Fisheries Professionals of India:

Gendered analysis of profile, academic performance and career growth

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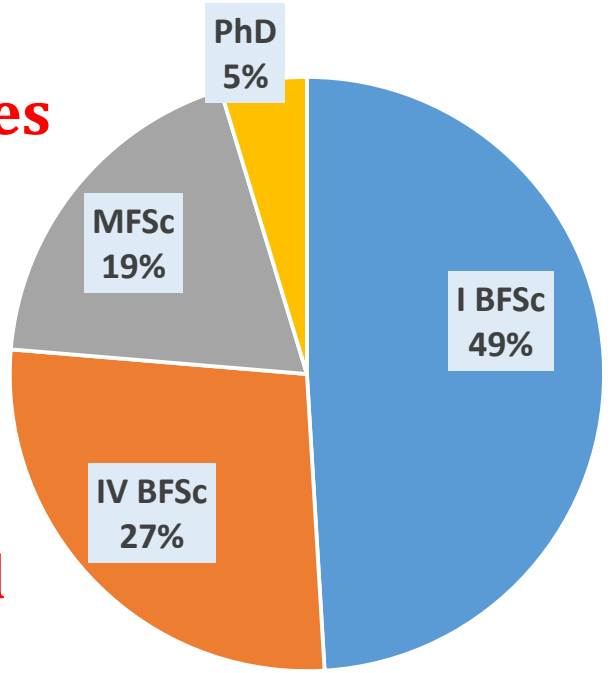
GAF7 @ AIT 2018

Higher Fisheries Education in India

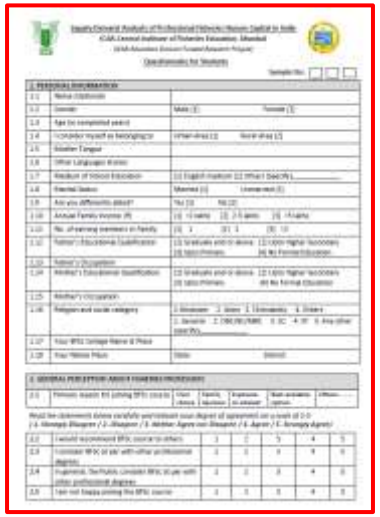
- Higher education in fisheries science is organised as 4 Years BFSc, 2 Years MFSc and 3 to 5 Years PhD programs
- 27 Colleges offer **BFSc** is a 4 year professional degree program offered in as on AY 2018 - **1005 seats** while a dozen Colleges offer **MFSc and PhD** programs with **385 and 165 seats :** *ICAR/UGC governed*
- In addition, several general Universities offer multitude of Programs related to fisheries and aquaculture across India : *UGC governed*
- Need to map the **students profile** to make **learning more relevant** & ensure ***gender equity*** among others
- National level study funded by ICAR-Education Division

Students' General Profile

- **All India level study conducted across 20 Fisheries Colleges covering 1063 students (2016-17)**

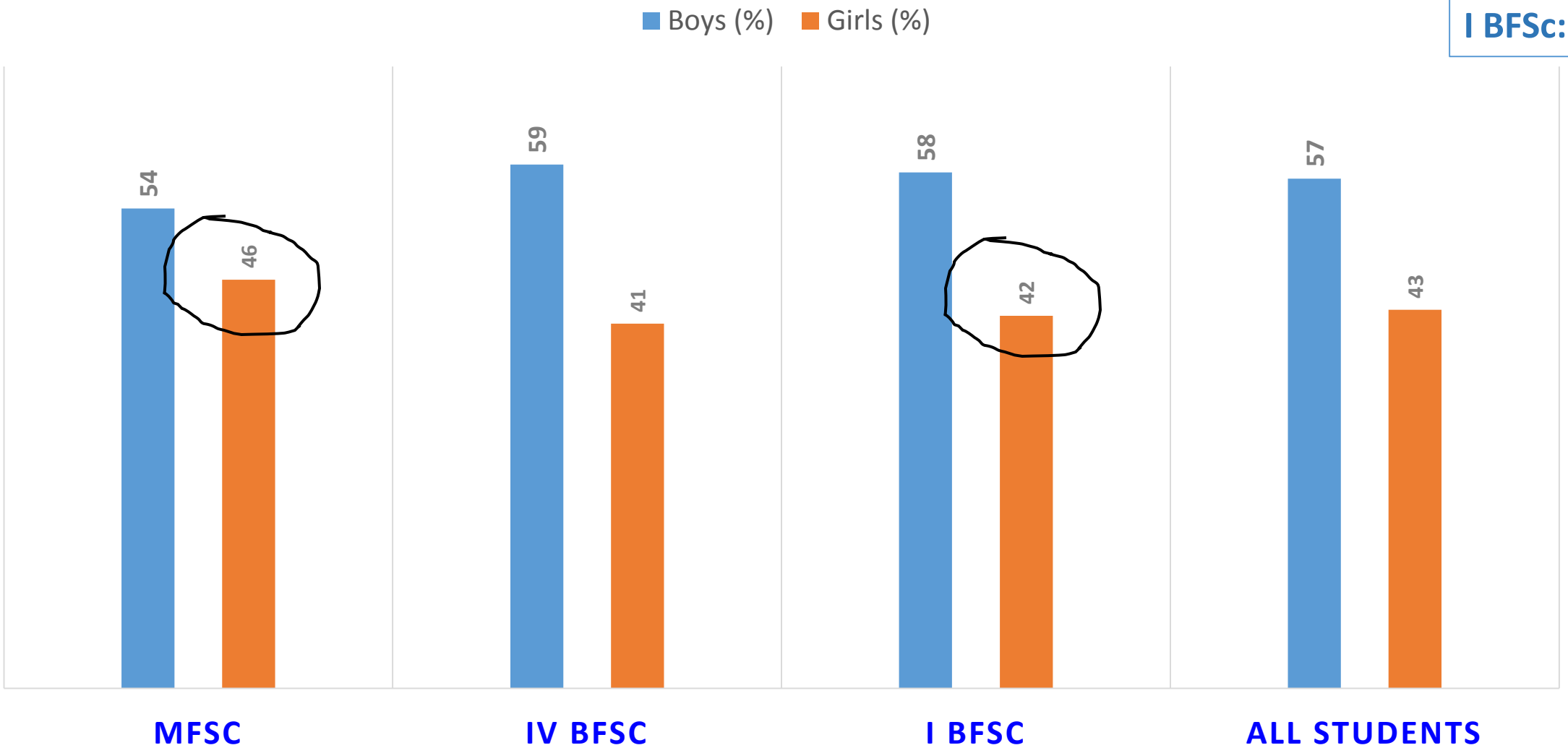


- **42.36 % of the students were girls**
- **Around two-third (59.32 %) of students hailed from rural areas while 26% belonged to SC/ST category**
- **52% had their schooling with medium of Instruction other than English**
- **Most students (72.71 %) hailed from households with annual income of < 2 lakhs**

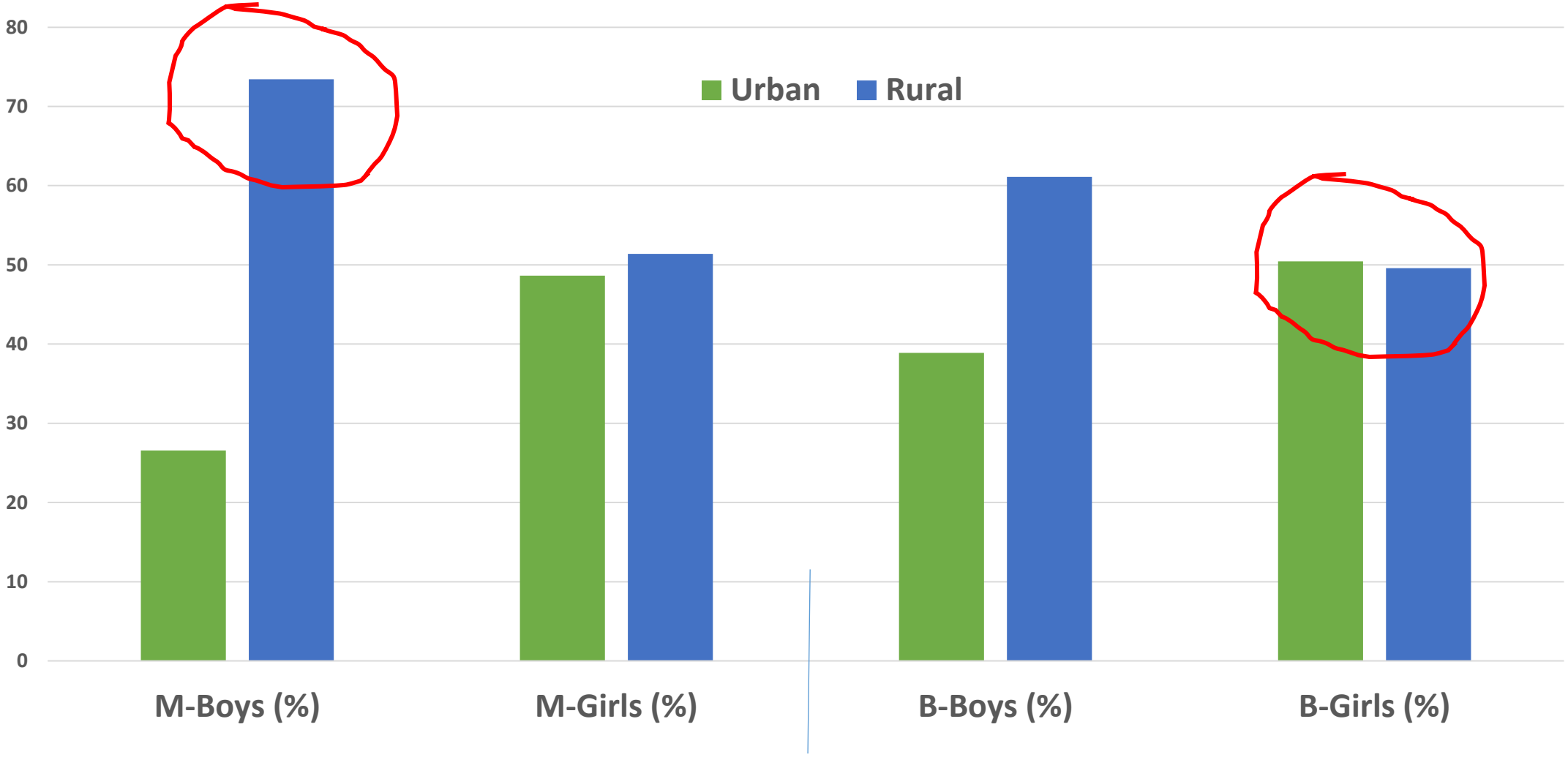


Composition of Fisheries Students Surveyed

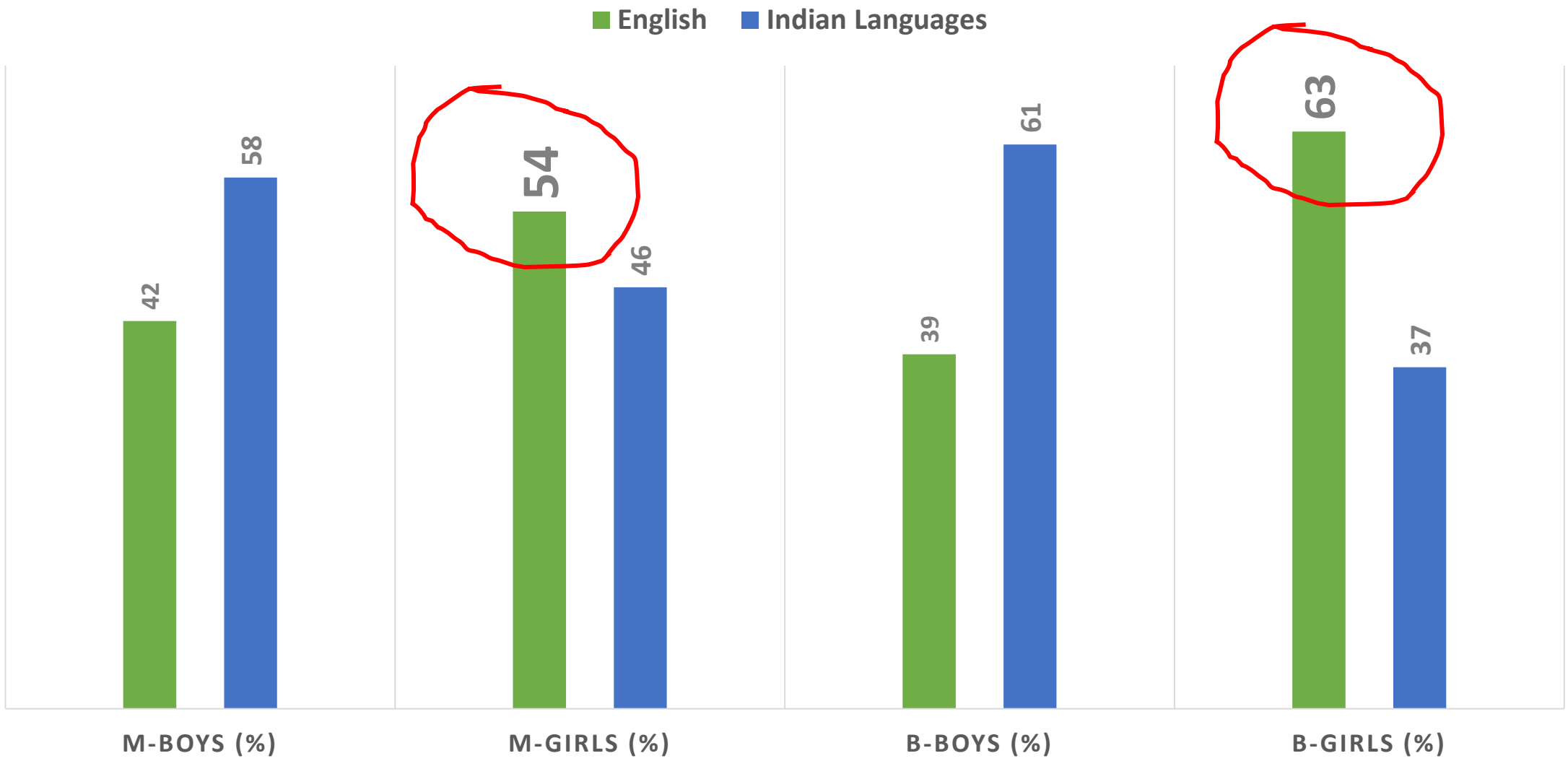
(N=1063)
MFSc: 237
IV BFSc: 268
I BFSc: 558



