

# **A Statistical Approach to Modernize the Indian Higher Education System for Rural and Vernacular Students**

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# Agenda

## 1. Introduction

## 2. Survey Questions

- Categories of questions
- Interpreting the response
- Rural vernacular student responses
- Data Analysis

## 3. Survey Results

- Conclusion
- References
- Question and Answers

Appendix: Questions

# 1. Introduction

# Introduction

- JKSHIM has lot of Rural and Vernacular students.
- We surveyed MBA students, 78 responded, and we compare the difference in learning habits between:
  - Rural and Urban students
  - Vernacular and English speaking students.
- We suggest ways to tailor higher education for Rural and Vernacular students.

# Introduction to the Survey

- We used Google surveys to conduct the online survey.
- We surveyed 150+180 MBA 1<sup>st</sup> and 2<sup>nd</sup> year students, of which 78 responded in Oct 2014. (107 responded by Dec 2014).
- Our survey had 62 questions, of which 55 could be numerically processed in R.
- Remaining 7 questions had descriptive answers.

# Survey Response

- The numerical responses were based on the Likert scale (1=strongly-disagree, 2=disagree, 3=don't care, 4=agree, 5=strongly agree).
- Survey Results  
<https://docs.google.com/forms/d/13XpuahZIFhi9Ik4ZJeDX-tBAe5ITJPhyKIGAb8qoetc/viewanalytics>
- In another paper Kavya (2015) describes how we did Correlation and Factor Analysis in R on the data.

# Survey Analysis

- We compared the responses of the
  - Rural and Urban students
  - Vernacular and English speaking studentsusing the t-tests in R with p-value of .05 at 95% significance.
- We report the results where the opinion differ significantly.
- We also present all the opinions in the survey with our insights.

## 2. The Survey



# 2.1 Question Categories

# Question Categories 1

1. Demographics
2. Reading and Writing
3. Speaking and  
Listening
4. Study Material
5. Technology Tools
6. Learning Methods

# Question Categories 2

7. Exams

8. Time Management

9. Confidence

10. Placements

11. Teachers

12. Lifestyle and Health

13. Gender Equality

## 2.3 Interpreting the Survey Results

# Interpreting the Response %

E.g. #5: 51 students *Strongly Agree* (5),  
65% is 51/78 (total responses).

1. Strongly disagree	1	1	1%
2. Disagree	2	2	3%
3. Don't care	3	4	5%
4. Agree	4	20	25%
5. Strongly Agree	5	51	65%

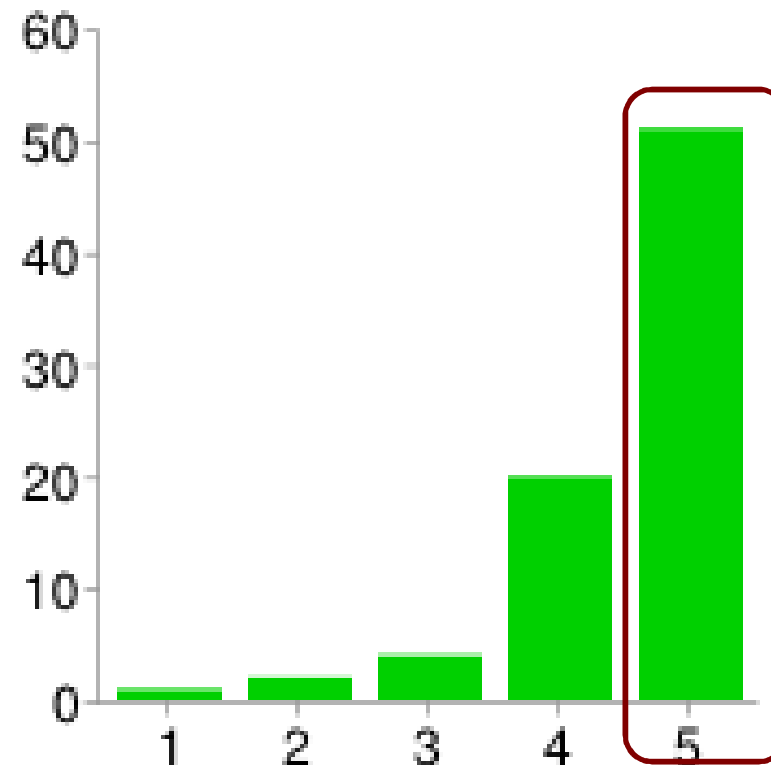
# Interpreting the Response Plots

E.g. #5: 51 Students *Strongly Agree* (5),

which is 65% = 51/78

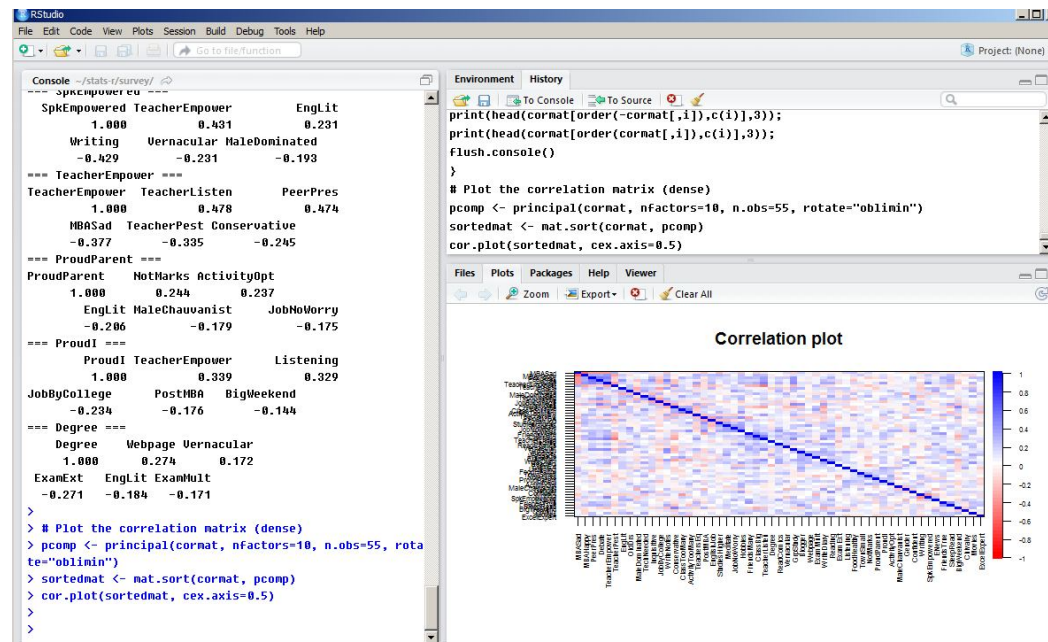
$$78 = 1 + 2 + 4 + 20 + 51$$

1	1	1%
2	2	3%
3	4	5%
4	20	25%
5	51	65%



# Data Analysis

- We used Google Survey visualize the response as bar charts.
- We used *R Studio* version 3.1 for processing responses into factors.



# 3 Results of the Survey



# 3.0 T-tests to compare Opinions

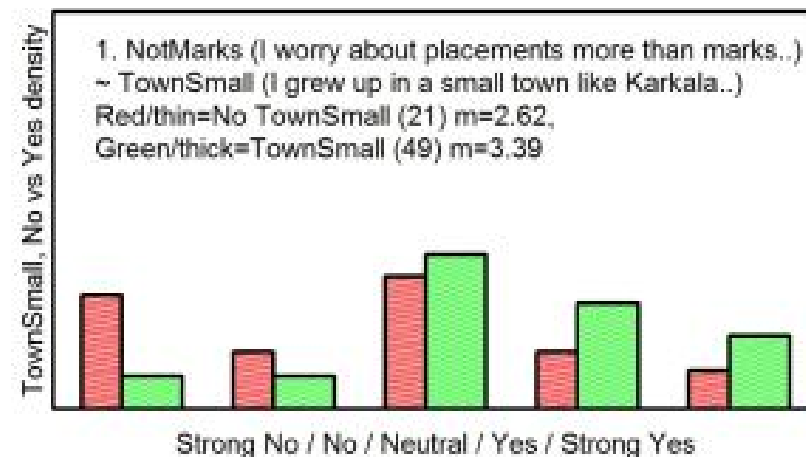
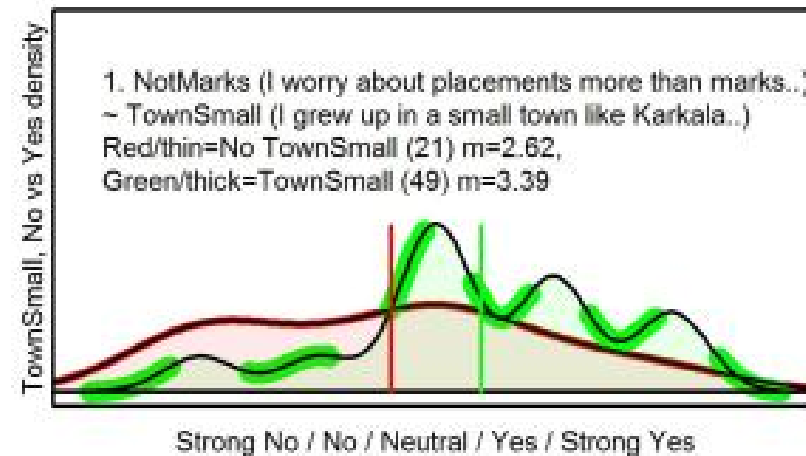
# 3.0.1 Comparing Opinions: Rural vs Urban

# Reading the Comparison graph

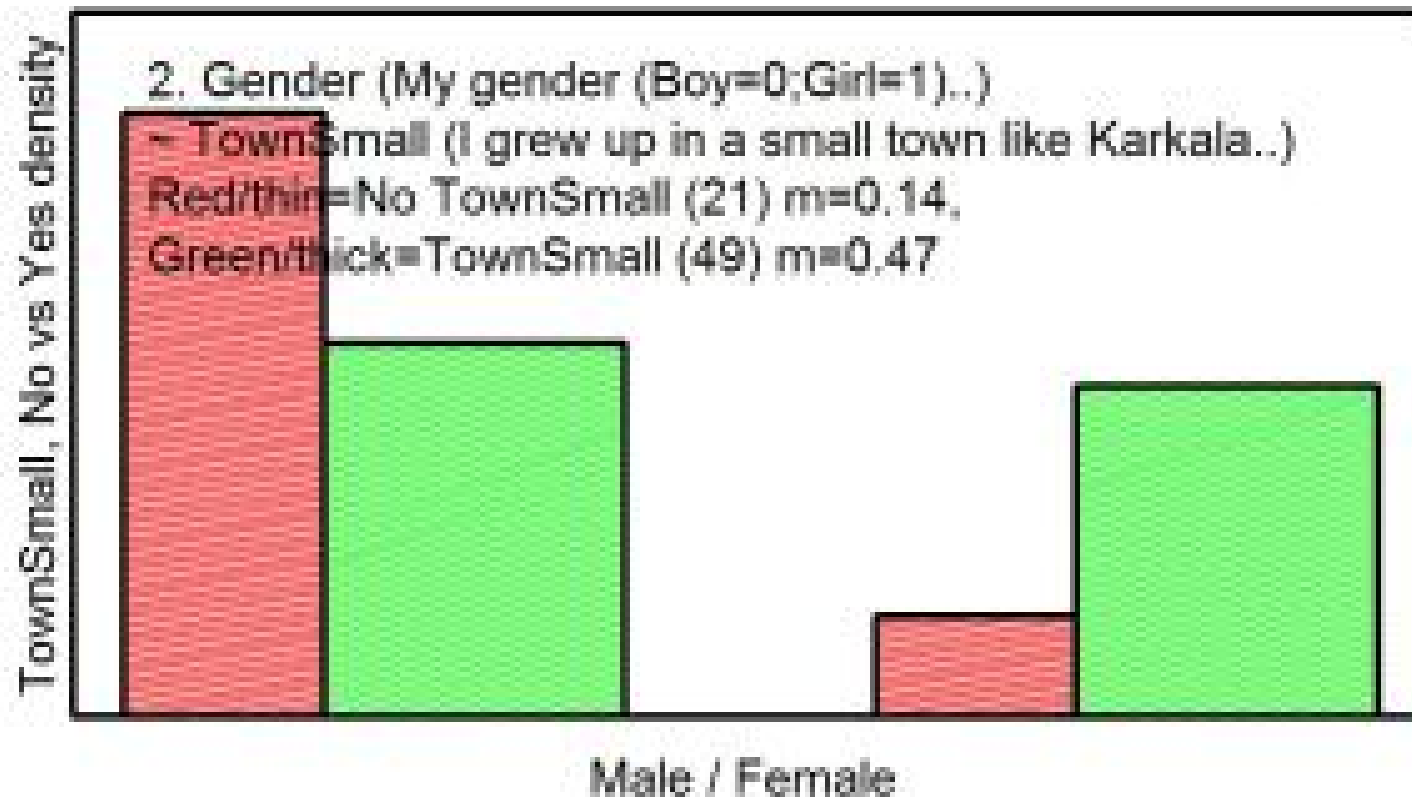
The graph is a density plot of survey Opinions of students on Placement (NotMarks).

