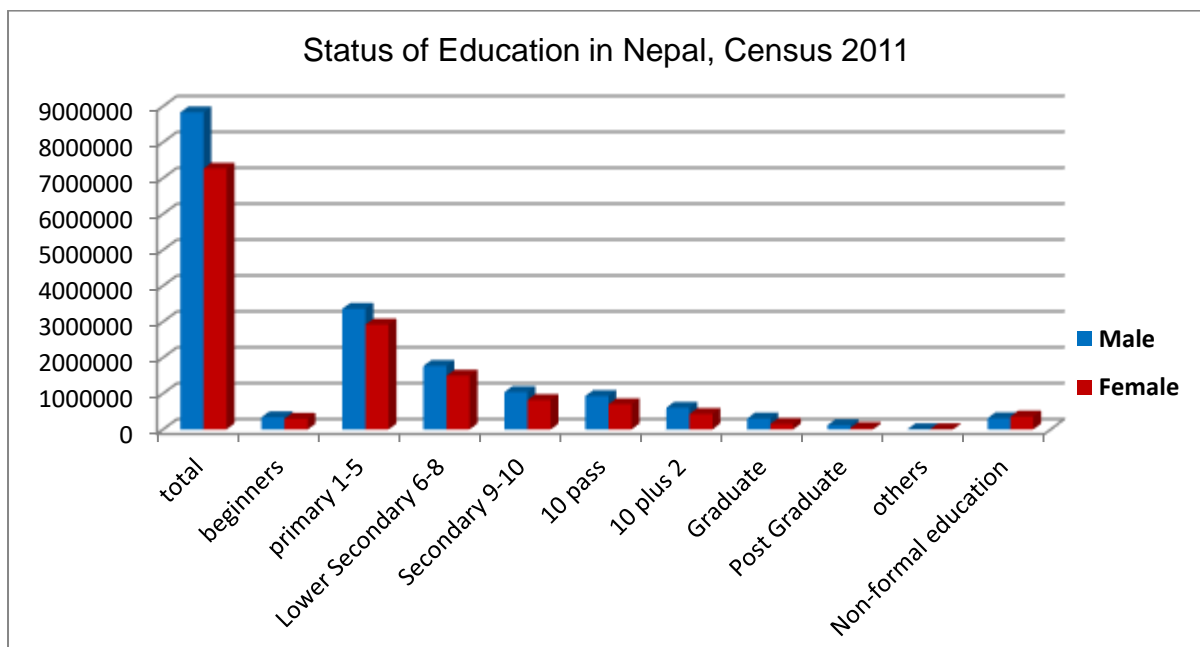
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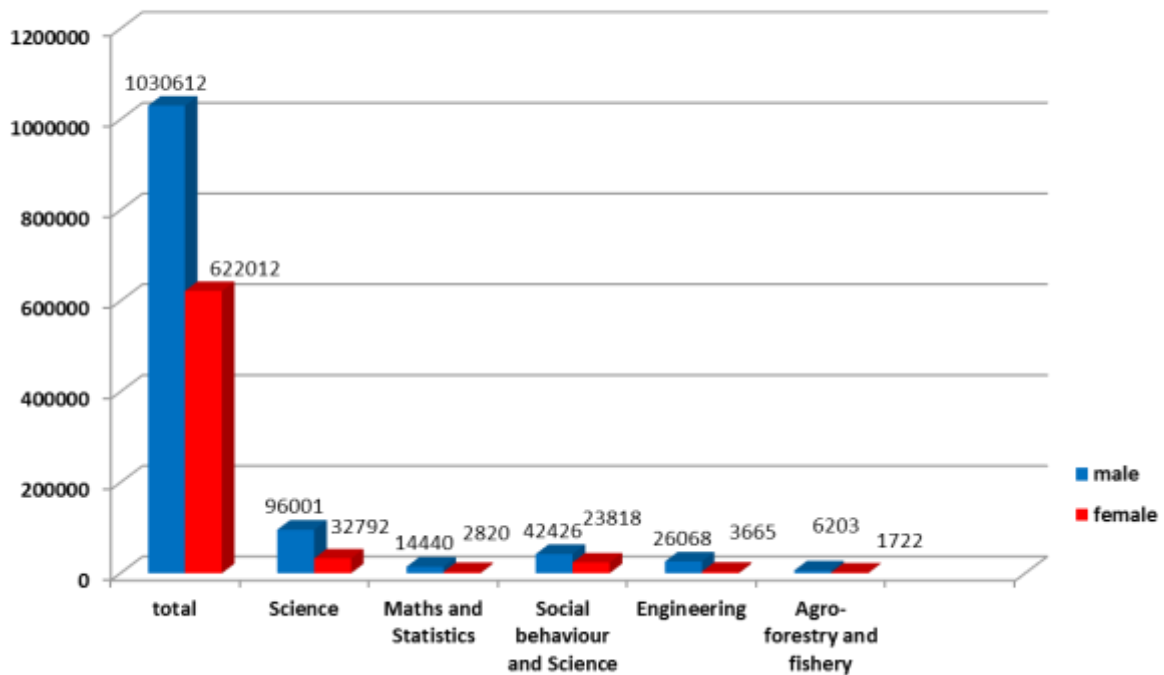
1. INTRODUCTION