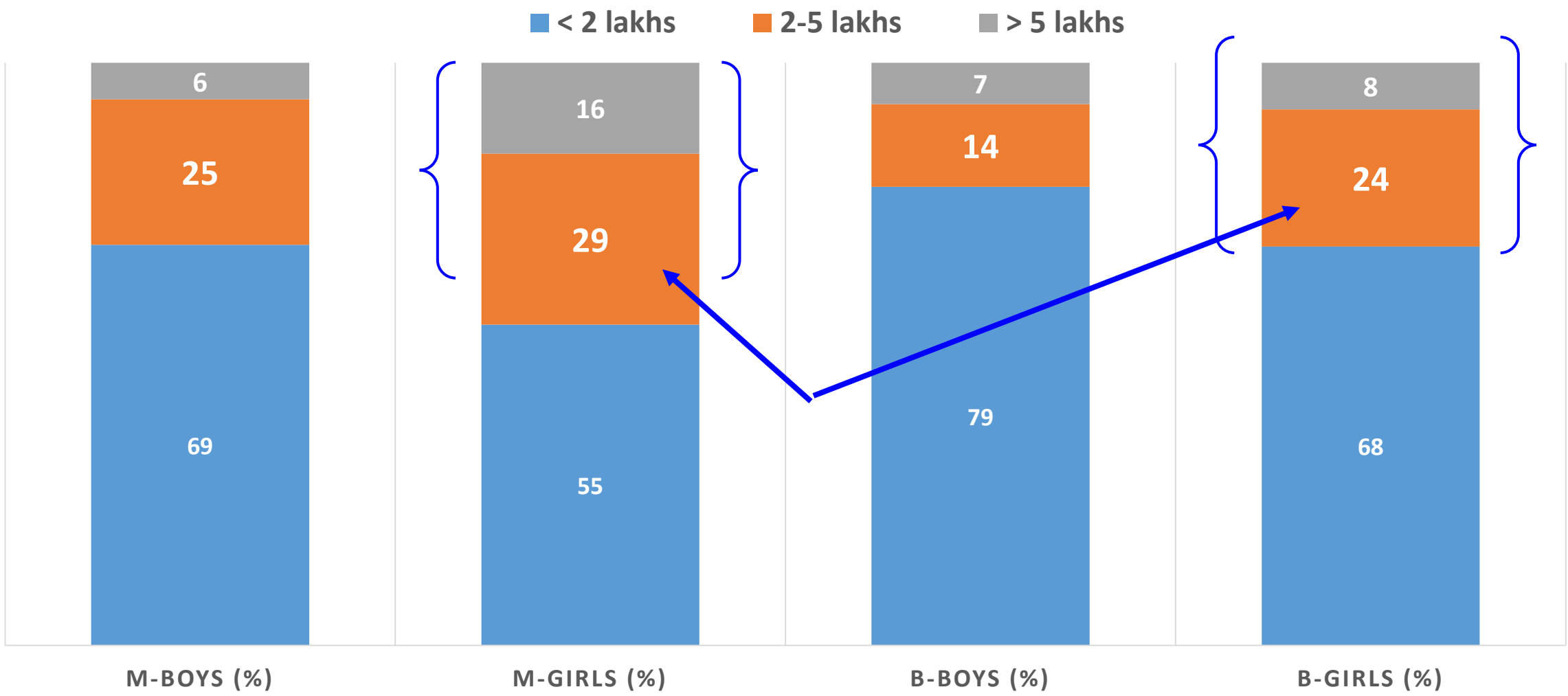
Place of Residence



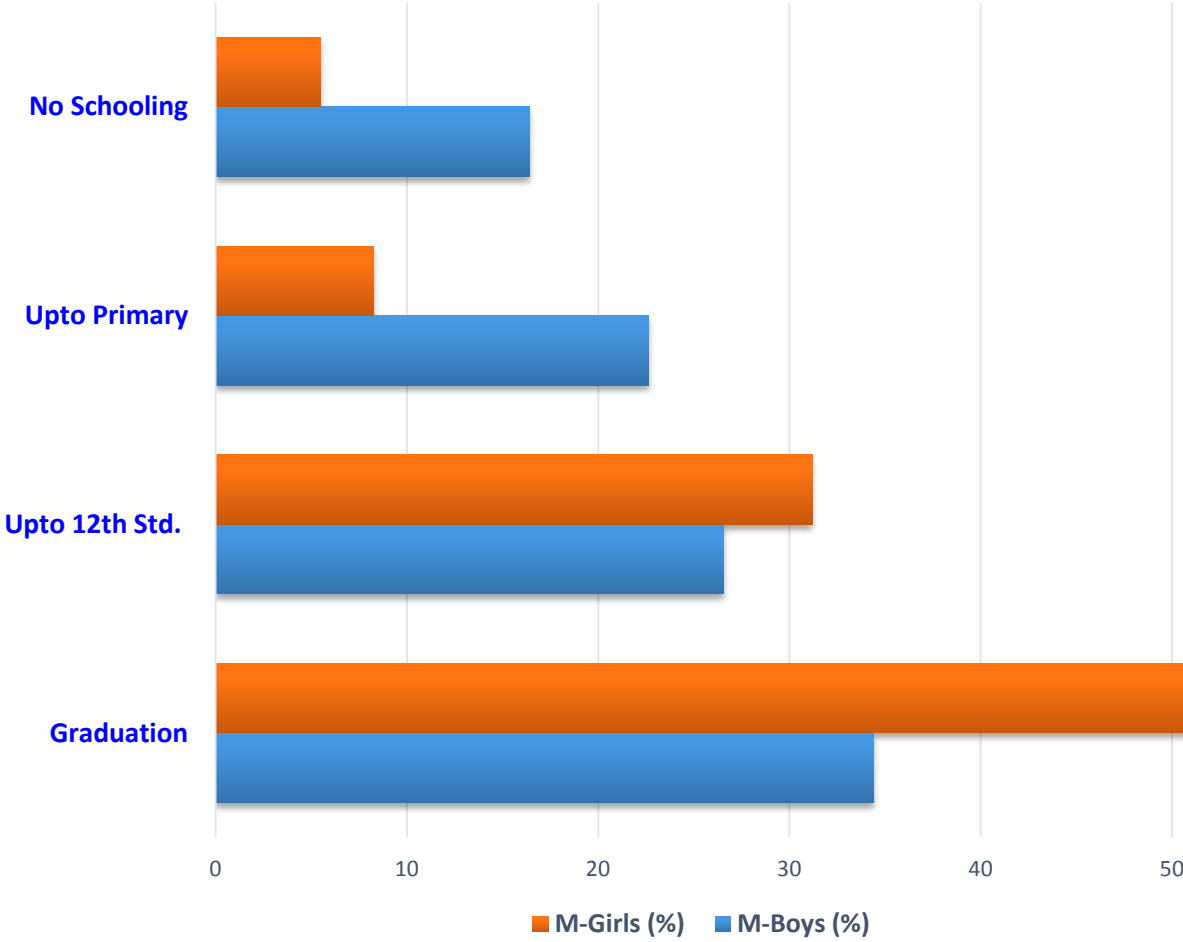
Medium of School Education

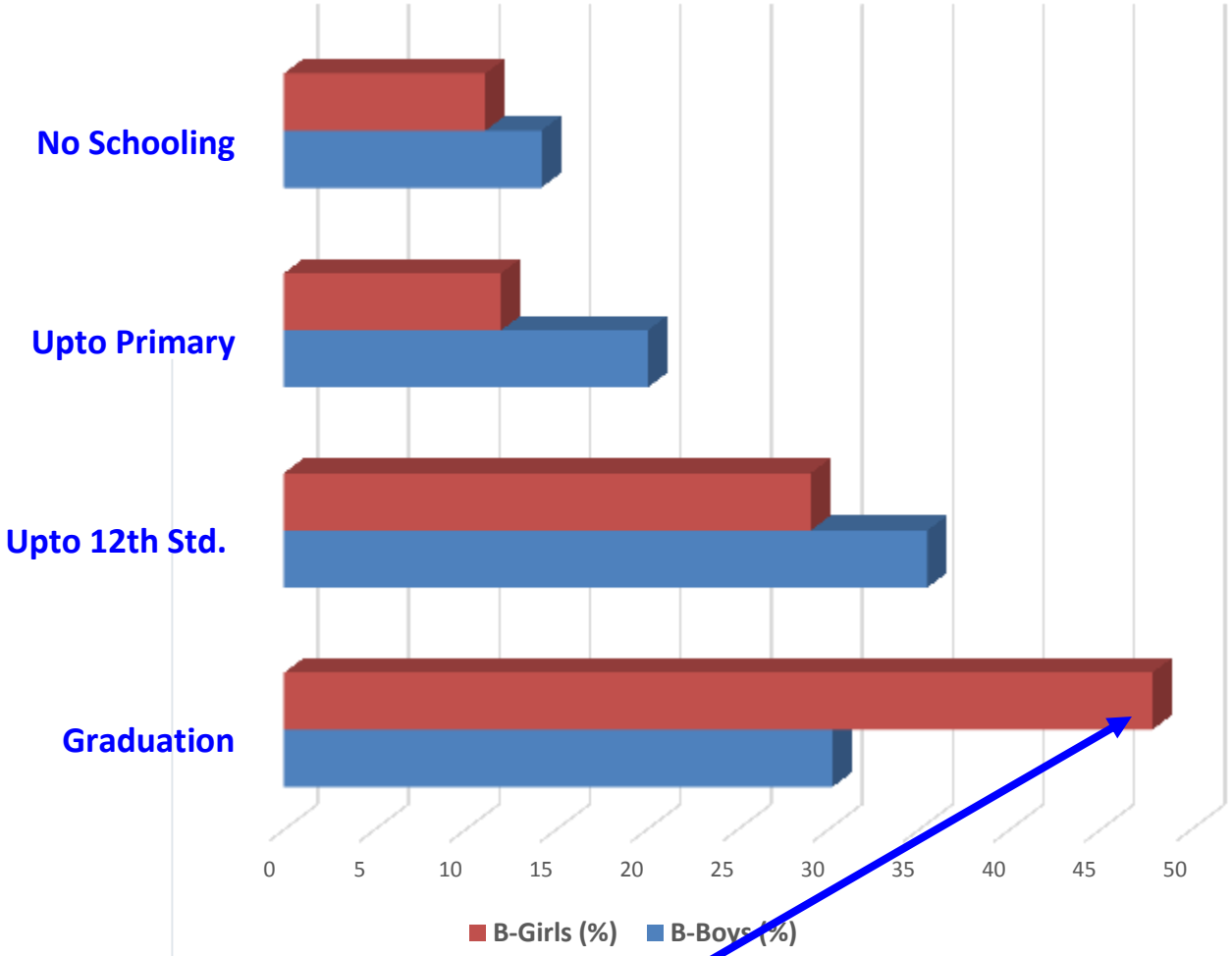


Parents Household Income (INR / Annum)