- Urban in **red**, 21 samples, mean=2.62
- Rural in **green**, 49 samples, mean=3.39

We see more green on right “YES”, meaning rural students are more worried about placement than their urban peers.

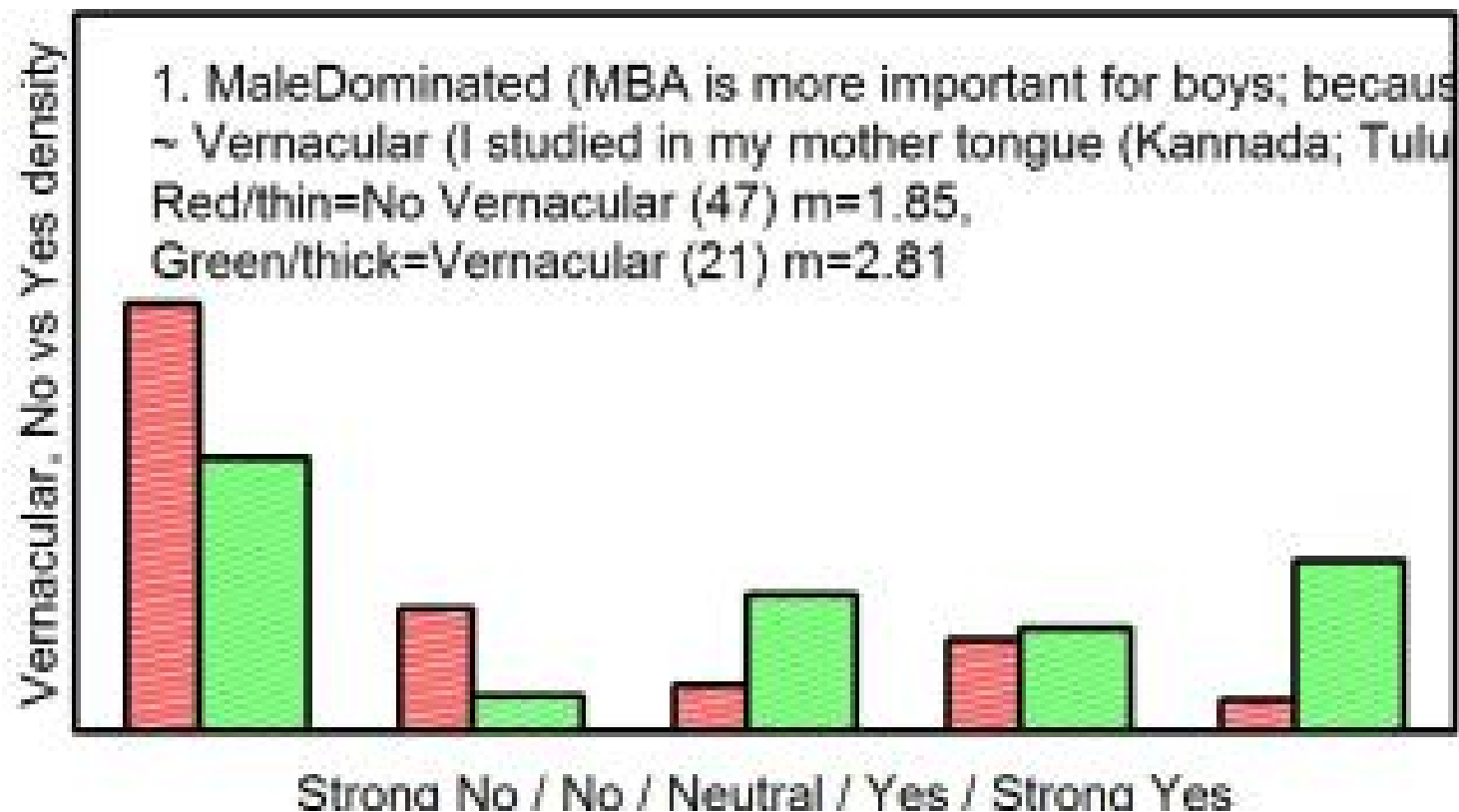


# More female students from rural background

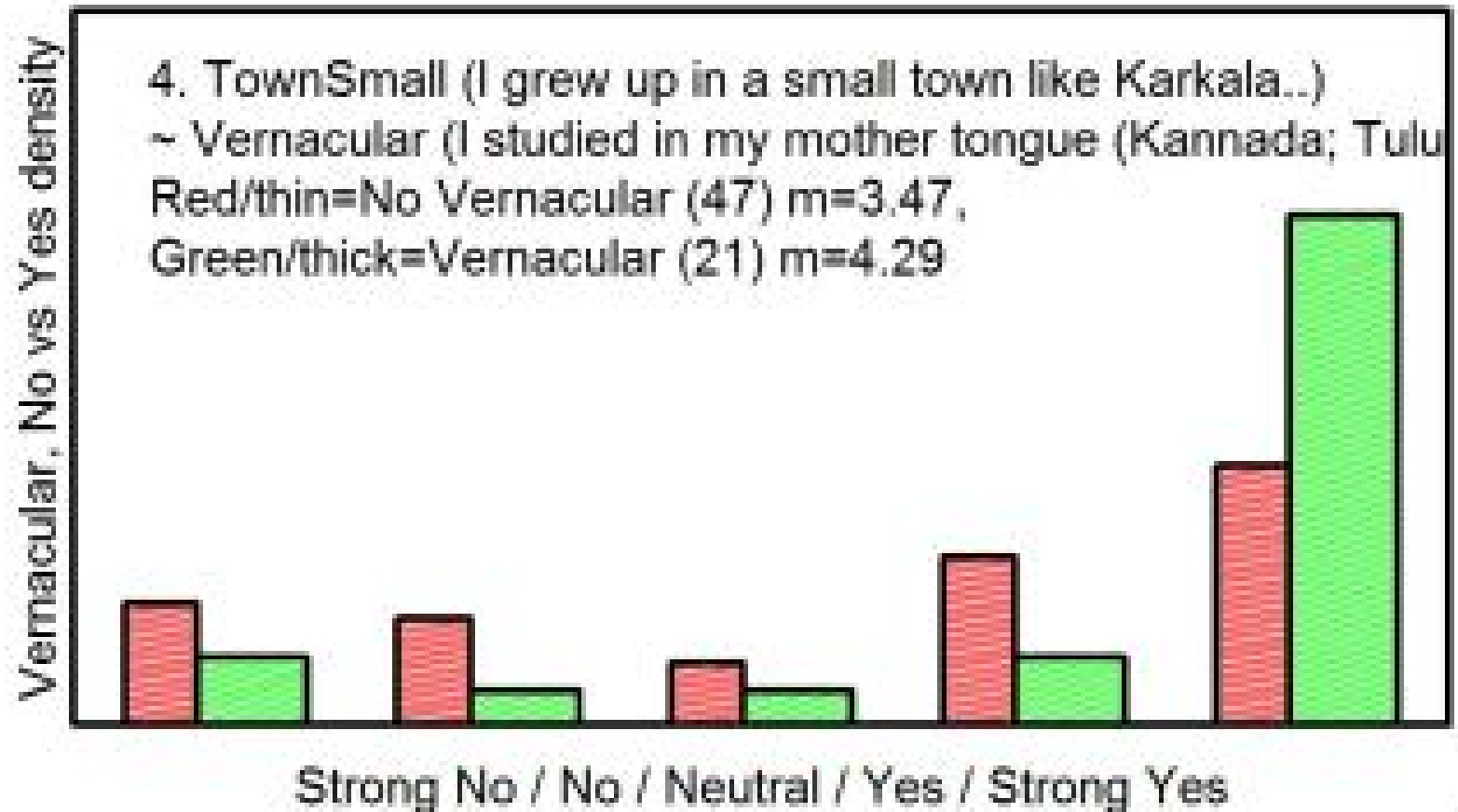


# 3.0.2 Comparing Opinions: Vernacular vs English Speaking

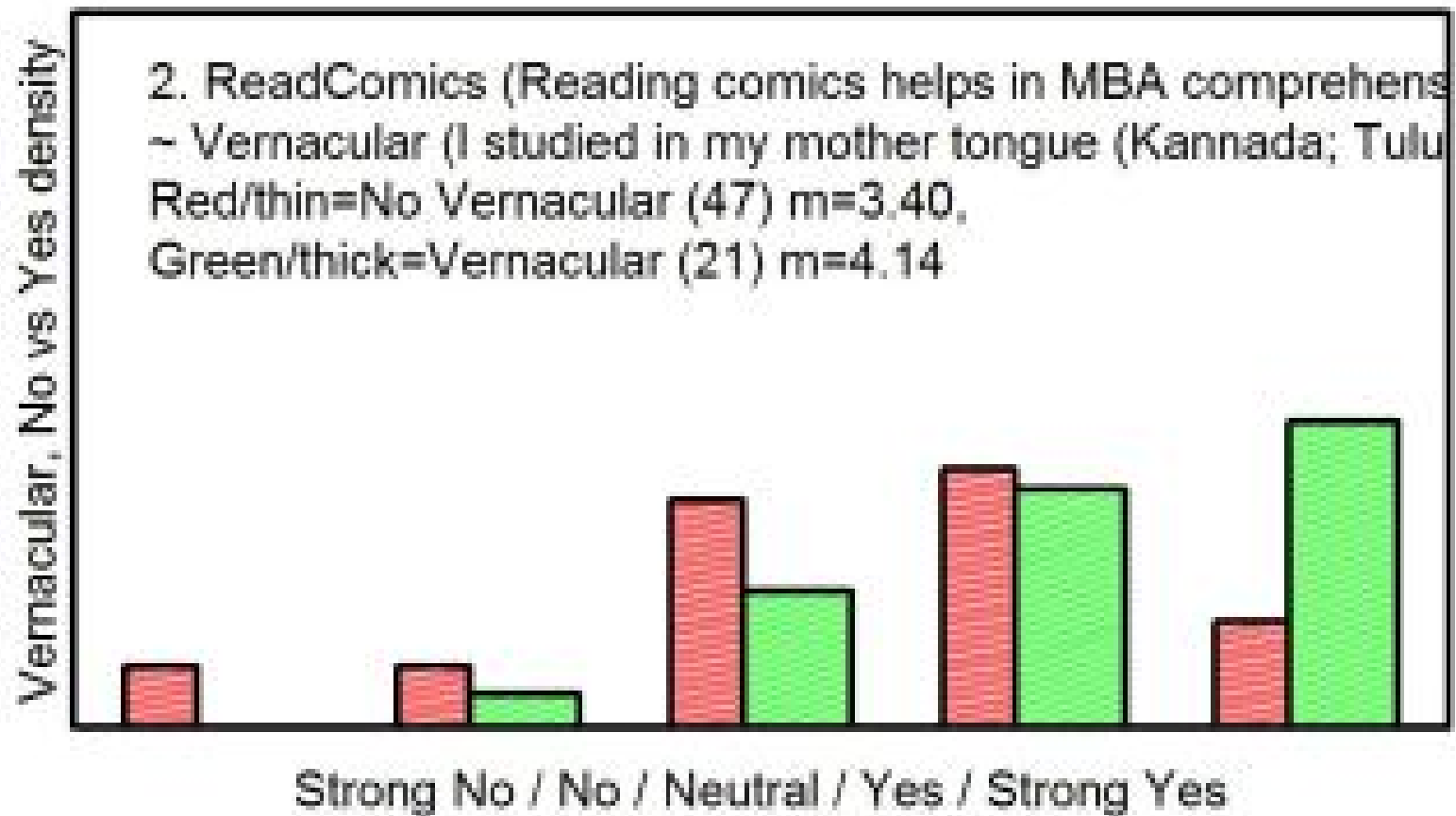
# 1. The vernaculars believe that MBA is more important for boys than girls



