

Assignment 4 Longitudinal characteristics

1. Continuing with the biofam data, build a table with the sequence length, the number of transitions, the number of subsequences, the longitudinal entropy, the turbulence and the complexity index.
2. Using `summary()`, look at the min, max, mean, medians and quartiles of the distribution of each of the computed longitudinal characteristics.
3. Display the histogram of each longitudinal characteristic but the length in a same graphic.
4. Generate the sequences of distinct successive states (DSS) and the table with the duration in the distinct successive states. Display the last 6 of them.
5. Compute the mean and the variance of the time spent in the successive states. Display their summaries. (Hint: use the `apply` function and specify `na.rm=TRUE`)
6. Generate a scatterplot matrix for comparing the Entropy with the Turbulence and Complexity Index.
7. Compare the distributions of the complexity index by birth cohorts using boxplots.
8. Regress the complexity index on the birth cohort, the sex and the language of the questionnaire. Comment the results.