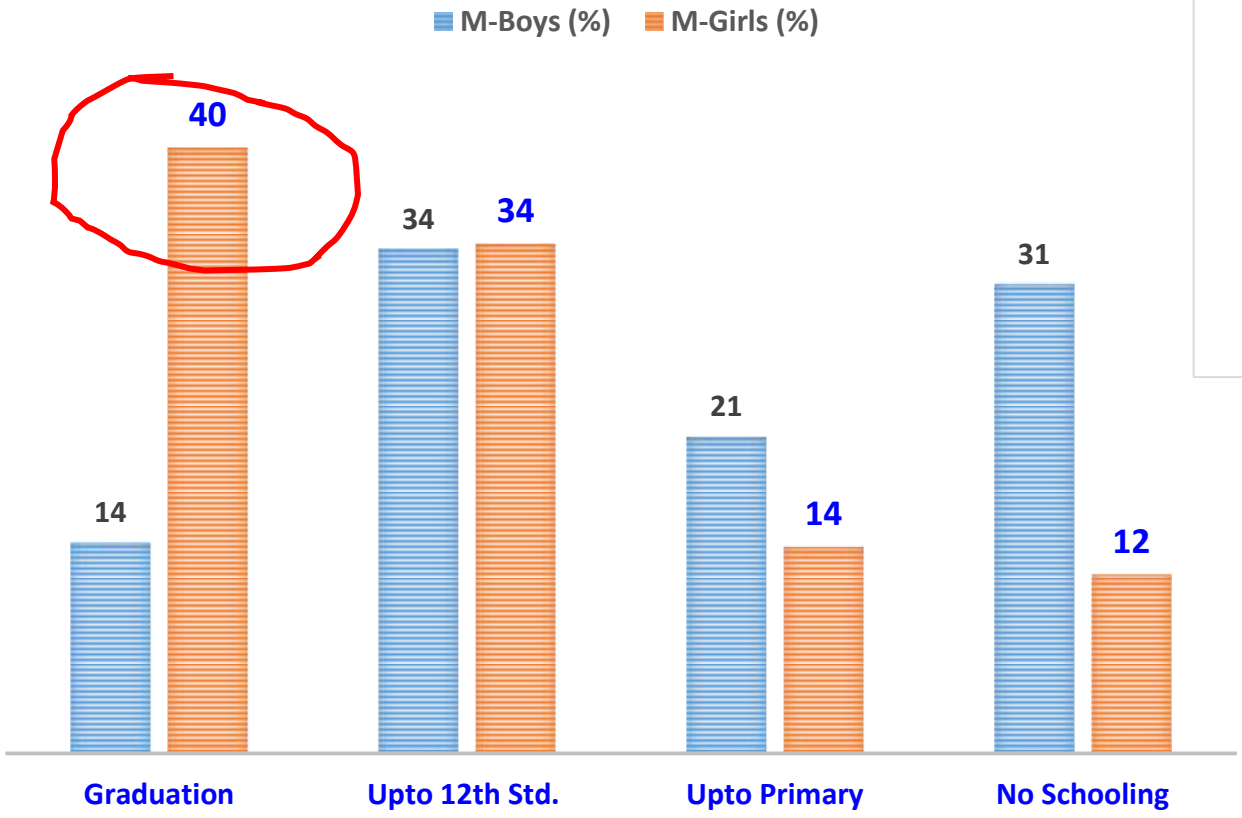


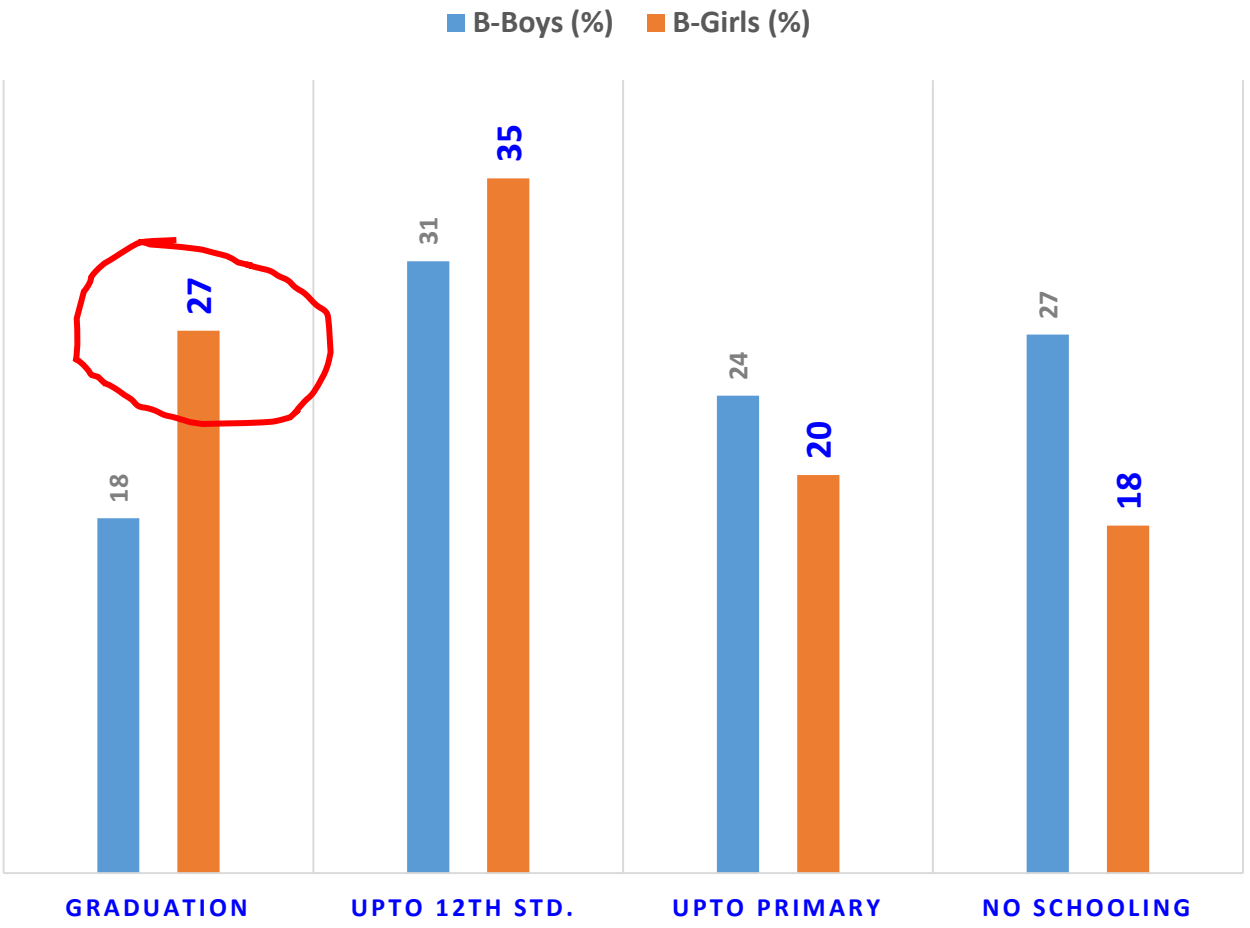
Father's Education



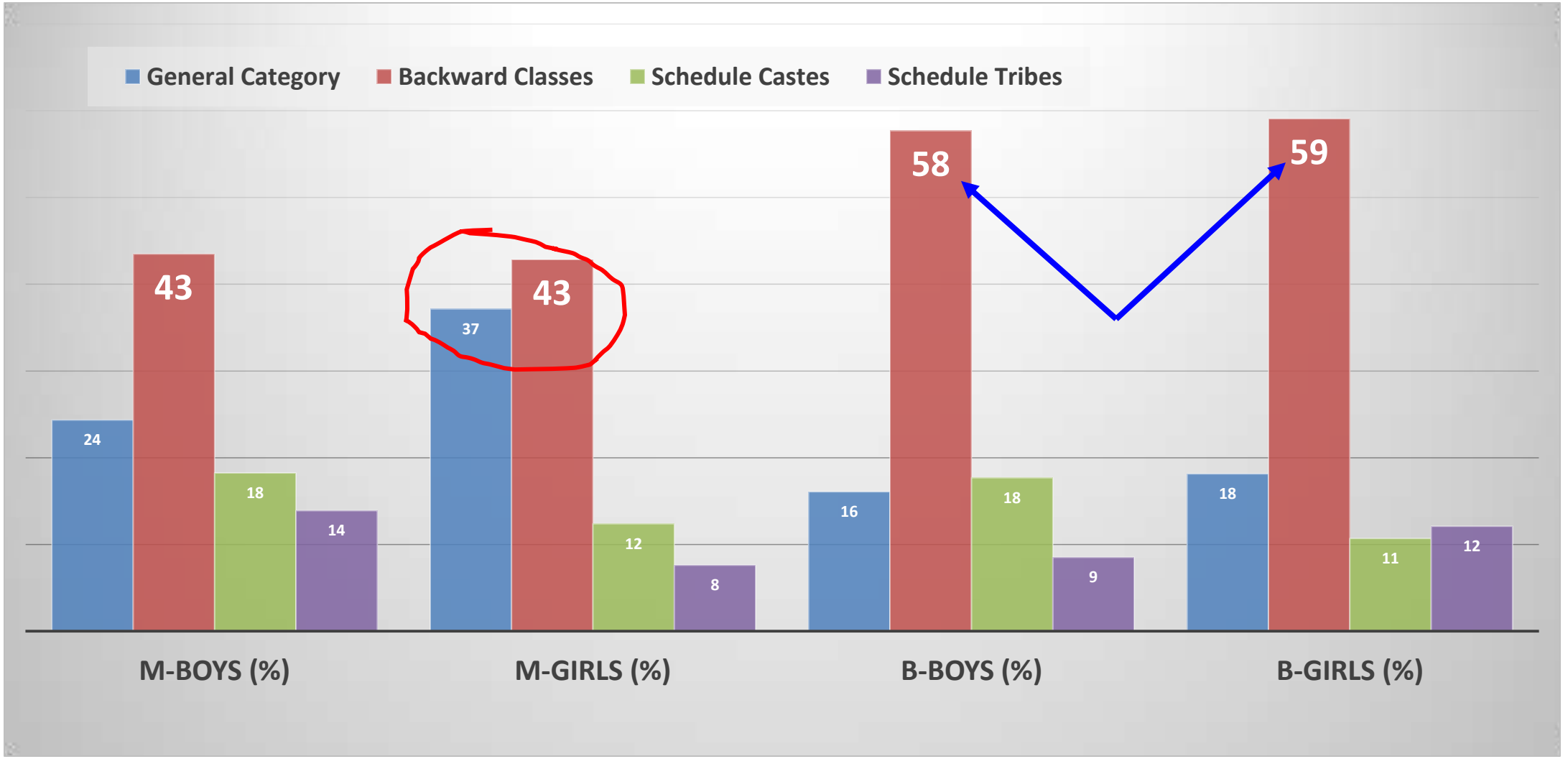


Mother's Education

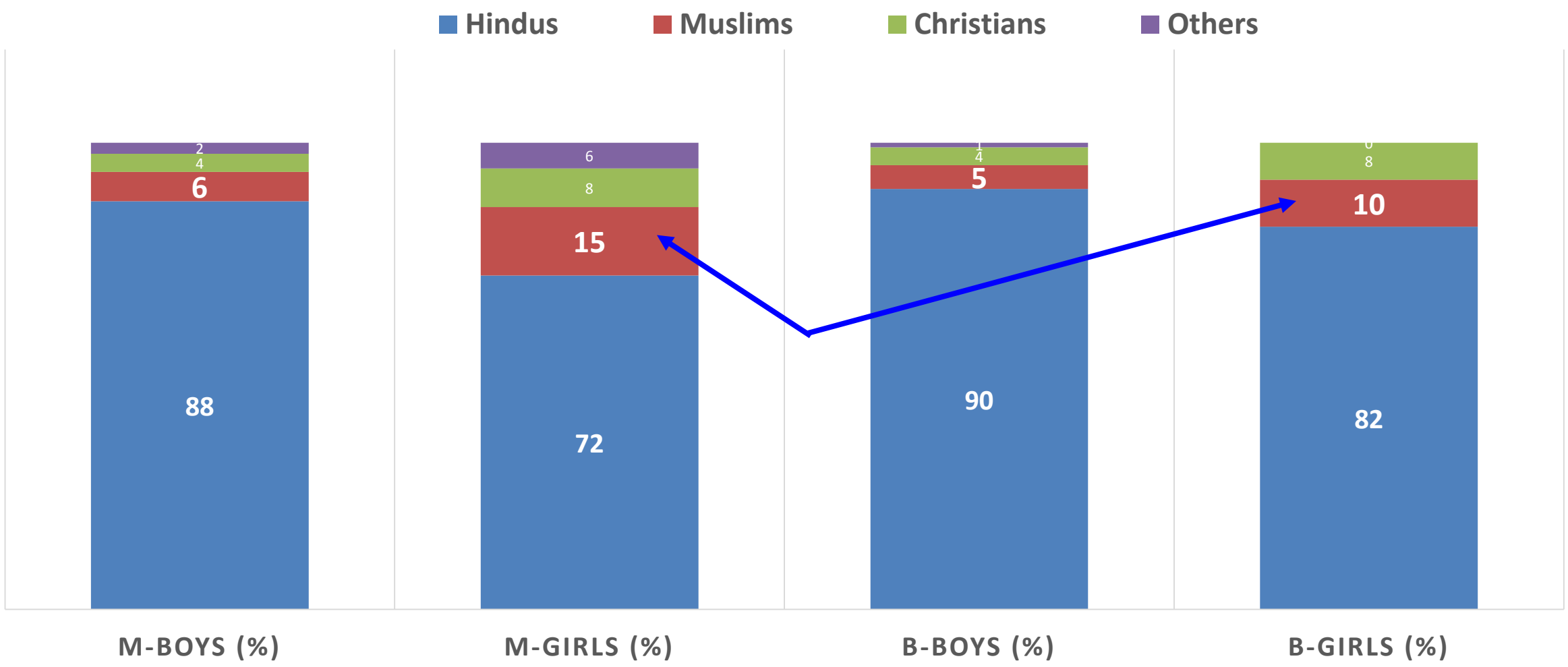




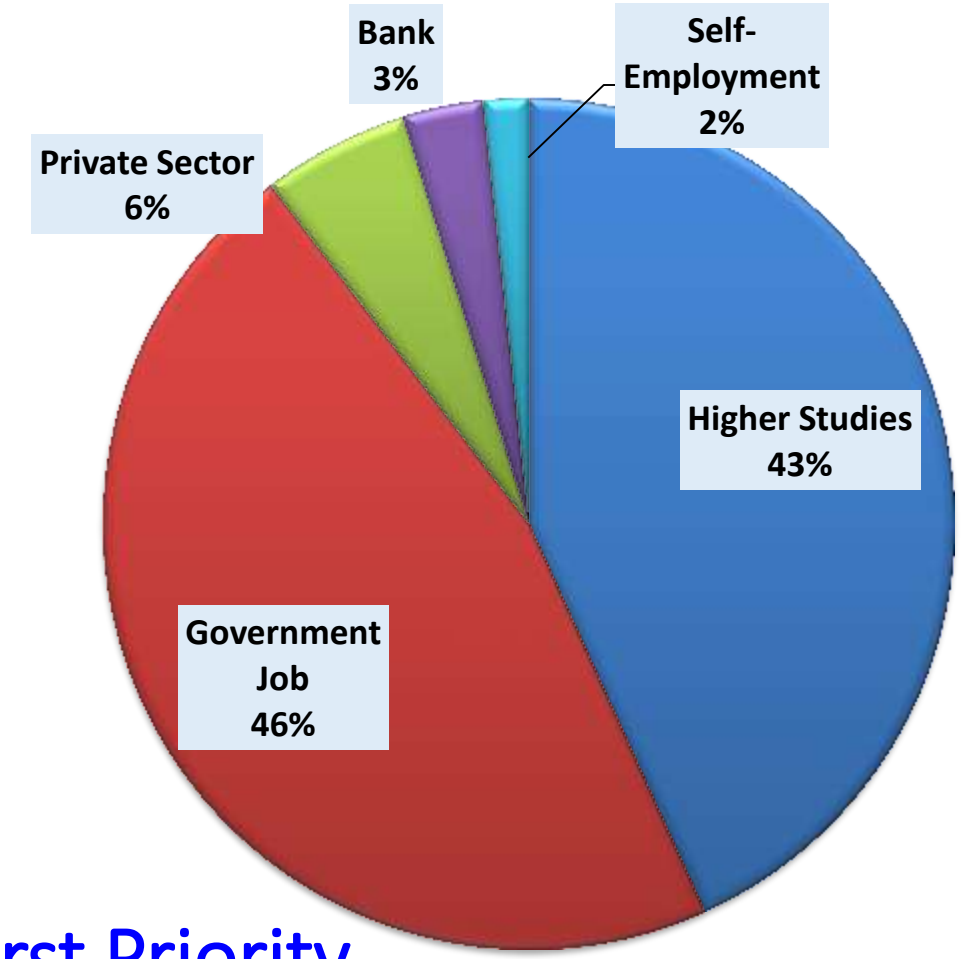
Students' Social Category



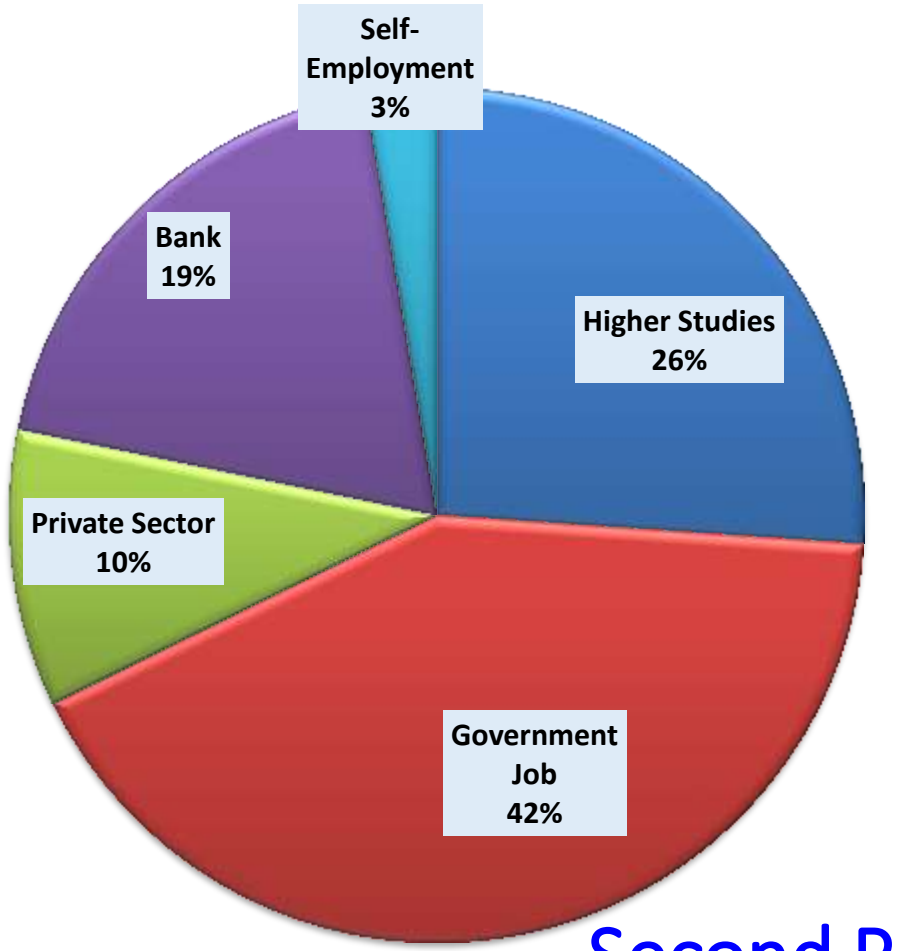
Students' Religion



Students' Career Choices



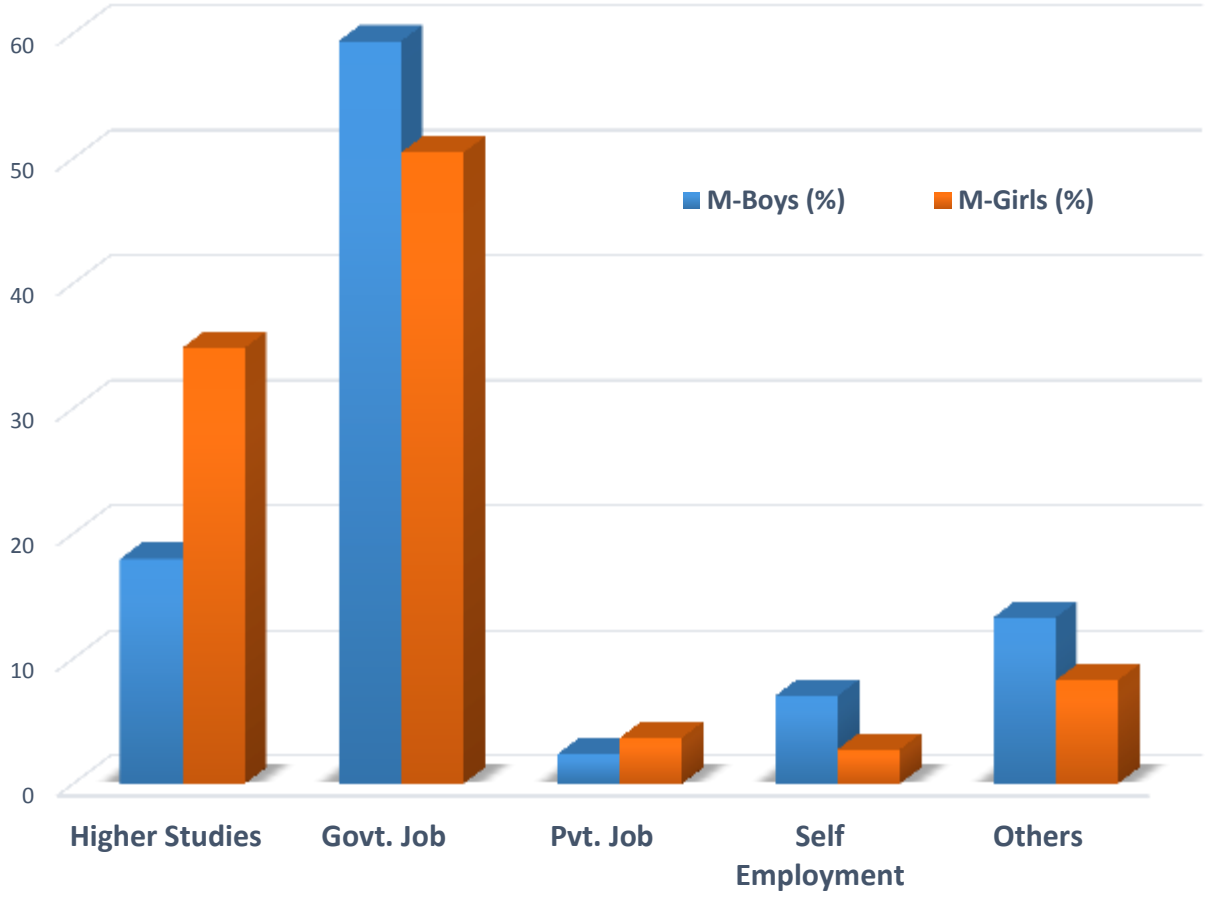
First Priority

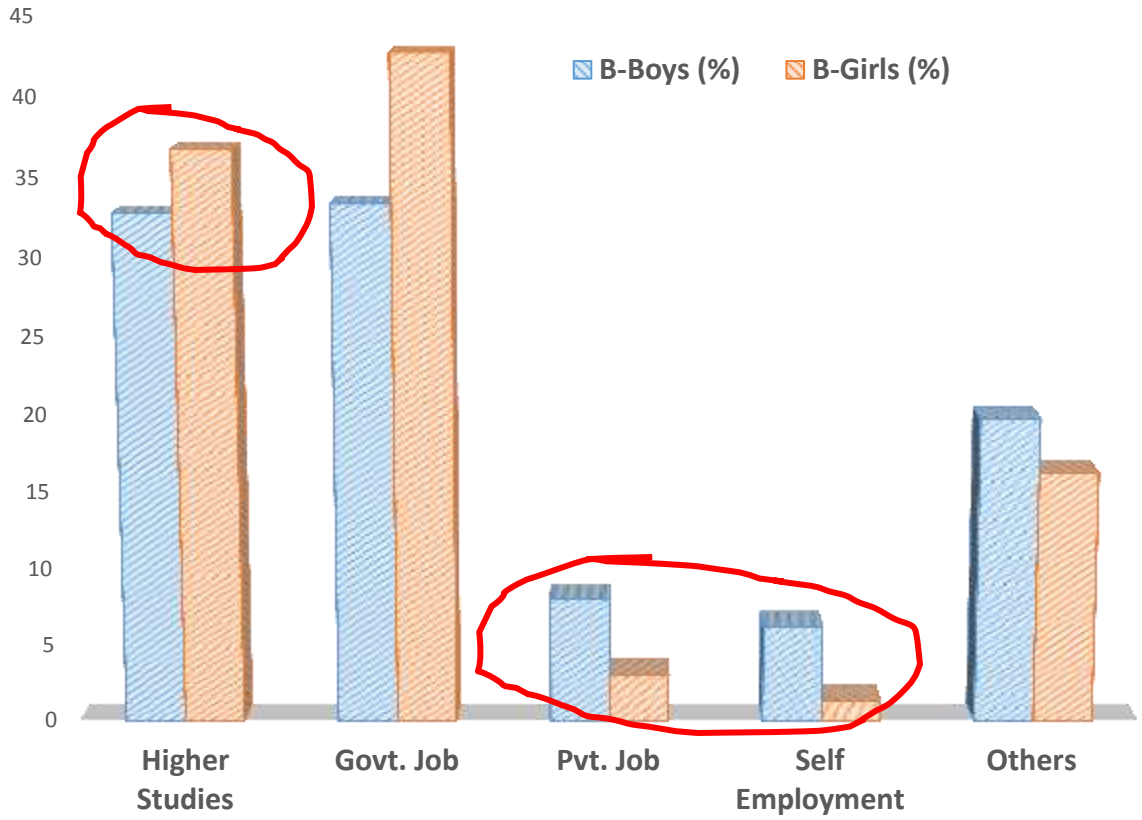


