

Effects of Participation in a Statistical Laboratory on Statistics Students

62nd ISI World Statistics Congress

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Federal University of Rio Grande do Norte - Brazil

Outline

1. Our Statistical Laboratory in Brazil
2. Lab Workflow
3. Effects of Participation on Students
4. Conclusions

Our Statistical Laboratory in Brazil

Our Statistical Laboratory in Brazil

- In Brazil we have *Laboratório De Estatística Aplicada* (Applied Statistical Laboratory) - LEA
- It is located at Federal University of Rio Grande do Norte (UFRN), in Natal
- It was created in 1978 under the name CONSULEST (Statistical Consulting), but it changed to its current name in 2013
- I am part of LEA since 2015, when I joined UFRN
- LEA is part of LISA 2020 (<http://lisa2020.org>) since 2013

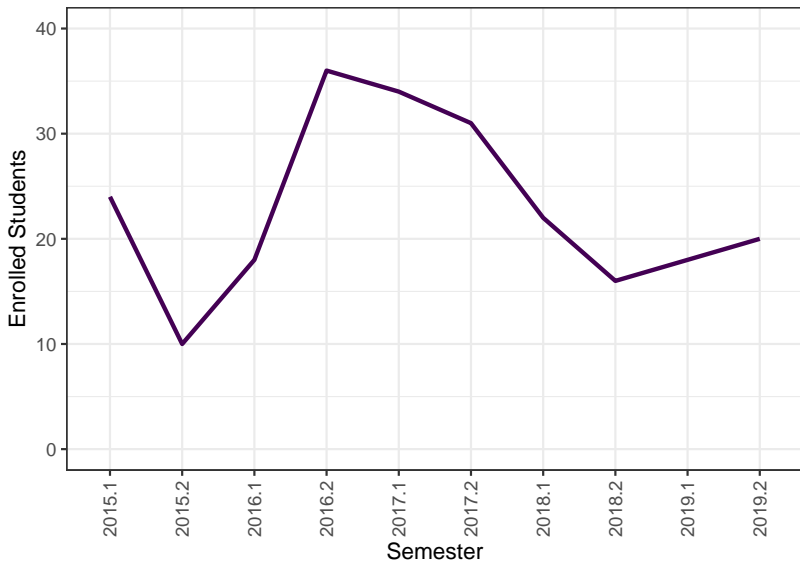
Our Statistical Laboratory in Brazil



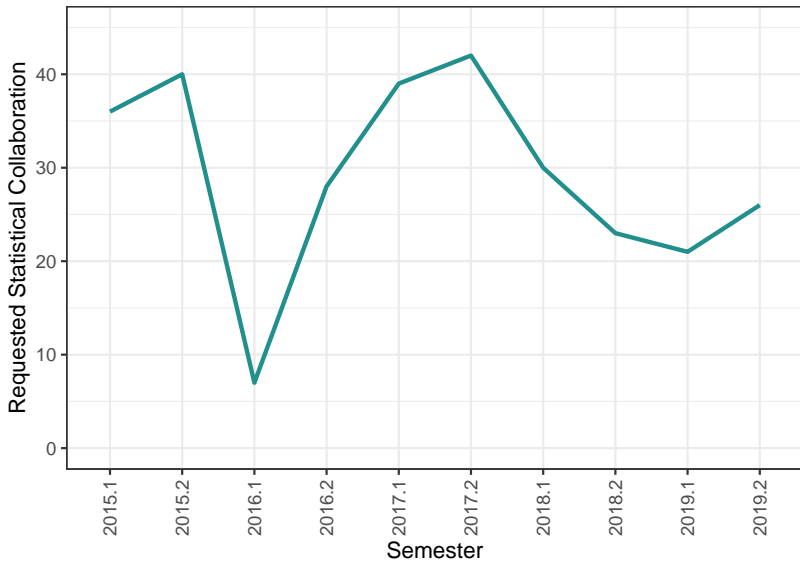
Our Statistical Laboratory in Brazil

- Participation in LEA is mandatory
- Every undergraduate student from the Statistics Department who finished their first Statistical Methods course (T Test, Chi Square Test, Simple Linear Regression, One-Way ANOVA) can participate
- The students need to complete at least 90 hours in statistical consulting, which is equivalent to finish three short term consulting projects
- Each project should take three weeks to complete

