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ACCREDITATION AGENCY

EXTERNAL EVALUATION REPORT

DEPARTMENT OF STATISTICS AND INSURANCE SCIENCE

UNIVERSITY OF PIREAUS

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TABLE OF CONTENTS

The External Evaluation Committee

Introduction

A. Curriculum

B. Teaching

C. Research

D. All Other Services

E. Strategic Planning, Perspectives for Improvement and Dealing with Potential Inhibiting Factors

F. Final Conclusions and recommendations of the EEC on

External Evaluation Committee

The Committee responsible for the External Evaluation of the Department of Statistics and Insurance Science of the University of Pireaus consisted of the following five (5) expert evaluators drawn from the Registry constituted by the HQAA in accordance with Law 3374/2005:

1. Professor George Roussas (Chairman)
University of California, Davis
2. Professor Tasos Christofides
University of Cyprus
3. Professor George Michailidis
University of Michigan
4. Professor Chris P. Tsokos
University of South Florida
5. Dr. George Vogiannou
Expert Consultant, Frankfurt

Introduction

The External Evaluation Committee (EEC) arrived at the appointed hotel in Athens on Tuesday February 25, 2014.

In the morning of the next day, Wednesday February 26, the EEC was transferred to the headquarters of the University of Piraeus where the evaluation proceedings started. The EEC had a brief meeting with the Chair of the Department, Associate Professor Demetrios Antzoulakos, and the members of the Internal Evaluation Committee (OM.E.A.), as well as the Dean of the School of Finance and Statistics, Professor Markos Koutras.

Next, the EEC was welcome by Rector, Professor Nikolaos Georgopoulos.

The next item on the agenda was the presentation of the Department by the Chair, Professor Antzoulakos, followed by a presentation of the undergraduate program by the coordinator of OM.E.A., Associate Professor Konstantinos Politis.

Following a brief break, the EEC visited a classroom with an audience of about 200 students, where the lecture of an undergraduate course was in progress. The EEC, in the absence of the instructor, introduced itself to the class and described briefly the purpose of the visit. The EEC invited the students to openly and without hesitation state their opinions on all aspects of the program (teaching quality, willingness of the teaching staff to assist on educational process, timely availability of textbooks, availability of additional instructional material, including software packages, course assessment, including homework assignments, midterms, final exams, as well as on how the teaching load affected the progress, evaluation of quality of teacher and educational resources (e.g., labs, library, etc.)). This was a fairly long interaction, but exceptionally constructive. The students articulated their positions fully and in a well reasoned manner. At the end of this meeting, the EEC emphasized to the students in no uncertain terms that they should feel free to discuss in private any additional issues they may have, although this invitation did not materialize. Nevertheless, during short breaks students did confer extensively with EEC members on one-on-one basis.

Next, the EEC held meetings first with senior (Associate and Full Professors), followed by junior (Assistant Professors and Lecturers) faculty members. A long discussion ensued with each of the groups, encompassing all aspects of teaching, research, and administration of the Department and the University. The EEC felt that it was an open and constructive discussion in every aspect of the educational mission of the Department. The EEC extended an invitation to both groups to meet privately with the Committee, should they so desire, although such a meeting did not materialize. However, during short breaks numerous faculty members held informal discussions on an one-on-one basis with various members of the EEC on subjects of their concern.

At the end of the day, the EEC held a brief meeting to reflect on the findings of the first day meetings.

The activities of the second day of the EEC visit, on Thursday February 27, started with a visit to the Placement Center, and a brief presentation of its activities by its Director. Despite inadequate space and possible understaffing, the EEC was impressed by the quality of services offered by the Center. Next, the EEC visited the central Information Technology service of the University, followed by a brief tour of computer labs and the University Library. The EEC found the labs and the Library well organized, but suffering from severe shortage in space. The book collection seems adequate, especially given additions of recent titles related to the Actuarial Science Program. However, there seems to be a serious issue regarding the electronic subscription to journals. The EEC was informed that the service suffers from frequent interruptions due to lack of payments of subscription dues in a timely manner. This position was reiterated by Dean Koutras, the leadership of the Department, individual faculty members and graduate students.

Next, on the EEC's agenda was the presentation of the Master's program in Actuarial Science and Risk Management by Professor Michael Glezakos, followed by that of the Applied Statistics by Associate Professor Giorgos Iliopoulos. Next, the EEC visited the International Relations Office which is responsible for the Erasmus exchange program, followed by a visit to the Registrar's office. The EEC was unfavorably impressed by the severe lack of space for both, but it found the services offered to be of high quality.