Second Priority

N=1063; in%

Students' Primary Career Choices





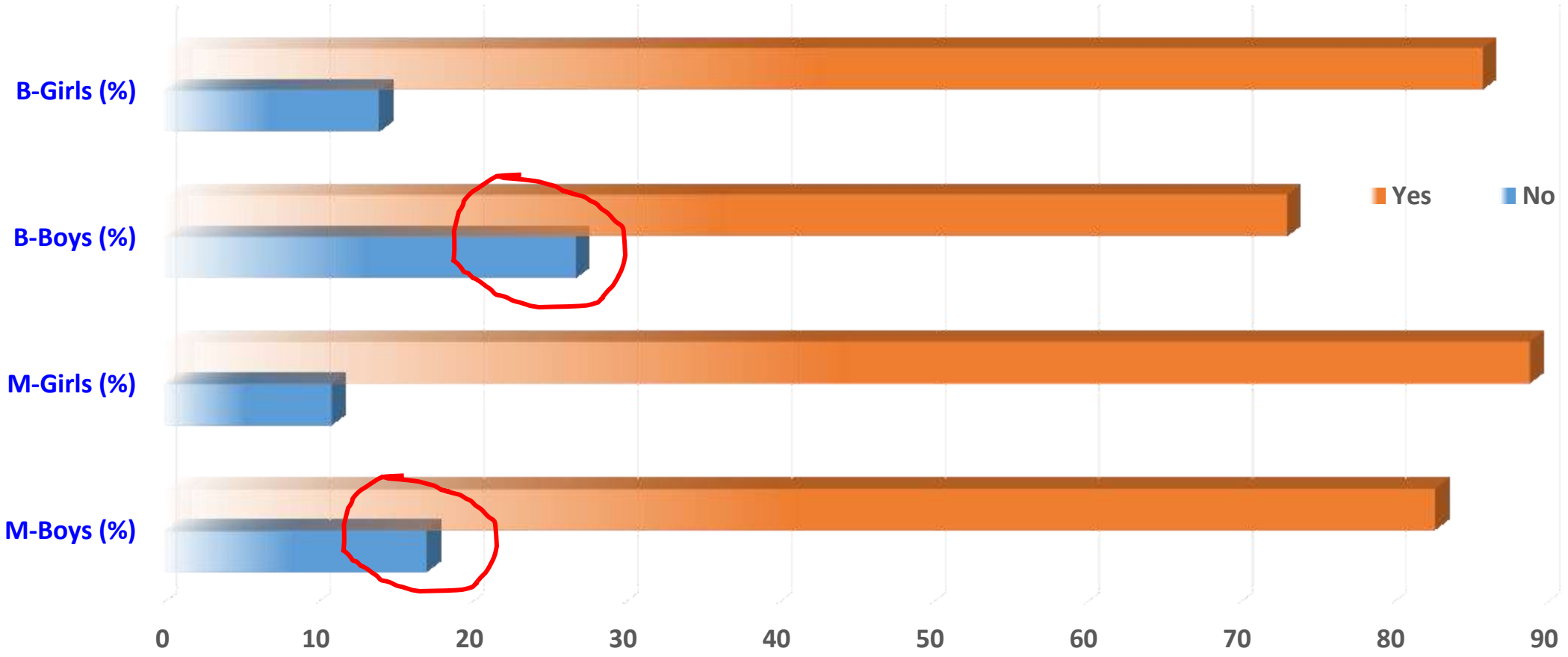
Students Career Choices

N=1063; in%

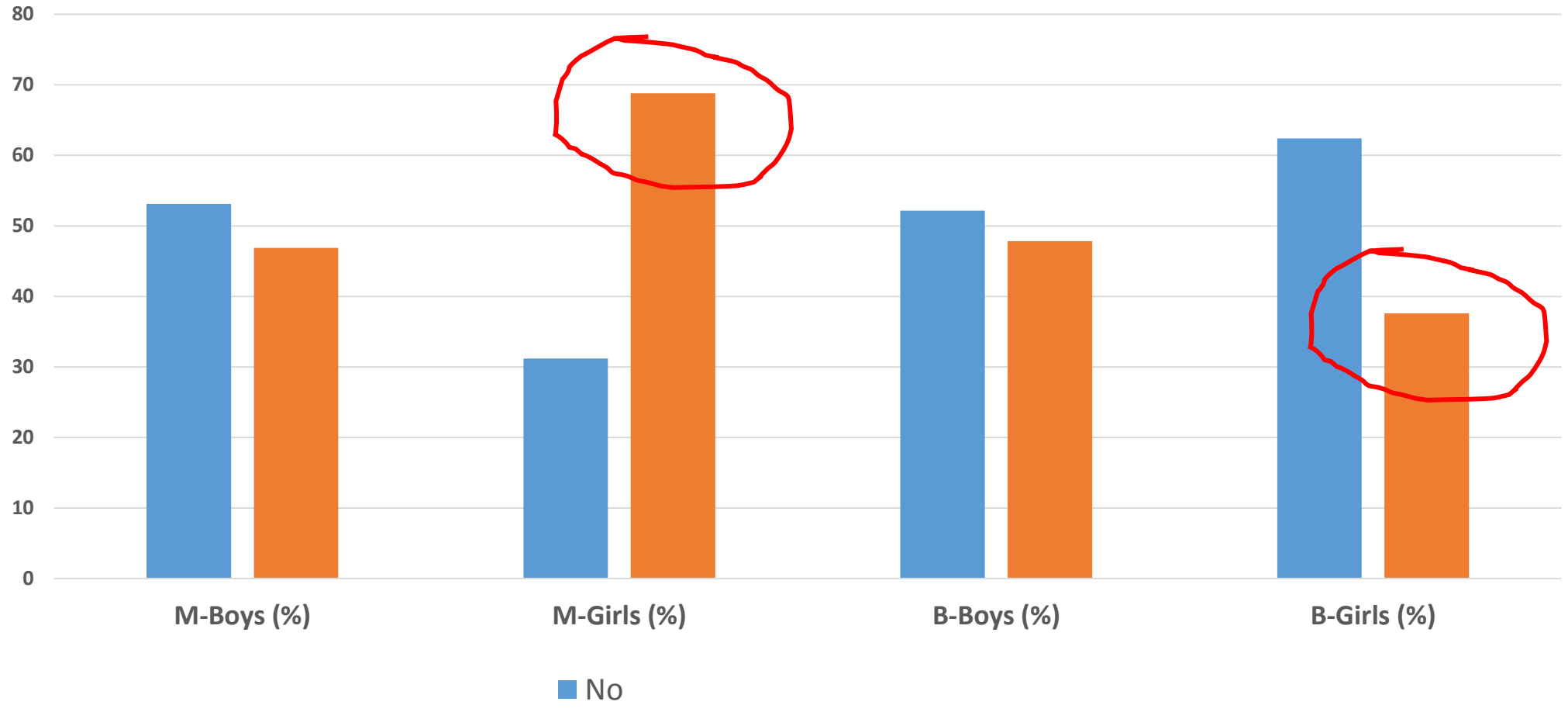
	1st Priority	2nd Priority	3rd Priority	4th Priority	5th Priority
Higher Studies	**35.5**	9.7	4.3	5.8	3.8
Government Job	**38.1**	**15.5**	3.9	2.4	1.1
Private Sector	4.6	3.9	**12.4**	**13.4**	4.9
Bank	2.5	7.1	**10.8**	**8.4**	**8.6**
Self-Employment	**1.4**	**1.0**	**2.9**	**<1**	**<1**

