



The Committee for the Evaluation of Statistics Study-Programs

Bar-Ilan University Evaluation Report

May 2010

Contents

Chapter 1: Background.....2

Chapter 2: Committee Procedures.....3

Chapter 3: Evaluation of the Statistics Study Programs, Bar-Ilan University.....4

Appendices: Appendix 1 – Letter of Appointment

Appendix 2 - Schedule of the visit

Chapter 1 - Background

At its meeting on October 07, 2008 the Council for Higher Education (CHE) decided to evaluate study programs in the fields of statistics during the academic year 2009-2010.

Following the decision of the CHE, the Minister of Education, who serves ex officio as a Chairperson of the CHE, appointed a Committee consisting of:

- **Prof. Abba M. Krieger, Statistics Department, Wharton School, University of Pennsylvania – Committee Chair**
- **Prof. Robert Adler, Faculty of Industrial Engineering and Management and the Faculty of Electrical Engineering, the Technion**
- **Prof. Peter Bickel, Department of Statistics, University of California, Berkeley**
- **Prof. Onno Boxma, Department of Mathematics and Computer Science, Eindhoven University of Technology**

Ms. Noa Nof Steiner - Coordinator of the Committee on behalf of the Council for Higher Education.

Within the framework of its activity, the Committee was requested to:¹

1. Examine the self-evaluation reports, submitted by the institutions that provide study programs in statistics , and to conduct on-site visits at those institutions.
2. Submit to the CHE an individual report on each of the evaluated academic units and study programs, including the Committee's findings and recommendations.
3. Submit to the CHE a general report regarding the examined field of study within the Israeli system of higher education including recommendations for standards in the evaluated field of study.

The entire process was conducted in accordance with the CHE's Guidelines for Self-Evaluation (of October 2008).

¹ The Committee's letter of appointment is attached as **Appendix 1**.

Chapter 2 - Committee Procedures

The Committee members received the self-evaluation reports in February, 2010, and discussed them via email.

The Committee held its first meeting on March 7, 2010, during which it discussed fundamental issues concerning higher education in Israel, the quality assessment activity, as well as statistics study programs.

In March 2010, the Committee visited the four institutions offering statistics study programs, at Tel-Aviv University, Haifa University, the Hebrew University and Bar-Ilan University. During the visits, the Committee met with various stakeholders at the institutions, including management, faculty, staff, and students.

This report deals with the **Statistics Study Programs at Bar-Ilan University**.

The Committee's visit at Bar-Ilan University took place on March 17, 2010. The schedule of the visit, including the list of participants from the institution, is attached as **Appendix 2**.

The Committee thanks the management of Bar-Ilan University and the Department of Mathematics for their self-evaluation report and for their hospitality towards the Committee during its visit at the institution.

Chapter 3: Evaluation of the Statistics Study Programs at Bar-Ilan University

** This Report relates to the situation current at the time of the visit to the institution, and does not take account of any changes that may have occurred subsequently. The Report records the conclusions reached by the Evaluation Committee based on the documentation provided by the institution, information gained through interviews, discussion and observation as well as other information available to the Committee.*

Current Status

This report is different in character from our other reports because the situation of statistics at Bar-Ilan University is unique. The various teaching programs in statistics at Bar-Ilan University reside within the Department of Mathematics. Historically, there were a few statisticians in the standing faculty of the Department, but all of these faculty members have left. So in essence, there are teaching programs without statisticians.

The Department has faculty members in allied disciplines, most notably bioinformatics, probability and mathematical physics. Nevertheless, adjunct faculty are teaching all of the courses that are currently being offered under the banner of statistics.

Our suggestion would have been to close the statistics programs at Bar-Ilan if the Department had not acted responsibly to deal with the situation. They took in essence two measures. The first was to freeze the minor to undergraduates and more notably, their graduate program, both on the Masters level and the PhD level. In addition, they took the situation seriously and met beforehand to discuss the matter and to arrive at an internal decision of whether to close statistics programs or to invest in them. The proposal they made was to keep programs open at the undergraduate level for now and to allot three faculty positions to statistics: a slot created by the success in terms of numbers of students of a new masters program in mathematical finance; a slot from the Mathematics Department; an additional slot from the University.

The Mathematics Department has a program whereby gifted pre-army students take courses at Bar-Ilan University. They admit about 50 students per year into this program.

Two standard programs related to statistics exist at the undergraduate level that are not frozen:

1. An extended mathematics and statistics track in which students essentially earn two undergraduate degrees in each of the subject areas. There are core sets of courses in each of mathematics and statistics. Students are required to take more advanced courses in mathematics.
2. A major in statistics in which students take the same core courses in mathematics and statistics. The degree is rounded out by a minor in an area that the student chooses.

All of the programs at the graduate level are frozen; no new students are accepted. The Department has just begun to offer a masters degree in mathematical finance. It is successful in that the demand for this program is high and approximately 50 students are enrolled in the program each year. The program has the flavor of “executive education”; students typically are working in the financial industry and courses are offered on Friday and Sunday after noon to accommodate work schedules. Although this program featured prominently in the report, it is not a program in statistics and hence one that we are not qualified to assess. We therefore have no evaluative comments to make concerning this program.

