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Joint ECE/Eurostat work session on statistical data confidentiality
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Topic (i): New theories and emerging methods

**THE NOISE METHOD - RESEARCH AND APPLICATIONS AT
STATISTICS NEW ZEALAND**

Contributed Paper

Submitted by Statistics New Zealand¹

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The Noise Method - Research and Applications at Statistics New Zealand

Abstract

Cell suppression is a common method for confidentialising tables of business magnitude data. But determination of secondary suppression patterns can be complex and time-consuming.

Compared to the cell suppression method, the "noise" method, which applies unbiased noise at the microdata level before tabulation, is easy to understand, and simple to apply. Statistics New Zealand's has replicated US Census Bureau research (Zayatz, Evans and Slanta 2000), using data from our Annual Enterprise Survey (AES). We get a very similar pattern of results, although the average level of noise is lower. To further analyse the results, we defined and compared information loss measures between current cell suppression methods and the noise method. Modifications to the method include a simpler 'multiplier' and splitting the noise into two parts, to reduce the volatility in year-to-year movements. Formulation of the 'sampling-plus-noise' error for levels has further contributed to the assessment of whether to introduce the method for the AES survey. We will soon decide whether the method will be officially used for the 2003 AES survey results.