

## Peer-review committee and evaluation report

The aim of the quality assurance process is to generate necessary knowledge to assure and develop the quality of the doctoral program. Peer review is a crucial part of this quality assurance process. The quality assurance process starts with a self-evaluation by the department, which is summarized in a self-assessment report (including supporting appendices). The doctoral student union gets the opportunity to submit a special report to the peer-review committee. The peer-review committee is expected to interview representatives of the program leadership (head of department and director of studies), supervisors, and doctoral students. The supervisor board or the head of department selects the supervisors to be interviewed and the doctoral student union selects the students.

Based on the self-evaluation report (including appendices), the doctoral student report, and the interviews, the task of the peer-review committee is to evaluate the strengths and weaknesses of the program and make recommendations based on the following criteria:

- The actual outcomes meet the objectives set for them, including the intended learning outcomes
- The program puts the learning of the doctoral students in focus
- The education is based on scientific ground
- All supervisors and course instructors have sufficient and appropriate disciplinary and pedagogical training (quality of staff)
- The program has a sufficient quantity of staff
- The program is relevant for the doctoral candidates and answers to societal needs
- The doctoral students have influence over planning, implementation and evaluation of the program and of their studies
- The learning environment is appropriate and accessible for all doctoral candidates
- There is a well-functioning support for doctoral students in need of such support
- The program is continuously evaluated and its quality is appraised
- Internationalization and international perspectives are promoted in the program
- Gender equality and equal treatment perspectives are integrated into the program
- Relevant (for the discipline) sustainability perspectives are promoted in the program

## Evaluation report

### Lund University School of Economics and Management

<b>Department:</b> Statistics	<b>PhD programme:</b> Statistics	<b>Date:</b> 12 November 2020
<b>Members of the peer-review panel:</b> Chair: Other members: Johan Lyhagen, Paul Sharp, Marie Wiberg		
<b>1. Area, Environment and Resources</b> <b>1.1. Subject of the program</b>  Strength: The Department of Statistics has a long and distinguished history at Lund, and the PhD program both meets societal needs and consists of a relevant curriculum with relevant goals. Statistics is able to contribute to other fields such as econometrics and other social sciences, biostats, and more. There is no doubt among the minds of the staff and students that it is extremely important that Statistics is maintained as an independent field, since it brings a perspective which is strongly complementary to other fields.  Weakness: The discussions with staff reveal some concern about the future of the department. However, at its present size it is difficult to provide the strong independent profile which is necessary to support an independent program in Statistics.  Recommendations: It is recommended that the department works hard to profile itself and its importance through a program which is complimentary to but does not overlap too much with other programs at Lund.		
<b>1. Area, Environment and Resources</b> <b>1.2. Staff: quantity, competence and management</b>  Strength: The two main supervisors have both taken university training courses aimed towards PhD supervision and they, correctly, stress that the main learning comes from actual supervision. There are monthly meetings amongst all main supervisors and the PhD students where they discuss everything from research problems to minor practical problems. These meetings are highly popular and appreciated amongst the PhD students. Teaching requirements are first reconciled with the main supervisors to protect the PhD students from too heavy teaching load.  Weakness: Currently there are only two main supervisors and only three PhD students. There is a very limited number of teachers with a PhD.  Recommendations: The main structure of the PhD program as it is organized fulfils well the administrative needs. The positions of the soon to be retired full professors needs to be appointed as soon as possible. There is a need for a long-term plan at the faculty level as to how to make the research environment become larger. The Faculty has to take the responsibility by allocating the necessary resources.		
<b>1. Area Environment and Resources</b> <b>1.3. Research studies environment</b>  Strength: The main supervisors are engaged in the PhD education. The supervisors have many collaborators and are part of many collaborations which are used in the PhD program. The Statistics education is based on a scientific basis. They have regular statistics seminars (at least every month) where they invite researchers and they sometimes have seminars with the Economics department and a department in France. Most PhD students also write papers together with other researchers outside the department. The department funds when PhD students takes part in international professional meetings if the PhD students have not managed to get funding elsewhere for it. All PhD students have their own offices and thus the physical working environment is very good. The students can follow courses both at Lund University but also at other universities in Sweden and abroad. The department encourages the PhD students to take part in national and international summer schools, the biannual winter conference in Statistics and other international		

statistics meetings. The PhD students also regularly attend the Mathematical statistics departments seminar to get more scientific seminars. Every month the supervisors and PhD students have a meeting where they can share research progress and accomplishments. The PhD students are happy with the research environment although the research environment would benefit from more and larger arenas to discuss their research.

**Weakness:** The research environment at the department is very small. The existing collaborations are person based and some of these collaborations would probably benefit from being formalized in the future. There are rather few inhouse research seminars as the department is small.

**Recommendations:** They should think of having a stronger encouragement for the PhD students to go on shorter and longer research stays as that is not common at the moment. They should formalize some of the existing collaborators and collaborations to make the situation of the PhD students more secure. They should consider collaborating with other departments in order to get access to more research seminars.

## **1. Area Environment and Resources**

### **1.4. Summary evaluation**

The department is small but they have a number of collaboration partners. We recommend that they formalize these collaborations both for research and in order to strengthen their seminars. By having formalized collaborations, it will facilitate the attraction of external funding and thus can help the department to grow. They should also consider formalizing seminar series with subjects which are close to statistics.

The faculty should consider helping with some initial funding in order for the department to hire 1-2 more PhD students and to attract at least one more senior lecture in order to fill the upcoming retirements of a number of teachers.

