: hazard in the overall population

s=1..S for S stratification factors

hazard in a subgroup defined by all stratification factors. There could be 2^S subgroups assuming each stratification factor has 2 levels (a positive level and a reference level)

prognostic effect of stratification factor s, assessed as the hazard ratio of the positive level vs the reference level

prevalence of the positive level of stratification factor s, ranging between 0 and 1

equals 1 (indicating the positive level) or 0 (indicating the reference level).

When S=1, for the positive statum and for the reference level, and the hazard ratio in log scale between the 2 groups reduces to . In this case, the weighted average of log hazard in the full population becomes

This may suggest when is close to 0 (eg, the overall median is 1.4 unit of the time, then log(2)/1.4 is close to 1), the weighted average will be different from 0. However, in simulation, we find the overall medians estimated from the simulated samples are close to log(2)/