Supplementary Material

Table 7: Simulation results for scenario I. The rows include the two endpoints, equal and different population distributions, and the considered effect sizes, the columns the evaluation measures for these scenarios power/type I error, coverage (Cov), bias, and root mean squared error (RMSE). Accordingly, for no effect, the column “Power" shows the type I error rate (α).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Bucher** | | | | **MAIC** | | | | **STC** | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.385 | 0.919 | -0.09 | 0.263 | 0.383 | 0.918 | -0.09 | 0.265 | 0.157 | 0.225 | 0.679 | 0.772 |
| TTE | equal | medium | 0.206 | 0.945 | 0.032 | 0.166 | 0.203 | 0.946 | 0.032 | 0.166 | 0.344 | 0.088 | 0.482 | 0.515 |
| TTE | equal | low | 0.066 | 0.943 | 0.039 | 0.136 | 0.066 | 0.944 | 0.039 | 0.136 | 0.528 | 0.203 | 0.339 | 0.367 |
| TTE | equal | no | 0.05 | 0.95 | 0.005 | 0.122 | 0.05 | 0.95 | 0.005 | 0.122 | 0.583 | 0.417 | 0.257 | 0.289 |
| TTE | diff | high | 0.43 | 0.913 | -0.091 | 0.248 | 0.338 | 0.87 | -0.06 | 0.397 | 0.131 | 0.48 | 0.733 | 0.928 |
| TTE | diff | medium | 0.227 | 0.941 | 0.031 | 0.16 | 0.168 | 0.935 | 0.039 | 0.23 | 0.243 | 0.261 | 0.492 | 0.547 |
| TTE | diff | low | 0.066 | 0.945 | 0.036 | 0.129 | 0.067 | 0.942 | 0.041 | 0.172 | 0.406 | 0.353 | 0.34 | 0.378 |
| TTE | diff | no | 0.052 | 0.948 | 0.007 | 0.118 | 0.053 | 0.947 | 0.012 | 0.152 | 0.488 | 0.512 | 0.26 | 0.299 |
| Binary | equal | high | 0.487 | 0.912 | -0.228 | 0.438 | 0.485 | 0.913 | -0.228 | 0.439 | 0.505 | 0.89 | -0.259 | 0.47 |
| Binary | equal | medium | 0.202 | 0.948 | -0.004 | 0.212 | 0.201 | 0.948 | -0.004 | 0.212 | 0.204 | 0.947 | -0.008 | 0.217 |
| Binary | equal | low | 0.065 | 0.951 | -0.001 | 0.154 | 0.066 | 0.951 | -0.001 | 0.154 | 0.068 | 0.948 | -0.003 | 0.157 |
| Binary | equal | no | 0.052 | 0.948 | 0 | 0.142 | 0.052 | 0.948 | 0 | 0.142 | 0.051 | 0.949 | -0.001 | 0.144 |
| Binary | diff | high | 0.475 | 0.907 | -0.241 | 0.457 | 0.346 | 0.881 | -0.303 | 0.655 | 0.278 | 0.926 | -0.444 | 1.297 |
| Binary | diff | medium | 0.193 | 0.947 | -0.001 | 0.214 | 0.14 | 0.94 | -0.004 | 0.306 | 0.135 | 0.947 | -0.005 | 0.302 |
| Binary | diff | low | 0.066 | 0.954 | 0 | 0.153 | 0.067 | 0.946 | -0.002 | 0.207 | 0.063 | 0.949 | -0.001 | 0.202 |
| Binary | diff | no | 0.05 | 0.95 | 0.003 | 0.142 | 0.05 | 0.95 | 0.002 | 0.183 | 0.047 | 0.953 | 0.002 | 0.179 |

Table 8: Simulation results for scenario II. The rows include the two endpoints, equal and different population distributions, and the considered effect sizes, the columns the evaluation measures for these scenarios power/type I error, coverage (Cov), bias, and root mean squared error (RMSE). Accordingly, for no effect, the column “Power" shows the type I error rate (α). The upper part of the following tables contains the results for considering all confounders within MAIC and the lower part those for only effect modifiers are included in MAIC.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| All confounders considered in MAIC/STC | | | | | | | | | | | | | | |
|  |  |  | **Bucher** | | | | **MAIC** | | | | **STC** | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.061 | 0.814 | 0.519 | 0.834 | 0.062 | 0.813 | 0.52 | 0.837 | 0.072 | 0.464 | 0.486 | 0.585 |