The overall education scenario of women is more encouraging than past several decades. National Population Census 2011 shows that female literacy rate (for population aged 5 years and above), as compared to that in 2001, has reached 57.4% (7,832,496) with overall literacy rate 65.9% (17,459,878). Close to half of the literate women have at least a primary level of education, however, the number of literate women attaining higher levels of schooling tend to gradually decrease. Though, the school level enrolment of female is slightly higher (50.5% as female population is 52% of the total), it has decreased at university level - university level enrolment of female is 45.9% (MoE, 2012).



In engineering field, number of student's enrolment is increasing remarkably in the last decades because of involvement of private sector, but again the enrolment of female students is still meager. The MoE (2012) reports that the university level enrolment of female in engineering faculty is only 17.4% in total enrolment of 15,841. Similarly, the figure of professional female engineer is even poor - only 13% (2,889) out of total engineers registered (22,087) at Nepal Engineering Council till July 2013 (NEC, 2014).

Scenario of Education beyond 10th Standard, Census 2011



Barriers contributing to low presence of women in this field include difficulty in managing work-life balances, societal norms and values (women being home-makers), lack of female role models. It has caused very few women engineers continue to work in difficult and remote terrains. Consequently, women engineers often tend to change their field of study from engineering to other social sciences in post graduate levels. However, there have been some appreciative efforts to overcome these barriers. The Government of Nepal has the policy of including at least 33% (of 45% reservation seats) women in its public service. Some of the non-governmental sectors, e.g., Swiss Agency for Development and Cooperation (SDC) have made efforts to include women engineers in workforce through affirmative action, such as providing internships for young women engineering graduates. Importantly, providing adequate supports by family members would make women engineers use their time, skills and potentials optimally at their works to be able to succeed equally as men.

In this respect, Women in Science and Engineering in Nepal (WISE-Nepal) is initiated with a goal of bettering the prospects of women scientists and engineers through their active involvement and participation in science and engineering in Nepal. It's immediate objectives are - women scientists & engineers take advantage of increased networking and knowledge sharing for their professional development in science and engineering fields, and women scientists and engineers raise their voices for inclusive and women-friendly policies in their workplace.