## 2. More Vernacular students are from Rural background

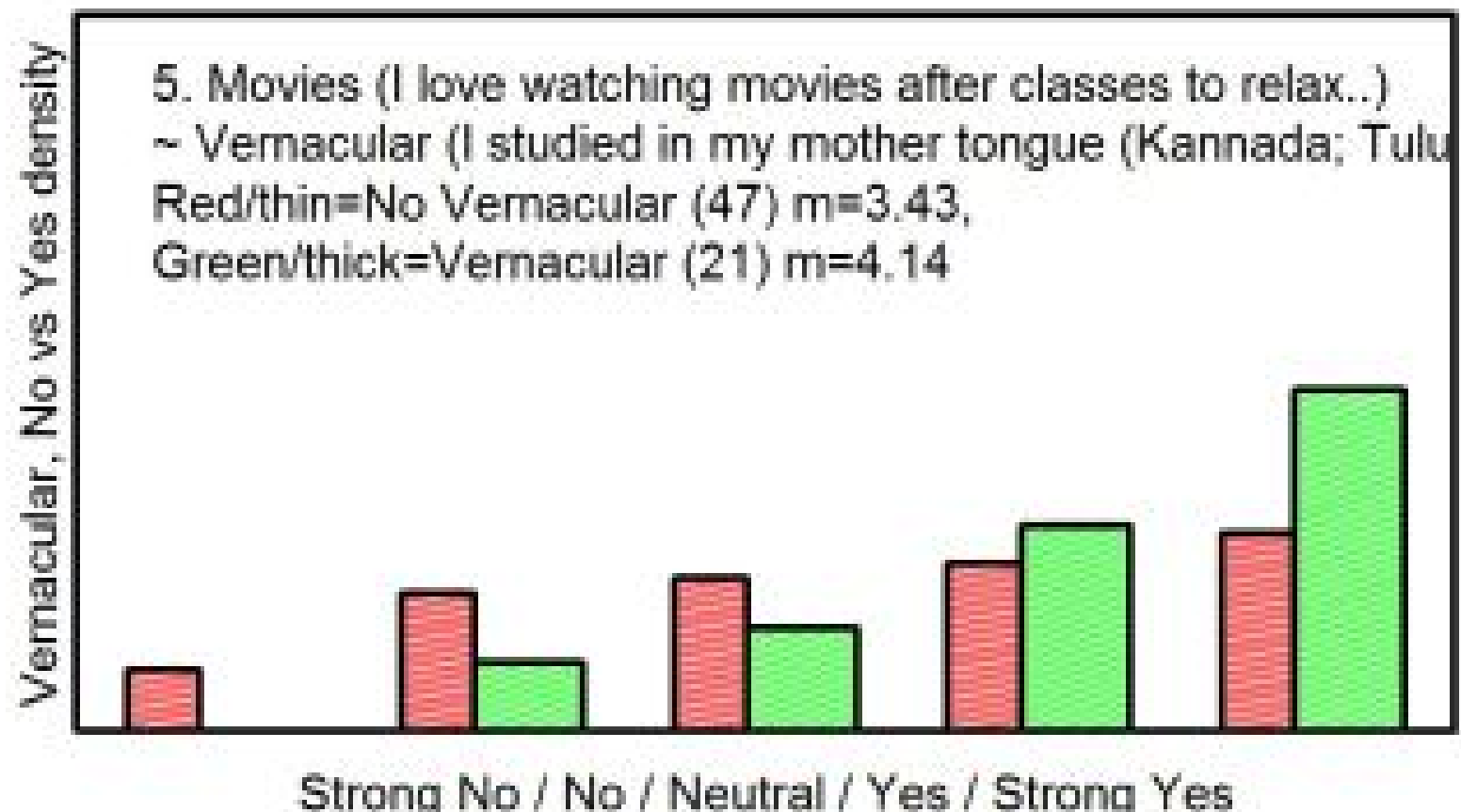


### 3. More Vernaculars like to read comics to improve their reading skills.

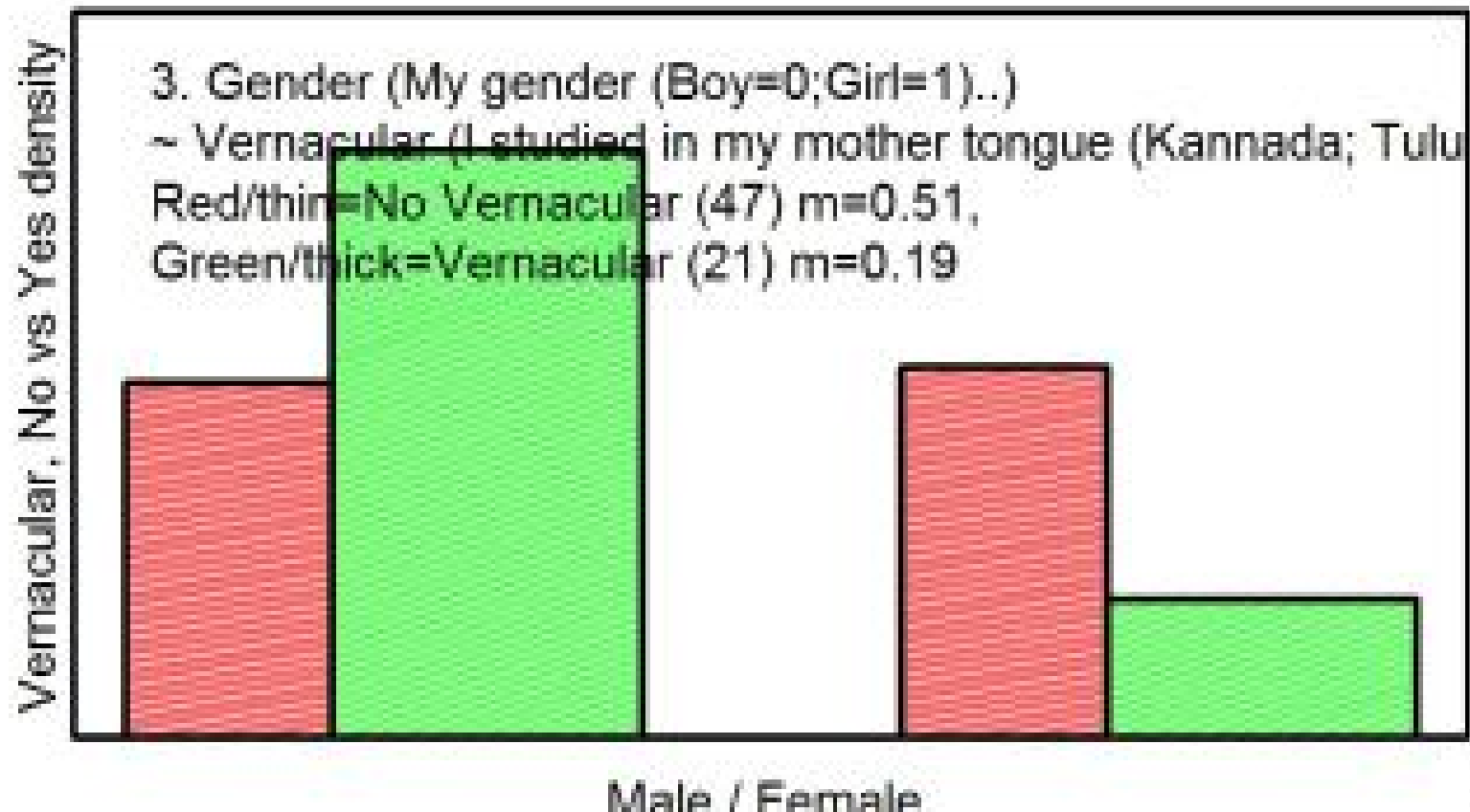




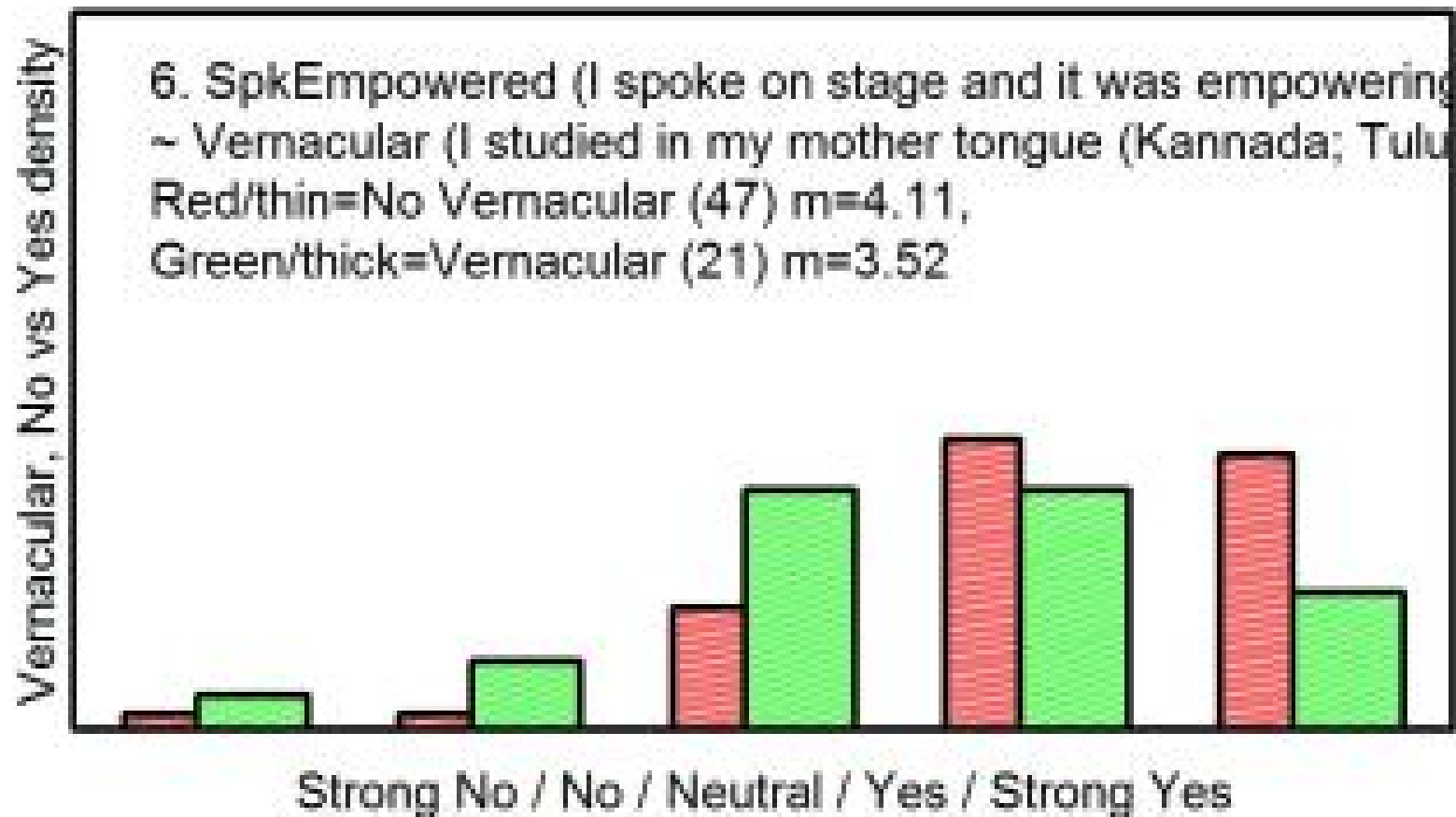
## 4. More vernaculars like to watch more movies after classes



## 5. There are more vernacular boys than girls.



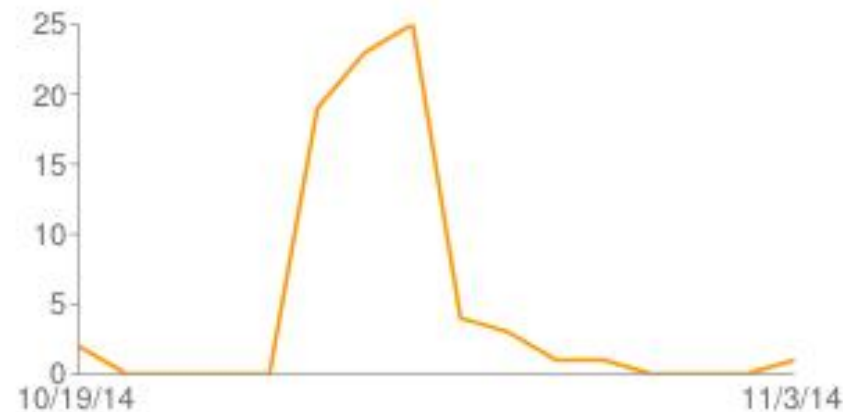
## 6. The English speaking were more empowered by stage speaking than the Vernaculars.