| TTE | equal | medium | 0.049 | 0.846 | 0.23 | 0.341 | 0.047 | 0.846 | 0.23 | 0.341 | 0.07 | 0.436 | 0.289 | 0.329 |
| TTE | equal | low | 0.053 | 0.932 | 0.076 | 0.191 | 0.054 | 0.932 | 0.076 | 0.191 | 0.083 | 0.757 | 0.142 | 0.185 |
| TTE | equal | no | 0.054 | 0.946 | -0.007 | 0.155 | 0.053 | 0.947 | -0.007 | 0.155 | 0.087 | 0.913 | 0.062 | 0.124 |
| TTE | diff | high | 0.069 | 0.841 | 0.584 | 1.037 | 0.123 | 0.816 | 0.75 | 1.478 | 0.09 | 0.661 | 0.545 | 0.762 |
| TTE | diff | medium | 0.052 | 0.867 | 0.248 | 0.387 | 0.065 | 0.878 | 0.284 | 0.508 | 0.066 | 0.622 | 0.293 | 0.359 |
| TTE | diff | low | 0.056 | 0.934 | 0.077 | 0.211 | 0.06 | 0.931 | 0.088 | 0.271 | 0.074 | 0.806 | 0.147 | 0.204 |
| TTE | diff | no | 0.052 | 0.948 | -0.008 | 0.169 | 0.061 | 0.939 | -0.002 | 0.213 | 0.076 | 0.924 | 0.063 | 0.139 |
| binary | equal | high | 0.048 | 0.876 | 0.463 | 0.757 | 0.288 | 0.944 | -0.081 | 0.413 | 0.041 | 0.859 | 0.616 | 0.981 |
| binary | equal | medium | 0.052 | 0.897 | 0.214 | 0.402 | 0.21 | 0.941 | -0.054 | 0.255 | 0.063 | 0.819 | 0.348 | 0.483 |
| binary | equal | low | 0.054 | 0.946 | 0.038 | 0.252 | 0.16 | 0.902 | -0.127 | 0.237 | 0.077 | 0.882 | 0.168 | 0.281 |
| binary | equal | no | 0.049 | 0.951 | -0.018 | 0.226 | 0.123 | 0.877 | -0.15 | 0.241 | 0.088 | 0.912 | 0.113 | 0.226 |
| binary | diff | high | 0.049 | 0.901 | 0.448 | 1.002 | 0.222 | 0.918 | -0.119 | 0.602 | 0.043 | 0.91 | 0.568 | 1.35 |
| binary | diff | medium | 0.053 | 0.918 | 0.209 | 0.455 | 0.154 | 0.932 | -0.059 | 0.336 | 0.055 | 0.886 | 0.34 | 0.562 |
| binary | diff | low | 0.048 | 0.952 | 0.038 | 0.281 | 0.122 | 0.917 | -0.127 | 0.271 | 0.062 | 0.914 | 0.17 | 0.333 |
| binary | diff | no | 0.053 | 0.947 | -0.019 | 0.255 | 0.105 | 0.895 | -0.148 | 0.267 | 0.075 | 0.925 | 0.115 | 0.28 |
| Only effect modifiers in MAIC/STC | | | | | | | | | | | | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.061 | 0.814 | 0.519 | 0.834 | 0.061 | 0.814 | 0.519 | 0.834 | 0.068 | 0.443 | 0.483 | 0.574 |
| TTE | equal | medium | 0.049 | 0.846 | 0.23 | 0.341 | 0.049 | 0.846 | 0.23 | 0.341 | 0.07 | 0.422 | 0.289 | 0.327 |
| TTE | equal | low | 0.053 | 0.932 | 0.076 | 0.191 | 0.053 | 0.932 | 0.076 | 0.191 | 0.084 | 0.752 | 0.142 | 0.184 |
| TTE | equal | no | 0.054 | 0.946 | -0.007 | 0.155 | 0.054 | 0.946 | -0.007 | 0.155 | 0.088 | 0.912 | 0.062 | 0.123 |
| TTE | diff | high | 0.069 | 0.841 | 0.584 | 1.037 | 0.081 | 0.83 | 0.596 | 1.071 | 0.075 | 0.573 | 0.509 | 0.651 |
| TTE | diff | medium | 0.052 | 0.867 | 0.248 | 0.387 | 0.055 | 0.865 | 0.248 | 0.388 | 0.063 | 0.539 | 0.289 | 0.339 |
| TTE | diff | low | 0.056 | 0.934 | 0.077 | 0.211 | 0.056 | 0.934 | 0.077 | 0.211 | 0.076 | 0.784 | 0.144 | 0.193 |
| TTE | diff | no | 0.052 | 0.948 | -0.008 | 0.169 | 0.053 | 0.947 | -0.008 | 0.169 | 0.08 | 0.92 | 0.061 | 0.131 |
| binary | equal | high | 0.048 | 0.876 | 0.463 | 0.757 | 0.287 | 0.944 | -0.08 | 0.412 | 0.044 | 0.832 | 0.593 | 0.833 |
| binary | equal | medium | 0.052 | 0.897 | 0.214 | 0.402 | 0.21 | 0.942 | -0.054 | 0.255 | 0.063 | 0.802 | 0.345 | 0.468 |
| binary | equal | low | 0.054 | 0.946 | 0.038 | 0.252 | 0.16 | 0.902 | -0.127 | 0.237 | 0.081 | 0.873 | 0.168 | 0.273 |
| binary | equal | no | 0.049 | 0.951 | -0.018 | 0.226 | 0.123 | 0.877 | -0.15 | 0.241 | 0.092 | 0.908 | 0.112 | 0.219 |
