Statistical Techniques for Transport Planners

Overview

Any data-led transport project will require the use of statistical and other mathematical techniques at some stage, whether this be in determining the scale of a perceived problem, establishing how much data to collect, analysing data, dealing with problems in data sets, or when undertaking before and after monitoring. This one day course equips delegates with working knowledge of the statistical techniques that should be applied at different stages in projects to ensure that the evidence base underlying decisions is robust. Packed with hands on exercises, and supported by useful reference material, this one day course is a must for anyone wishing to increase their confidence in practical mathematics.

Learning outcomes

On completion of the course, delegates will:
- have an understanding of the different statistical techniques commonly used in transport planning activities
- have experience of applying different statistical techniques to transport data sets
- have an understanding of which distribution types apply to which types of transport data
- be aware of how to identify problems with datasets and apply suitable methodologies to remedy problems
- have an understanding of sample sizes required to achieve different confidence levels in data collected
- be able to analyse before and after data to determine whether transport interventions have achieved their intended outcomes
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Who should attend

The course has been developed for people who need to analyse and manipulate data as part of their transport planning work, and is particularly suitable for people who have recently joined the industry or started working on more technical and/or analytical projects. Anyone who needs to justify decisions on transport interventions through a robust evidence base will find this course invaluable.

Topics covered

- Poisson, binomial and normal distributions
- Different types of averages, standard deviation and spread
- Confidence intervals and sample sizes
- Identifying errors in data, dealing with outliers and gaps
- Comparing samples, checking for bias
- Reporting methods

Programme*

09:30 **Session 1: Introduction**

Introduction to the scenario - a sleepy town plagued with traffic problems, or is it just vocal residents?

09:45 **Session 2: Using data to determine if there is a transport problem to be solved**

- Types of data
- Idea of a distribution
    - 'Shape' of data
    - Parameters
- Appropriate distributions for types of data
    - Poisson (counts)
    - Normal (measures)
    - Binomial (proportions)
    - Limitations
- How big a sample do we need, and why?
- How do we get a good sample?

10:15 **Session 3: Analysing the data**

- What has the data told us?
    - Averages
    - Spread

11:00 **BREAK**

11:15 **Session 3: Analysing the data continued**

- How confident are we in the data?
    - In the distribution (goodness of fit)
    - In our parameters (confidence)

12:30 **LUNCH**

13:30 **Session 4: How to fix rotten data**

- Finding problems in the data
    - Outliers
    - Missing data
- Infilling approaches

15:00 **BREAK**

15:15 **Session 5: Evaluation techniques**

- Comparing samples
    - Did things improve
    - Checking for bias
- Reporting statistics
    - Talking statistics vs talking human
    - Reporting changes in small numbers

17:00 **Close**

*Please note that this is a preliminary programme and is subject to change

Statistical Techniques for Transport Planners

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1 Registration Form
Applications should be made on the official registration form. Photocopies are accepted. One form should be completed for each delegate attending an event. It is important that all sections are completed legibly. Delegates are advised to retain a copy of the registration form for reference before sending.

2 Fees
Fees include attendance at lectures, lecture notes, lunch and all refreshments unless otherwise indicated.

Fees do not include overnight accommodation, breakfast and evening meals unless stated or otherwise indicated.

3 Acknowledgement
Receipt of a registration form will be acknowledged by email, delegates will be sent an invoice and an email of acknowledgement. Joining instructions, including a map, will be sent to each delegate by email approximately two weeks before the start of the event.

4 Payment
Unless otherwise stated payment in full must be made at the time of booking. All prices are exclusive of VAT, unless stated otherwise.

5 Cancellation
All cancellations, or alterations to a booking, must be received in writing. To avoid cancellation penalties, substitutes will be accepted at any time, if notified in writing and in advance of the event. Adjustments in fees will be made if there is any change in fee category. Cancellations received in writing up to 14 days before an event will be subject to an administration fee of £75 + VAT or the event delegate fee, whichever is the lower. Cancellation within 14 days of the event date or a 'no show', will be liable for the full fee.

6 Disclaimer
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