

AI1175 Basic Statistics for Economists 7.5 credits – Course Analysis

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1. Description of the course evaluation process

Students had the possibility to give feedback and recommendation using / in

- a) “3 things I have learned, 2 things I would change for this course, 1 thing I did not understand” paper-based survey during the semester,
- b) the KTH provided evaluation questionnaire during the end of the lecture period,
- c) a meeting with the 2 program representatives after the exam. Aspects regarding gender and discrimination against migrants were explicitly discussed during the meeting with the program representatives.

2. Description of meetings with students

The meeting was arranged after the exam; the discussion structure was mainly “what was good/what can be improved” from the perspective of the students and professors.

3. Course design

The intended learning objectives are that students should be able to:

- a) identify appropriate methods for basic statistical problems.
- b) perform statistical calculations using a computer program.
- c) interpret, analyze and present results from statistical calculations.
- d) critically use their own and others' statistical results.

The learning activities are:

- a) lecture: classical setting; explanatory figures and discussions are given by professors and are discussed with the students; reading the textbook/supporting slides is recommended,
- b) exercises: professor and teacher assistant a) discuss, b) demonstrate, and c) again discuss the solutions for examples; further examples and solutions are available for homework,
- c) computer lab: students have to prepare solutions for given problems in groups; the professor only assists in computer lab sessions,
- d) online “discussion” in Canvas: students can ask for help – esp. regarding further exercises from the textbook or old exam questions.

The examination activities are:

- a) computer assignments (P/F),
- b) written exam (A-F).

Development that has been implemented since the last cycle:

- a) A few exercises were taught by a student assistant.
- b) A few exercises were moved to “do it yourself” to have more time for discussions during the class meetings.
- c) The assignment group size of 2-4 persons was changed to 3-4 persons to encourage constant learning.
- d) Peer-review of assignments before final submission.

- e) The submission deadlines for the 4 assignments were spread over the semester.
- f) New exam structure: MCQs in 2 levels of difficulty and open questions; MCQs have always 5 options.

4. Students' workload

The actual average students' workload was lower than the necessary extent in relation to the course credits (200h). Even the maximum workload stated in the online questionnaire is lower than the expected workload. However, due to the low participation rate of the survey, it is questionable how representative these numbers are. Students' feedback (during the semester and in the questionnaire) show that students expected a lower workload, which would contradict KTH's regulations. Students explicitly complained about the necessary time for reading the textbook and computer exercises. Students are on average not aware that the time for the class meetings does not correspond to the total required workload – it is actually around 31% of the total workload.

5. Students' results in the course

Computer assignment: The pass rate is high (approx. 95%). The quality of the groups who participated in the computer assistance sessions is high. Mistakes of non-participants are obviously recognizable. There is a high lack of knowledge about basic functions of computers, Excel and formatting skills – all are requested professional skills by the industry.

Written exam: The pass rate is 60%; the shares of good grades (A-B) is 14% and medium grades (C-D) is 23%. For the first time, this exam incorporated KTH's new grading requirements. Based on the level of difficulty of the questions, students with Ds and Es have more problems with questions with the low level of difficulty even if they are based on already trained exercises. This corresponds to their poor solutions for the open/essay questions. False answers in the open/essay questions show that concepts were not understood even if they were correctly answered in the MCQ part.

The differences compared to the previous cycle are mainly due to the new structure based on KTH's new grading requirements.

6. Students' answers to open questions

Students complained about:

- a) the changes in the written exam due to KTH's new grading requirements.
- b) the necessary time for reading the textbook and computer exercises.
- c) that there was no introduction lesson in basic Excel.
- d) that the lecture was taught by 2 professors.
- e) that professors refused to give explicitly hints for the exam in the last lecture.
- f) that KTH hired a non-Swedish speaking professor and that statistic cannot be understood if it is taught in English.

7. Summary of students' opinions

Students liked:

- a) that the solutions of the exercises were online available and detailed (step-by-step solutions).
- b) the possibility to ask questions in Canvas.

- c) the detailed slides.

Students asked for:

- a) detailed solutions for the last exams.
- b) the possibility of “plussna”.
- c) that only slides which are relevant to the exam are included.
- d) an “introduction to Excel”-lecture.

8. Overall impression

In comparison to the last cycles, students showed extreme low attendance/participation during the lecture and in the discussion section on the online platform. Students repeatedly asked the same questions regarding organization and content (see low participation comment). The motivation to learn something new (statistic and Excel) was low. The self-study willingness (homework, reading textbook/slides, looking-up of equations on the “formelsamling” paper during exercises) was extremely low. Often mentioned basic concepts (e.g. mean, variance, correlation vs. causality) were not incorporated in the discussion/questions.

9. Analysis

- Students find it confusing to have two professors and would prefer to be taught by one.
- Students seem to prefer to build same-sex groups and groups with mostly members without/with migration background.
- Anonymous comments show at least a xenophobic or even racist attitude against non-Swedish speaking teachers – “KTH should not hire a non-Swedish speaking professor”. I informed the program representatives who want to discuss this with the students. I also informed the head of the department about these resentments against non-Swedish speaking employees.
- Students show a low motivation to read the textbook, slides and to bring the handed-out “formelsamling” paper during the exercises.
- Students show a low motivation to go to the lecture.
- Regarding “discussions” in Canvas:
 - These can be seen as indirect measurements of students’ understanding and their starting periods for the preparation for the exam. It shows that questions are only asked a few days before the exam and mostly regarding basic problems.
 - The online tool is not used during the semester.
 - Some students prefer to ask questions via email instead of asking in Canvas.

10. Prioritized course development

- Counteracting discrimination against gender and migrants.
 - As discussed with the program representatives, I try to counteract this anti-diversity behavior of the students during the group building by a random group building process at the beginning of the next cycle and will address as well as discuss this issue at the beginning.
 - I will address the existing discrimination against migrants at the beginning of the lecture.
- The lecture will only be taught by one professor.

- I will inform students why it is necessary to work with Excel and a student assistant will introduce the basic functions of Excel.
- A student assistant will mainly teach the assignments/exercises.
- I will inform students on the importance of regular attendance/participation.
- I will use more often the “think-pair-share” method to motivate students to share their opinion during the lecture.
- I will hint and advertise the discussion section in Canvas.
- Since most students do not read the KursPM, I will post the content step-by-step in Canvas.
- I will express KTH’s/my expectation of the necessary working load. To study at a leading tech university comprises more than going to some lecture classes.
- I will hint that computer assignments are time-consuming but apart from being an own assessment, they are a good preparation/training for the written exam and a practical use in the industry.
- The submission deadlines for the 4 assignments will be shifted to earlier dates so that there is no deadline at the end of December.
- Since the response rate of the online questionnaire is extremely low to be representative, I will further use a paper-based survey during the semester.

11. Other information you want to share

none