| binary | diff | high | 0.049 | 0.901 | 0.448 | 1.002 | 0.228 | 0.944 | -0.048 | 0.443 | 0.042 | 0.885 | 0.579 | 1.06 |
| binary | diff | medium | 0.053 | 0.918 | 0.209 | 0.455 | 0.176 | 0.945 | -0.039 | 0.265 | 0.061 | 0.857 | 0.34 | 0.514 |
| binary | diff | low | 0.048 | 0.952 | 0.038 | 0.281 | 0.138 | 0.914 | -0.115 | 0.234 | 0.068 | 0.899 | 0.17 | 0.303 |
| binary | diff | no | 0.053 | 0.947 | -0.019 | 0.255 | 0.116 | 0.884 | -0.141 | 0.239 | 0.081 | 0.919 | 0.112 | 0.249 |

Table 9: Simulation results for scenario III. The rows include the two endpoints, equal and different population distributions, and the considered effect sizes, the columns the evaluation measures for these scenarios power/type I error, coverage (Cov), bias, and root mean squared error (RMSE). Accordingly, for no effect, the column “Power" shows the type I error rate (α). The upper part of the following tables contains the results for considering all confounders within MAIC and the lower part those for only effect modifiers are included in MAIC.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| All confounders considered in MAIC | | | | | | | | | | | | | | |
|  |  |  | **Bucher** | | | | **MAIC** | | | | **STC** | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.059 | 0.811 | 0.496 | 0.76 | 0.06 | 0.81 | 0.497 | 0.765 | 0.072 | 0.473 | 0.487 | 0.587 |
| TTE | equal | medium | 0.053 | 0.837 | 0.228 | 0.337 | 0.052 | 0.837 | 0.228 | 0.337 | 0.065 | 0.458 | 0.287 | 0.328 |
| TTE | equal | low | 0.049 | 0.934 | 0.074 | 0.185 | 0.05 | 0.934 | 0.074 | 0.185 | 0.079 | 0.765 | 0.142 | 0.185 |
| TTE | equal | no | 0.053 | 0.947 | -0.009 | 0.152 | 0.053 | 0.947 | -0.009 | 0.152 | 0.081 | 0.919 | 0.063 | 0.126 |
| TTE | diff | high | 0.069 | 0.841 | 0.555 | 0.961 | 0.112 | 0.821 | 0.697 | 1.347 | 0.086 | 0.659 | 0.542 | 0.75 |
| TTE | diff | medium | 0.055 | 0.863 | 0.237 | 0.376 | 0.072 | 0.878 | 0.262 | 0.476 | 0.067 | 0.626 | 0.295 | 0.361 |
| TTE | diff | low | 0.051 | 0.935 | 0.08 | 0.207 | 0.053 | 0.933 | 0.09 | 0.26 | 0.071 | 0.816 | 0.144 | 0.201 |
| TTE | diff | no | 0.054 | 0.946 | -0.005 | 0.167 | 0.058 | 0.942 | 0.003 | 0.208 | 0.077 | 0.923 | 0.065 | 0.141 |
| binary | equal | high | 0.048 | 0.875 | 0.47 | 0.833 | 0.296 | 0.944 | -0.091 | 0.416 | 0.044 | 0.859 | 0.628 | 1.066 |
| binary | equal | medium | 0.049 | 0.905 | 0.208 | 0.401 | 0.22 | 0.941 | -0.065 | 0.258 | 0.059 | 0.834 | 0.34 | 0.482 |
| binary | equal | low | 0.047 | 0.947 | 0.046 | 0.252 | 0.147 | 0.906 | -0.125 | 0.234 | 0.077 | 0.883 | 0.173 | 0.285 |
| binary | equal | no | 0.047 | 0.953 | -0.02 | 0.227 | 0.122 | 0.878 | -0.152 | 0.243 | 0.088 | 0.912 | 0.111 | 0.229 |
| binary | diff | high | 0.05 | 0.895 | 0.481 | 1.055 | 0.228 | 0.924 | -0.123 | 0.591 | 0.042 | 0.912 | 0.596 | 1.443 |
| binary | diff | medium | 0.051 | 0.914 | 0.217 | 0.462 | 0.16 | 0.94 | -0.062 | 0.329 | 0.056 | 0.878 | 0.345 | 0.57 |
| binary | diff | low | 0.051 | 0.947 | 0.039 | 0.285 | 0.128 | 0.913 | -0.128 | 0.27 | 0.068 | 0.908 | 0.172 | 0.339 |
| binary | diff | no | 0.05 | 0.95 | -0.019 | 0.255 | 0.111 | 0.889 | -0.152 | 0.269 | 0.07 | 0.93 | 0.111 | 0.277 |
| Only effect modifiers in MAIC | | | | | | | | | | | | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.059 | 0.811 | 0.496 | 0.76 | 0.059 | 0.811 | 0.496 | 0.76 | 0.068 | 0.45 | 0.483 | 0.575 |