Reason for Joining Fisheries Science Program

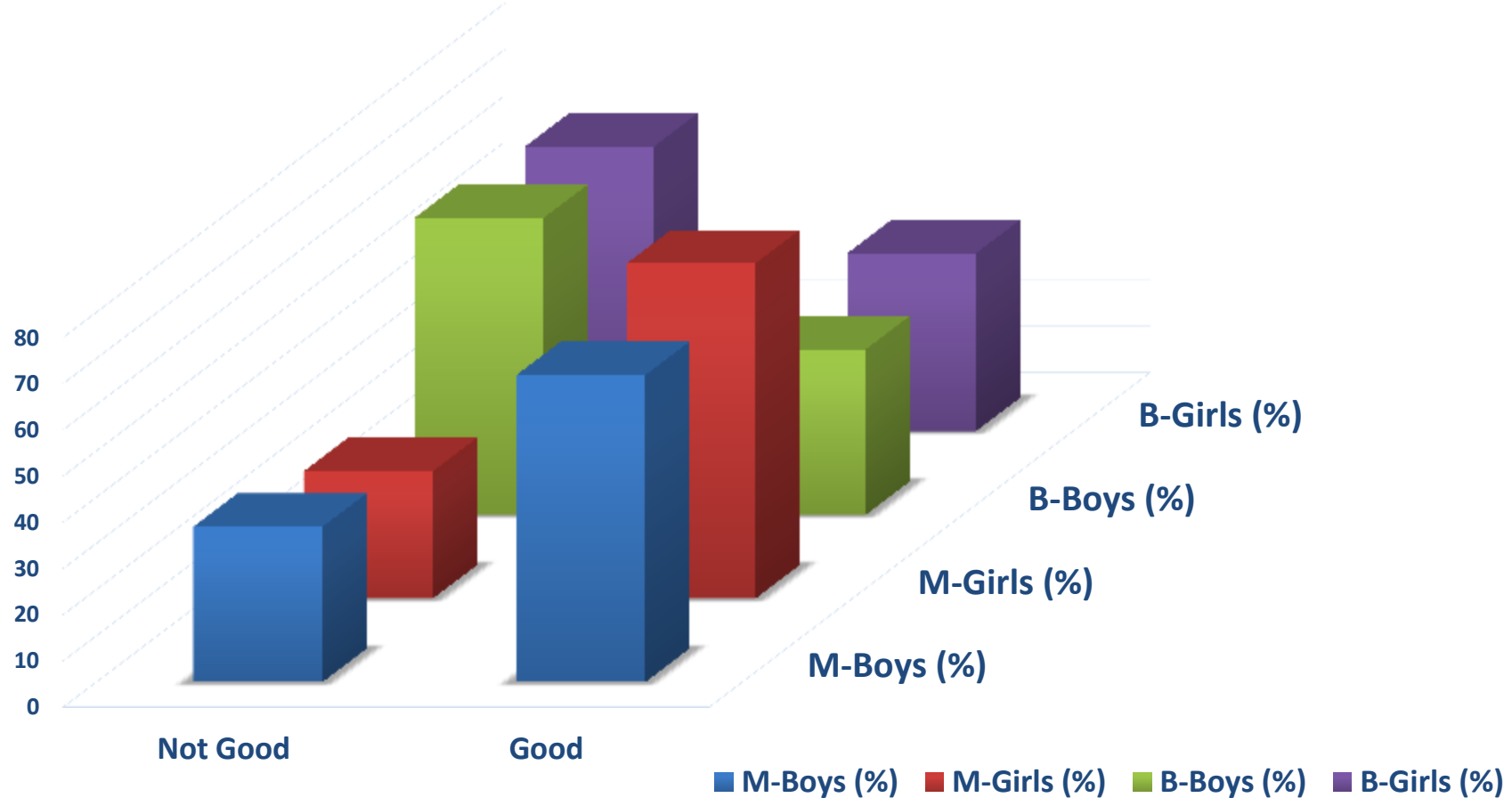
Fair and Equal Treatment of Boys & Girls in College:
What students perceive?



Will they pursue higher studies in same College/University?



Prospects of getting a job after graduation



Employable Skills Perception Index (ESPI)

N=1063

ESPI Category	Students Perception (%)	Teachers Perception (%)
Poor / Low (<0.33)	0.28	2.3
Average / Medium (0.33-0.66)	54.67	73.3
Good / High (>0.66)	45.04	24.4
ESPI Mean Score :	*0.66 (66%)*	*0.57 (57%)*

- *Masters & PhD students had significantly higher ESPI score* than BFSc (Final/First) students
- Both girls and boys had similar ESPI score
- *Neither* household income *nor* rural/urban background significantly influence students ESPI score
- Teachers' qualification, cadre and gender didn't affect their perception of ESPI

Student Expectations

- **55% of students don't want to continue their higher studies in same College/University**

- **61% students expect more than ₹ 30,000 as starting salary in first job; expectations of both boys and girls were *similar***

- **Students *rated Course Curriculum (58%) and Infrastructure (51%) as average,* and feel as not adequately imparting practical / employable skills**

Panel Data Analysis of CIFE Students Career (1995-2015)

Methodology

- **Data :-**

➢ **1995-97 to 2015-17 batch : 1186 M.F.Sc Students**

➢ **1997-00 to 2017-20 batch : 764 Ph.D students**

➢ **Total Data sets = 1950**

- **Data Sources :-**

➢ **CIFE Alumni directories**

➢ **Facebook (Alumni association, Individual accounts)**

➢ **Alumni details from different Divisions**

➢ **Personal phone calls and interaction with key informants across various batches**

- **Challenges faced during data collection :-**

➢ **Since data is collected from 1995 onwards, Discipline wise data availability became a major challenge**

➢ **Specially for Mariculture and Inland Aquaculture students, who studied at CMFRI and CIFA, it was time consuming to collect relianble data**

Students details –

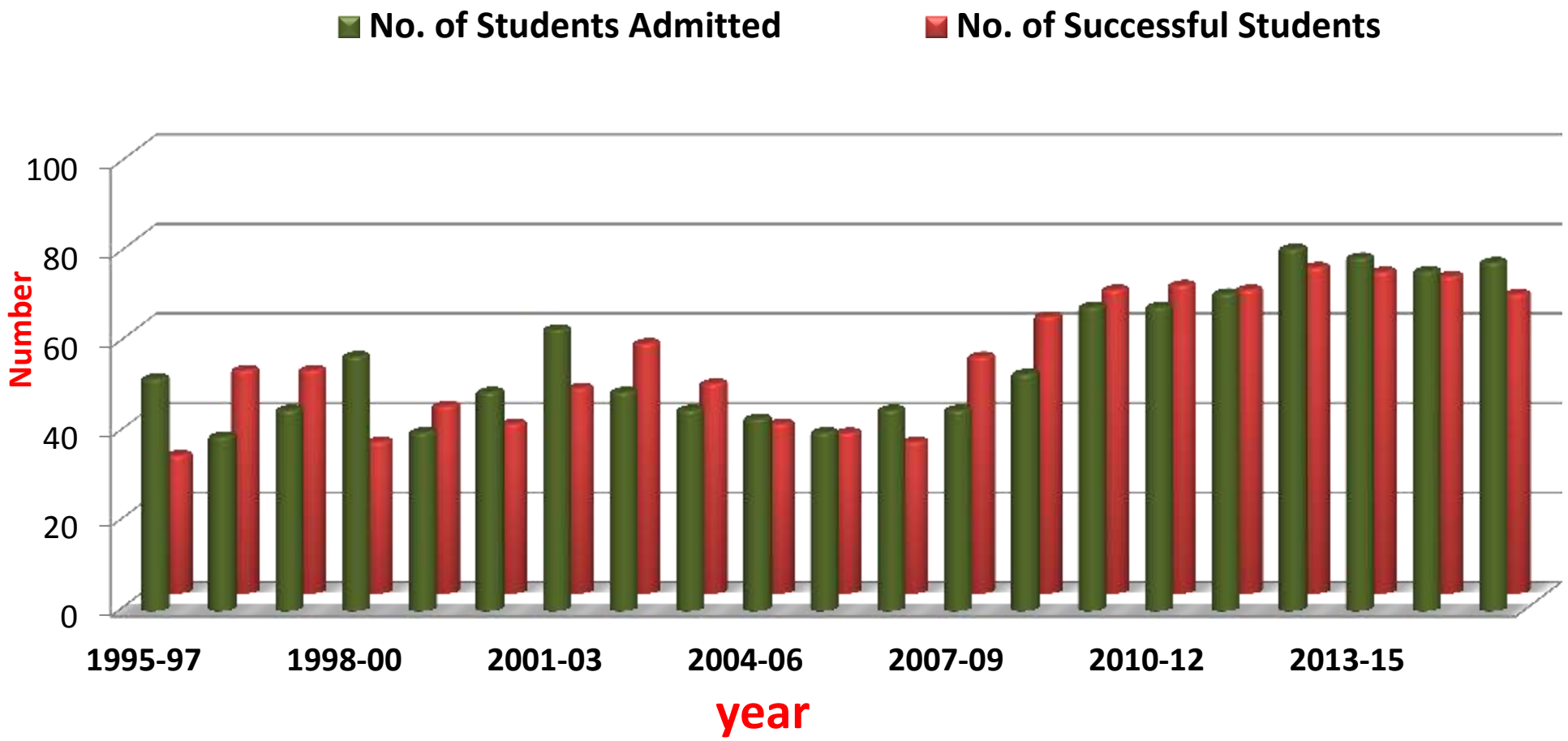
Total M.F.Sc Student = 1186 (Male-833, Female- 353)

- Successful Students = 1108
- Discontinued =74
- Expired = 4

Total Ph.D students = 764 (Male-535, Female- 229)

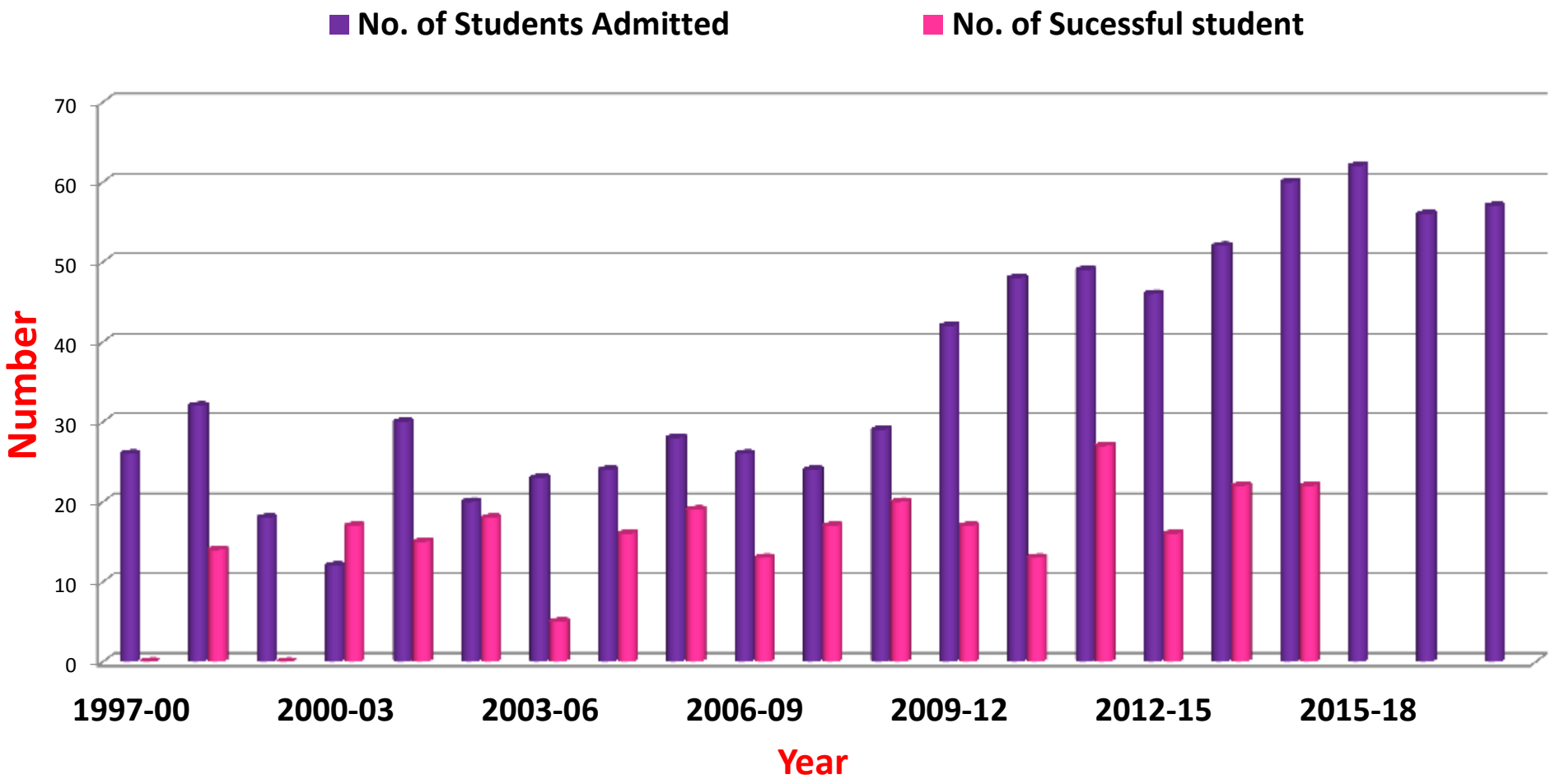
- Successful Students = 271
- Continuing =137
- Discontinued= 353
- Expired = 3

M.F.Sc Students details :



Successful Students = 94.26%

Ph.D Students details :