2. OBJECTIVES

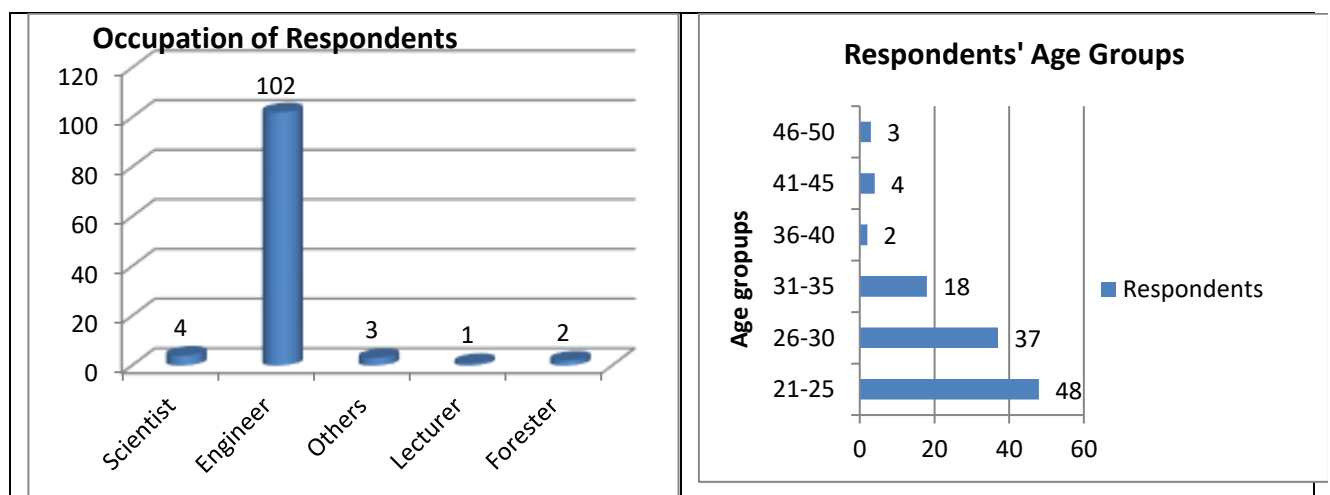
The objective of this study (survey) was to understand the perceptions of gender inequality in Science, Technology, Engineering and Mathematics (STEM) in Nepal. The study is

conducted as a part of comparing the level of gender inequality across countries in the Asia Pacific region.

3. METHODOLOGY AND LIMITATIONS

The study used the close-ended structured questionnaire. The respondents gave their perception on the questionnaire via e-mail.

Total number of respondents was 112 and they were purposively selected. Their ages range from 21 to 50 years old - 48% of the respondents were from the age group 21-25 followed by 26-30 years old (37%), and 18% of 31-35 years of age group. Respondents above the age of 36 years were negligible (9%) in total. All respondents were female. Most of the respondents were civil engineers (46%) followed by architect engineers (17%). Most of the respondents were engineers (91%) working both in the governmental & non-governmental organizations.



Although, the sample size of the study is not sufficient as compared to the total number of women professionals in STEM in Nepal, however, it has given a scenario of gender inequality in STEM in the country.

4. RESULTS WITH RESPECT TO THE INDICATORS OF QUESTIONNAIRES

This section provides the information on the results of survey, basically, it gives the pictures of the perceptions on the various indicators of survey.

4.1 Chance to identifying female role model during science/engineering education

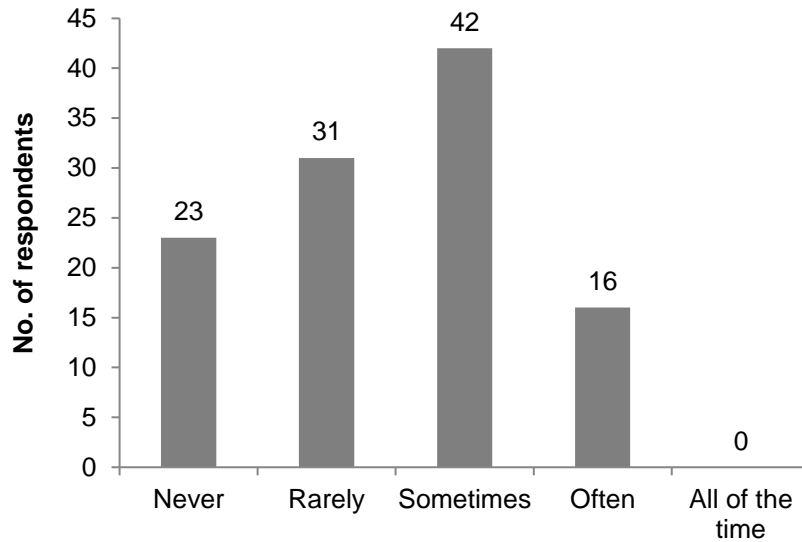


Figure 1. Chance of identifying female role model as a scientist or engineer during science/engineering education

Most of the respondents had poor chance to identify any female role model as a scientist or engineer during their science/engineering education, that is, in formal schooling covering primary to college (tertiary) systems (Figure 1). About 21% of the respondents felt they never got that chance, 28% of them rarely got the chance and 38% sometimes got the chance to identify female role models.