| TTE | equal | medium | 0.053 | 0.837 | 0.228 | 0.337 | 0.053 | 0.837 | 0.228 | 0.337 | 0.066 | 0.436 | 0.286 | 0.325 |
| TTE | equal | low | 0.049 | 0.934 | 0.074 | 0.185 | 0.049 | 0.934 | 0.074 | 0.185 | 0.08 | 0.757 | 0.142 | 0.184 |
| TTE | equal | no | 0.053 | 0.947 | -0.009 | 0.152 | 0.053 | 0.947 | -0.009 | 0.152 | 0.082 | 0.918 | 0.063 | 0.125 |
| TTE | diff | high | 0.069 | 0.841 | 0.555 | 0.961 | 0.073 | 0.836 | 0.559 | 0.969 | 0.08 | 0.584 | 0.513 | 0.656 |
| TTE | diff | medium | 0.055 | 0.863 | 0.237 | 0.376 | 0.056 | 0.864 | 0.237 | 0.376 | 0.064 | 0.555 | 0.292 | 0.344 |
| TTE | diff | low | 0.051 | 0.935 | 0.08 | 0.207 | 0.051 | 0.935 | 0.08 | 0.208 | 0.07 | 0.796 | 0.142 | 0.192 |
| TTE | diff | no | 0.054 | 0.946 | -0.005 | 0.167 | 0.054 | 0.946 | -0.005 | 0.167 | 0.081 | 0.919 | 0.064 | 0.134 |
| binary | equal | high | 0.048 | 0.875 | 0.47 | 0.833 | 0.295 | 0.943 | -0.091 | 0.416 | 0.046 | 0.836 | 0.6 | 0.905 |
| binary | equal | medium | 0.049 | 0.905 | 0.208 | 0.401 | 0.22 | 0.94 | -0.065 | 0.258 | 0.063 | 0.814 | 0.34 | 0.467 |
| binary | equal | low | 0.047 | 0.947 | 0.046 | 0.252 | 0.148 | 0.906 | -0.125 | 0.233 | 0.082 | 0.877 | 0.174 | 0.277 |
| binary | equal | no | 0.047 | 0.953 | -0.02 | 0.227 | 0.123 | 0.877 | -0.152 | 0.243 | 0.092 | 0.908 | 0.111 | 0.222 |
| binary | diff | high | 0.05 | 0.895 | 0.481 | 1.055 | 0.238 | 0.947 | -0.051 | 0.437 | 0.04 | 0.883 | 0.614 | 1.115 |
| binary | diff | medium | 0.051 | 0.914 | 0.217 | 0.462 | 0.178 | 0.946 | -0.037 | 0.263 | 0.061 | 0.847 | 0.348 | 0.523 |
| binary | diff | low | 0.051 | 0.947 | 0.039 | 0.285 | 0.141 | 0.91 | -0.117 | 0.235 | 0.068 | 0.901 | 0.171 | 0.306 |
| binary | diff | no | 0.05 | 0.95 | -0.019 | 0.255 | 0.116 | 0.884 | -0.142 | 0.241 | 0.075 | 0.925 | 0.111 | 0.248 |

Table 10: Simulation results for scenario IV. The rows include the two endpoints, equal and different population distributions, and the considered effect sizes, the columns the evaluation measures for these scenarios power/type I error, coverage (Cov), bias, and root mean squared error (RMSE). Accordingly, for no effect, the column “Power" shows the type I error rate (α). The upper part of the following tables contains the results for considering all confounders within MAIC and the lower part those for only effect modifiers are included in MAIC.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| All confounders considered in MAIC | | | | | | | | | | | | | | |
|  |  |  | **Bucher** | | | | **MAIC** | | | | **STC** | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.627 | 0.801 | -0.209 | 0.286 | 0.625 | 0.802 | -0.209 | 0.287 | 0.076 | 0.43 | 0.48 | 0.572 |
| TTE | equal | medium | 0.655 | 0.786 | -0.157 | 0.205 | 0.653 | 0.786 | -0.156 | 0.205 | 0.068 | 0.429 | 0.284 | 0.323 |
| TTE | equal | low | 0.551 | 0.664 | -0.182 | 0.214 | 0.549 | 0.665 | -0.182 | 0.214 | 0.08 | 0.75 | 0.143 | 0.184 |
| TTE | equal | no | 0.489 | 0.511 | -0.225 | 0.249 | 0.488 | 0.512 | -0.225 | 0.249 | 0.087 | 0.913 | 0.061 | 0.124 |
| TTE | diff | high | 0.685 | 0.777 | -0.214 | 0.278 | 0.505 | 0.77 | -0.191 | 0.357 | 0.087 | 0.626 | 0.545 | 0.739 |
| TTE | diff | medium | 0.693 | 0.764 | -0.157 | 0.202 | 0.481 | 0.825 | -0.152 | 0.234 | 0.07 | 0.604 | 0.291 | 0.354 |