At the request of the EEC, the Rector of the University made himself available for a brief discussion for a presentation of the EEC's initial findings, impressions and tentative recommendations, to which he was very receptive.

The next two items on the agenda were meetings of the EEC with graduate students, the first with the vast majority of doctoral students. Once again the EEC tried to impress upon them the opportunity to express their views on every aspect of their studies, including recommendations for remedies and improvements. The EEC was favorably impressed by the articulation of their positions. The next meeting was with about 40 students from both Masters programs. The students were encouraged to state their views on all aspects of their studies, including suggestions for modifications and improvements. Details of findings and potential recommendations are given in subsequent sections.

The EEC concluded its visit with a brief wrap-up session with the Dean, the Department Chair and the Head of the IEC.

The discussions throughout both days were held in Greek and English, as the need arose, without causing any communication problems.

The EEC found the Internal Evaluation Report well documented. Further, the committee was provided with all additional material requested in a timely manner. In addition to the material sent to the EEC, the Department made available to the committee extensive documentation (textbooks, notes, exams, homework illustrations, Master's theses and Doctoral dissertations) that the committee reviewed and examined.

A. Curriculum

The Department of Statistics and Insurance Science was established in 1984. The mission of the Department is the theoretical and practical training of students in the fields of Statistics and Insurance Science. The original curriculum was radically revised during the 2001-02 academic year. In 2012-13, the School of Finance and Statistics was established- following a major restructuring of the University-consisting of two Departments: Statistics and Insurance Science and Financial Management and Banking. The aims of the Department of Statistics and Insurance Science were redefined to be: (i) equip the students with the necessary tools for their scientific and professional goals, (ii) conduct research and teaching with the objective of elevating the Department at international level, and staff itself with faculty members of international calibre, and (iii) to address to the extent possible and within their specialties problems of Greek society and contribute to its development and progress.

I) Undergraduate Curriculum

In its present form, as the EEC understands it, was arrived at by the regulations governing the University procedures and consists of 31 mandatory courses and 45 electives. For graduation, a student is required to successfully complete 47 courses for a total of 240 ECTS units.

The EEC believes that 47 courses for the completion of the degree is too heavy a load.

According to international practice the total required varies between 30 and 35. A student

should be expected to carry a course load of 4-5 courses per semester, but no more than 5. This will necessitate the restructuring of the syllabus of many courses, either through elimination, merging and even introduction of novel material. This implies the re-evaluation of each course, so that the total credit units add up to 240 per EU mandate. The EEC strongly feels that such implementation of reduction of courses and restructuring of the syllabus of the courses (a) would improve the grade quality of the student and (b) would enhance the chance of students to graduate at a reasonable time.

It was brought to the attention of the EEC that many students of the entering class lack the necessary background in mathematics to follow the curriculum. In such cases, it is common practice for a Department to introduce a remedial course in mathematics to remedy the situation, since mathematics represents the foundation for successful completion of the major.

An effort should be made that many courses, when appropriate, include a recitation session conducted by a qualified paid teaching assistant. Extra effort in the instruction area should be made to emphasize the applicability of the statistical methodology to real world problems. This request was clearly expressed by the students during their interaction with the EEC. The current curriculum makes heavy use of software packages and therefore their availability should be increased significantly to address the student needs. The Library and computing labs should be made available on certain times during the weekends, thus further facilitating working students.

Based on the EEC findings, course assessment is exclusively based on final exams for most courses. The EEC feels that this is totally unacceptable from the pedagogical point of view. Student performance should be based on multiple evaluation methods, including a combination of homework projects, midterm exams and final exams. This approach would enable instructors to obtain a holistic view of the student's academic performance and encourage students to attend lectures, systematically review the course material and improve their chances for successfully completing the course. As a by-product, it will reduce the number of students retaking the course exam numerous times.

Finally, the concept of prerequisite courses must be strictly enforced. It must be understood that it is not an empty requirement, but rather a necessary tool facilitating the embedding of knowledge.

II) Master's degrees

Regarding the admissions process in the Master's programs, although improvements are possible, it is generally adequate.

IIa) Applied Statistics MSc degree. Regarding the curriculum, the EEC believes that the core should consist of the following courses: (i) Mathematical Statistics, (ii) Linear Models and variants, (iii) Applied Multivariate Analysis and (iv) Survey Methodology.

Currently, the program offers five specialization tracks. However, the EEC believes that they should be renamed as Statistical Methodology in Health Sciences, in Engineering, in the Social Sciences, in Educational Sciences, etc.

Data analysis, with the use of statistical packages, should be an integral and significant part of all statistical courses; the EEC is pleased that the Department is on the right track in this respect.