Successful Students = 46%

Lev and Schwartz method (1999) - Measurement of Human Capital

$$v_r = \sum_{t=r}^{T} \frac{I(t)}{(1+r)^{t-r}}$$

Where,

Vr = Human capital value of a person T years old

I (t)= Person's annual earning up to retirement

r = Discount rate specific to person

T = Retirement age

To valuate ICAR-CIFE student human resource capital in quantitative terms

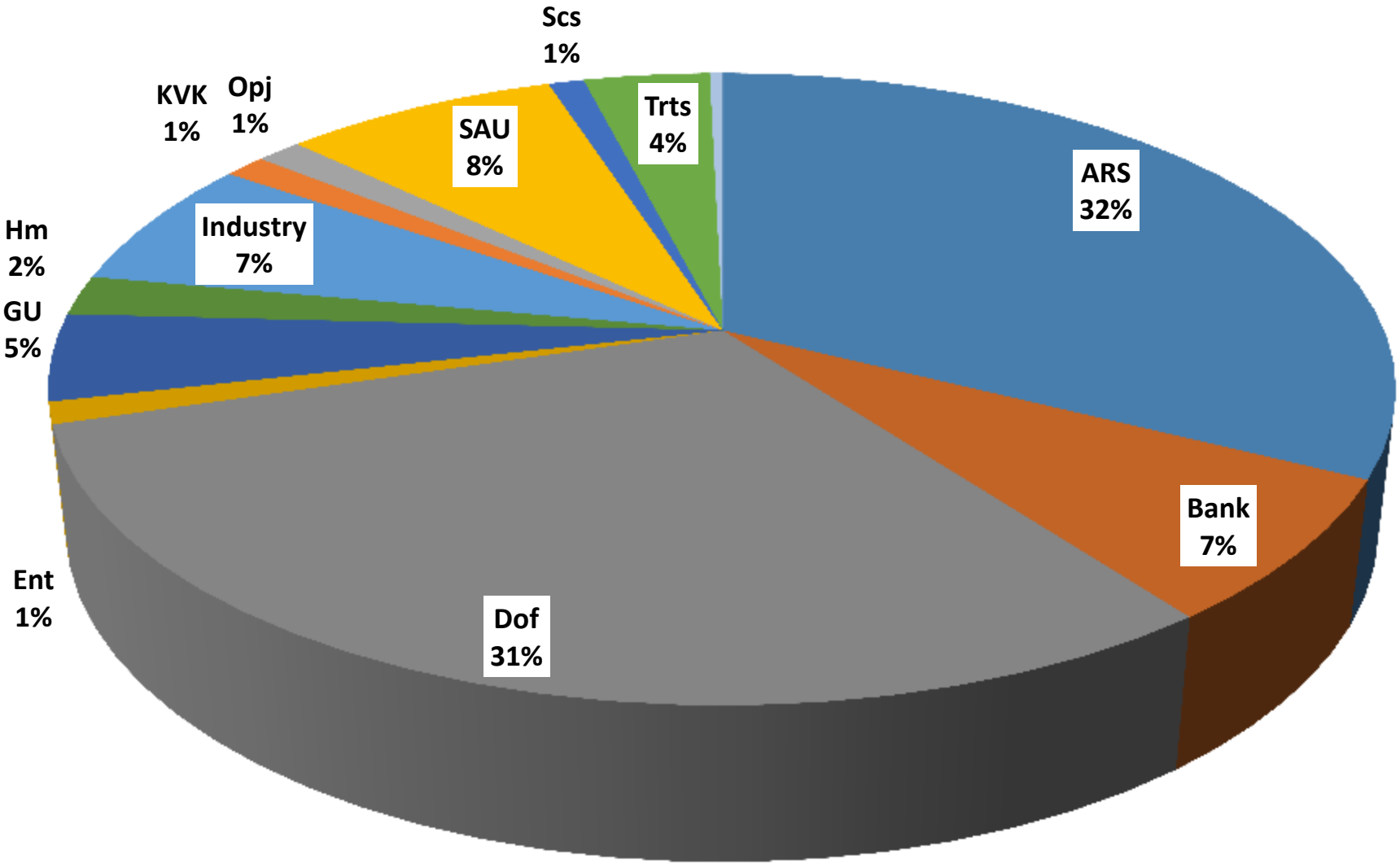
Jobs – Categorised into

1. Banking services
2. Aqua Industry
3. Entrepreneurship
4. Krishi Vigyan Kendra
5. State Civil Service
7. General Universities
8. State Agricultural Universities – APs
8. Private Jobs (Outside Fisheries Sector)
9. Temporary researcher / Teaching Staffs
10. Jobs at Department of Fisheries
11. ICAR- Agricultural Research Service

Placement / Career Details (1995-2015)

Sl. No.	Job Types	Frequency	Mean Monthly Salary (INR)
1.	ICAR-ARS	349	61,000
2.	Jobs at Department of Fisheries	329	33,789
3.	State Agricultural Universities -APs	85	56,200
4.	Banking services	79	46,163
5.	Industry / Private Sector	72	23,677
6.	General Universities	48	39,479
7.	Temporary Research/ Teaching Staff	39	22,744
8.	Private Jobs (outside fisheries sector)	14	40,464
9.	Krishi Vigyan Kendra	13	30,215
10.	Entrepreneurship	12	51,167
11.	State Civil Service	11	35,509

Placement details of students

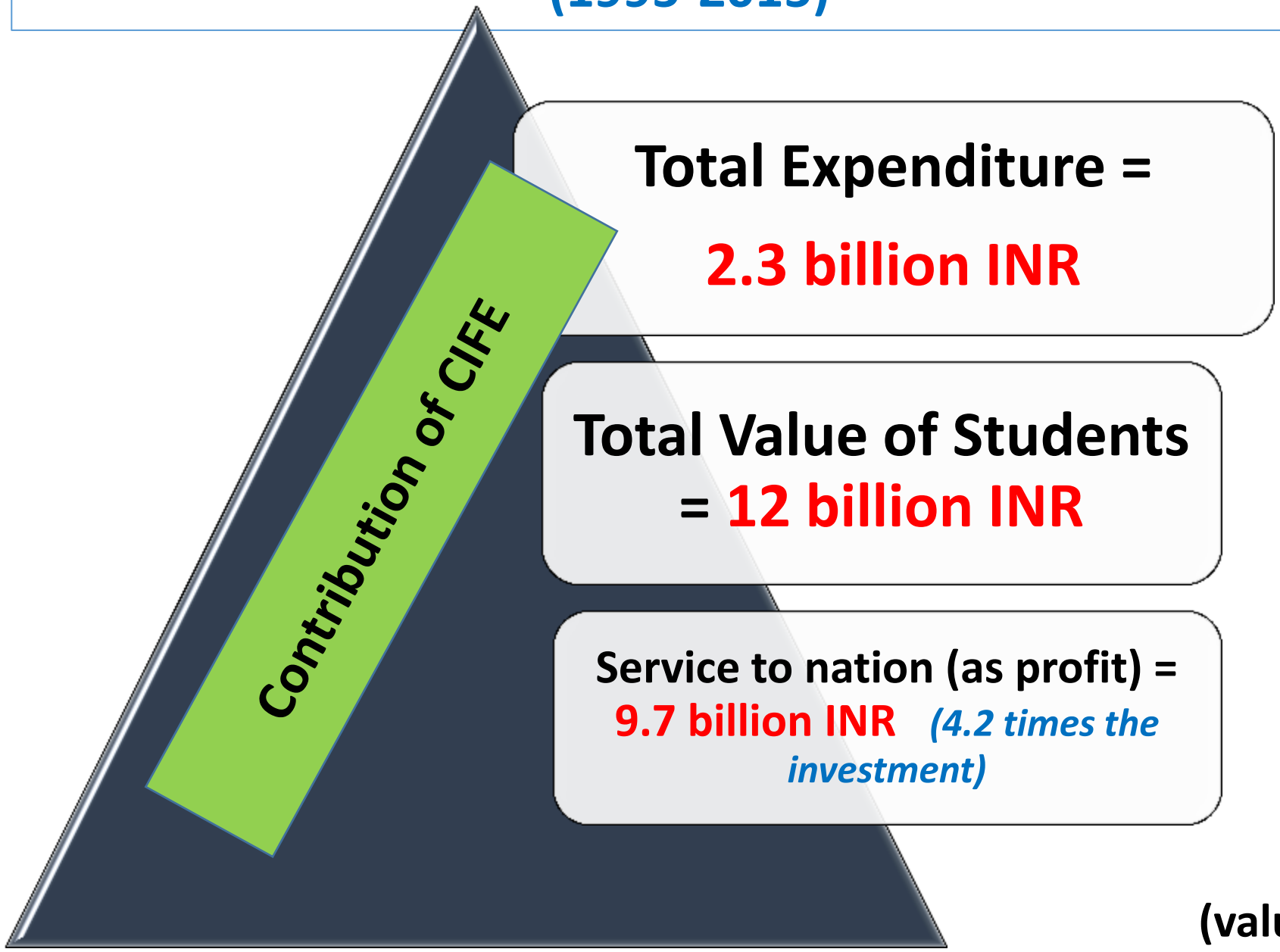


Present Value of CIFE's Human Capital

Values in INR

Sl. No.	Job Types	Value
1.	ARS	350,875.32
2.	Bank	265,529.21
3.	Department of Fisheries	194,356.50
4.	Entrepreneurship	414,686.32
5.	General Universities	227,086.31
6.	Industry	136,192.21
7.	Krishi Vigyan Kendra	173,800.53
8.	Private Jobs (outside fisheries sector)	232,752.77
9.	State Agricultural Universities	323,265.46
10.	State Civil Service	204,250.22
11.	Temporary Research & Teaching Staff	130,822.36

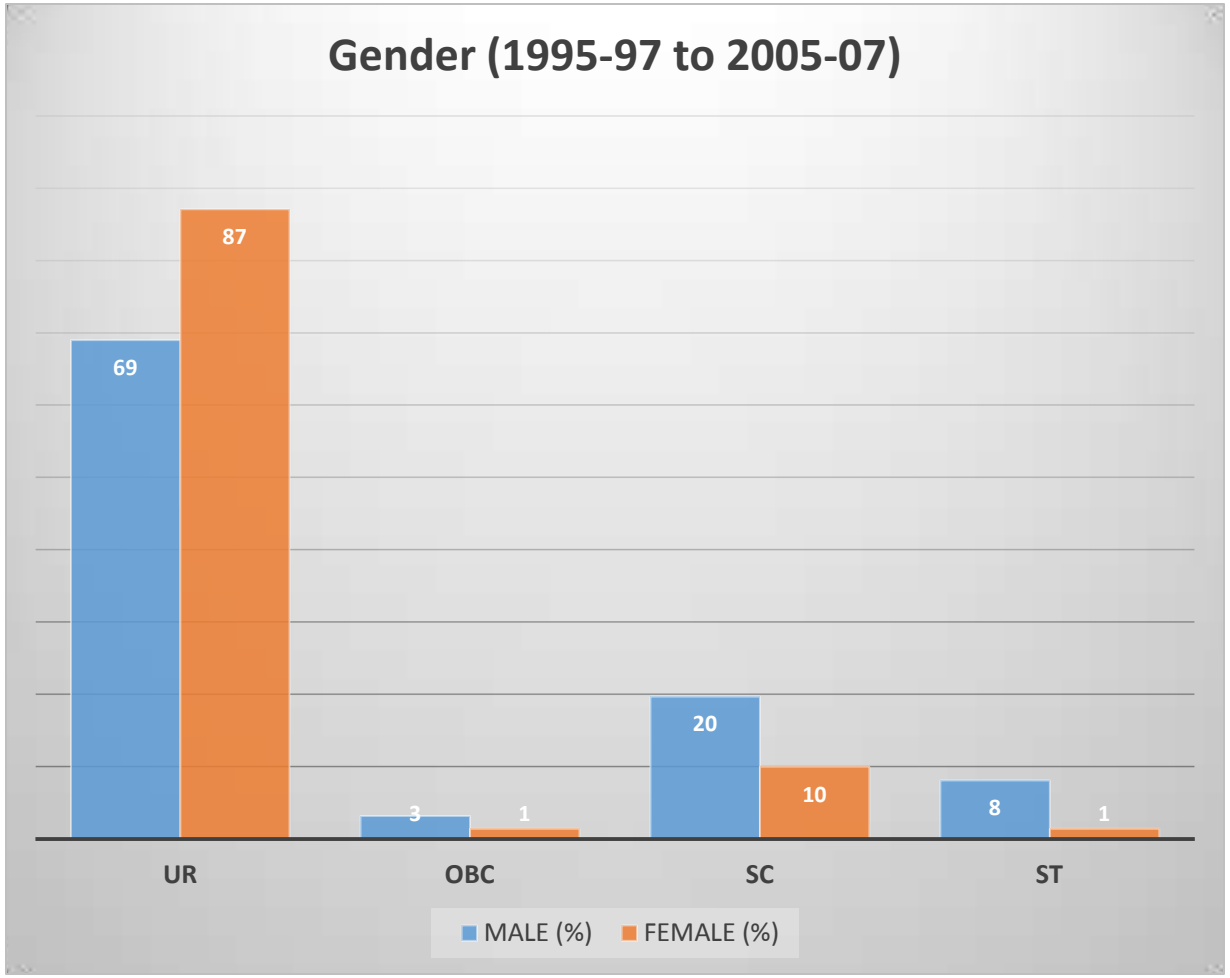
Investment on & Returns from CIFE's Human Capital (1995-2015)