The basic question is: should statistics as a research (and hence faculty) entity at Bar-Ilan be revived, and if so, how? The plan is to resuscitate the program with the hiring of three faculty members. Even this plan is murky in that there were some differences of opinion or differences in nuance as to whether the slot that is an outgrowth of the mathematical finance program will be constrained to meet the needs of that program.

This plan seems unrealistic for three reasons:

1. There needs to be direction given to the hiring of faculty members in statistics. Since currently there are no statisticians on the standing faculty, who is going to give direction to this search? Perhaps, it is telling that we heard that these new

faculty should be able to “talk to the mathematicians”. However, statistics is evolving in ways where areas other than mathematics have also become extremely attractive (e.g., computer science). Such candidates will not necessarily have many common interests with pure mathematicians.

2. Obviously, statistics departments have more than three faculty members. To what extent can a statistics group survive with such limited size in the Mathematics Department?
3. Is it feasible for Bar-Ilan to attract high quality statisticians in the proposed framework? It should be noted that overall, there is a shortage of academic statisticians in Israel. Furthermore, all programs in Israel are at a critically low level facing many retirements within the next decade. In addition to statistics departments, demand for statisticians will also come from the Technion, the Weizmann Institute and Ben-Gurion University. Even if Bar-Ilan were able to attract a young talented statistician, would it be in this faculty member’s interest to join the university since the number of colleagues would be very small?

Nonetheless, we do not recommend that the statistics programs at Bar-Ilan be closed despite the above reservations, since there has been an honest interest in keeping it open and there are advantages that we see if the program can be reestablished. Specifically, the extended mathematics and statistics program is training statisticians with a great deal of mathematics courses. We have heard from students in other statistics programs in other universities that one of the things that is lacking at the undergraduate level is more mathematics courses.

The Bar-Ilan Mathematics Department has been entrepreneurial in establishing its strong program for talented youth. Currently, hardly any of these students take a statistics track, but there is a hope that if they are exposed to talented standing faculty in statistics, some fraction would opt for statistics as their course of study. This could, ultimately, help feed the national pipeline of academic statisticians.

Future Plans

We have two suggestions, which, if successfully carried out, might result in a viable statistics program:

1. Create a center or a graduate program that will attract faculty in statistics or related research interests under one umbrella. Since statistics by its nature is interdisciplinary, research interests span a large number of areas. A program or center that might be a second home for faculty members in various departments such as mathematics, computer science and biology could be a way to establish a critical mass of faculty who are involved in empirical research and as such, have some common interests.
2. Attract a senior faculty member first. This senior faculty would undoubtedly request positions and as such would be the decision maker and draw to attract additional faculty who are likely to be more junior.

Even if Bar-Ilan were able to attract a limited number of faculty, the resources to run a comprehensive graduate program would still be lacking. We are recommending that a joint program be established that will have the most prominent statistics faculty members give courses for credit to distinguished graduate students from all universities. A detailed description of this program is given in our general report.

Recommendations

1. Maximum effort be given to finding faculty members in statistics.
2. The content of the courses in the undergraduate program needs beefing up. We heard that there is a two course sequence, the first of which is to introduce SAS as a computer language and the second to explore in more depth SAS commands that are used in statistics. We also heard that the course on regression primarily discusses the topic from a methodological point of view and how methodologies are used in practice is treated in the applied statistics courses. There needs to be

better integration between computer language and practice and between theory and practice. In addition, the computer course has no graded assignments.

3. The courses in the program need to be modernized. There are no projects in which students need to perform analysis on real world problems. Perhaps due to limited capability of classrooms, computer output is Xeroxed and handed out in class. This is archaic in contrast to illustrating methods live by accessing data sets in real time and allowing students to suggest analysis and then see whether it makes sense. Bar-Ilan should “hire” an appropriate standing faculty at another university in Israel to help them with the statistical curriculum.
4. We recommend that the undergraduate extended program in mathematics and statistics remain active. We recommend that the undergraduate major in statistics be frozen and the graduate programs remain frozen until statistics faculty are hired.
5. We recommend that a committee of statisticians in Israel from other universities be convened by MALAG in two years to evaluate the progress that Bar-Ilan has made on these recommendations and whether or not the program should be closed.

Signed by:

Abba M. Krieger

Prof. Abba M. Krieger,
Chair

Robert Adler

Prof. Robert Adler

Peter Bickel

Prof. Peter Bickel

Onno Boxma

Prof. Onno Boxma

Appendices

Appendix 1



שר החינוך
Minister of Education
وزير التربية والتعليم

September 8, 2009

Prof. Abba M. Krieger
Statistics Department
Wharton School, University of Pennsylvania
USA

Dear Professor Krieger,

The State of Israel undertook an ambitious project when the Israeli Council for Higher Education (CHE) established a quality assessment and assurance system for Israeli higher education. Its stated goals are: to enhance and ensure the quality of academic studies; to provide the public with information regarding the quality of study programs in institutions of higher education throughout Israel; and to ensure the continued integration of the Israeli system of higher education in the international academic arena. Involvement of world-renowned academicians in this process is essential.