At present, in addition to the coursework, a student must write a Master's thesis. The EEC recommends that a more flexible mechanism should be in place: either (i) extra courses plus

an oral presentation based on a project involving a sophisticated analysis of data on a subject of his/her interest, or (ii) a professional internship supervised by a faculty member; upon completion of the internship, the student is required to submit a report and make a formal presentation to the Department.

Iib) Actuarial Science and Risk Management MSc degree. This is a unique program for Greece and attracts a significant number of students. On the curriculum aspects and from strong feedback from the students, the EEC recommends that both core and electives should be so structured to accommodate the accreditation process of the students by professional societies, since that would further enhance their job opportunities. The EEC feels that in relevant courses the use of packages should be an integral and significant part of the course. Further, efforts should be made to strengthen the quantitative content of selected courses, as well as provide an introduction to data extraction from big-scale databases. The EEC recommends that a more flexible mechanism should be in place: either (i) extra courses plus an oral presentation based on a project involving a sophisticated analysis of data on a subject of her interest, or (ii) a professional internship supervised by a faculty member; upon completion of the internship, the student is required to submit a report and make a formal presentation to the Department.

The EEC encourages the Department to accommodate in a structured manner the needs of working students. This was a point repeatedly brought up in the meetings of the committee with them.

The EEC notes the recent acquisition of about 170 recently published titles in the areas of actuarial science and risk management, and encourages the Department to adopt this practice across the board on a regular basis, so that current bibliography consistent with the objectives of the curriculum is available to the students.

The Department should consider the option of offering its programs in English, so that it can both attract international students and at the same time enhance the communications skills of domestic ones.

III) Doctoral program

In its present form, the program has about 16 students. It is the opinion of the committee that there are issues regarding (i) the admissions process, (ii) requirements towards the degree. Specifically,

- (i) At present, it appears that the requirements are holding a Master's degree and the consent of a faculty member to supervise the candidate. The EEC believes that the process should consist of the following parts: (a) The requirement of the Master's degree, (b) a lower bound on the grade point average (e.g. 7.5/10), (c) three letters of recommendation from previous professors or other professional entities, (d) a plan of study statement regarding professional objectives, (e) an interview with a 3-member committee. The Department should retain the parts which are already in place and introduce the rest.
- (ii) A well structured course requirement beyond the Master's level of a 3-semester advanced coursework. Upon completion of the coursework, the Ph.D. student will take a written qualifying examination in two areas of the graduate coursework. Upon the successful completion of this exam, the Ph.D. student becomes a doctoral candidate and selects a doctoral thesis advisor. Next, the thesis committee is formed, consisting of three internal and two external members

selected in accordance to the subject area of the candidate. Subsequently, the student must present to his/her doctoral committee a comprehensive plan of his/her research and finally defend the completed thesis.

The doctoral students should participate in the teaching process of the Department subject to compensation.

B. Teaching

The teaching methods used both at the undergraduate and graduate programs are carried out in the traditional method in front of the blackboard mode, supplemented by various electronic means (e.g., slide presentations, computer illustrations, etc.). Overall, the student to faculty ratio is very high and the physical infrastructure inadequate. The former is a consequence of the exceedingly large number of entering students beyond and above the Department's requests, together with inadequate level of staffing. The EEC notes that new appointments elected two years ago have not been approved to join the faculty.

All appropriate courses should be integrated with the appropriate software packages. Nevertheless, this objective is hampered by the lack of adequate lab space. Further, all efforts should be made to make software packages available to the students.

Student performance should be based on multiple evaluation methods, including a combination of homework projects, midterm exams and final exams. The teaching effectiveness of the faculty, based on student evaluations, ranges from above average to very good. This is consistent with our direct communication with the students.

The EEC notes the recent acquisition of about 170 recent titles in the areas of actuarial science and risk management, and encourages the Department to adopt this practice across the board on a regular basis, so that current bibliography consistent with the objectives of the curriculum is available to the students. This should be the goal across the entire undergraduate and graduate curriculum.

Due to the nature of the subject matter, it is not easy to connect research with coursework at the undergraduate level. However, at the Master's level this is essential.

Every effort should be made to enhance students' mobility through the Erasmus and related programs.

The undergraduate program should be heavily promoted internationally, and certain courses that are closely related to the MSc program should be offered in English. As for the Master's program it is not inappropriate that all courses be taught in English. This is an opinion expressed by the students themselves. This definitely will increase the number of students that can be drawn from other Universities (with exchange program) not only from the EU but also from other countries.

