Building indices in the age of big data - Application to honey bee exposure to parasites and pathogens

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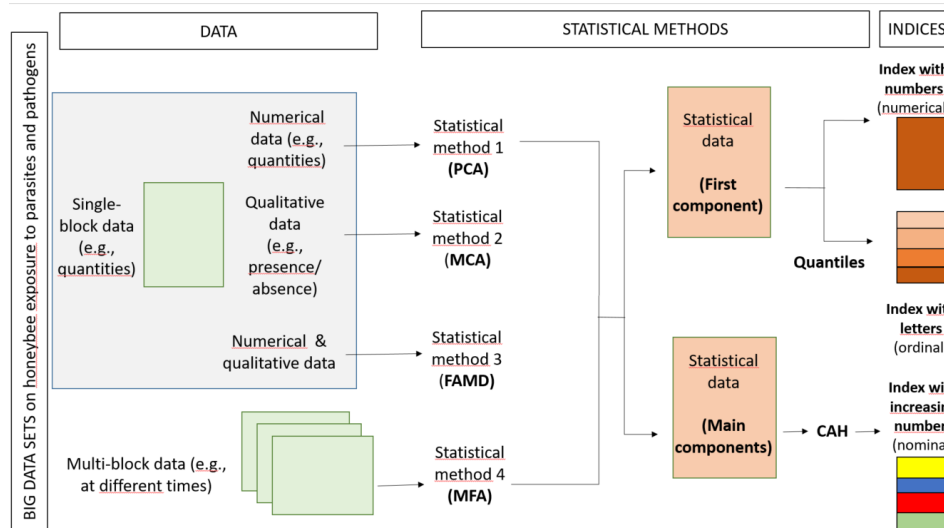MP Rivière, M Laurent, MP Chauzat
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CONTEXT

- The assessment, by high-throughput molecular methods, of pollinator exposure to multiple infectious and parasitic agents (IPAs) produces large data sets.
- These large data sets needed to be summarized to enable ease of handling and interpretation with respect to the detection and quantification of parasites and pathogens.
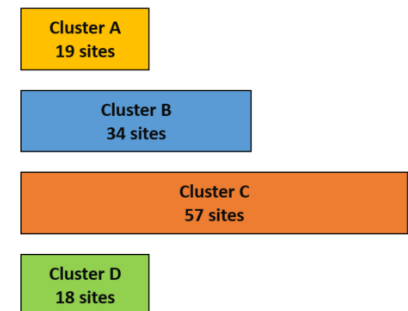
OBJECTIVE

- Develop a standard and transferable procedure adaptable to any kind of data and any exposure.
- Procedure based on factor analyses (statistical methods).

RESULTS

The three types of indices categorised 128 sites (2,816 observations) into 4 clusters (example below)

Cluster A — 19 sites
Cluster B — 34 sites
Cluster C — 57 sites
Cluster D — 18 sites

PERSPECTIVES

- The indices can be used in further statistical analyses.
- They can also be used by policy makers and stakeholders to characterize a given health situation at the level of individual sites.