

Status of Gender Diversity in STEMM Fields in Pakistan



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Basic Information:-

Location: Southern Asia, bordering the Arabian Sea, between India on the East, Iran and Afghanistan on the West and China in the North

Total Area: 881,888 Sq km

Total Population: ~193 million

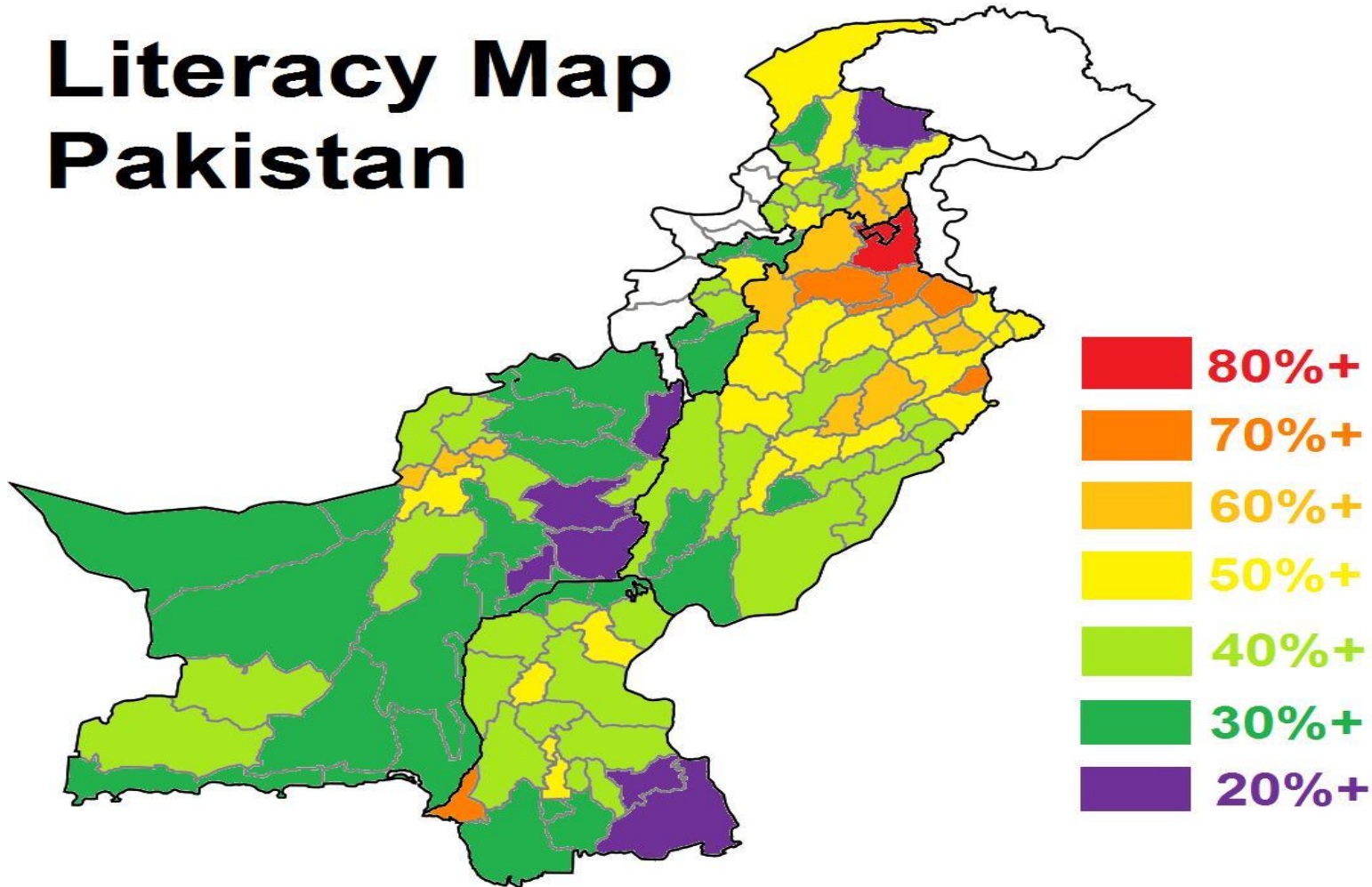
Female Population: ~ 49.12%

Female Education: ~ 45%

Gender Diversity: High

- Though women constitute almost half of the population but women are under-utilized talent in Pakistan like many other countries
- The status of women in Pakistan varies considerably across;
 - classes, regions and rural urban divide due to uneven socio-economic development and
 - and the significant impact of tribal, feudal and capitalist social formation of women life
- The Constitution of Pakistan gives equal rights to men and women. However in practice, women rarely stand at par with their male counterparts which also reflects in STEMM
- Here is a recent data (2014) from of the top ranking university of country in i.e. Quaid-i-Azam University, Islamabad that gives status of gender diversity in STEM in my country - Figure/Tables
- Now data from one of the top Engineering Universities i.e. University of Engineering and Technology, Lahore

