

BNM826 PERFORMANCE MEASUREMENT IN PRACTICE

Academic Year 2011/12

Number of Aston Credits: 15

Number of ECTS Credits: 7.5

Staff Member Responsible for the Module:

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Availability: see office hours on door or contact John Morley, ABS266, Ext: 3236

Pre-requisites for the module:

BNM820 Operational Research Methods or equivalent, subject to the approval of the course director

Mode of Attendance:

FT and PR On-Campus. It is block-delivered over 4-5 days in blocks separated by one or two weeks through a combination of lectures, practical exercises, and case studies.

Module Objectives and Learning Outcomes:

- > To introduce the student to Data Envelopment Analysis (DEA) as a method of comparative performance measurement;
- > To enable the student to identify the types of situations where DEA may be used;
- > To enable the student to use DEA to carry out comparative efficiency assessments;
- > To enable the student to interpret the information on comparative performance derived from DEA assessments.



Module Content:

Please note that although the material is laid out below in weekly format to fit in with the style required by this form, BNM826 is in fact delivered in full day blocks with each block covering two weeks material. See mode of attendance and the teaching method section below.

- Week 1:** Introduction to comparative performance measurement: unit of assessment and measures of efficiency.
- Week 2:** Data Envelopment Analysis under constant returns to scale: basic principles and general models. Data Envelopment Analysis under variable returns to scale.
- Week 3:** Incorporating value judgements in Data Envelopment Analysis. Assessing productivity change using DEA.
- Week 4-8:** Using Data Envelopment Analysis in practice: case studies including those relating to marketing and enterprise systems.
- Week 9:** Revision.
- Week 10:** Examination.

Corporate Connections:

The module is delivered in block form over 4-5 days to enable those with work or other commitments or from overseas to take it. This makes it possible to create a lively mix of students on the module consisting of those in full-time education and those in employment.

International Dimensions:

The course material is a mix of methodologies and applications some of which will be drawn internationally. Additionally some of those taking this module as a training course could be employees of overseas organisations.

Contribution of Research:

The module draws heavily from extensive research at Aston Business School into Data Envelopment Analysis. The method is one of those used for performance measurement and management. There are several staff at Aston Business School, including those teaching this module, who have formed a Research Centre into Performance





Measurement and Management researching and applying the methods covered in this module.

Method of Teaching:

Each 'week' in the outline above represents a block of three hours, divided as follows: 1.25 hour lecture per week, followed by 0.5 hour break, followed by 1.25 hour tutorial/consolidation/computer lab session as appropriate. As noted above the module is delivered in block form over 4-5 days. Each day consists of lectures, followed by hands-on sessions implementing the material taught on sample data. Appropriate software, notably LINDO, Excel and PIM DEA are used in the hands-on sessions. Handouts are provided through the Blackboard learning environment as well as the computer instructions where appropriate to create a dynamic learning environment with student participation in lectures and in the application of the concepts covered.

Method of Assessment and Feedback:

The module is assessed 40% by individual assignment and 60% by examination. Feedback is available at the end of each hands-on session in the form of debriefing facilitated by the tutor and led by students. This is done in class. Additional feedback is provided either by email or Blackboard.

Learning Hours:

Contact hours	30
Directed Learning	10
Private study/group work	90
Assessment (exam, assignments)	20
Total	150

The following essential and recommended readings are subject to change. Students should not therefore purchase textbooks prior to commencing their course. If students wish to undertake background reading before starting the course, many of the chapters/readings are available in electronic form via on-line library catalogues and other resources.

Essential Reading

Thanassoulis, E. (2001) *Introduction to the Theory and Application of Data Envelopment Analysis: A foundation text with integrated software*, Springer





Aston Business School
Birmingham

Indicative Bibliography:

Cooper, W.W., Seiford, L.W. and Zhu, J., (eds.) (2004) *Handbook on Data Envelopment Analysis*, Springer

Cooper, W.W., Seiford, L.M. and Tone, K. (2000) *Data Envelopment Analysis: A comprehensive text with models, applications, references and DEA-solver software*, Springer

Coelli, T., Prasada Rao, D.S. and Battese, G.E. (1998) *An Introduction to Efficiency and Productivity Analysis*, Springer

Charnes, A., Cooper, W.W., Lewin, Y.A., and Seiford, M.L., (eds) (1994) *Data Envelopment Analysis: Theory, Methodology and Application*, Springer



For further information on any of the opportunities that Aston Business School offers, please contact:

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