A modification of the prevalence index

The prevalence index[1] has been designed to compare tree species assemblages amongst studies with discrete data sets. It is defined as

$$p_i = \frac{\sum_{j=1}^{m_i} \frac{n_{ij}}{n}}{m_i},$$

where p_i is the prevalence for plot i, n_{ij} the number of plots over which a species j present on the plot i is encountered, n the total number of plots and m_i the total number of species encountered on plot i. The prevalence index will vary between $1/n$ and 1. A value close to 0 implies that none of the species encountered on the plot i is found elsewhere. A value of 1 means that all the species found on plot i are found on every plot. The lower the prevalence, the more restricted in distribution is the set of species found on this particular plot.

In its present form however, the lowest value possible for this index ($1/n$), depends on the total number of samples studied, which is an undesirable property. It is preferable to have an index which is independent of sample size. The objective of the authors was to obtain an index which varies between 0 and 1. A slight modification can help to obtain such an index.

On calculation, n_{ij} also includes the plot i. For this reason, the numerator can never be 0, since there is always at least one plot including the species j, namely the plot i. Excluding plot i would help to cancel the summation when no other plot contains the species j. When summed, it would be better to have $n_{ij} - 1$. Since the number of the plot is useless, a simpler notation could be $n_j - 1$, with n_j being the number of plots with species j. It is also important to keep the fraction under summation as 1, when the species j occurs in all the plots. For this reason, n should be replaced by $n - 1$. The index then becomes

$$p_i = \frac{\sum_{j=1}^{m_i} \frac{n_j - 1}{n - 1}}{m_i}.$$

As mentioned by the authors, the prevalence index allows comparisons within studies. In particular, m_i is dependent on the sample size and shape, making it difficult to compare among studies. Moreover, this index is sensitive to the sampling design, i.e. distribution of the plots and stratification. Geographical distance and spatial arrangement of the vegetation can induce biases. The proportion of different types of vegetation can also influence the prevalence index.

1. Ghate, U., Joshi, N. V. and Gadgil, M., *Curr. Sci.*, 1998, **75**, 594–603.

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MEETINGS/SYMPOSIA/SEMINARS

XXII Annual Convention and International Seminar on Watershed Development with a Special Colloquium on Drinking Water Supply in SAARC Countries

Date: 16–18 October 2003
Place: Visakhapatnam, India

Seminar topics include: Fresh water resources, Drinking water needs, Watershed development, Water markets, Conjunctive use of ground and surface waters, Artificial recharge, Problems of developing countries, Water quality and quantity.

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National Workshop on Good Laboratory Practices (GLP)

Date: 24–26 October 2002
Place: Chennai

Topics include: National GLP programme, OECD principles of GLP, Role of management of test facility in GLP studies, Role and responsibilities of study director in GLP studies, Application of GLP principles in short-term studies, Compliance of laboratory supplies with GLP principles, Quality assurance and GLP, The role and responsibilities of sponsor, Application of GLP principles in field studies, GLP principles in computer systems, Laboratory inspection and study audits, Implementation of national GLP programme, Importance of training in GLP, Guidance for preparation of SOPs.

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