The Department currently employs a significant number of outside instructors. This principle should be retained and built upon, given the nature of the subject matter and the location of the institution. The EEC notes that students expressed a very favourable opinion regarding participation of such instructors.

In every academic department, teaching evaluations of the instructors by the students should be accessible by the students, and be taken into consideration by the Department for advancement and promotions. The EEC is satisfied that the Department already uses them in the advancement and promotion processes. Finally, the EEC strongly recommends that an award be created for outstanding undergraduate teaching to be given annually, selected by an appropriate committee. This reward may or may not involve monetary compensation.

Overall, the EEC is satisfied with the efficacy of teaching.

Based on the data provided to the EEC, the grade point average of graduating students is around 6.39. This is considered to be on the low side. This may be due to the heavy student course load, the lack of class attendance by many students and finally the fact that for many courses the final grade is solely based on the final exam. With respect to the final grade of the course, the committee recommends that it be a composition of homework projects, midterm and final exams.

Although student attendance is absurdly not required under current regulations, the above recommendations, in all likelihood, will enhance attendance.

Regarding student feedback, every effort should be made so that graded homework assignments, projects, midterm and final exams are made available to students in a short period of time. Students will benefit the most, if information about their progress is provided to them.

C. Research

The research productivity of the faculty during the past five years has been outstanding. In particular, they have published papers in top rated journals in their respective fields. The EEC encourages the Department to continue on this path.

Despite limited financial means, the Department does provide financial assistance for participation in international and domestic conferences.

Collaboration between senior and junior members of the Department is plentiful, but the committee would encourage especially junior members to strengthen their independence as well as seek outside collaborations.

On the basis of information provided to the EEC, members of the Department have served as PI or co-PIs on numerous projects funded by national and international funding agencies.

This is a very solid record, and the EEC encourages them to continue on this path.

Regarding organization of workshops, conferences, etc., it is a definitely positive activity that increases the visibility of both the Department and the individual faculty members involved; however, the EEC cautions that it should not take away from research time, especially for junior faculty members.

The EEC would recommend the establishment of an annual “research award” for the most active and outstanding research-wise faculty members; this award may or may not carry a financial component.

It was brought to the EEC’s attention that there is a serious lack of research resources, both in terms of computer infrastructure and timely access to journals. This is clearly detrimental to research efforts.

D. All Other Services

The Department has control of two computer labs, relatively well equipped, both in terms of hardware and software. However, they are not sufficient for the adequate training of both undergraduate and graduate students. Furthermore, time availability is limited. It is a common practice that labs are available during the weekends, when students can utilize them. There is an outstanding request of the Department for additional lab space exclusively for the

training of students. The EEC strongly recommends that all necessary measures should be taken for the immediate implementation of the Statistics Laboratory, whose approval occurred quite some time ago.

Furthermore, the Department Registrar's office is understaffed and in lack of adequate space. Despite these challenges, it is the opinion of the EEC that it provides good quality of service to students, a fact corroborated by the students themselves. The official hours of operation of the office could be extended.

E. Strategic Planning, Perspectives for Improvement and Dealing with Potential Inhibiting Factors

There is a substantial shortage of space to serve the needs of the academic mission of the Department. This problem is constantly aggravated, because the Ministry of Education allocates double the number of students that the Department can adequately educate. If the government continues along this path, it should simultaneously provide the necessary human resources and logistics. Furthermore, what is outrageous in the current system, and despite the severe shortage of space for faculty, graduate systems, and administrative staff, among others, the University administration finds it feasible and appropriate to allocate valuable space to student organizations directly associated with political parties. The EEC finds this policy atrocious.

It is commonly understood and practiced that the University budget should be allocated according to certain criteria to its respective Departments. The EEC was surprised to be informed that this practice is not applied at the University of Piraeus. Direct control of the budget by the Department would enable long term strategic planning and overall activities.

The EEC found the number of inactive students that have been carried on for many years on the Department's roster to be an outrageous and unethical behaviour for any constructive educational process. The EEC firmly believes that the inactive students should be immediately removed from the departmental roster. The EEC is pleased to notice that the Rector of the University is in full agreement with the committee's position. It would not be unrealistic therefore to expect him to implement the provisions of the existing law, within the confines of his own institution.

The EEC notes that the administrative leadership of the University should define a strategic vision for the institution and provide the ways and means for its successful implementation.

The EEC recommends that the Ph.D. students be supported by the teaching assistantship system that has proven successful internationally. Implementing such a system will offer students teaching responsibilities that would reduce the load of the faculty, support the students financially and give the graduate students teaching experience that future academic employment requires.