## **2. Design, implementation and outcomes**

### **2.1. Achieving objectives – knowledge and understanding**

**Strength:** There is an expectation that students should have knowledge of both the theoretical and applied sides of statistics, although there is a slight bias towards applications. There is no particular pressure from supervisors to work on “fashionable” topics such as machine learning.

**Weakness:** There was some indication that students might be interested in working on e.g. machine learning.

**Recommendations:** More could be done to formalize contact and facilitate collaborations with other related fields. This would also allow them to explore fields of research beyond those that the researchers at the department have knowledge of.

## **2. Design, implementation and outcomes**

### **2.2. Achieving objectives – competence and skills**

**Strength:** There is an open environment for the PhD students to decide upon their specific research topics and collaborations. The supervisors are accessible for the PhD students for quick meetings if needs be. The revised individual study plan is actively used as a support tool and revised every six months. PhD students are encouraged to attend conferences, both small and larger ones, and are present at these occasions.

**Weakness:** For those PhD students doing a more theoretical thesis there is not enough training as an applied statistician. This training is of great importance as much of the demand outside academia, but also within (maybe to a lesser extent), is due to the fact that a statistician is very useful in helping with empirical work.

**Recommendations:** Next time the general study plan is revised, clarify the importance of empirical statistical training.

## **2. Design, implementation and outcomes**

### **2.3. Achieving objectives – judgement and approach**

**Strength:** The department and supervisors have both national and international collaborations. The department has an active role in the national Swedish network for graduate and postgraduate education in Statistics (GRAPES). The PhD students attend national organized statistics courses (connected to GRAPES) and the department members are active teachers on the national inference course, a course which is mandatory in most PhD programs in Statistics in Sweden. The PhD students can attend statistics seminars, but also other seminars such as for example mathematical statistics seminars if they are interested.

**Weakness:** The local and international collaborators within research are not formalized at the moment as they are mainly person based which could possibly be a problem in the future. Due to their small size it is difficult to give their own PhD courses.

**Recommendations:** They should consider formalizing collaborations around seminars and research in order to increase the students' broad knowledge of statistics. It would strengthen the PhD education to embed it in larger collaboration networks. One idea would be to have a joint seminar series with Mathematics Statistics to strengthen the Statistics subject.

## **2. Design, implementation and outcomes**

### **2.4. Summary evaluation**

The department and supervisors have local, national and international collaborations. In the future, these collaborations should be formalized. They should also consider to extend local collaborations with similar subjects, such as for example Mathematics Statistics.

## **3. Working life perspective**

**Strength:** The fact that the department is small allows for advice which is catered to the individual student. This is greatly appreciated at all levels. Students are not afraid to ask questions, and well informed about their progress, and receive constant feedback.

**Weakness:** Little consideration appears to have been given about how to provide support for students who are considering academic vs. non-academic careers. The PhD students report no particular pressure or recommendations to go in either direction, which can be positive, but more consideration might be given as to how to align expectations, particularly if the department grows.

**Recommendations:** More consideration should be given about how to encourage support for students considering multiple career goals.

## **4. Doctoral student perspective**

**Strength:** There is a much appreciated monthly general meeting between all main supervisors and the PhD students and the PhD students are very pleased with the supervision they receive. The PhD students feel that there is an open research environment where they, can e.g. ask questions at the higher seminars. The PhD students also feel that they have a say in which courses they will teach. They all have their own office which is not common at other statistics departments in Sweden.

**Weakness:** There have been times when the PhD students have been teaching way too much but they changed the routines such that teaching is decided in collaboration with the supervisors. There are some research visits to other universities but not enough. There is a lack of PhD level courses and the PhD program needs to rely on collaboration with the GRAPES network as well as mathematical statistics. Sometimes the higher seminars are on a too advanced level (this problem is not unique for Lund...).

**Recommendations:** Encourage PhD students to participate in research visits at foreign universities. The seminar organizer may inform seminar speaker that the audience has quite a different background and at least the introduction to the talk should reflect this.

### **5. Gender equality perspective**

Strength: There is a clear desire at all levels to make the department more gender equal. This is however not an easy task as Statistics is a male dominated field. They have however managed to attract two female guest professors, one post doc and one associate senior lecturer. These recruitments mainly teach at the master's and advanced levels, including the PhD level.

Weakness: There are essentially no female staff (professors, associate professors) even though they have tried to attract more females by encouraging them to apply for the positions. Most undergraduate students will only meet male teachers which might have an effect on later recruitment and for females considering which field they want to pursue a career within.

Recommendations: Think of where female staff is most useful when teaching in the sense of exposing students to both female and male instructors. Think of the recruitment process and how to encourage more females to apply for their open positions at all levels.

### **6. Sustainability perspective**

Strength: The field of statistics has clear relevance for the study of issues relating to sustainability.

Weakness: No one is working on these issues at the moment.

Recommendations: The department should be open to scholars working on sustainability, and consider contributing to relevant collaborations.

### **7. Other comments**

No other comments.

### **8. Summary evaluation and recommendations**

A clear challenge is how to make the department grow. A good way would be to formalize existing collaborations and extend these – especially on a local level. A way to attract funding in statistics is to collaborate with other people in other subject areas. In order to build something like this, one way could be to start by building a consultancy unit for other university departments. By solving more applied problems one usually comes across interesting theoretical problems and it helps greatly when applying for funding to include both theoretical and practical research problems in the same application.