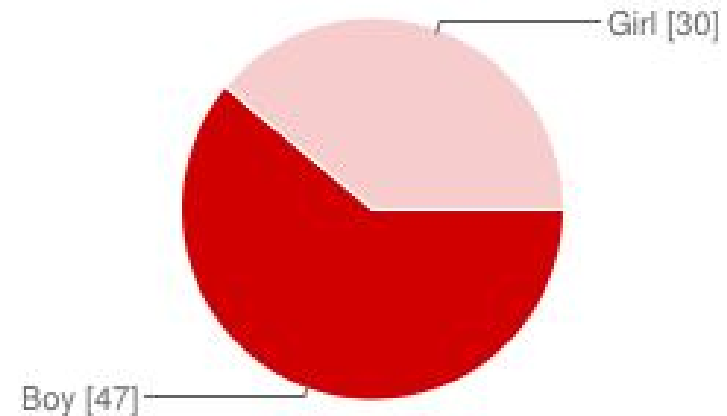
# 3.1 Results: Demographics

# Responses, Gender

Number of daily responses

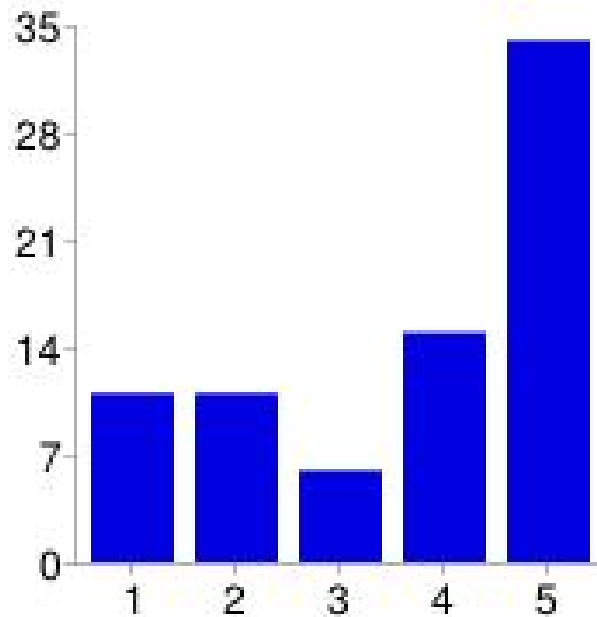


My gender

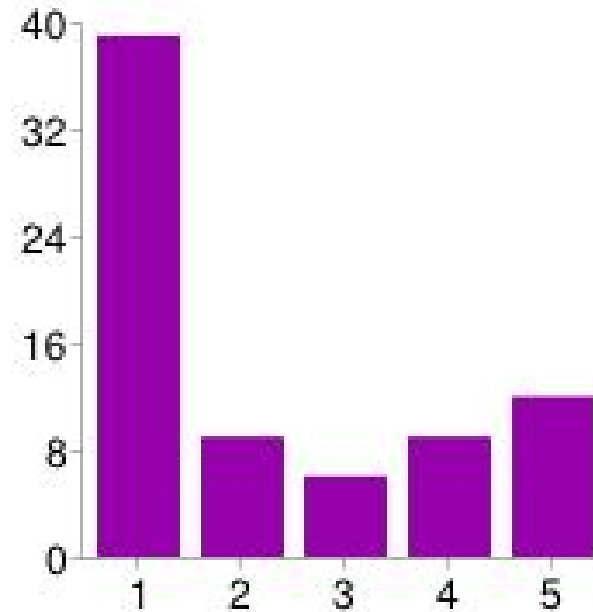


# Rural, English Educated

I grew up in a small town like Karkala

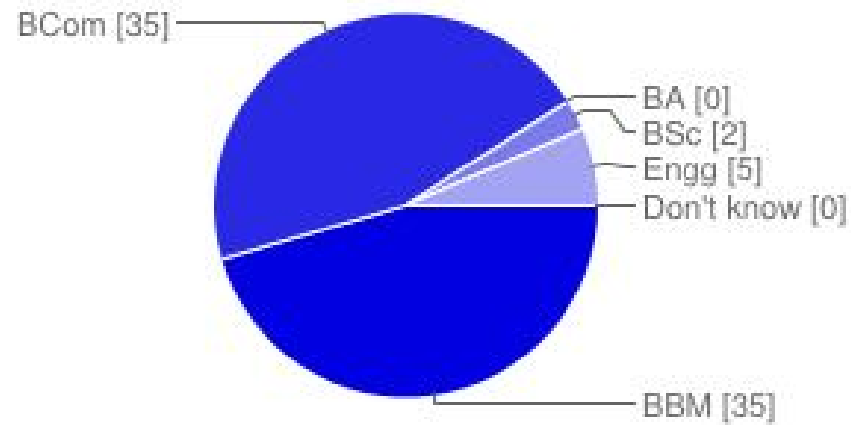


I studied in my mother tongue (Kannada, Tulu, Konkani, etc)



