

Analysing activities in a classroom – Remembrances of John Aitchison in Hong Kong with applications to a Service Provider

S.Y. Coleman

Industrial Statistics Research Unit, School of Maths and Statistics, Newcastle University, UK
Shirley.coleman@ncl.ac.uk

Abstract

Compositional data analysis formed a main focus of statistical activities at Hong Kong University when John Aitchison was head of the Statistics department. It was part of a new Master's degree in Statistics that he set up, and as this was the first such post graduate degree to be offered in Hong Kong, it attracted many gifted statisticians from the Government Statistical Service and other employments making it a very lively program.

Acknowledging the constrained nature of many types of data led to a novel and fascinating way of looking at proportions and percentages of components making up data items. John Aitchison's seminal book *The statistical analysis of compositional data* contains background theory and many examples of data arising from a wide variety of applications such as geology, economics and human behaviour. One example was an analysis of daily activities of statisticians. This prompted an analysis of classroom activities in a range of classes and schools encountered during teacher training within the Professional Educational Studies department of Hong Kong University (Coleman and Lee, 1988). It was found that the nature of the target class and the school level affected the pattern of lesson activities with more listening carried out in the higher target classes and higher level schools. More time was spent dealing with educational equipment in lower level schools.

Data analytics is increasingly popular in all walks of life and many small and medium enterprises are realising the benefits (Coleman, 2016). Compositional data forms a large part of internal company operational data and its analysis can provide useful insight. For example, the occurrence of failed and cancelled appointments on different days of the week, and changes in the proportions of different activities undertaken over time are important information for a service provider. Using ternary diagrams to illustrate proportions is an informative way to share the findings with company staff.

References

- Aitchison, J.A. (1986). *The Statistical Analysis of Compositional Data*. London: Chapman and Hall.
- Coleman, S.Y. (2016). Data mining Opportunities for Small to Medium Enterprises from Official Statistics, *Journal of Official Statistics* 32(4), 849-866.
- Coleman, S.Y. and S. Lee (1988). Compositional data analysis of activities in a typical lesson' *Hong Kong Educational Research Journal* 3, 98-103.