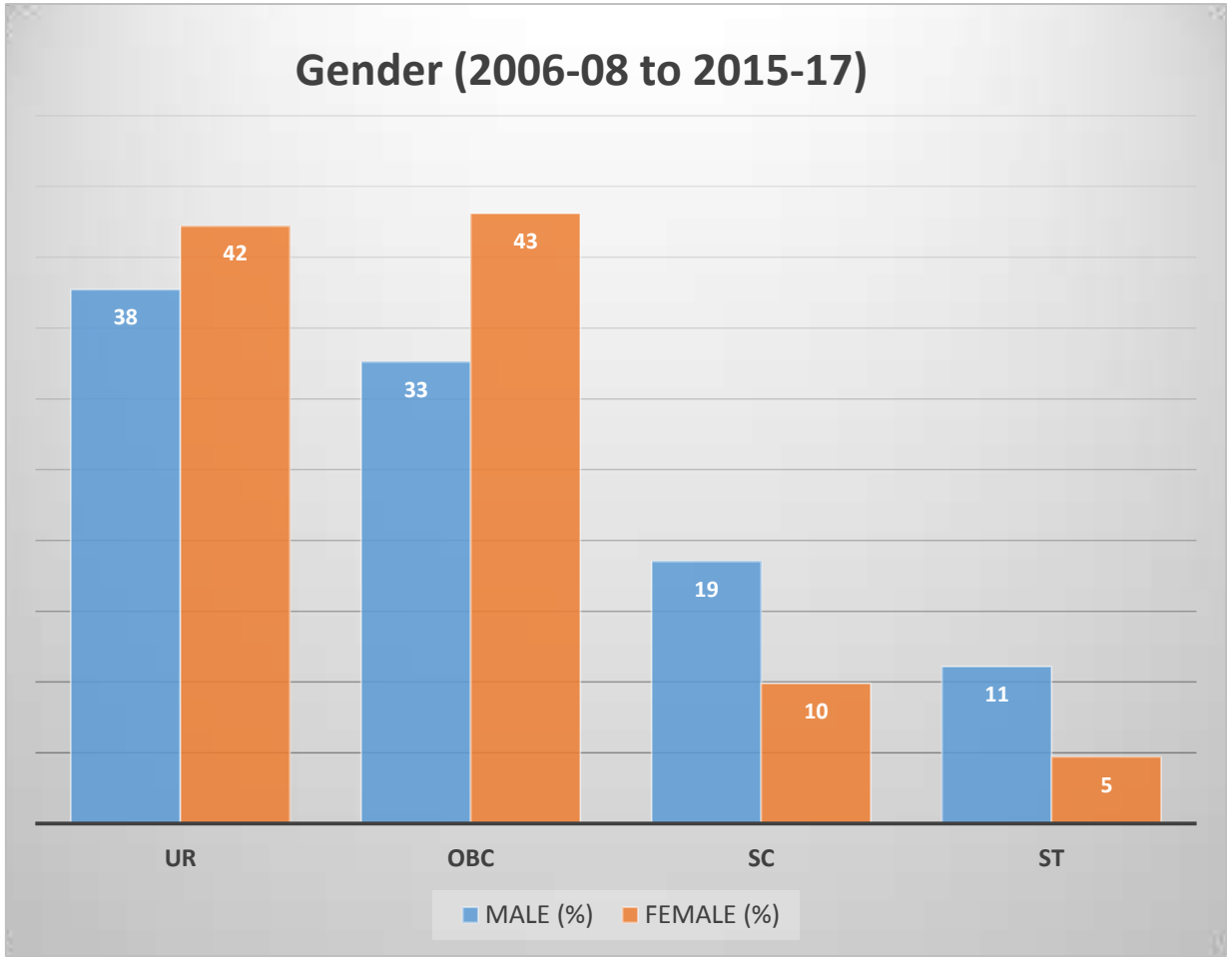


(values in INR)

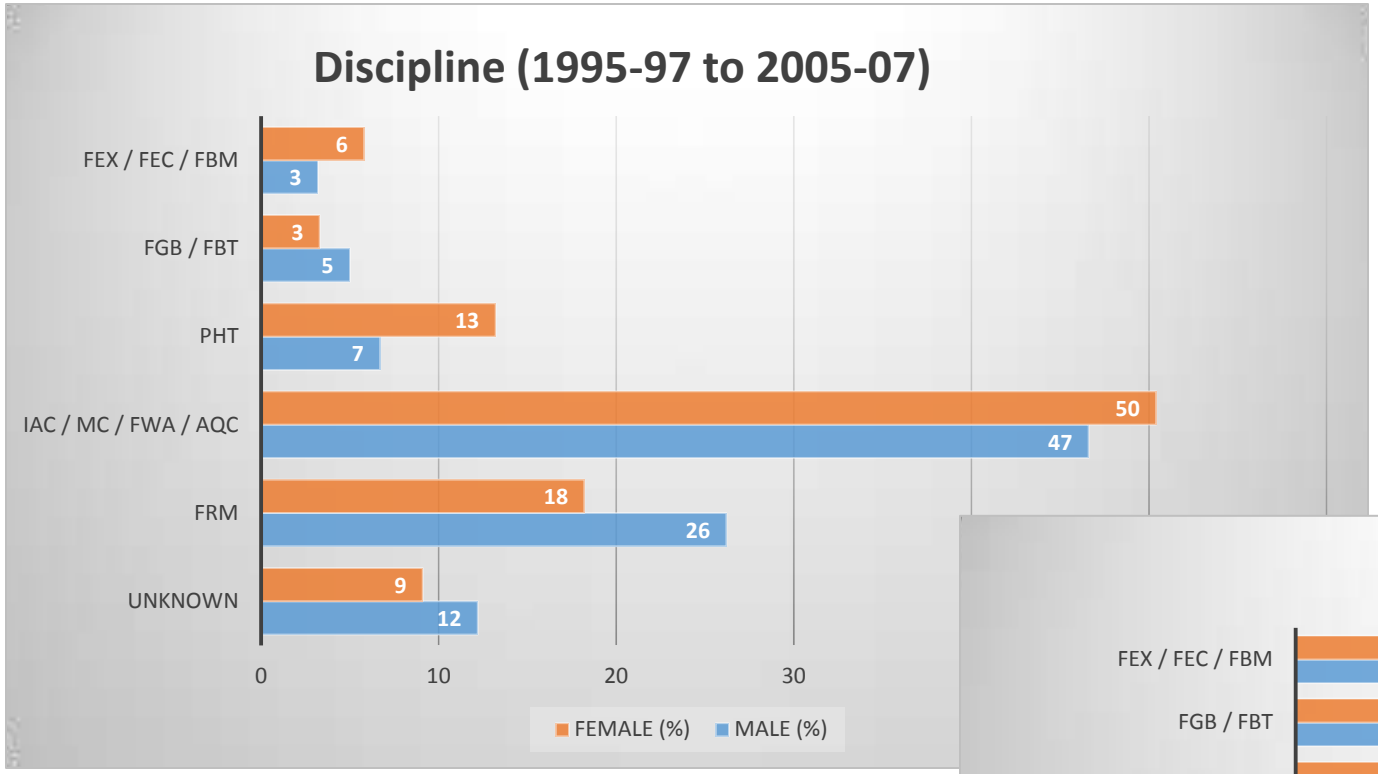
- After completion of MFSc from CIFE, students' minimum worth is **Rs. 2,41,238** (taking average value of all job categories)
- **Contribution of CIFE towards Fisheries HRD is 0.04 (10%), but if we consider only PG education, then its contribution would be as high as 34%.**
- Only 1% of passing students become entrepreneurs, though they earn much higher than other job categories i.e. Rs. 4,14,686 - ***Scope for Entrepreneurship***
- Negligible unemployment of CIFE graduates (<3%)
- ***The nation is getting 4.2 times the investment made on CIFE's students***
- ***Scope to increase no. of PG students and increase the investment especially Fellowship to attract bright students***

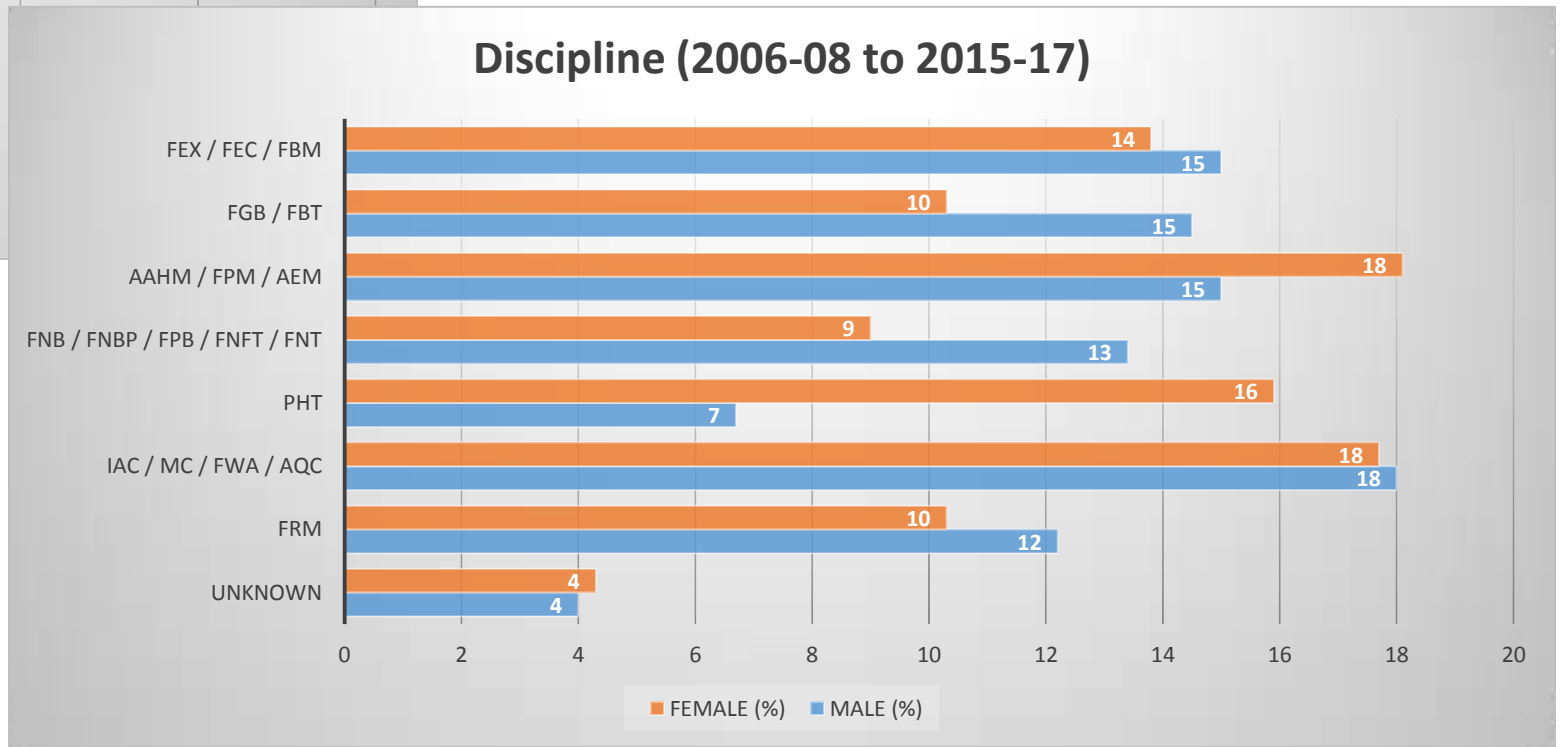
Ratio of Male and Female Students



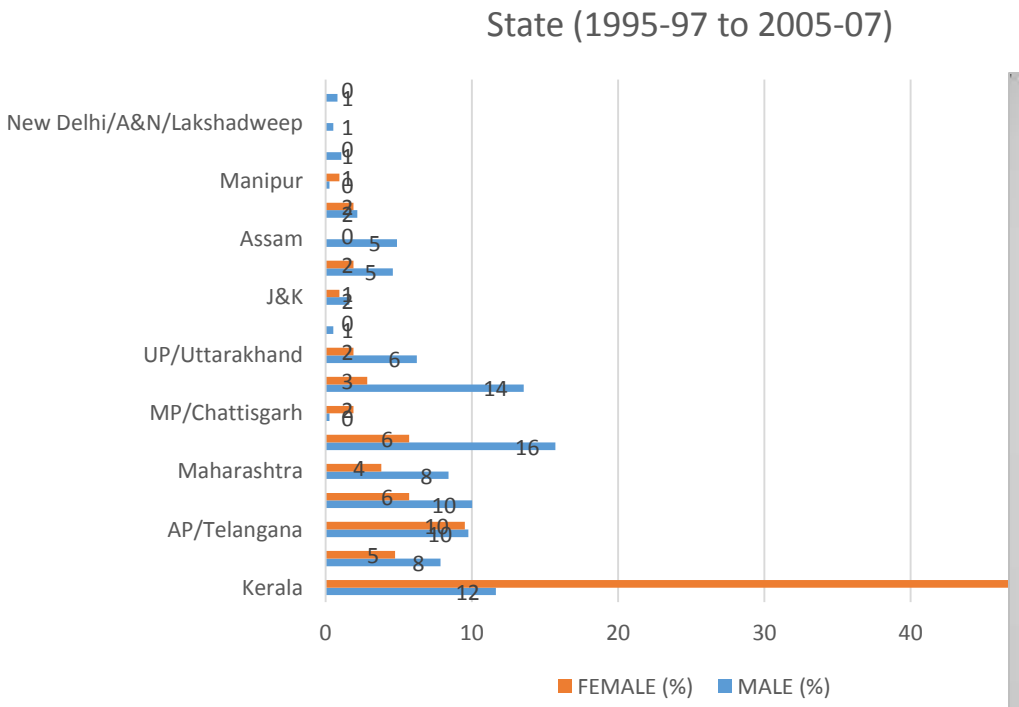


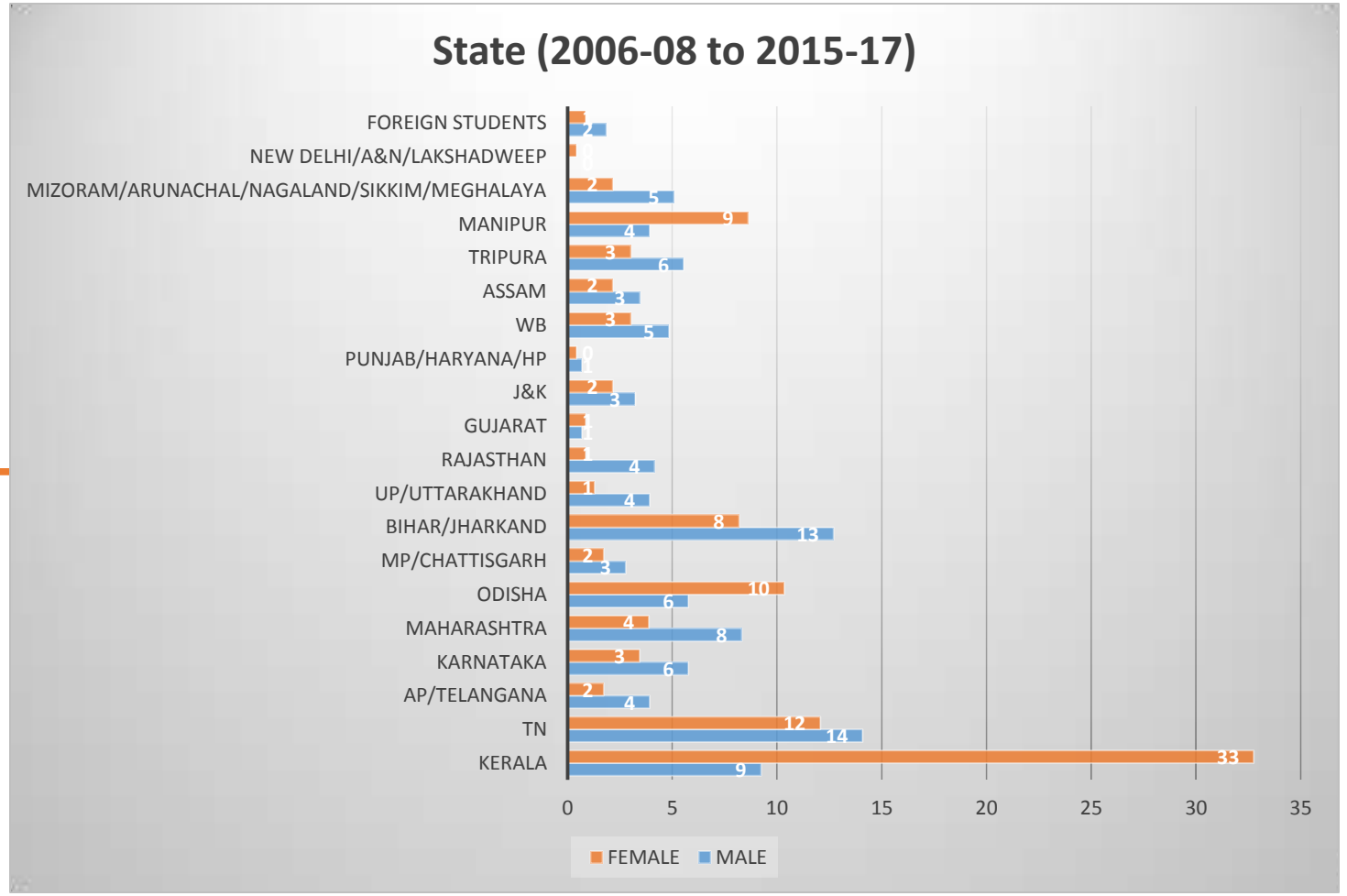
Discipline wise distribution of Male & Female Students