This most important initiative reaches out to scientists in the international arena in a national effort to meet the critical challenges that confront the Israeli higher educational system today. The formulation of international evaluation committees represents an opportunity to express our common sense of concern and to assess the current and future status of education in the 21st century and beyond. It also establishes a structure for an ongoing consultative process among scientists around the globe on common academic dilemmas and prospects.

I therefore deeply appreciate your willingness to join us in this crucial endeavor.

It is with great pleasure that I hereby appoint you to serve as the Chair of the Council for Higher Education's Committee for the Evaluation of Statistics Studies in Israel.

The composition of the Committee will be as follows: Prof. Abba M. Krieger – Chair, Prof. Robert Adler, Prof. Peter Bickel and Prof. Onno Boxma.

Ms. Noa Nof-Steiner will coordinate the Committee's activities.

In your capacity as the Chair of the Evaluation Committee, you will be requested to function in accordance with the enclosed appendix.

I wish you much success in your role as the Chair of this most important committee.

Yours sincerely,

Gideon Saar

Gideon Saar
Minister of Education,
Chairperson, the Council for Higher Education

Enclosures: Appendix to the Appointment Letter of Evaluation Committees

cc: Ms. Riki Mendelzvaig, Secretary of the Council for Higher Education
Ms. Michal Neumann, Head of the Quality Assessment Unit
Ms. Noa Nof-Steiner, Committee Coordinator

רח' שבטי ישראל 34 ירושלים מיקוד 91911 • טל' 02-5602330 • פקסמיליה 02-5602246

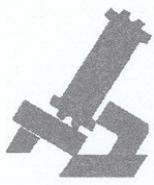
34 Shivtei Israel St' 91911 Jerusalem. Tel. 02-5602330. Fax 02-5602246

شارع شبطى اسرائيل 34 . اورشليم القدس 91911 . هاتف 02-5602330 فاكس 02-5602246

כתובת אתר ממשל זמין: <http://gov.il>

כתובת אתר המשרד: <http://www.education.gov.il>

Appendix 2



אוניברסיטת בר-אילן (ע"ר)

לשכת סגן הרקטור

BAR-ILAN UNIVERSITY (RA)

OFFICE OF THE VICE RECTOR

The Committee for the Evaluation of Statistics Study Programs

Schedule of Site Visit

Wednesday, 2 Nissan 5770 (March 17, 2010) - Spiegel Building 216 – Room 201

Time	Subject	Participants
09:00-09:30	Opening Session: The heads of the institution and of the faculty	Prof. Yosef Menis, Rector Prof. Haim Taitelbaum, Vice Rector Prof. Benjamin Ehrenberg, Dean
09:30-10:15	Meeting with the academic heads of the department	Prof. Ron Adin, Chair Prof. Uzi Vishne, Vice Chair
10:15-11:15	Meeting with senior faculty and representatives of relevant committees (teaching/curriculum committee, appointments committee)*	Prof. Kenneth Hochberg Dr. Mordechai Levin Prof. Yoram Louzoun Prof. Ely Merzbach Prof. Malka Schaps Prof. Jeremy Schiff
11:15-11:45	Meeting with adjunct faculty*	Dr. Alex Klein Dr. Boris Kriheli Dr. Amir Sandach
11:45-12:30	Meeting with undergraduate students*	Oren Allouche, Romisa Assi, Moria Beit-Yaakov, Idan Harash, Or Shohat, Ziv Tal, Ateret Weinberg
12:30-13:30	Light lunch at the meeting room with junior faculty and graduate students	Dr. Reuven Cohen Dr. Yaniv Zaks Einat Aviel Lior Dekel Liora Girdzman Ofir Nadav
13:30-14:00	Tour of campus: classes, computer labs, etc.	Katz Building 604: <u>Guide:</u> Prof. Malka Schaps <u>IT:</u> Shmuel Mekler
14:00-14:30	Tour of Spiegel Building: Meeting with administrative staff and IT personnel	<u>Offices:</u> Rivka Wohlberger Malka Bachar Miriam Beller <u>Librarian:</u> Hedva Adiri <u>IT:</u> Pinchas Weisberg, Doron Kurzberg, Yisrael Yedidya
14:30-15:15	Closed-door working meeting of the committee	
15:15-16:00	Summation meeting with the heads of the department	Prof. Ron Adin, Chair Prof. Uzi Vishne, Vice Chair

16:00-16:30	Summation meeting with the heads of the institution and of the faculty	Prof. Yosef Menis, Rector Prof. Haim Taitelbaum, Vice Rector Prof. Benjamin Ehrenberg, Dean
-------------	--	--

לשכת סגן הרקטור, אוניברסיטת בר-אילן, רמת-גן 52900 Office of the Vice Rector, Bar-Ilan University, Ramat-Gan Israel 52900

טל': 972-3-5317808 Tel: 972-3-5317808 פקס: 972-3-5352649 Fax: 972-3-5352649 E-mail: vicerec@mail.biu.ac.il