On the Role of Official Statistics in Business Study Programmes

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Educational goals of a business statistics course:

- provide general knowledge on typical introductory statistics topics

- demonstrate use of data to support informed decision-making in the face of uncertainty
Motivation (2)

- Educational goals of a business statistics study programme?

- Informed decision-making based on business intelligence

- Official statistics an important part of business intelligence
Research Challenge

To find out

- if
- where
- how

is official statistics placed in the framework of business study programmes?
Research Framework

BLUE-ETS Project:  [http://www.blue-ets.istat.it/](http://www.blue-ets.istat.it/)

Online survey with 35 questions

Target Population:
5,274 faculty of 70 European EQUIS-accredited business schools

*EQUIS = quality improvement system of the European Foundation for Management Development (EFMD)*

Sample: 228 usable responses from 64 schools
Research Questions

• Do European EQUIS-accredited schools perceive quantitative literacy and statistics education as important?

• Do European EQUIS-accredited schools include official statistics into their study programmes? If yes, where and how?

• What are the predominant characteristics of a teaching style in classes using official statistics?
Respondent Characteristics

- 69.6% males and 30.4% females
- 93.7% respondents with a doctoral degree
- More than one third full professors, 28.9% associate professors, 24.2% assistant professors
- 94.7% of respondents full-time employees
- Average number of respondents’ professional experience 17.1 years (min. 0, max. 50 years, SD 10.8)
- Average number of years spent teaching at a higher education institution 15.1 years (min. 1, max. 44 years, SD 9.6)
- Primary focus of teaching: business (71.7%), economics (20.8%), statistics (4.0%), econometrics (3.5%)
Importance of Quantitative Literacy and Statistics Education
General Focus

Levels of (dis)agreement with the statement “Generally, the emphasis in our study programme is not on development of quantitative literacy”

<table>
<thead>
<tr>
<th>Response Category</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completely disagree</td>
<td>47</td>
<td>23.2</td>
</tr>
<tr>
<td>Disagree</td>
<td>74</td>
<td>36.5</td>
</tr>
<tr>
<td>Neither disagree nor agree</td>
<td>43</td>
<td>21.2</td>
</tr>
<tr>
<td>Agree</td>
<td>34</td>
<td>16.7</td>
</tr>
<tr>
<td>Completely agree</td>
<td>5</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td>203</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Levels of agreement with the statements “Knowledge of mathematics is deemed unnecessary for student career development” and “Knowledge of statistics is in my opinion deemed unnecessary for student career development”

<table>
<thead>
<tr>
<th>Response Category</th>
<th>Statement for mathematics</th>
<th>Statement for statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>Completely disagree</td>
<td>74</td>
<td>36.5</td>
</tr>
<tr>
<td>Disagree</td>
<td>86</td>
<td>42.4</td>
</tr>
<tr>
<td>Neither disagree nor agree</td>
<td>30</td>
<td>14.8</td>
</tr>
<tr>
<td>Agree</td>
<td>11</td>
<td>5.4</td>
</tr>
<tr>
<td>Completely agree</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Total</td>
<td>203</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Inclusion of Official Statistics in Business Study Programmes
General Characteristics

Official statistics is predominantly included:

• at the graduate level
• in the courses for full-time students

• More than half of respondents include official statistics into non-statistics courses they teach within business study programmes
How are official statistics used?

- Interpretation (98.0%)
- Conceptual understanding (84.5%)
- Data visualization (76.0%)
- Secondary data search (57.7%)
- Facts about methodology (51.9%)
- Statistical computing (49.0%)
- Secondary data quality assessment (41.0%)
Teachers’ use of materials produced by institutional data providers

- Familiarize students with the current state of a given phenomenon: 83.2%
- Illustrate development in time of a given phenomenon: 82.2%
- Explain methodology behind a chosen indicator: 34.3%
- Technically explain the analytical method: 28.6%
- Other purposes: 20.6%

Percent
Mode of Implementation (2)

Use of materials produced by institutional data providers

- Lecture slides: 91.0%
- Study notes available to students: 60.2%
- Teaching notes as part of class preparation: 60.0%
- Exercises: 59.0%
- Exam questions: 43.3%
- Seminar paper guidelines: 28.3%
- Elsewhere: 11.1%
Mode of Implementation (3)

Presentation of materials produced by institutional data providers

- Lectures: 95.0%
- Tutorials with computer access: 28.4%
- Tutorials without computer access: 23.2%
- Course chat groups/forums: 20.0%
- Elsewhere: 20.0%
- E-learning sessions: 13.8%
Students’ use of materials produced by institutional data providers

- Course projects: 59.2%
- Homework: 56.3%
- Exam questions: 48.5%
- Seminar papers: 40.2%
- Other: 10.3%
Characteristics of Teaching Style
### General Overview

<table>
<thead>
<tr>
<th>Statement</th>
<th>Frequency of the teaching style element’s use (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>My explanations are intuitive rather than technical.</td>
<td>3.0</td>
</tr>
<tr>
<td>I use the formulae but do not explain how they were derived.</td>
<td>26.3</td>
</tr>
<tr>
<td>I tend to use the applied approach – tie technical issues to topics relevant for the discipline my course is servicing.</td>
<td>3.0</td>
</tr>
<tr>
<td>I use the case study approach.</td>
<td>10.0</td>
</tr>
<tr>
<td>I illustrate statistical concepts using topical real-life examples.</td>
<td>4.0</td>
</tr>
</tbody>
</table>
Instead of Conclusion ...
Main Qualitative Threads (1)

A more **proactive role** of official statistics wished for by teachers, especially when it comes to:

- development and dissemination of **teaching notes** on conceptualisation and operationalization
- development and dissemination of **pedagogic case studies**
- support of textbook and other study materials’ development by continuous **provision of real-life illustrative examples**
Main Qualitative Threads (2)

Development of support services offered by official statistics:

- beyond technical support

- adding value by facilitating direct contact with experts from a given official statistics topic area
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