Literacy Map Pakistan



Source: Sample taken from the public domain USGS Digital Raster Graphic file o44072d6.tif for the Stowe, VT quadrangle

Table 1: BS Degree Program -Spring 2014

Departments	Male %	Female %
Chemistry	28.6	71.4
Mathematics	65.4	34.6
Pharmacy	22.6	77.4
Physics	50	50
Statistics	38.9	61.1

Table 2: M. Sc. Degree Program - Spring 2014

Departments	Male %	Female %
Biological Sciences	18.5	81.5
Chemistry	20.4	79.6
Computer Sciences	52.1	47.9
Electronics	62.7	37.3
Geophysics	70.4	29.6
→ Mathematics	28.4	71.6
Physics	43.5	56.5
Statistics	21.3	78.7

Table 3: M. Phil Degree Program - Spring 2014

Departments	Male %	Female %
Biological Sciences	33.3	66.7
Chemistry	35.8	64.2
Computer Sciences	73.3	26.7
Electronics	67.8	32.2
Geophysics	85.9	14.1
Mathematics	33.3	66.7
Pharmacy	50	50
Physics	78	22
Statistics	51.4	48.6

Table 4: Ph. D Degree Program - Spring 2014

Departments	Male %	Female %
Biological Sciences	49.4	50.6
Chemistry	61.2	38.7
Computer Sciences	80	20
Electronics	95.7	4.3
Geophysics	93.3	6.7
Mathematics	53.4	46.6
Pharmacy	75	25
Physics	63.5	36.5
Statistics	52.6	47.4

Table 5: Graduated in 2010 from UET, Lahore

Programs	Male %	Female %
Bachelor	-	-
*M. Sc. In		
Electrical Engineering	87	13
Computer Sciences	62.5	37.5
Civil Engineering	73.3	26.7
Transportation Engineering	-	100
Environmental Engineering	33.3	66.7
Chemical Engineering	55.6	44.4
Metallurgical and Material Engineering	50	50
Manufacturing Engineering	50	50
Engineering Management	80	20
Mathematics	46.7	53.3
Physics	32.4	67.6
Chemistry	27.5	72.5
**M. Phil in		
Chemistry	65	35
Mathematics	31.3	68.7
Physics	53.3	46.7
Ph. D	90	***10
Total		


* Only in given Engineering fields. If take in account other fields then female makes only 19% of total fields

** Non in engineering fields

*** In Computer Sciences not in Engineering fields

Table 6: Discipline wise/Gender wise Ph. Ds in % (Source: HEC Annual Report 2012-13)

Scholarships	Gender		Disciplines						
	Male	Female	Agriculture and Veterinary Sciences	Biological and Medical Sciences	Physical Sciences	Engineering and Technology	Business Education	Social Sciences, Arts and Humanities	Total PhDs
Foreign	86.5	13.5	11.89	12.93	34.00	27.14	4.41	9.62	1632
Indigenous	78.9	21.1	17.90	19.47	39.82	10.17	3.47	9.15	1268
Total	83.2	16.8	14.52	15.79	36.55	19.72	4.01	9.41	2900