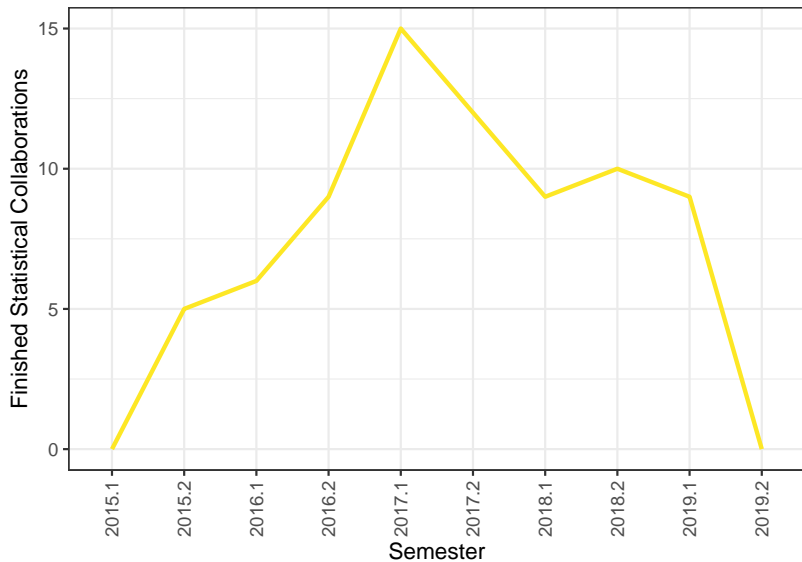
Our Statistical Laboratory in Brazil - Students



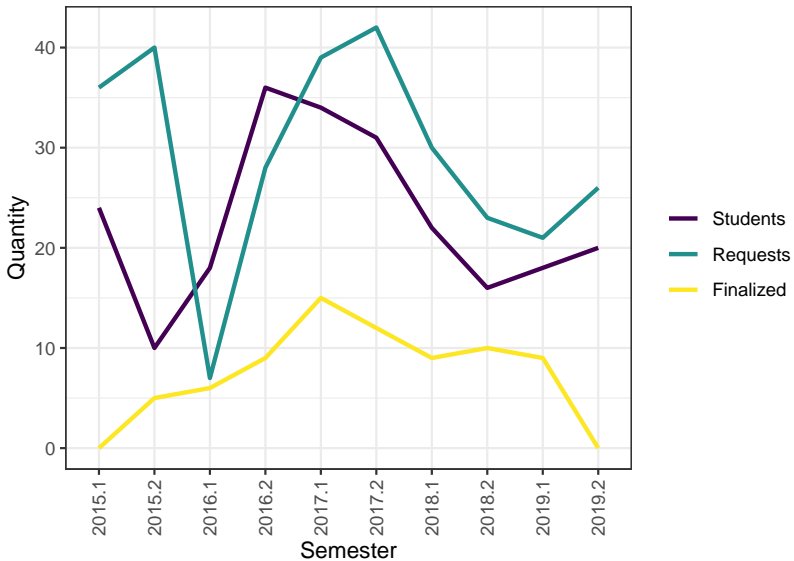
Our Statistical Laboratory in Brazil - Requests



Our Statistical Laboratory in Brazil - Finalized



Our Statistical Laboratory in Brazil



Lab Workflow

Lab Workflow

- Every project at LEA is developed according to a workflow
- LEA used to receive requests of collaboration projects all year around
- We changed this approach to an one month application window in 2019.2
- Our lab main activity is to give free statistical advice for short term projects
- So far, we do not offer short courses, but we plan to do it very soon

Lab Workflow

- Ideally, each project should take three weeks to be completed
- Each consulting project is taken by a student and an advisor
- There are 20 students and 8 advisors working with LEA during 2019.2 semester
- Every month, a meeting with all the students is held
- After the consulting project is finalized, the consultant writes their report and present it to the other students and advisors

Lab Workflow

Day	Task
1	Initial meeting with client
2-3	Initial meeting with advisor
4-13	Data analysis and draft report
14-15	Advisor review
16-19	Final report
20-21	Final meeting with advisor
22	Final meeting with client

- We use the POWER Process to organize our client meetings
- POWER is an acronym for Prepare, Organize, Work, Evaluate, and Rethink
- We translated it to Portuguese as PODER: Preparar, Organizar, Desenvolver, Encerrar e Refletir

Effects of Participation on Students

Effects of Participation on Students

- Statistical experience
- Stronger communication skills
- Better sense of organization

Statistical Experience

- Problem solving mindset
- Tasks that need to be completed
- Independent research

Stronger Communication Skills

- Talk to people from other knowledge domains
- Explain statistical concepts to non-statisticians
- Improved writing
- Explain the results to advisors and other students

Better Sense of Organization

- Deadlines are good
- Meetings are held in a professional setting
- The written reports need to make sense

Problems

- Not all students are interested in consulting
- Sometimes there is lack of professionalism from the students
- It is hard to offer advanced statistical analysis
- We did not start to offer short courses yet

Conclusions

Conclusions

- Our Statistics students in Brazil are very well prepared for the job market after their experience at LEA
- After seeing statistical applications in the real world, some students started their own business
- It is a good opportunity for networking between students, advisors and researchers around our university

Acknowledgements

- Professor Carla Vivacqua
- Professor Eric Vance
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Questions?

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