| TTE | diff | low | 0.579 | 0.646 | -0.184 | 0.214 | 0.414 | 0.75 | -0.179 | 0.227 | 0.071 | 0.813 | 0.143 | 0.198 |
| TTE | diff | no | 0.51 | 0.49 | -0.227 | 0.25 | 0.38 | 0.62 | -0.224 | 0.258 | 0.075 | 0.925 | 0.061 | 0.137 |
| binary | equal | high | 0.712 | 0.766 | -0.491 | 0.628 | 0.712 | 0.768 | -0.491 | 0.629 | 0.65 | 0.815 | -0.395 | 0.556 |
| binary | equal | medium | 0.524 | 0.808 | -0.262 | 0.361 | 0.524 | 0.809 | -0.262 | 0.361 | 0.397 | 0.9 | -0.136 | 0.257 |
| binary | equal | low | 0.362 | 0.74 | -0.259 | 0.327 | 0.361 | 0.739 | -0.259 | 0.327 | 0.224 | 0.866 | -0.13 | 0.204 |
| binary | equal | no | 0.278 | 0.722 | -0.258 | 0.32 | 0.278 | 0.722 | -0.258 | 0.32 | 0.145 | 0.855 | -0.127 | 0.193 |
| binary | diff | high | 0.709 | 0.762 | -0.508 | 0.646 | 0.505 | 0.787 | -0.563 | 0.816 | 0.367 | 0.893 | -0.567 | 1.338 |
| binary | diff | medium | 0.523 | 0.812 | -0.265 | 0.362 | 0.353 | 0.857 | -0.271 | 0.425 | 0.244 | 0.924 | -0.139 | 0.329 |
| binary | diff | low | 0.371 | 0.742 | -0.259 | 0.325 | 0.271 | 0.806 | -0.259 | 0.353 | 0.15 | 0.906 | -0.129 | 0.239 |
| binary | diff | no | 0.284 | 0.716 | -0.26 | 0.321 | 0.223 | 0.777 | -0.261 | 0.325 | 0.114 | 0.886 | -0.129 | 0.223 |
| Only effect modifiers in MAIC | | | | | | | | | | | | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.627 | 0.801 | -0.209 | 0.286 | 0.627 | 0.801 | -0.209 | 0.286 | 0.07 | 0.41 | 0.479 | 0.563 |
| TTE | equal | medium | 0.655 | 0.786 | -0.157 | 0.205 | 0.655 | 0.786 | -0.157 | 0.205 | 0.07 | 0.413 | 0.284 | 0.321 |
| TTE | equal | low | 0.551 | 0.664 | -0.182 | 0.214 | 0.551 | 0.664 | -0.182 | 0.214 | 0.079 | 0.748 | 0.143 | 0.183 |
| TTE | equal | no | 0.489 | 0.511 | -0.225 | 0.249 | 0.489 | 0.511 | -0.225 | 0.249 | 0.088 | 0.912 | 0.061 | 0.123 |
| TTE | diff | high | 0.685 | 0.777 | -0.214 | 0.278 | 0.635 | 0.779 | -0.212 | 0.289 | 0.076 | 0.526 | 0.506 | 0.629 |
| TTE | diff | medium | 0.693 | 0.764 | -0.157 | 0.202 | 0.646 | 0.783 | -0.156 | 0.207 | 0.069 | 0.513 | 0.288 | 0.336 |
| TTE | diff | low | 0.579 | 0.646 | -0.184 | 0.214 | 0.542 | 0.665 | -0.183 | 0.215 | 0.08 | 0.792 | 0.141 | 0.189 |
| TTE | diff | no | 0.51 | 0.49 | -0.227 | 0.25 | 0.483 | 0.517 | -0.227 | 0.251 | 0.078 | 0.922 | 0.06 | 0.128 |
| binary | equal | high | 0.712 | 0.766 | -0.491 | 0.628 | 0.712 | 0.766 | -0.491 | 0.628 | 0.65 | 0.828 | -0.372 | 0.53 |
| binary | equal | medium | 0.524 | 0.808 | -0.262 | 0.361 | 0.524 | 0.808 | -0.262 | 0.361 | 0.399 | 0.901 | -0.133 | 0.253 |
| binary | equal | low | 0.362 | 0.74 | -0.259 | 0.327 | 0.362 | 0.74 | -0.259 | 0.327 | 0.227 | 0.866 | -0.129 | 0.203 |
| binary | equal | no | 0.278 | 0.722 | -0.258 | 0.32 | 0.278 | 0.722 | -0.258 | 0.32 | 0.146 | 0.854 | -0.127 | 0.192 |
| binary | diff | high | 0.709 | 0.762 | -0.508 | 0.646 | 0.657 | 0.776 | -0.518 | 0.675 | 0.581 | 0.84 | -0.393 | 0.582 |
| binary | diff | medium | 0.523 | 0.812 | -0.265 | 0.362 | 0.48 | 0.82 | -0.266 | 0.372 | 0.357 | 0.907 | -0.136 | 0.27 |
| binary | diff | low | 0.371 | 0.742 | -0.259 | 0.325 | 0.347 | 0.756 | -0.258 | 0.329 | 0.204 | 0.88 | -0.129 | 0.21 |
| binary | diff | no | 0.284 | 0.716 | -0.26 | 0.321 | 0.27 | 0.73 | -0.261 | 0.325 | 0.138 | 0.862 | -0.129 | 0.199 |

