Conversion table for the variables in the `core_functions.R` file

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In this file it is provided a glossary for the variables defined in the `core_functions.R` file, using the same notation of the paper Rigon, Durante and Torelli (2017). We describe these variables following the notation of the **usage** choice model, as in Section 3 of the paper. The notation for the **reversibility** and the **method** choice models proceeds in a similar manner. The elements of the glossary are listed below following the order of appearance in the `core_functions.R` file.

- The design matrix $\boldsymbol{X}_1$ is denoted with `X_Fix`.
- The binary indicators z_{ij1} are contained in the vector `y`.
- The number of observations n_i is denoted with `n`.
- The precision matrix $\boldsymbol{B}^{-1}$ is denoted with `P_Fix`.
- The prior hyperparameters (a_{τ_1}, b_{τ_1}) are denoted with `a_tau` and `b_tau`, respectively.
- The precision hyperparameter $\sigma_{\mu k}^{-2}$ is denoted with `tau_mu`.
- The number of mixture components H is denoted with `H`.
- The prior hyperparameters (a_λ, b_λ) are denoted with `a_lambda` and `b_lambda`, respectively.
- The B-spline design matrix $\boldsymbol{H}_1$ is denoted with the matrix `B`.
- The rank of the penalty matrix rank($\boldsymbol{D}$) is denoted with `rankD`.
- The penalty matrix $\boldsymbol{D}$ is denoted with `DtD`.
- The random intercept μ_{i1} are contained in the vector `beta_RF`.
- The vector of parameters $\boldsymbol{\beta}_1$ is denoted with `beta_Fix`.
- The vector of parameters $\boldsymbol{\gamma}_1$ is denoted with `beta_spline`.
- The spline component of the linear predictor, whose elements are $f_1(\texttt{age}_{ij})$, is denoted `eta_spline`.
- The random effect component of the linear predictor, whose elements are the corresponding random intercepts μ_{i1}, is denoted `eta_RF`.
- The fixed effect component of the linear predictor, whose elements are $\boldsymbol{x}_{ij}^\intercal \boldsymbol{\beta}_1$, is denoted with `eta_Fix`.
- The diagonal of the matrix $\boldsymbol{\Omega}_1$ is stored in the vector `omega`.
- The cluster indicators G_{i1} are contained in the vector `S`.
- The means $\bar{\mu}_{h1}$ are contained in the vector `theta_RF`.
- The smoothing parameter λ is denoted with `lambda`.

- The precision σ_1^{-2} is denoted with `tau`.
- The mixture weights $(\nu_{11}, \ldots, \nu_{H1})$ are denoted with `nu`.

All these quantities are repeatedly replaced during the execution of the Gibbs sampler and they are stored in vectors, matrices or arrays having the same name as in the list above, but with the suffix `_out` added. For instance, the $\boldsymbol{\beta}_1$ coefficients are stored in the vector `beta_Fix_out`.