4.2 Description of female scientists/engineers in educational textbook

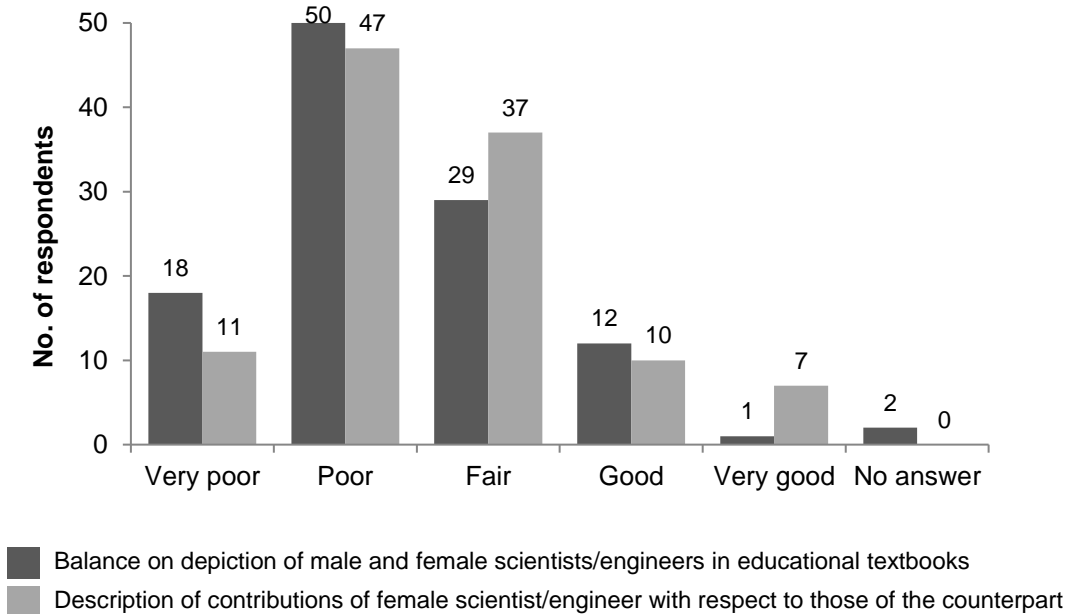


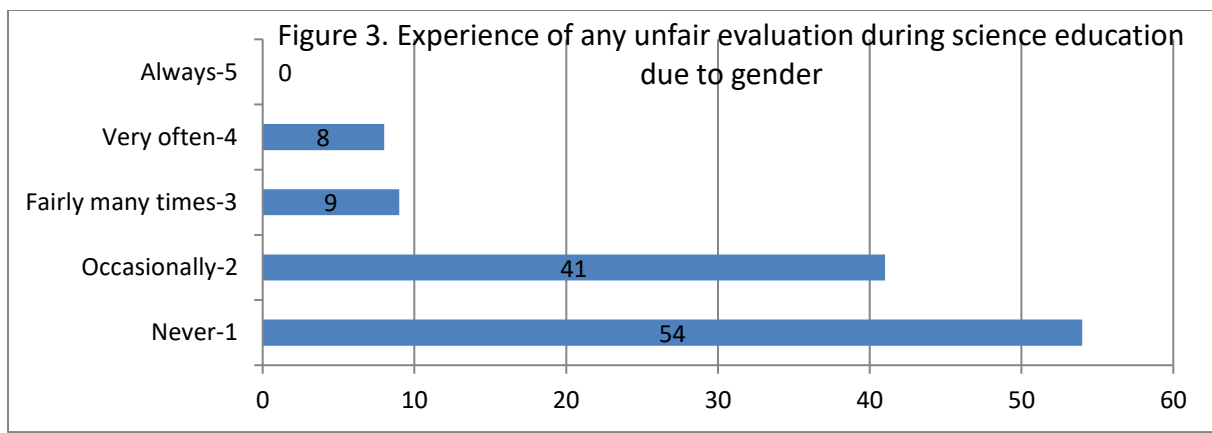
Figure 2. Description of female scientists/engineers and their contribution with respect to those of the counterpart in educational text book