Table 11: Simulation results for scenario V. The rows include the two endpoints, equal and different population distributions, and the considered effect sizes, the columns the evaluation measures for these scenarios power/type I error, coverage (Cov), bias, and root mean squared error (RMSE). Accordingly, for no effect, the column “Power" shows the type I error rate (α). The upper part of the following tables contains the results for considering all confounders within MAIC and the lower part those for only effect modifiers are included in MAIC.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| All confounders considered in MAIC | | | | | | | | | | | | | | |
|  |  |  | **Bucher** | | | | **MAIC** | | | | **STC** | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.655 | 0.794 | -0.207 | 0.277 | 0.65 | 0.791 | -0.208 | 0.277 | 0.073 | 0.441 | 0.475 | 0.566 |
| TTE | equal | medium | 0.677 | 0.778 | -0.156 | 0.202 | 0.674 | 0.777 | -0.156 | 0.203 | 0.07 | 0.436 | 0.288 | 0.327 |
| TTE | equal | low | 0.555 | 0.655 | -0.181 | 0.212 | 0.555 | 0.656 | -0.181 | 0.212 | 0.077 | 0.757 | 0.142 | 0.184 |
| TTE | equal | no | 0.484 | 0.516 | -0.224 | 0.248 | 0.483 | 0.517 | -0.224 | 0.248 | 0.085 | 0.915 | 0.06 | 0.124 |
| TTE | diff | high | 0.706 | 0.772 | -0.208 | 0.27 | 0.531 | 0.782 | -0.19 | 0.334 | 0.083 | 0.638 | 0.525 | 0.711 |
| TTE | diff | medium | 0.712 | 0.766 | -0.156 | 0.198 | 0.5 | 0.826 | -0.15 | 0.225 | 0.066 | 0.61 | 0.292 | 0.354 |
| TTE | diff | low | 0.589 | 0.634 | -0.183 | 0.212 | 0.433 | 0.734 | -0.179 | 0.224 | 0.075 | 0.806 | 0.145 | 0.201 |
| TTE | diff | no | 0.514 | 0.486 | -0.225 | 0.248 | 0.388 | 0.612 | -0.223 | 0.255 | 0.074 | 0.926 | 0.06 | 0.136 |
| binary | equal | high | 0.722 | 0.762 | -0.498 | 0.632 | 0.72 | 0.764 | -0.498 | 0.633 | 0.652 | 0.82 | -0.393 | 0.552 |
| binary | equal | medium | 0.519 | 0.812 | -0.265 | 0.36 | 0.518 | 0.813 | -0.265 | 0.36 | 0.4 | 0.905 | -0.139 | 0.257 |
| binary | equal | low | 0.367 | 0.742 | -0.26 | 0.326 | 0.367 | 0.741 | -0.26 | 0.326 | 0.222 | 0.87 | -0.132 | 0.206 |
| binary | equal | no | 0.29 | 0.71 | -0.263 | 0.325 | 0.289 | 0.711 | -0.263 | 0.325 | 0.139 | 0.861 | -0.13 | 0.195 |
| binary | diff | high | 0.707 | 0.768 | -0.497 | 0.637 | 0.498 | 0.797 | -0.543 | 0.791 | 0.363 | 0.888 | -0.538 | 1.265 |
| binary | diff | medium | 0.521 | 0.809 | -0.263 | 0.361 | 0.36 | 0.853 | -0.268 | 0.424 | 0.241 | 0.918 | -0.137 | 0.331 |
| binary | diff | low | 0.37 | 0.734 | -0.261 | 0.327 | 0.274 | 0.8 | -0.26 | 0.353 | 0.155 | 0.9 | -0.128 | 0.24 |
| binary | diff | no | 0.285 | 0.715 | -0.262 | 0.322 | 0.226 | 0.774 | -0.263 | 0.342 | 0.113 | 0.887 | -0.131 | 0.223 |
| Only effect modifiers in MAIC | | | | | | | | | | | | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.655 | 0.794 | -0.207 | 0.277 | 0.655 | 0.794 | -0.207 | 0.277 | 0.07 | 0.419 | 0.474 | 0.558 |
| TTE | equal | medium | 0.677 | 0.778 | -0.156 | 0.202 | 0.677 | 0.778 | -0.156 | 0.202 | 0.069 | 0.421 | 0.287 | 0.324 |
| TTE | equal | low | 0.555 | 0.655 | -0.181 | 0.212 | 0.555 | 0.655 | -0.181 | 0.212 | 0.08 | 0.754 | 0.142 | 0.183 |
| TTE | equal | no | 0.484 | 0.516 | -0.224 | 0.248 | 0.484 | 0.516 | -0.224 | 0.248 | 0.086 | 0.914 | 0.06 | 0.122 |
