

## Appendix 1

We conducted a principal component analysis on the 30 sound features for 454 calls. We determined the number of principal components using broken stick method proposed by Jackson (1993) and selected the first 3 principal components (Table A1). These three components collectively explained 55% of the variance. Notably, the first component showed a higher correlation with frequency features, while the second and third components exhibited correlations with temporal features (Table A1; Fig. A1). The observed overlaps in the clusters align with expectations, as principal component analysis excels in reorienting original variables rather than distinctly separating clusters (Fig. A2).

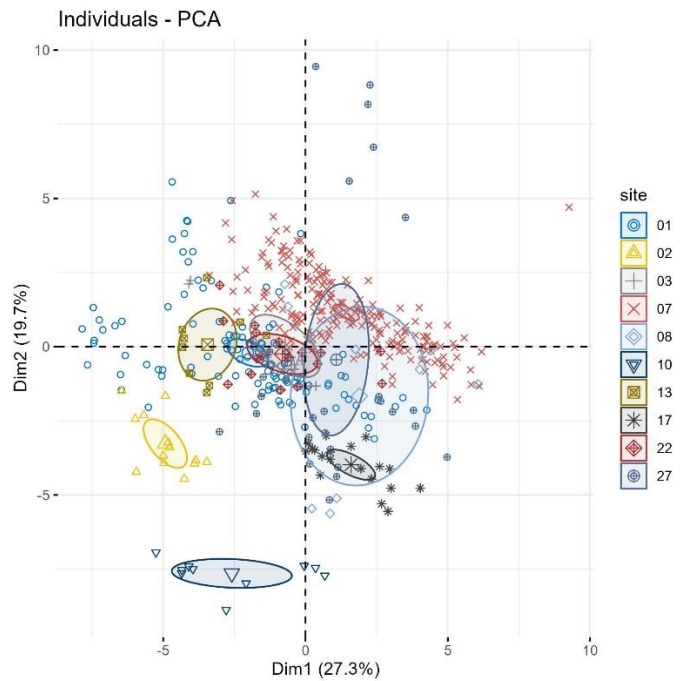
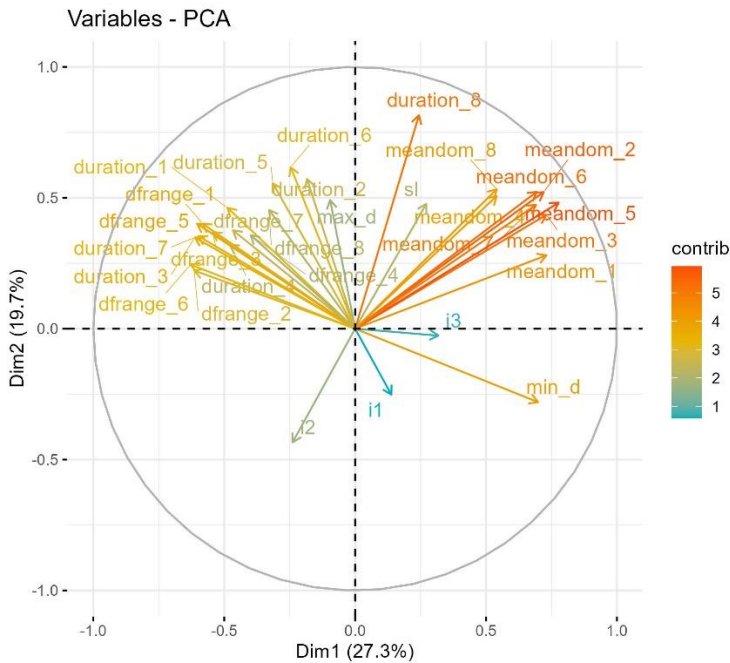


Fig. A1. PCA visualization of all the original variables on the PC1 and PC2.

Fig. A2. PCA visualization of all the observations reprojected on the PC1 and PC2.

Table A1. Statistics of the PCA analysis on the 30 sound features.

Components	Variance explained	Accumulated variance	Broken stick value	Correlated variables (absolute cor > 0.6)
Comp1	27%	27%	0.13	min_d, md_1, md_2, md_3, md_5, md_6, md_7
Comp2	20%	47%	0.09	d_6, d_8
Comp3	8%	55%	0.08	cl, i1, i3