Most of the respondents thought that the balance on depiction of male and female scientists or engineers in the textbook during their education was poor (45%) (Figure 2). Similarly, 42% of them experienced that the contributions of female scientists or engineers are poorly described with respect to those of the counterpart. 26% of the respondents thought that

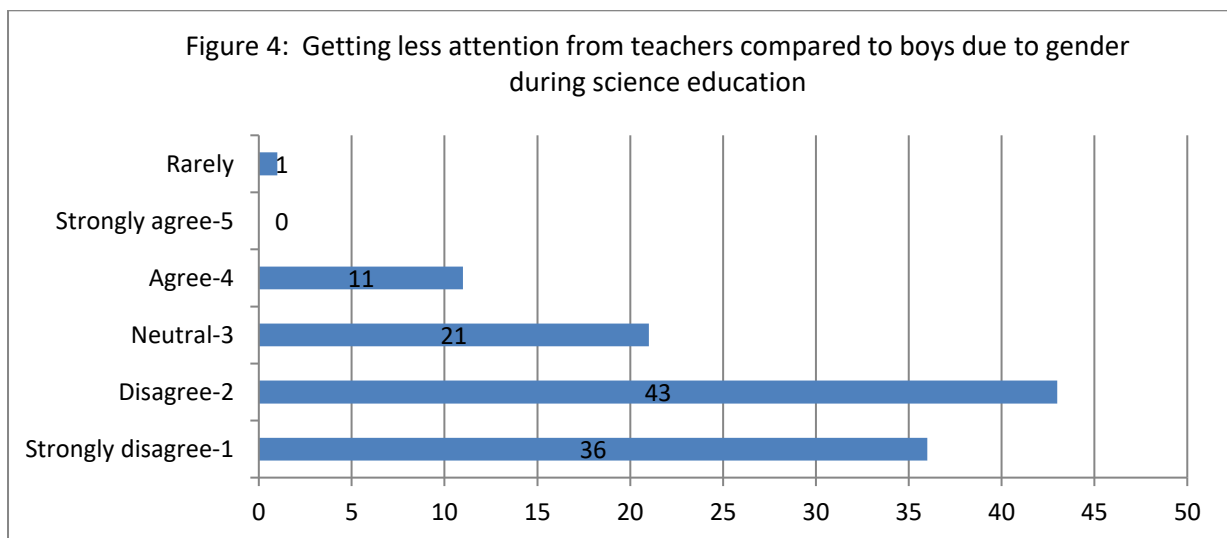
there was fairly balanced depiction of male and female scientists or engineers whereas 33% realized the same level of description of contributions of female scientists or engineers with respect to those of the counterpart.