| TTE | diff | high | 0.706 | 0.772 | -0.208 | 0.27 | 0.647 | 0.778 | -0.206 | 0.28 | 0.075 | 0.536 | 0.499 | 0.622 |
| TTE | diff | medium | 0.712 | 0.766 | -0.156 | 0.198 | 0.662 | 0.783 | -0.155 | 0.202 | 0.064 | 0.526 | 0.29 | 0.339 |
| TTE | diff | low | 0.589 | 0.634 | -0.183 | 0.212 | 0.557 | 0.656 | -0.183 | 0.214 | 0.079 | 0.79 | 0.143 | 0.192 |
| TTE | diff | no | 0.514 | 0.486 | -0.225 | 0.248 | 0.483 | 0.517 | -0.225 | 0.249 | 0.075 | 0.925 | 0.059 | 0.128 |
| binary | equal | high | 0.722 | 0.762 | -0.498 | 0.632 | 0.722 | 0.762 | -0.498 | 0.632 | 0.652 | 0.829 | -0.377 | 0.532 |
| binary | equal | medium | 0.519 | 0.812 | -0.265 | 0.36 | 0.519 | 0.812 | -0.265 | 0.36 | 0.403 | 0.905 | -0.136 | 0.253 |
| binary | equal | low | 0.367 | 0.742 | -0.26 | 0.326 | 0.367 | 0.742 | -0.26 | 0.326 | 0.226 | 0.868 | -0.131 | 0.205 |
| binary | equal | no | 0.29 | 0.71 | -0.263 | 0.325 | 0.29 | 0.71 | -0.263 | 0.325 | 0.14 | 0.86 | -0.129 | 0.194 |
| binary | diff | high | 0.707 | 0.768 | -0.497 | 0.637 | 0.644 | 0.782 | -0.502 | 0.661 | 0.57 | 0.845 | -0.381 | 0.58 |
| binary | diff | medium | 0.521 | 0.809 | -0.263 | 0.361 | 0.485 | 0.821 | -0.264 | 0.371 | 0.355 | 0.906 | -0.136 | 0.271 |
| binary | diff | low | 0.37 | 0.734 | -0.261 | 0.327 | 0.348 | 0.75 | -0.261 | 0.331 | 0.202 | 0.878 | -0.129 | 0.21 |
| binary | diff | no | 0.285 | 0.715 | -0.262 | 0.322 | 0.27 | 0.73 | -0.262 | 0.325 | 0.139 | 0.861 | -0.131 | 0.2 |

Table 12: Simulation results for scenario I. The rows include the two endpoints, equal and different population distributions, and the considered effect sizes, the columns the evaluation measures for these scenarios power/type I error, coverage (Cov), bias, and root mean squared error (RMSE). Accordingly, for no effect, the column “Power" shows the type I error rate (α). The regression models for estimating the treatment effect in trial CB are not adjusted for confounders.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Bucher | | | | MAIC | | | | STC | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.385 | 0.919 | -0.09 | 0.263 | 0.383 | 0.918 | -0.09 | 0.265 | 0.157 | 0.225 | 0.679 | 0.772 |
| TTE | equal | medium | 0.206 | 0.945 | 0.032 | 0.166 | 0.203 | 0.946 | 0.032 | 0.166 | 0.344 | 0.088 | 0.482 | 0.515 |
| TTE | equal | low | 0.066 | 0.943 | 0.039 | 0.136 | 0.066 | 0.944 | 0.039 | 0.136 | 0.528 | 0.203 | 0.339 | 0.367 |
| TTE | equal | no | 0.05 | 0.95 | 0.005 | 0.122 | 0.05 | 0.95 | 0.005 | 0.122 | 0.583 | 0.417 | 0.257 | 0.289 |
| TTE | diff | high | 0.43 | 0.913 | -0.091 | 0.248 | 0.338 | 0.87 | -0.06 | 0.397 | 0.131 | 0.48 | 0.733 | 0.928 |
| TTE | diff | medium | 0.227 | 0.941 | 0.031 | 0.16 | 0.168 | 0.935 | 0.039 | 0.23 | 0.243 | 0.261 | 0.492 | 0.547 |
| TTE | diff | low | 0.066 | 0.945 | 0.036 | 0.129 | 0.067 | 0.942 | 0.041 | 0.172 | 0.406 | 0.353 | 0.34 | 0.378 |
| TTE | diff | no | 0.052 | 0.948 | 0.007 | 0.118 | 0.053 | 0.947 | 0.012 | 0.152 | 0.488 | 0.512 | 0.26 | 0.299 |
| binary | equal | high | 0.487 | 0.912 | -0.228 | 0.438 | 0.485 | 0.913 | -0.228 | 0.439 | 0.505 | 0.89 | -0.259 | 0.47 |
| binary | equal | medium | 0.202 | 0.948 | -0.004 | 0.212 | 0.201 | 0.948 | -0.004 | 0.212 | 0.204 | 0.947 | -0.008 | 0.217 |
| binary | equal | low | 0.065 | 0.951 | -0.001 | 0.154 | 0.066 | 0.951 | -0.001 | 0.154 | 0.068 | 0.948 | -0.003 | 0.157 |