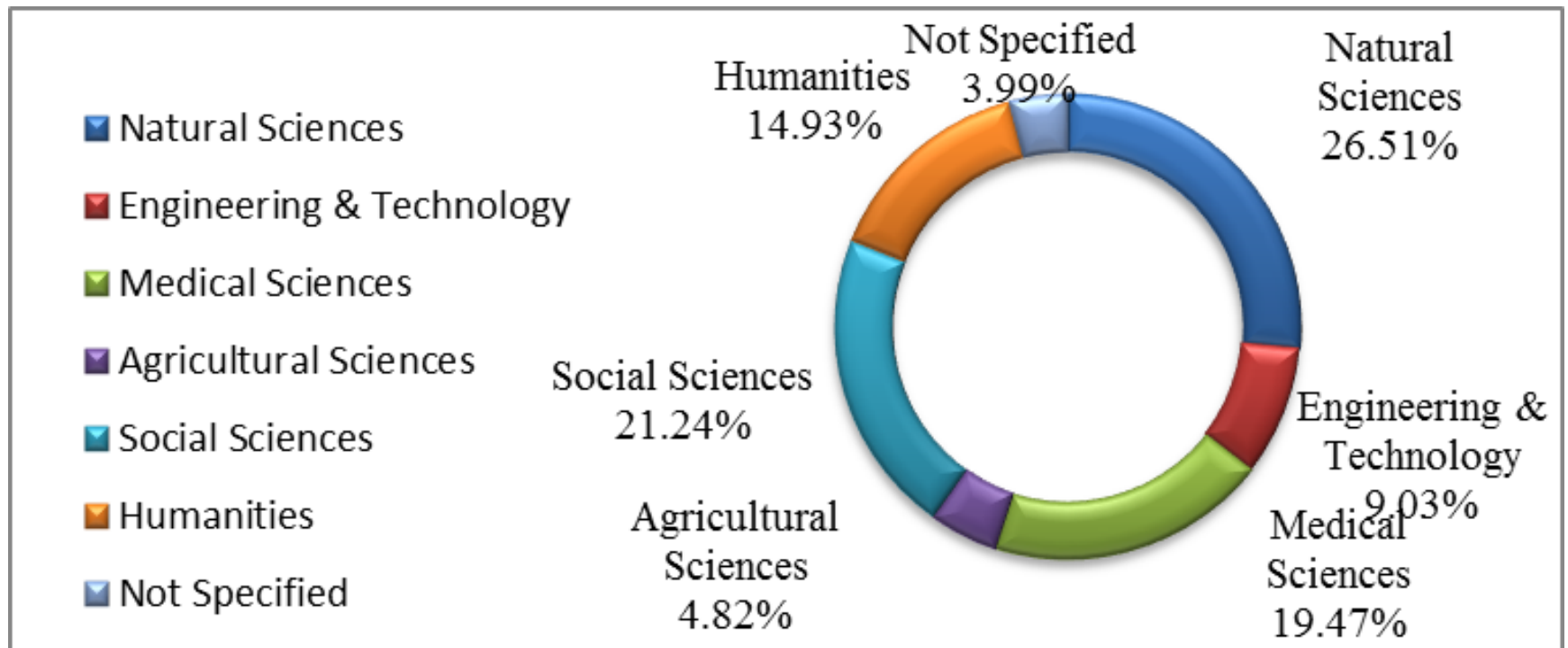
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- As far as forth letter of STEMM is concerned, according to top Medical University data i.e. Dow Medical University, Karachi, it has currently 70% women to 30 percent men enrollment
 - Thus women now make up the vast majority of students studying medicine
 - A gradual change that's come about after a quota favoring male admittance into medical school was lifted in 1991
 - However, this majority does not translate in work force as doctors registered with the Pakistan Medical and Dental Council (PMDC) only 44% are female and the % of female specialists is even smaller i.e. only 27
 - Now in terms of employment, according to the Pakistan Bureau of Statistics - Employment Trends Report 2011, female participation in the workforce has increased from 16.3% to 24.4% in the last decade (Tables/Figure)


**Table 7: Education of women working in Pakistan's public sector
(Source: PCST Survey 2010-2011)**

Education Category	Male (%)	Female (%)
Total Manpower	81.60	18.40
MBBS/BDS/Equivalent	59.94	40.06
MD/FRCS/FCPS/MRCS/ Equivalent	73.02	26.28
B. Sc. (Eng.)/B.E/ Equivalent	79.25	20.75
M.E/M. Sc./ Equivalent	84.97	15.03
Others	90.55	09.45
B. Sc./B.A/ Equivalent	87.27	12.73
M.Sc./M.A/ Equivalent	68.83	31.17
M. Phil./ Equivalent	71.93	28.07
Ph. D	73.33	26.67

Percentage of female faculty (headcount) in different fields of Science

Source: PCST R&D Survey 2013-14



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- Though women constitute quite less percentage with compare to their male counterpart in STEMM fields but
 - Pakistani women scientists/engineers/medical doctors in general do not face conscious discrimination in terms of salary, facilities, study leave and promotions etc.
 - Government with strong political will has the capacity to take care of gender diversity in STEMM and advance gender innovation
 - This may be supplemented and complemented by Universities, Institutes and Women Organizations
 - In brief concerted effort are required from all stakeholders