4.3 Pursuing educational/professional career and gender

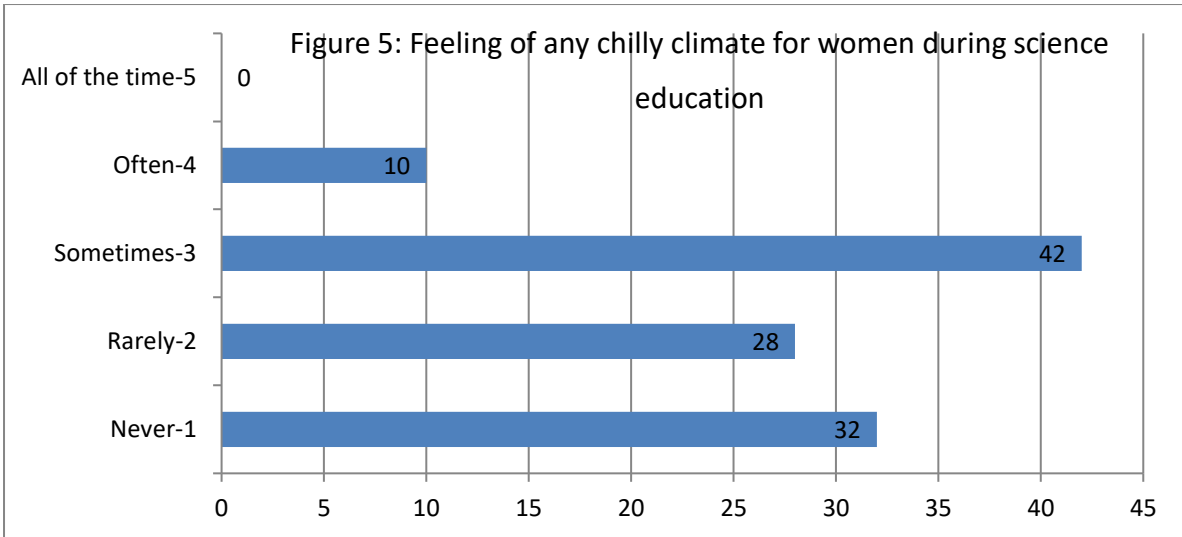
More than half of the respondents (54%) never experienced any unfair evaluation due to gender during their science education and 41% of them occasionally experienced that feeling. More than 2/3rd (79%) of them disagreed that they got less attention from teachers as compared to boys due to gender – only 11 of the respondents felt that they got less attention in class due to being females. Only 8% of the respondents experienced unfair evaluation very often.



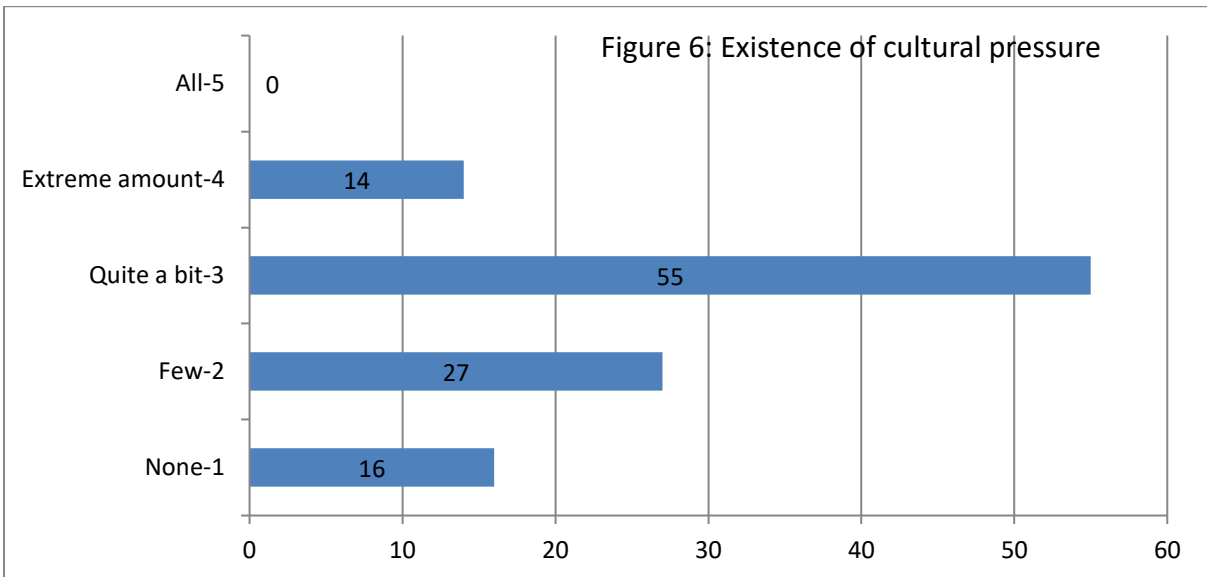
It is strange to notice that only 21 % of the respondents were neutral as getting less attention in education due to being females.