# Before MBA

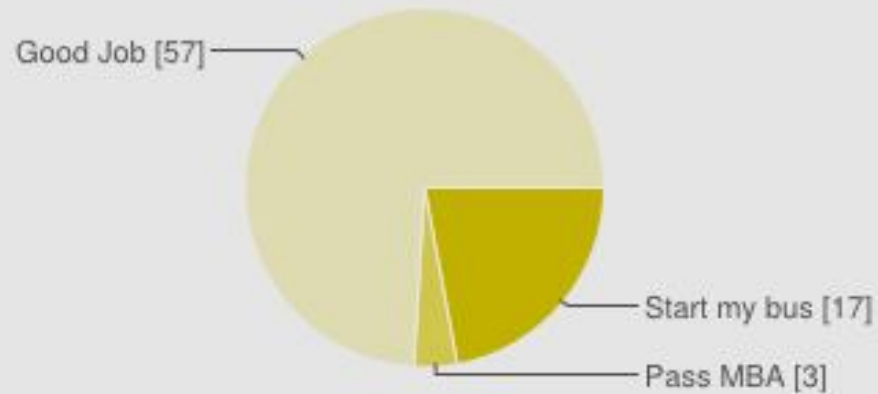
Before MBA, I studied



BBM	35	44%
BCom	35	44%
BA	0	0%
BSc	2	3%
Engg	5	6%
Don't know	0	0%

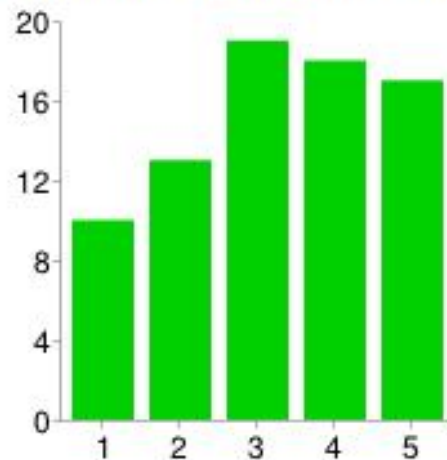
# After MBA

## My dream during MBA



Start my business	17	22%
Pass MBA	3	4%
Good Job	57	72%

## I want to study more after MBA

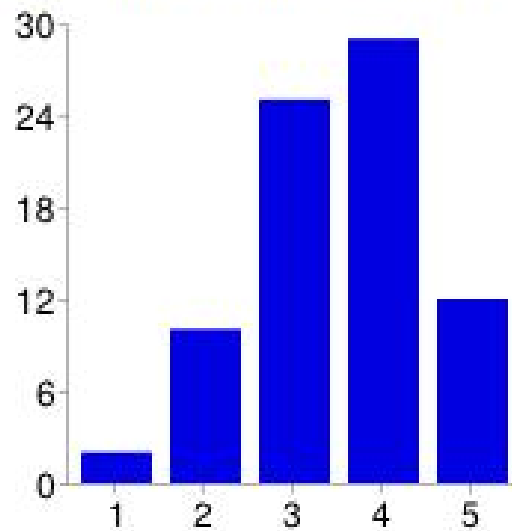




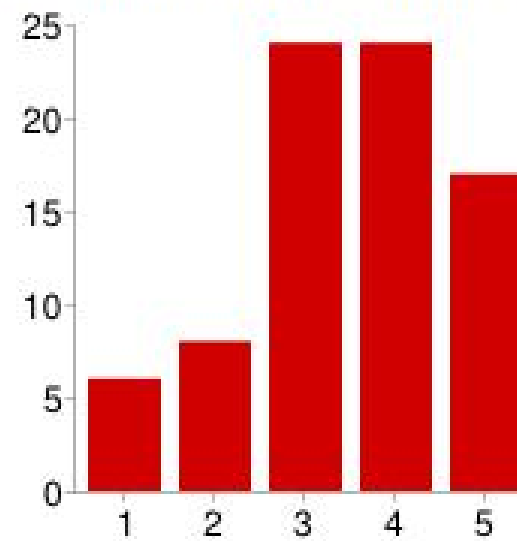
# 3.2 Results: Reading and Writing

# Reading

**Reading is important for MBA**

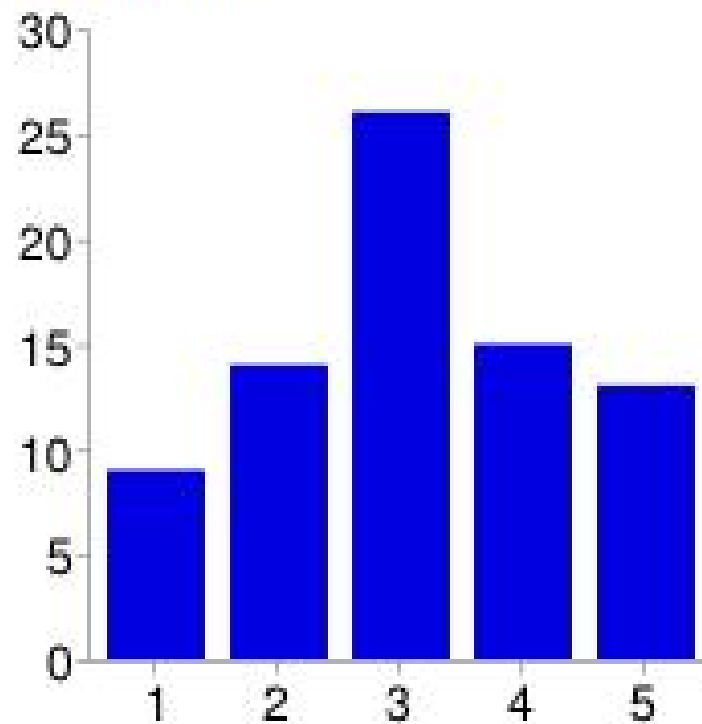


**Reading comics helps in MBA**

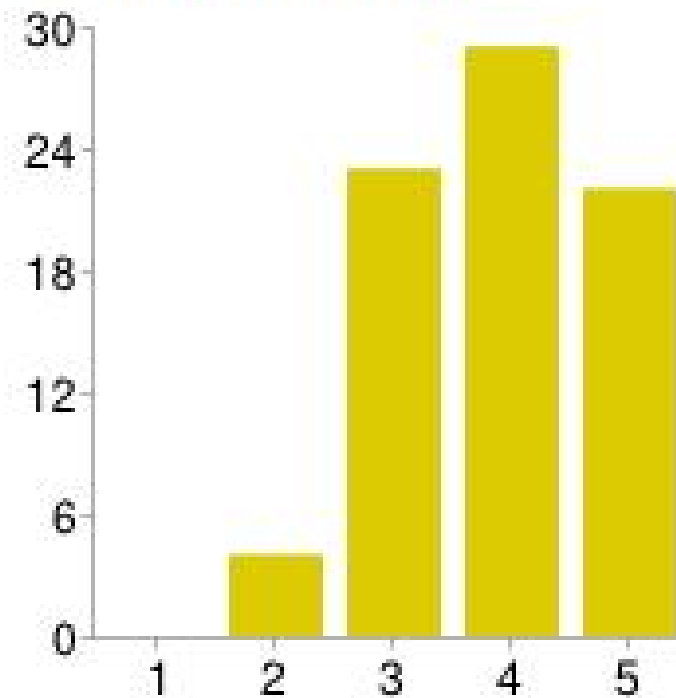


# Reading

**I read google news every morning**

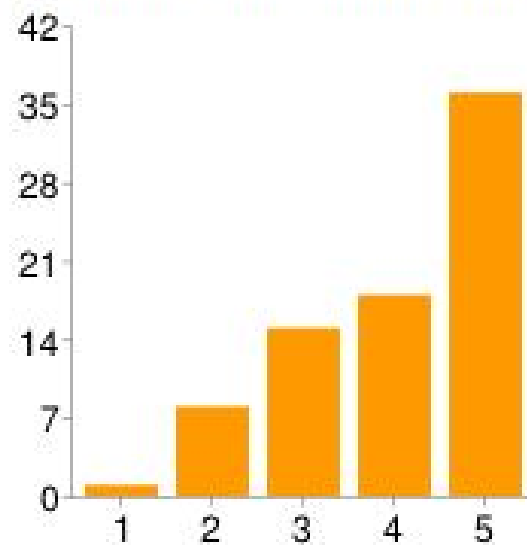


**English Literature should be taught in MBA**

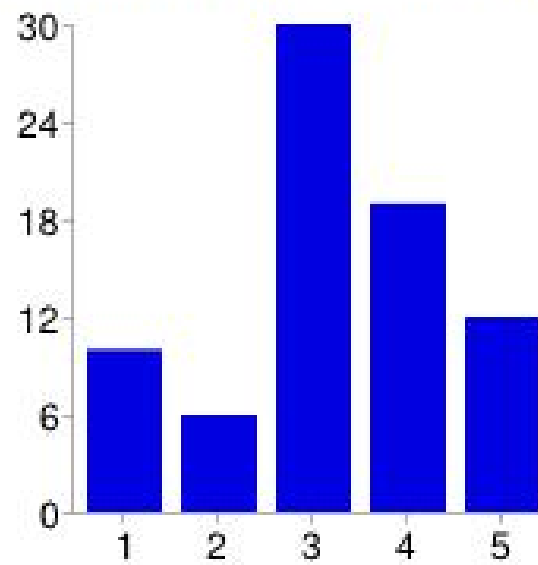


# Writing

**We must write notes in all classes**

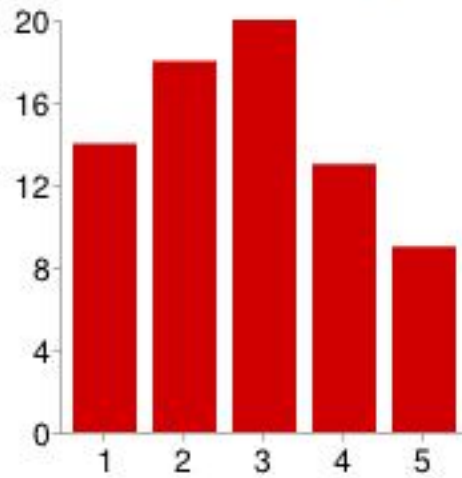


**Writing is more important than reading**



# Writing

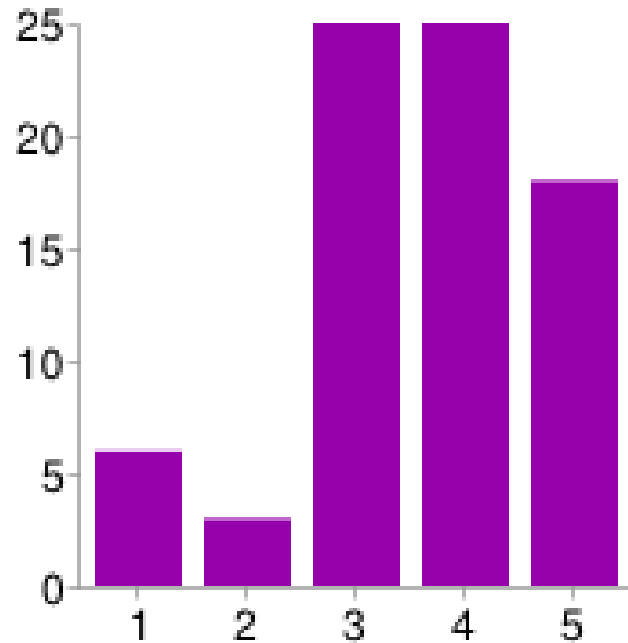
I write a diary to organize my thoughts



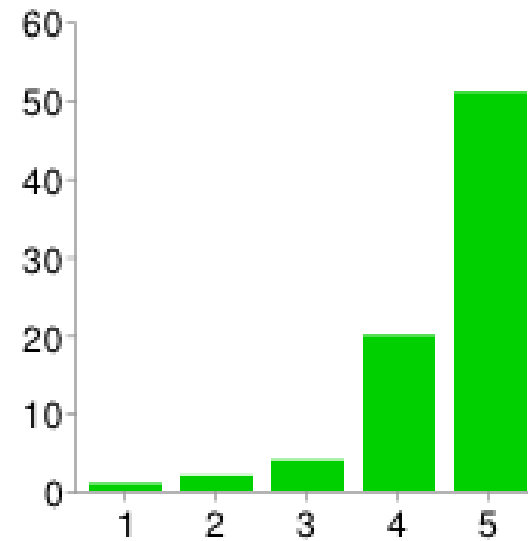
# 3.3 Results: Speaking and Listening

# Listening is important

**Listening is more important  
than speaking English**

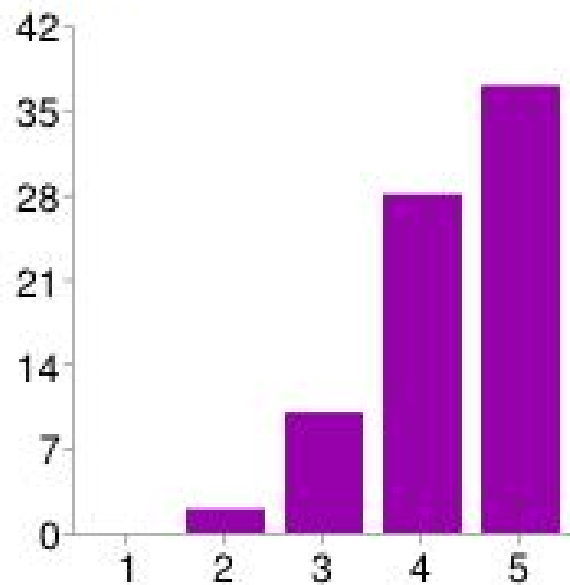


**Speaking English is necessary  
for placements**

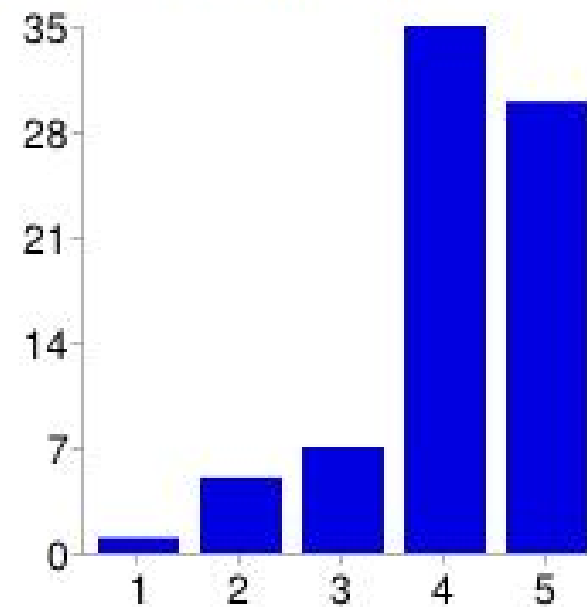


# Questioning and open minds

**We should ask more questions in class**



**Seminars must include debate at the end**



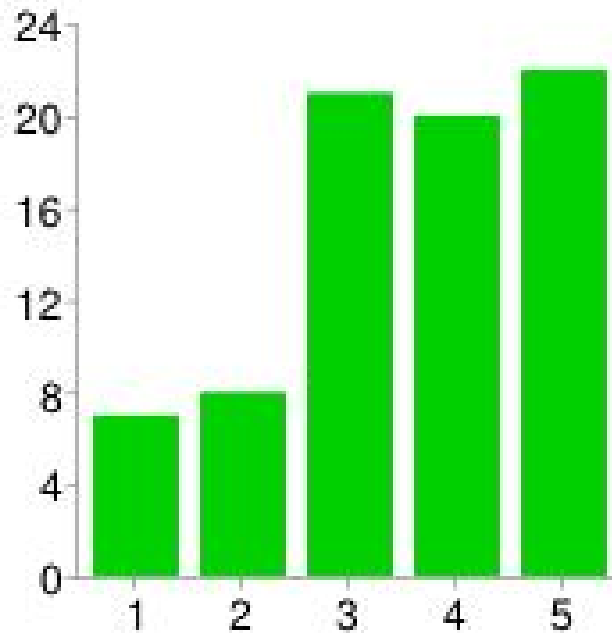


## 3.4 Results:

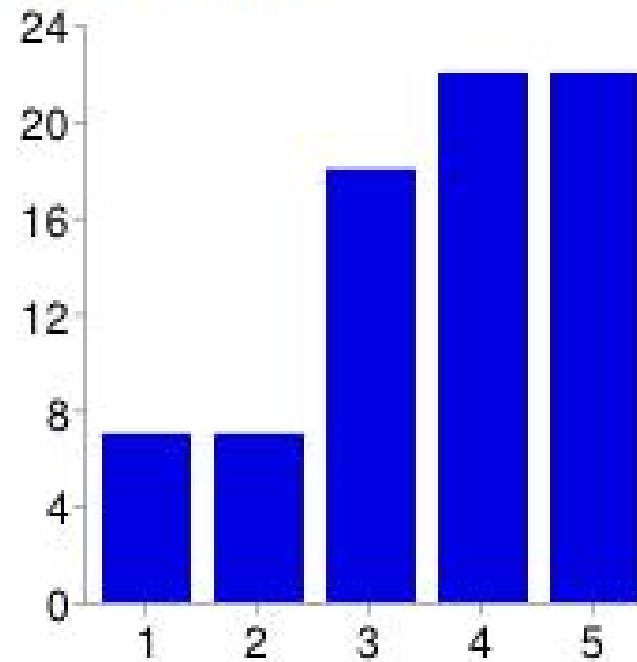
# Study Material

# Study

**Our course material is outdated, we need modern technology like tablets to learn.**



**I study in a group after college hours**



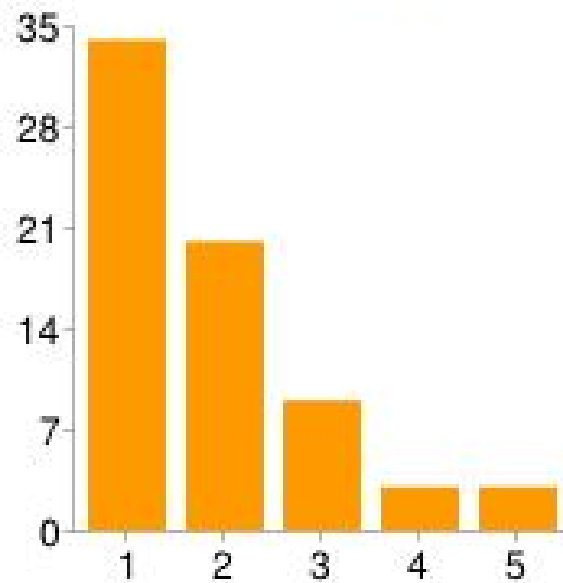
# 3.5 Results:

## Technology

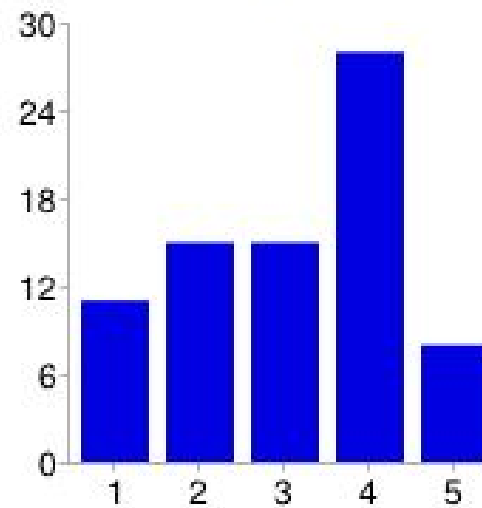
## Tools

# Bloggers, no website

I have a web page

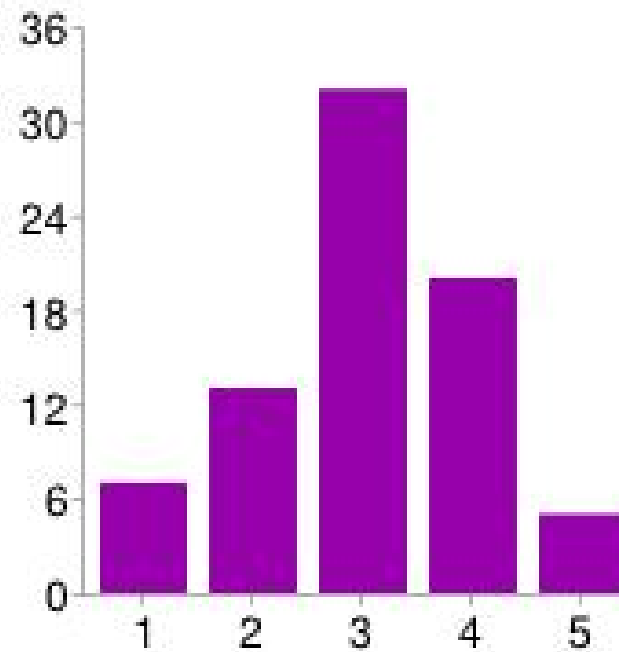


I write a blog

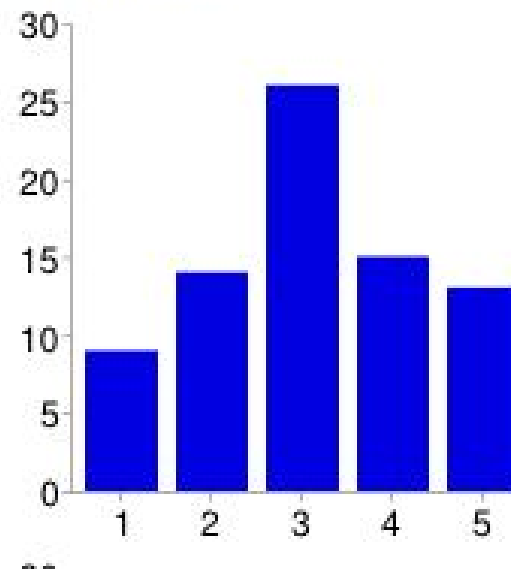


# Tech tools

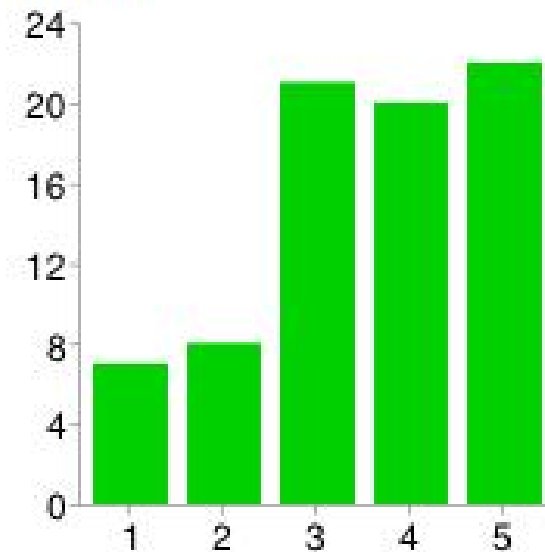
**I know Excel well**



**I read google news every morning**



**Our course material is outdated, we need modern technology like tablets to learn.**

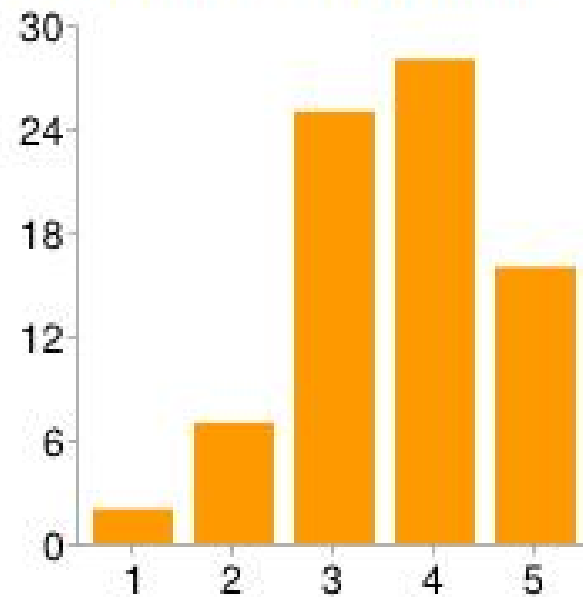


# 3.6 Results:

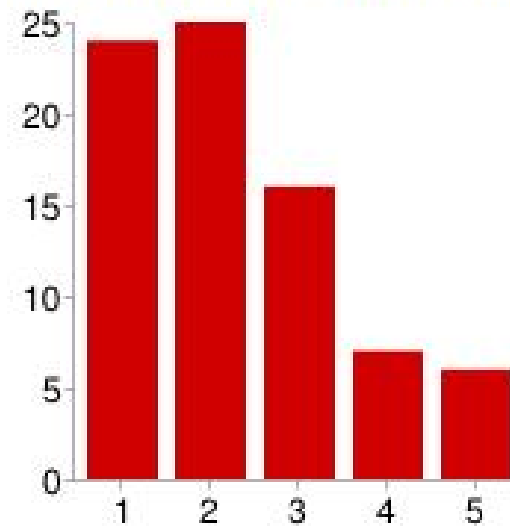
## Learning Methods

# Teaching

**I learn best from fellow student presentations.**

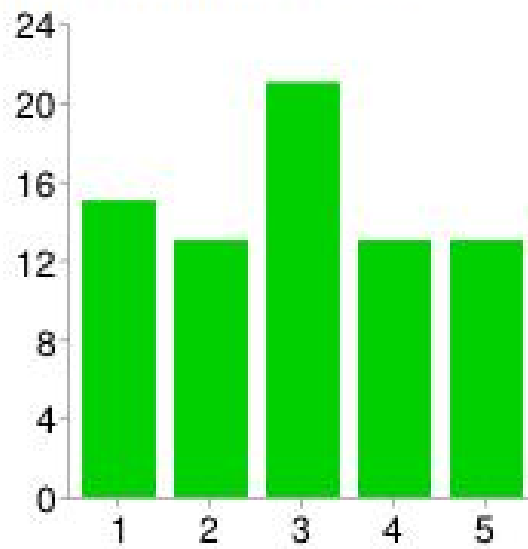


**Teachers don't listen to us, they think we are trouble**



# Big Class?

**I like big classes**

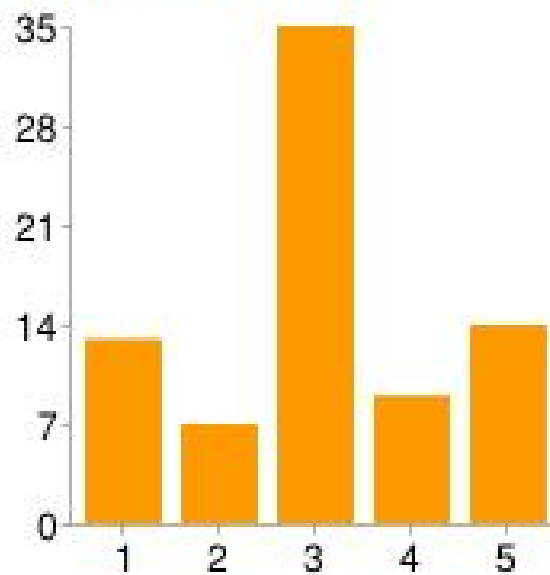




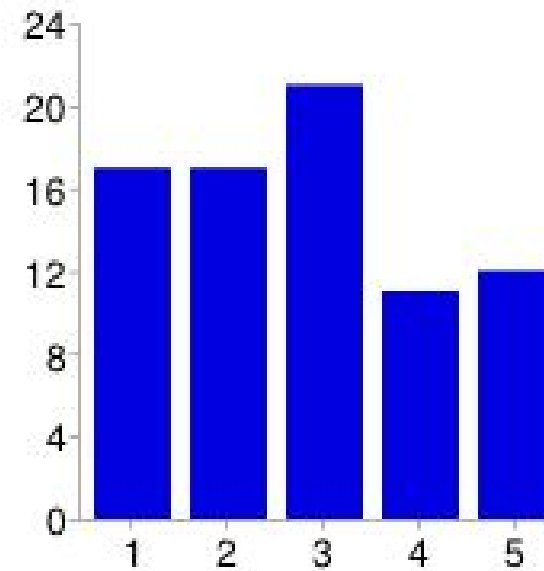
# 3.7 Results: Exams

# Exams

**External exams are better than internal exams?**



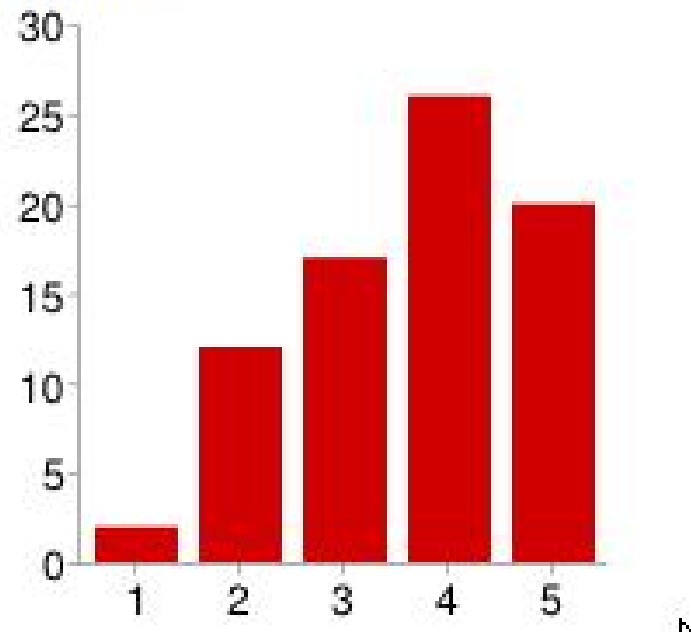
**Multiple choice exams are easier than essay exams**



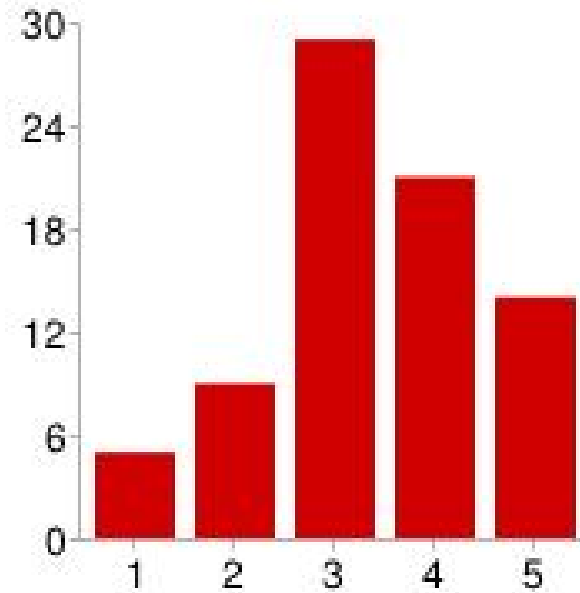
# 3.8 Results: Time Management

# Time is short

**We have too many classes  
and not enough time to  
think**

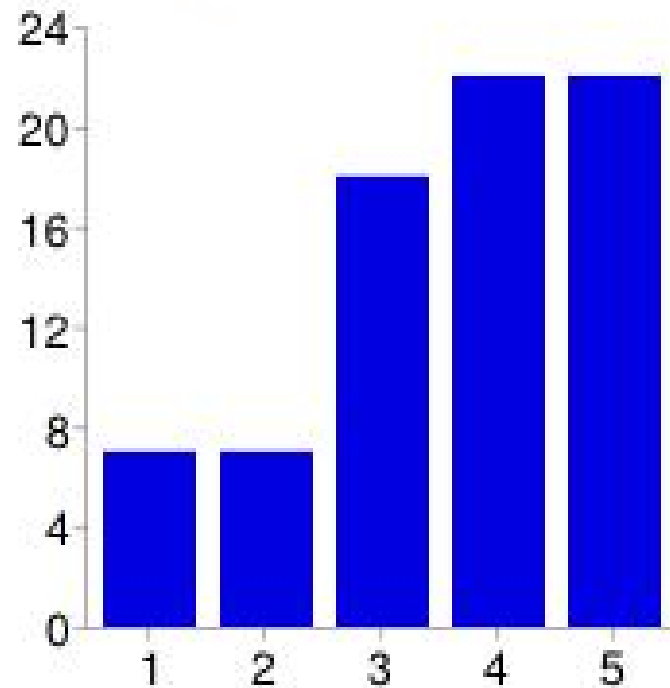


**There are too many  
activities and not enough  
interesting course material**

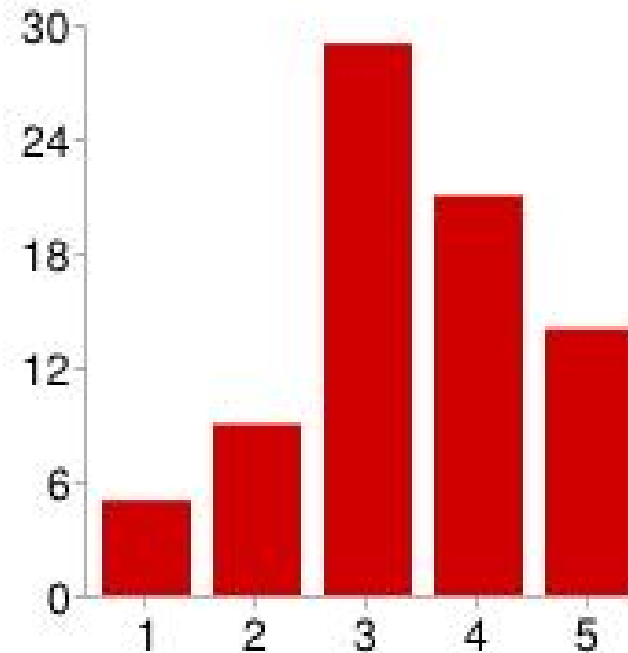


# Time is short

**I study in a group after college hours**

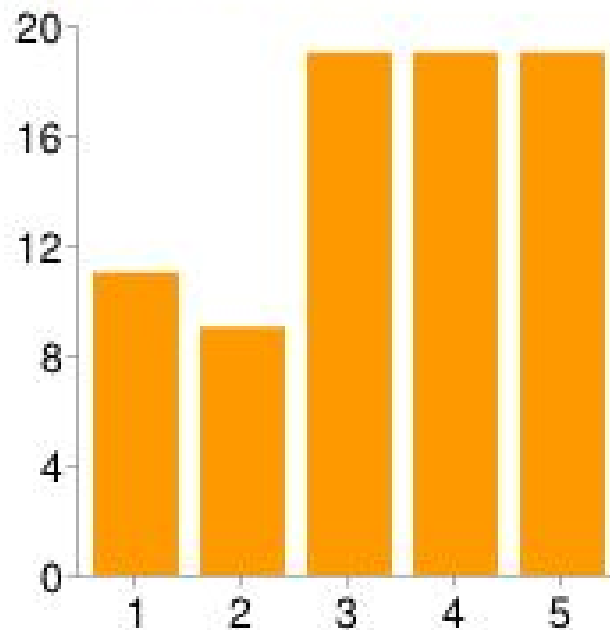


**There are too many activities and not enough interesting course material**

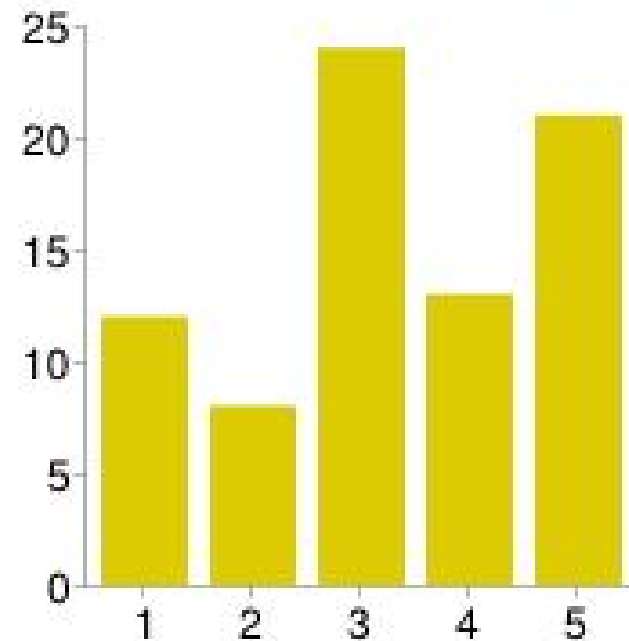


# Time is short

**Extra curricular activities must be optional**



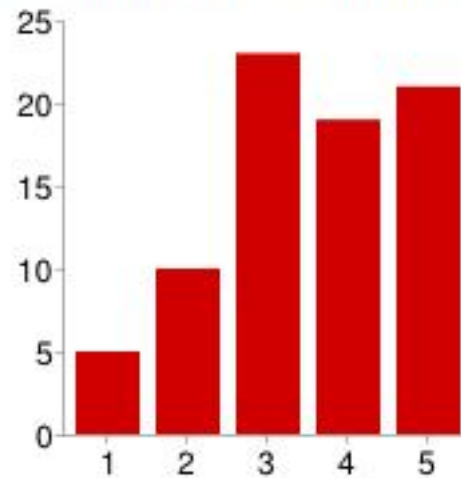
**Saturdays should be holiday so we can go home**



