

Statistics education in countries without statistics

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Outline

1 What is statistics?

2 Where is it found?

3 How to teach it?

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- 2 Where is it found?
- 3 How to teach it?

Is statistics part of...

... mathematics?

... economics ?

Both seem to claim it is

Statistics is not a subfield of other disciplines

It uses methods from

mathematics

computing

Took ideas from many other fields

But the main principles of statistics cannot be derived
from any other discipline

Illustration

The likelihood principle cannot be derived from any mathematical result – although it sounds very 'mathematical'

It is clearly not a statement within economics

The meaning, proper use and usefulness of the principle are being debated

How one does statistics may look very 'mathematical'

Why one does the way it is done is unrelated to mathematics

Illustration

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Core and applied statistics

Core:

How statistical analysis should be conducted

Applied:

Statistical analysis of substantive problems

These should not be separated

Though different tasks at the master and doctoral levels

The Anglo-Saxon world

Statistics Departments

Statistics programs

Service courses

Consulting services

Statisticians work among statisticians

Exchange between academia and industry & government

The Continent

'Mathematical Statisticians'

'Economists'

'Applied Statisticians'

All work in separate departments

Each is minority in their respective departments

Struggle for approval

Rigid structure, no or little exchange with outside bodies

Less effect

Lower prestige

Perhaps the landscape is changing

Even if so, the change is slow

Cooperation in teaching or in research projects
may help change

If there is a need for a more unified and stronger
statistics in business & government,
it is hard to realize

A stronger presence of statistics in countries...

is often related to

better quality control in industry

evidence based policy making in government

Although no causal claim is made

Statistics education in countries without statistics

Fragmented university presence of statisticians

No visible job opportunities

Each fraction wants to prove they are the 'real' statisticians

Each will look for opportunity to do what they can
as opposed to finding the most appropriate solution for a problem

How not to teach statistics in a country without statistics?

Copying existing programs is likely to be inappropriate

If graduates find no jobs, the program will collapse

Why would professors from different departments be interested in contributing?

Why would the university be interested in setting up a new department

Who wants statistics education?

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How to teach statistics in a country without statistics

One has to juggle many aspects parallel

Find good students who want to work

Find good professors who motivate them

Find internship opportunities

'Free trial'

Generate jobs

What to teach in a country without statistics

Bring real problems into the curriculum

Teach how to handle them

Teach why to handle that way

Teach that there are problems one cannot handle easily

Bring in role models for students

Provide international exposure

I wish us all good luck