Similarly, 32% of the respondents never felt any chilly climate for women, e.g., sexual harassment or any hostile comments during their science education - 28% rarely felt this feeling, whereas 42% sometimes felt and only 10 % often felt it (Figure 5 below).



Almost half of the respondents (55%) opined that the cultural pressure on girls/women has quite a bit confined them to traditional gender roles thereby prohibiting to pursue professional science career - 14% opined it exists in extreme amount, 27% in few amount and 16% said it does exist no more (Figure 6 below). It is good to note that young age groups have started feeling this differently, meaning they do not feel the cultural pressure to traditional gender roles for females, which is good.



4.4 Most significant difficulties as a female science/engineering professional

More than half of the respondents (58%) prioritized the work-life balance affecting the female science/engineering career the most, followed by lack of job opportunities (12%) and discrimination between men & women (8%) (Table 2). Only 17% of the respondents gave discrimination as second priority followed by career limit in technical roles (13%) and each of workplace culture (12%) & lack of women in senior roles (12%). Lack of access of women

professionals to senior roles was rated as the third priority by 18% respondents, work-life balance by 15% and access to training by 11% respondents.

Table 2. Number of respondents believing the most significant difficulties as a female science/engineering professional

Issues	No. of respondents		
	1 st priority	2 nd priority	3 rd priority
Work/life balance	58	6	15
Work place culture	6	12	5
Lack of access to senior roles	1	6	18
Lack of women in senior roles	6	12	8
Lack of career support	7	11	7
Unclear career objectives	2	4	8
Lack of job opportunities	12	9	7
Lack of network	3	8	7
Career limit in technical roles	5	13	10
Discrimination	8	17	6
Lack of other women in workplace	3	10	10
Access to training	1	4	11

5. CONCLUSION AND RECOMMENDATIONS

The study showed that there is still much to do. Starting from the household levels, by educating parents on transformation from traditional gender roles to girl children by giving them with equal opportunities for education and in particular, to pursue them to study and excel in science, engineering and technical education. There is a need for identifying and giving more examples of female role models in education so that females tend to follow similar paths. There is also a need bigger need for working women to give ample environment and support systems both at works and at homes so that working women scientists, engineers can make greater balance between their lives and work. It is evident that many women tend to work less hours when family becomes their priority, and thereby they will earn less. These realities may be similar across all countries and there is still a long way to go for Nepalese women scientists and engineers for coming together and advocate for better participation in the education, career and for economic development of the nation.

The WISE – Nepal (Women in Science and Engineering in Nepal), has emerged to do the following actions on a short and medium term basis (2-3) years time provided the funds are available.

a. Education, training and mentoring

- Graduate school level: Sponsorship on relevant research projects through on-going projects at different institutions (NGOs/INGOs) involving women engineering students.

- College level: Invite successful women as role model for a talk programme to give inspirational speeches about their work-life balances, career success etc.
- Graduate school level:
 - Counseling and giving information on career paths, potential job opportunities to the potential graduates.
 - Conducting sessions on choosing the right dissertation, student project works.
 - Invite student to participate in demonstration programmes in the field to build more confidence among female students.

b. Career development, retention and retirement

- Graduate school level:
 - Taking interns from engineering institutes as fresh graduates to coach/help them choose their future career.
 - Give the interns opportunity to apply as regular staff after internship in ongoing projects.
 - Host talk programmes on preparing/developing CV by inviting experts.
- Retired stage: Organize a programme where retired women in STEM share their experiences on their career, challenges faced and solution.

c. Women friendliness and gender equality at work

- Unemployed stage: Organize meeting and talk programme with key management staff of potential employers on the issue, like separate toilets for men and women, flexible working hours for working mothers, placement in comfortable regions/fields, security *etc.*

d. Changing social recognition and tradition

- High school level: Organize a session at least once a year for both boys and girls to make them understand that girls can be as competent as boys in science, engineering and technology.

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