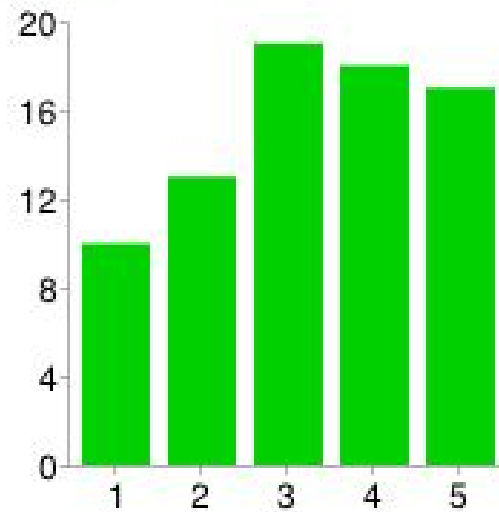
# 3.9 Results: Confidence

# Confidence

**I can change the world with my work**



**I want to study more after MBA**

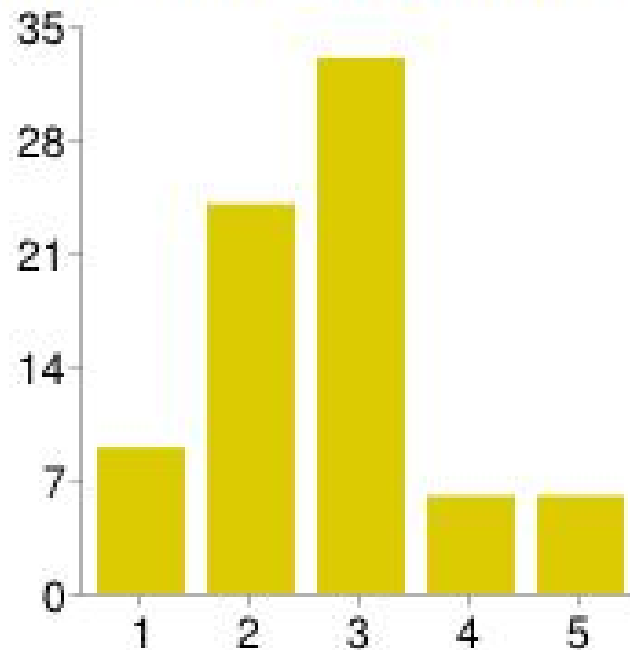




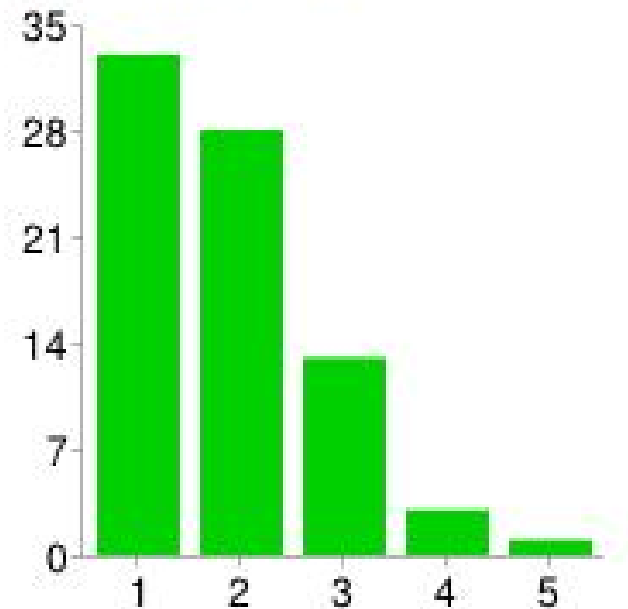
# 3.10 Results: Placements

# Placement is independent of marks and student is responsible

**No matter what marks I get, placement is guaranteed**

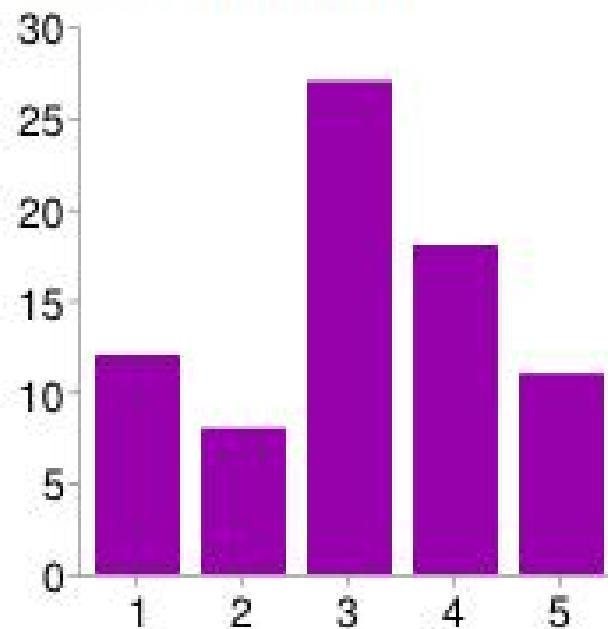


**It is the college's responsibility to do placements.**

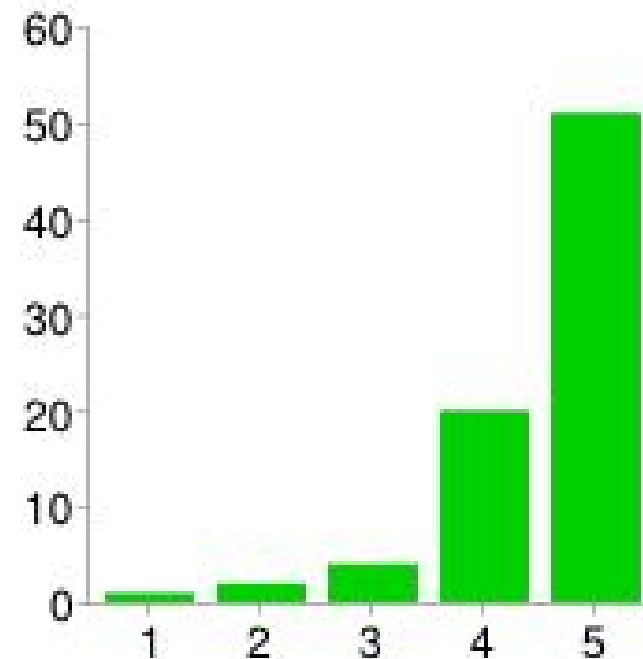


# Placement, English

**I worry about placements  
more than marks**



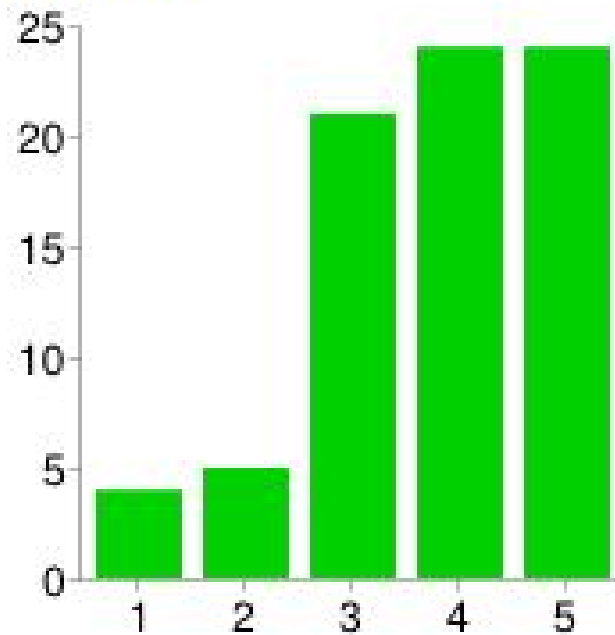
**Speaking English is  
necessary for placements**



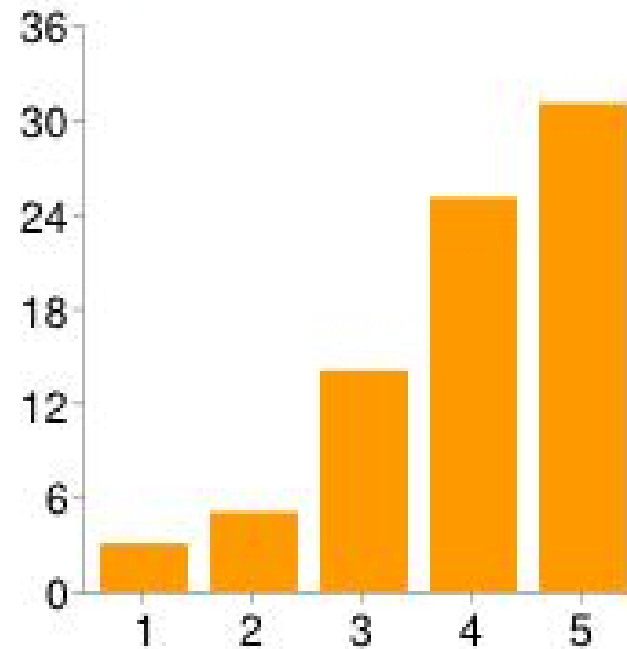
# 3.11 Results: Teachers

# Teachers

**We can talk to teacher  
anytime during office  
timings**



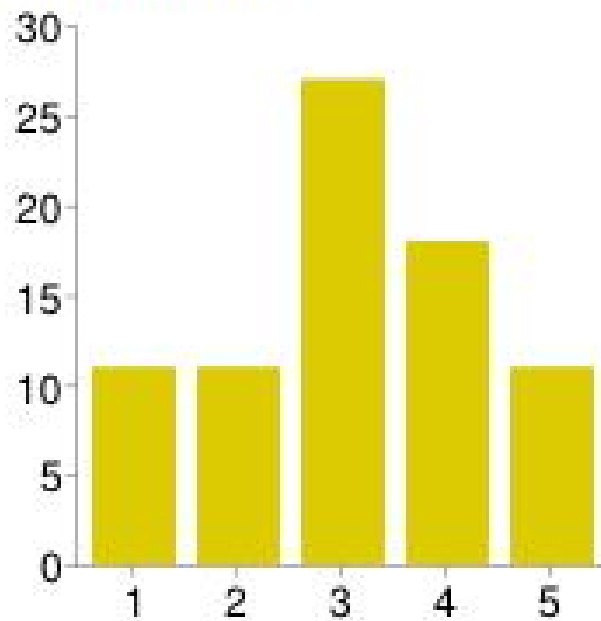
**We are treated equally by  
college/teachers**