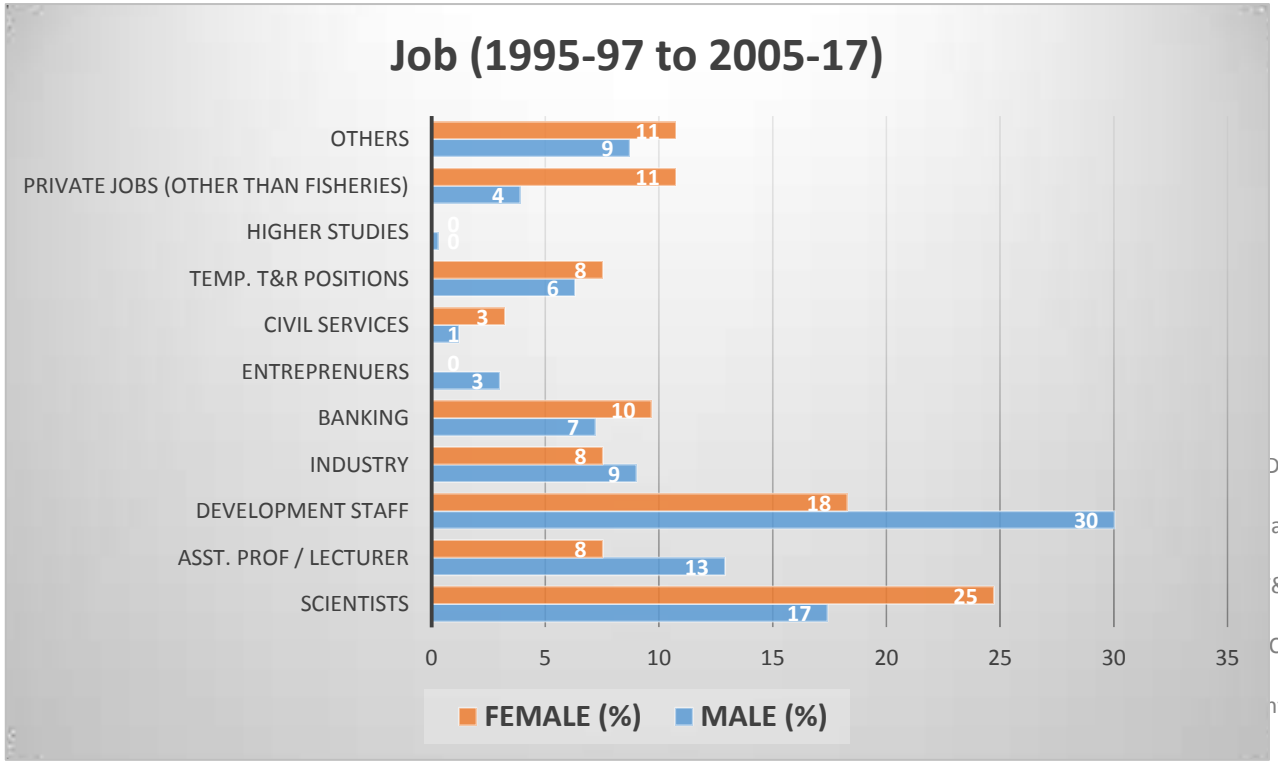


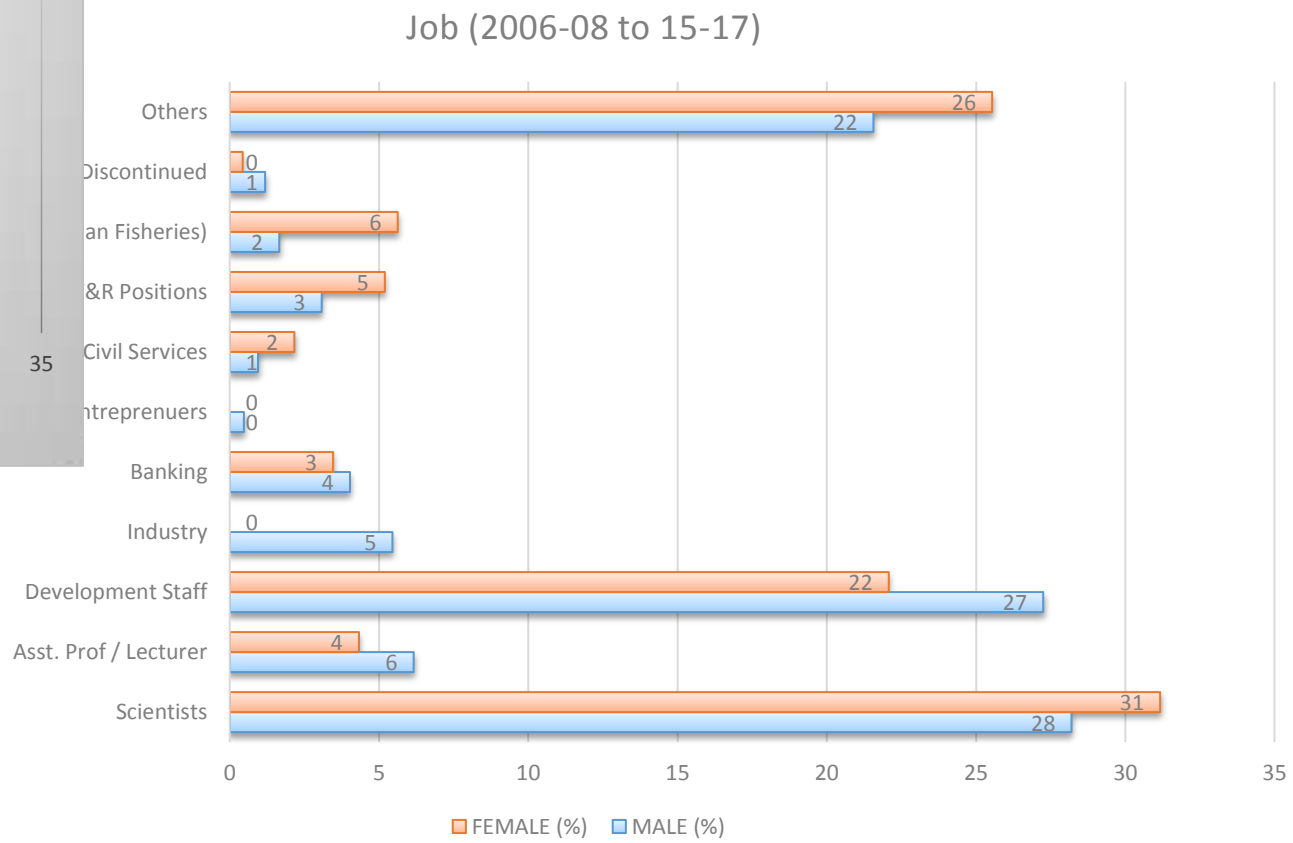
State wise distribution of Male & Female Students





Careers of Male & Female Students





Broad Inferences

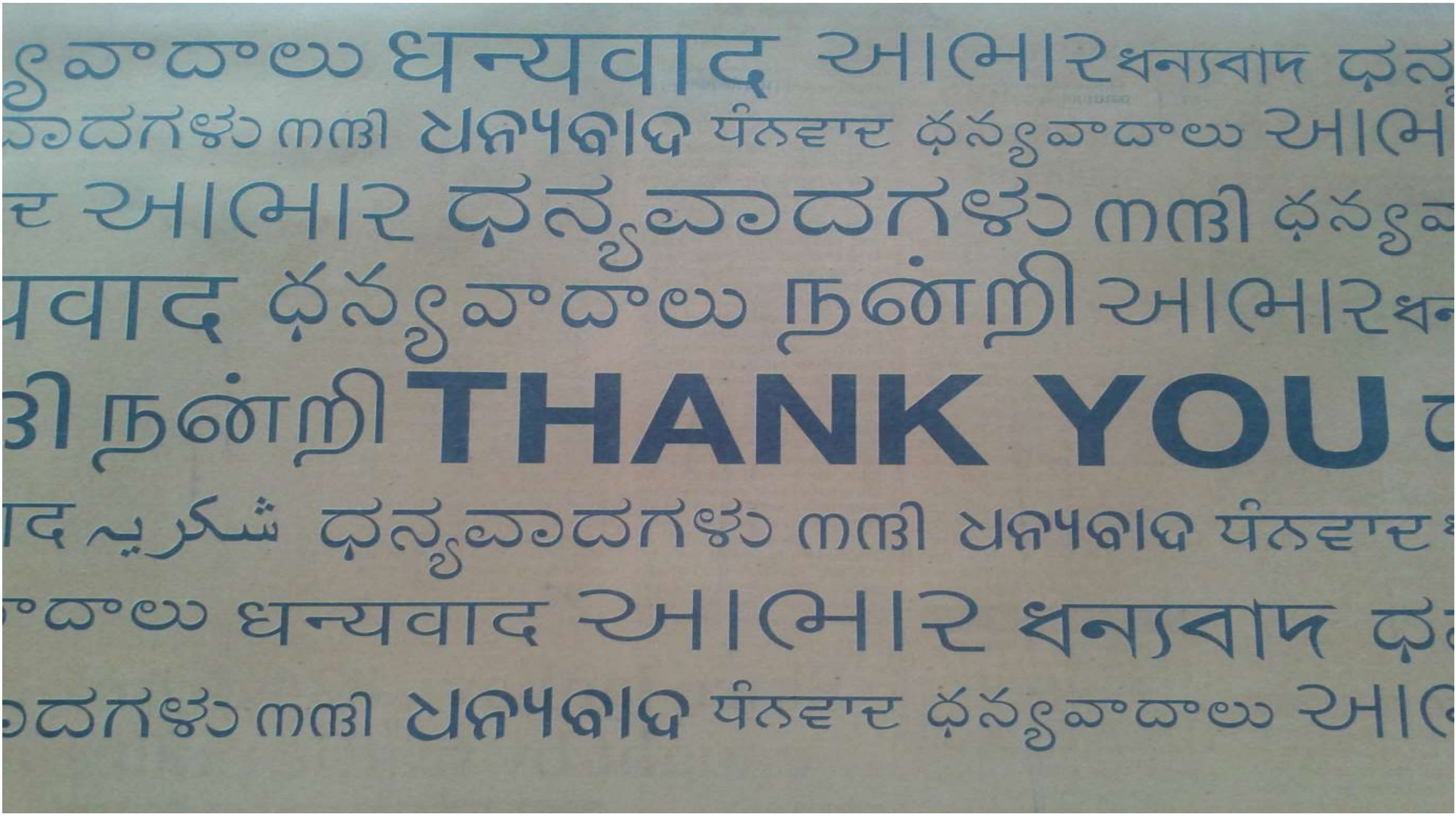
Acknowledgements

DDG (Education), ICAR; Director, ICAR-CIFE; ADG (HRD), ICAR

Dr. S.K. Chakraborthy, Dr. Bhawesh Sawant T., Dr. Babitha Rani, Dr. Gireesh Babu P, Dr. A Pavan Kumar, Dr. Kundan Kumar, Mr. Shashi Bhusan , Dr. Muzhid Khan, Ms. Shamna N

Deans of All Fisheries Colleges and Project Staff

Pritam Tripathi



ధన్యవాదాలు धन्यवाद આભાર ধন্যবাদ
ధన్యవాదగళు ಧನ್ಯವಾದಗಳು ಧನ್ಯವಾದಾಲು
ಧನ್ಯವಾದಗಳು ಧನ್ಯವಾದಗಳು ಧನ್ಯವ
ಧನ್ಯವಾದಾಲು நன்றி
நன்றி THANK YOU
شكريه ధన్యవాదగళు ಧನ್ಯವಾದಗಳು ಧನ್ಯವಾದಗಳು
ధన్యవాదాలు धन्यवाद આભાર ধন্যবাদ
ಧನ್ಯವಾದಗಳು ಧನ್ಯವಾದಗಳು ಧನ್ಯವಾದಾಲು

Fisheries colleges in India - Year Established

No.	College Name	Location	Estd
1	College of Fisheries	Mangalore, Karnataka	1969
2	Fisheries College and Research Institute	Thoothukudi, Tamil Nadu	1977
3	College of Fisheries	Panangad, Kerala	1979
4	College of Fisheries	Rangailunda, Orissa	1981
5	College of Fisheries	Ratnagiri, Maharashtra	1981
6	College of Fishery Science	Pantnagar, Uttaranchal	1985
7	College of Fisheries	Dholi, Bihar	1986
8	College of Fisheries	Raha, Assam	1988
9	College of Fisheries	Veraval,Gujarat	1991
10	College of Fishery Science	Muthukur, Andhra Pradesh	1992
11	College of Fishery Sciences	Kolkata, West Bengal	1995

No.	College Name	Location	Estd
12	College of Fisheries	Lembucherra, Tripura	1998
13	College of Fisheries	Udaipur, Rajasthan	2003
14	College of Fisheries	Srinagar, Kashmir	2005
15	College of Fishery Science	Nagpur, Maharashtra	2007
16	College of Fisheries	Faizabad, Uttar Pradesh	2007
17	College of Fisheries	Udgir, Maharashtra	2007
18	College of Fisheries	Ludhiana, Punjab	2009
19	College of Fisheries	Kawardha, Chhattisgarh	2010
20	College of Fishery Science	Jabalpur, Madhya Pradesh	2012
21	Fisheries College and Research Institute	Ponneri, Tamil Nadu	2013
22	College of fisheries science and reserch	Etawah, Uttar pradesh	2015