Inbreeding in the faculty ranks is an extremely important issue for every department. For a department to hire its own graduates should normally be out of discussion. Also, hiring graduates from other Greek universities, without their having the benefit of being exposed for a long period of time to the academic climate of educationally advanced foreign universities, would deprive the department of the breath of fresh air so much in need in Greek universities. This Department has done well in reference to the first case, and is encouraged to strive for improvement with regard to the second case; it is understood that there are practical issues to be dealt with, but the target should not be lost.

At the national level, the Department, with the support of the University and in conjunction with other departments in the country, should work toward educating the people in charge of

the education enterprise and the public at large about the great significance and use of probability and statistics in our society. It is rather absurd that there are no such independent courses in high schools, and that graduates of statistics departments are not allowed to teach mathematics/statistics courses in high schools.

Finally, it should be a strategic target of the Department to cultivate appropriate financial sources and try to attract funds for endowed chairs and other research/service objectives.

The EEC believes that the English language should be adopted as the teaching language at the graduate level.

The faculty should be engaged in the continuous updating of the curriculum, as well as of the labs, so that they will keep abreast of scientific developments, and also satisfy the marketplace demands.

Finally, the Department and the University should adopt forward looking and internationally oriented policies, which should help to attract foreign students from the Balkans and other neighbouring countries around the Mediterranean seabed.

F. Final Conclusions and recommendations of the EEC

Despite numerous challenges identified in the present report, the Department has managed a commendable job in fulfilling its mission.

The EEC finds that the research output of the faculty is very good, based on the average productivity per faculty member per year, as well as the high quality of the journals that the research appeared. Furthermore, there exists a large number of collaborations with international scholars. Finally, members of the Department serve on editorial boards of several high calibre professional journals.

The teaching effort has overall been effective and successful, based on data gleaned from student evaluations and testimony from the students themselves. However, the current teaching load is heavy, a fact exacerbated by the repeated examination periods, almost reducing the University to an “examination center.”

The Department has been very active in serving the profession by organizing domestic and international workshops, conferences, etc., and participating in several professional organizations.

The EEC makes the following recommendations. Many of these recommendations (such as (i)-(vi)) can be effected by the Department, whereas others (such as (vii) and (viii)) are the joint job of the Department and the University. Likewise, some recommendations (such as (ix)-(xi)) can be implemented by the University, whereas others (such as (xii)-(xiv)) are in need of the collaboration of the Ministry of Education. Finally, some recommendations (such as (xv) and (xvi)) are in the authority of the Ministry of Education. It is about time that it, actually, does so.

Recommendations:

- (i) Revision of the undergraduate program in line with our detailed recommendations stated in Section A of the report.
- (ii) Implementation of continuous assessment of course performance for all faculty members (Section B).
- (iii) Efforts should be undertaken for continuous updating of the curriculum, list of

available books (both in Greek and foreign languages) and other educational material, including software.

- (ιϞ) Implementation of the recommendations for the Master's programs, as outlined in Section A of the report.
- (Ϟ) Implementation of the recommendations for the doctoral program, as outlined in Section A of the report.
- (Ϟι) Establishment of annual teaching and research awards, as described in Sections B and C.
- (Ϟιι) Inactive students should be eliminated from the Departmental roster, by immediately implementing the relevant provisions of the current law. It is a sad commentary that this sorry state of affairs has made its way into the Wikipedia!
- (Ϟιιι) Introduction to the teaching assistantship model for doctoral students, as outlined in section E of the report.
- (ιξ) The University budget should be allocated and managed directly by the Department.
- (ξ) University resources (library and computer labs) should extend their working hours and also include weekends.
- (ξι) The central University administration should immediately address the urgent space shortage faced by the Department.
- (ξιι) The University should take all necessary steps to eliminate problems arising from the existing number of examination periods.
- (ξιιι) The University should work jointly with the government to eliminate immediately the repulsive bazaar-like atmosphere created by posters and graffiti in the University spaces. If that is the modern way of disseminating ideas, nothing is going to be lost in terms of ideas by their elimination and, actually, much to be gained in decorum. The clientele mentality established by the political parties, even in the universities, must be terminated at once.
- (ξιϞ) The misunderstood, misinterpreted and misused noble concept of academic asylum must be reinstated in its original status at once.
- (ξϞ) The size of the entering class should be drastically reduced according to the Department's current capacity levels.
- (ξϞι) That already elected members should be appointed as soon as possible; such appointments would improve the age structure of the Department.

The Members of the Committee

Signature

1. Professor George Roussas (Chairman) _____
2. Professor Tasos Christofides _____
3. Professor George Michailidis _____
4. Professor Chris P. Tsokos _____
5. Dr. George Vogiannou _____