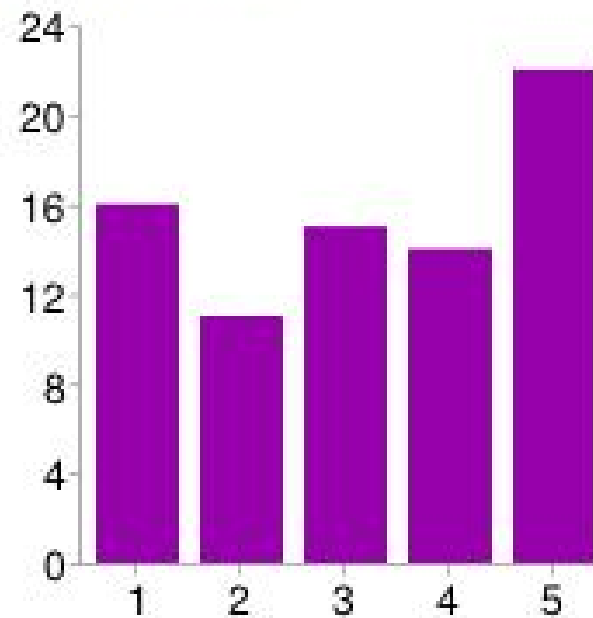
# 3.12 Results: Lifestyle and Health

# Liberal or Traditional?

**Our college needs to be more liberal**

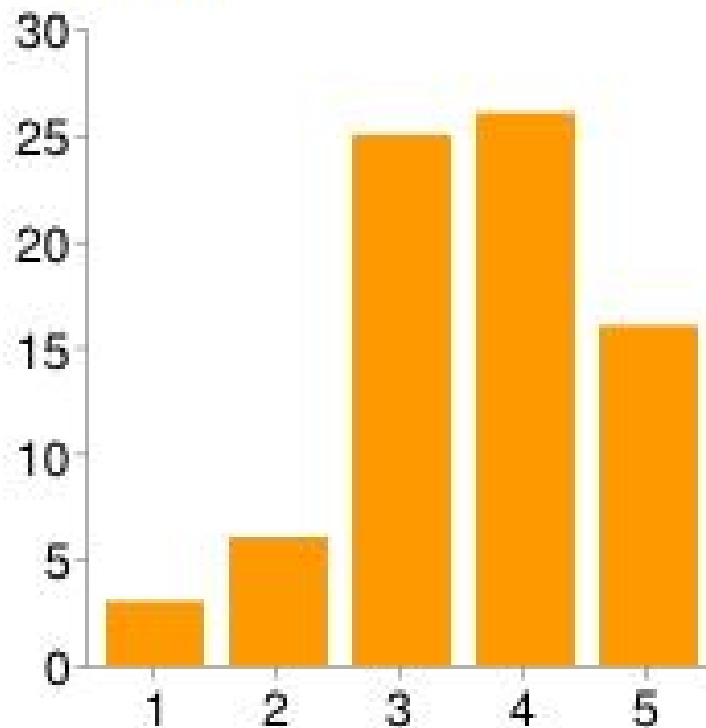


**Dress code in college is old fashioned**

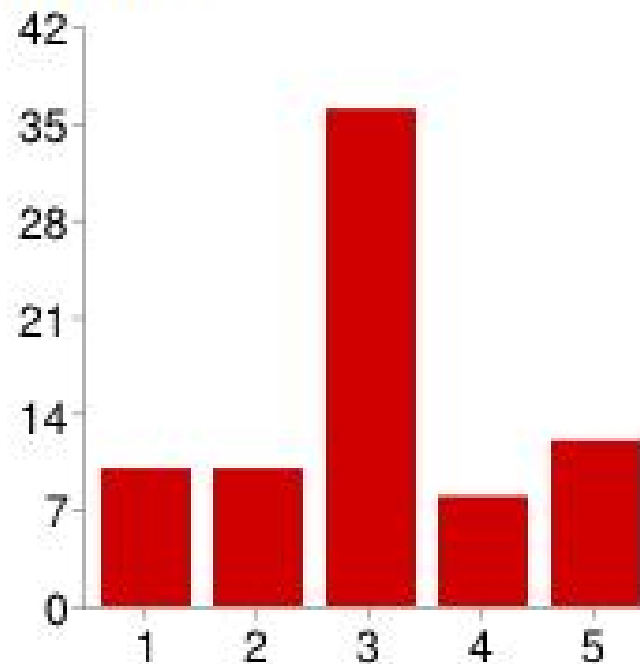


# Friends in College

**I have lots of Friends in college**



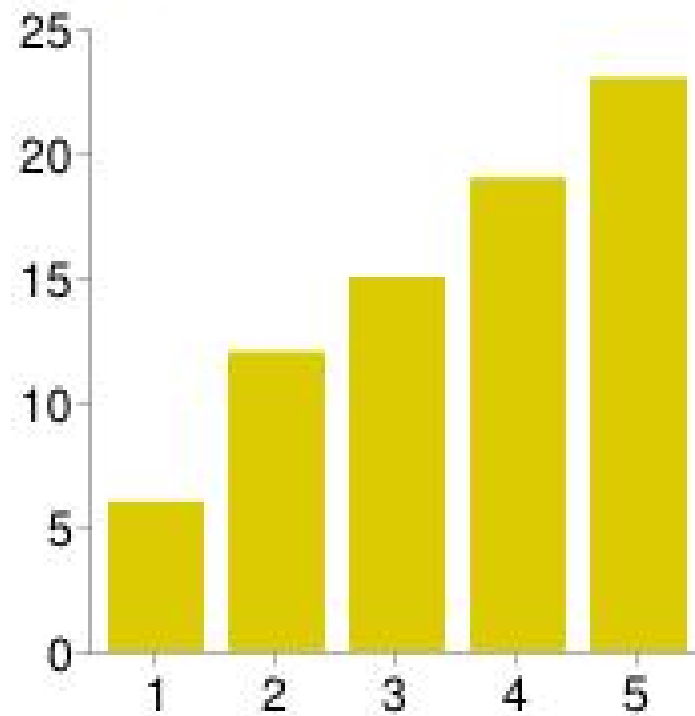
**College friends are true friends**





# Relaxing

**I love watching movies  
after classes to relax**

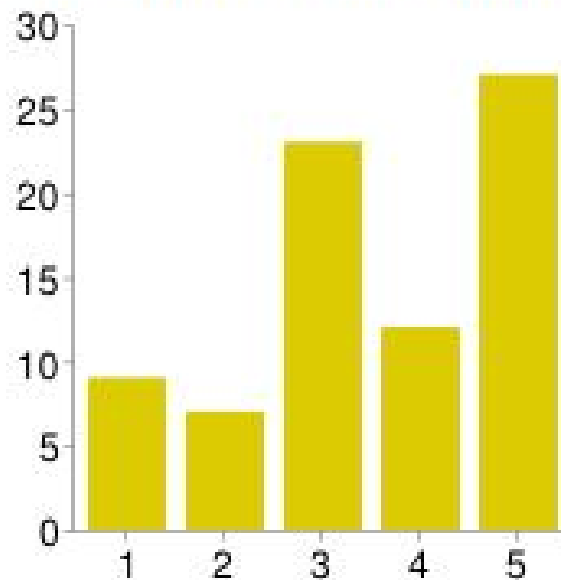


# 3.13 Results:

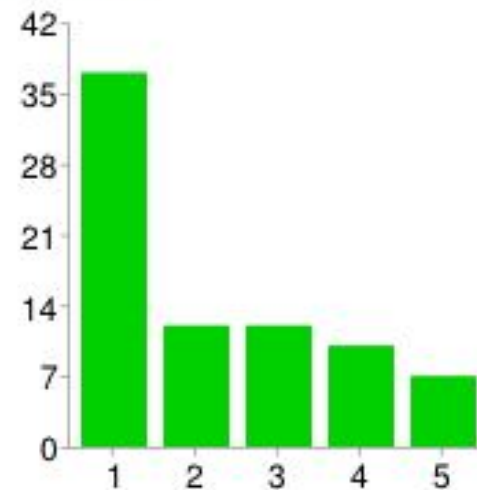
## Gender Equality

# Gender Equality is there!

**In a full bus, a boy should give seat to a girl standing?**

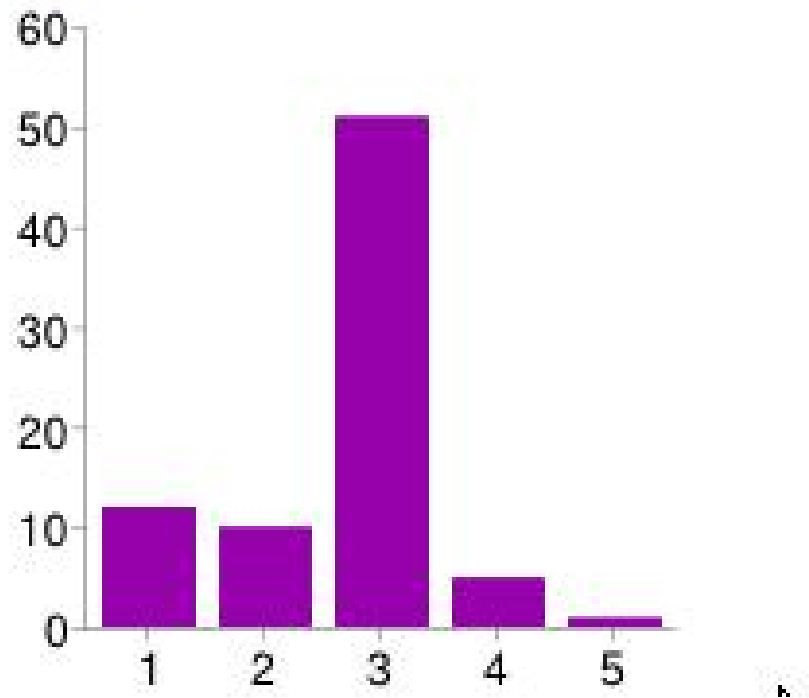


**MBA is more important for boys, because they must get a job and support the family?**



# Gender Equality is there!

Boys do better in Math than girls



# Conclusion

# Conclusion (Vernacular, Rural)

The students who come from vernacular background do not consider MBA is as important for girls as for boys.

They like to read comics to improve their language skills.

They also watch more movies for entertainment.

They also are not as likely to come to speak on the stage and be empowered.

The rural students are also more interested in placement than in marks, unlike their urban peers.

# Conclusion (General Responses)

- Reading and writing are important to MBA students.
- Placement is the student's responsibility.
- The college must educate the urban students that marks are not an end by themselves and teach students to not give in to peer pressure and compete on artificial yardsticks.

# Conclusion (Statistics)

- We were quickly able to analyze and classify the survey data using R.
- R found at least 16 factors are necessary to classify the survey results (There may be more hidden variables). This would be our future work.



# References

1. Kavya M N, Nishita Rai, Jovita M, Nikitha F, Laxmi N, Meet A, “*R for MBA*”, Techbugs workshop, JKSHIM, NITTE, India 8/2014.
2. Kavya M N, Using R to Statistically Analyse a Survey on the Learning Habits of MBA Students, Under preparation, slated for 2/2015.
3. Google Forms for Surveys,  
<https://www.google.com/insights/consumersurveys/home>

# Acknowledgements

We thank our Director Prof. Sankaran, Prof. Krishna Prasad and JKHSIM faculty for their constant encouragement.

We thank all the students who answered our questionnaire.

# Question and Answers

## (5 minutes)

Please email us your unresolved questions or suggestions to the presenters:

1. Shreyashree Jain, Shreya.P.Jain.9@gmail.com
2. Vaishali (Kadri), Vaishali.952@gmail.com
3. Kavya M N, Kavya.Nagraj.4@gmail.com
4. Prof. Krishna Kumar, Krishna.Kumar@nitte.edu.in
5. Prof. Mohsin Ahmed, MoshAhmed@gmail.com

## 2.2 Questions

# Survey Questions 1..20

- Q.01 Reading -- Reading is important for MBA
- Q.02 SleepRead -- I sleep late and read at night
- Q.03 Confident -- I can change the world with my work
- Q.04 Chivalry -- In a full bus; a boy should give seat to a girl standing?
- Q.05 MaleDominated - - MBA is more important for boys;  
because they must get a job and support the family?
- Q.06 MaleChauvanist -- Boys do better in Math than girls
- Q.07 ExamMult -- Multiple choice exams are easier than essay exams
- Q.08 ExamExt -- External exams are better than internal exams?
- Q.09 ReadComics -- Reading comics helps in MBA comprehension
- Q.10 JobNoWorry -- No matter what marks I get; placement is guaranteed
- Q.11 JobByCollege - It is the college's responsibility to do placements.
- Q.12 Inquisitive -- We should ask more questions in class
- Q.13 Debate -- Seminars must include debate at the end
- Q.14 WriteNotes -- We must write notes in all classes
- Q.15 ClassTooMany -- We have too many classes and not enough time to think
- Q.16 BigWeekend -- Saturdays should be holiday so we can go home
- Q.17 TeacherListen -- We can talk to teacher anytime during office timings
- Q.18 NotMarks -- I worry about placements more than marks
- Q.19 GrpStudy -- I study in a group after college hours
- Q.20 TeachersEq -- We are treated equally by college/teachers

# Survey Questions 21..40

- Q.21 ActivityTooMany -- There are too many activities and not enough interesting course material
- Q.22 Conservative -- Our college needs to be more liberal
- Q.23 TechNeeded -- Our course material is outdated; we need modern technology like tablets to learn.
- Q.24 OldDrs -- Dress code in college is old fashioned
- Q.25 ENews -- I read google news every morning
- Q.26 PeerPres -- I learn best from fellow student presentations.
- Q.27 TeacherPest -- Teachers don't listen to us; they think we are trouble
- Q.28 EngLit -- English Literature should be taught in MBA
- Q.29 EnglishJob -- Speaking English is necessary for placements
- Q.30 Listening -- Listening is more important than speaking English
- Q.31 Writing -- Writing is more important than reading
- Q.32 ActivityOpt -- Extra curricular activities must be optional
- Q.33 Gender -- My gender (Girl=1,Boy=0)
- Q.34 PostMBA -- My dream during MBA
- Q.35 ClassBig -- I like big classes
- Q.36 Vernacular -- I studied in my mother tongue (Kannada; Tulu; Konkani; etc)
- Q.37 TownSmall -- I grew up in a small town like Karkala
- Q.38 FriendsMany -- I have lots of Friends in college
- Q.39 FriendsTrue -- College friends are true friends
- Q.40 Movies -- I love watching movies after classes to relax

# Survey Questions 41..55

- Q.41 StudiesHigher -- I want to study more after MBA
- Q.42 ExcelExpert -- I know Excel well
- Q.43 Blogger -- I write a blog
- Q.44 Webpage -- I have a web page
- Q.45 WriteDiary -- I write a diary to organize my thoughts
- Q.46 Meditate -- I meditate to calm my mind and focus attention
- Q.47 Hobbies -- I have hobbies outside of studies to keep me busy
- Q.48 MBASad -- MBA is depressing
- Q.49 MBAHappy -- MBA classes give me joy and hope
- Q.50 FoodHealthy -- I eat healthy food in NITTE
- Q.51 SpkEmpowered -- I spoke on stage and it was empowering
- Q.52 TeacherEmpower -- Teachers empower me to do great things
- Q.53 ProudParent -- My parents are more proud of my MBA than me.
- Q.54 ProudI -- I am proud to be learning MBA
- Q.55 Degree -- Before MBA; I studied (Bcom=2,BBM=3,BSc=4,Engg=5)