| binary | equal | no | 0.052 | 0.948 | 0 | 0.142 | 0.052 | 0.948 | 0 | 0.142 | 0.051 | 0.949 | -0.001 | 0.144 |
| binary | diff | high | 0.475 | 0.907 | -0.241 | 0.457 | 0.346 | 0.881 | -0.303 | 0.655 | 0.278 | 0.926 | -0.444 | 1.297 |
| binary | diff | medium | 0.193 | 0.947 | -0.001 | 0.214 | 0.14 | 0.94 | -0.004 | 0.306 | 0.135 | 0.947 | -0.005 | 0.302 |
| binary | diff | low | 0.066 | 0.954 | 0 | 0.153 | 0.067 | 0.946 | -0.002 | 0.207 | 0.063 | 0.949 | -0.001 | 0.202 |
| binary | diff | no | 0.05 | 0.95 | 0.003 | 0.142 | 0.05 | 0.95 | 0.002 | 0.183 | 0.047 | 0.953 | 0.002 | 0.179 |

Table 13: Simulation results for scenario II. The rows include the two endpoints, equal and different population distributions, and the considered effect sizes, the columns the evaluation measures for these scenarios power/type I error, coverage (Cov), bias, and root mean squared error (RMSE). Accordingly, for no effect, the column “Power" shows the type I error rate (α). The upper part of the following tables contains the results for considering all confounders within MAIC and the lower part those for only effect modifiers are included in MAIC. The regression models for estimating the treatment effect in trial CB are not adjusted for confounders and effect modifiers.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| All confounders considered in MAIC | | | | | | | | | | | | | | |
|  |  |  | **Bucher** | | | | **MAIC** | | | | **STC** | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.064 | 0.758 | 0.628 | 0.943 | 0.067 | 0.76 | 0.628 | 0.946 | 0.072 | 0.464 | 0.486 | 0.585 |
| TTE | equal | medium | 0.061 | 0.719 | 0.326 | 0.419 | 0.061 | 0.72 | 0.326 | 0.419 | 0.07 | 0.436 | 0.289 | 0.329 |
| TTE | equal | low | 0.077 | 0.823 | 0.172 | 0.245 | 0.078 | 0.825 | 0.172 | 0.245 | 0.083 | 0.757 | 0.142 | 0.185 |
| TTE | equal | no | 0.086 | 0.914 | 0.087 | 0.173 | 0.086 | 0.914 | 0.087 | 0.173 | 0.087 | 0.913 | 0.062 | 0.124 |
| TTE | diff | high | 0.073 | 0.801 | 0.697 | 1.157 | 0.125 | 0.79 | 0.873 | 1.624 | 0.09 | 0.661 | 0.545 | 0.762 |
| TTE | diff | medium | 0.062 | 0.77 | 0.346 | 0.467 | 0.074 | 0.82 | 0.385 | 0.593 | 0.066 | 0.622 | 0.293 | 0.359 |
| TTE | diff | low | 0.074 | 0.854 | 0.173 | 0.264 | 0.072 | 0.886 | 0.185 | 0.327 | 0.074 | 0.806 | 0.147 | 0.204 |
| TTE | diff | no | 0.079 | 0.921 | 0.088 | 0.191 | 0.072 | 0.928 | 0.095 | 0.24 | 0.076 | 0.924 | 0.063 | 0.139 |
| binary | equal | high | 0.049 | 0.816 | 0.593 | 0.833 | 0.2 | 0.942 | 0.05 | 0.39 | 0.041 | 0.859 | 0.616 | 0.981 |
| binary | equal | medium | 0.065 | 0.799 | 0.345 | 0.468 | 0.107 | 0.931 | 0.078 | 0.229 | 0.063 | 0.819 | 0.348 | 0.483 |
| binary | equal | low | 0.082 | 0.872 | 0.168 | 0.273 | 0.071 | 0.944 | 0.003 | 0.158 | 0.077 | 0.882 | 0.168 | 0.281 |
| binary | equal | no | 0.092 | 0.908 | 0.112 | 0.219 | 0.049 | 0.951 | -0.019 | 0.144 | 0.088 | 0.912 | 0.113 | 0.226 |
| binary | diff | high | 0.052 | 0.861 | 0.579 | 1.06 | 0.175 | 0.922 | 0.012 | 0.576 | 0.043 | 0.91 | 0.568 | 1.35 |
| binary | diff | medium | 0.063 | 0.852 | 0.34 | 0.514 | 0.095 | 0.933 | 0.071 | 0.314 | 0.055 | 0.886 | 0.34 | 0.562 |
| binary | diff | low | 0.069 | 0.897 | 0.17 | 0.303 | 0.065 | 0.946 | 0.005 | 0.207 | 0.062 | 0.914 | 0.17 | 0.333 |
| binary | diff | no | 0.081 | 0.919 | 0.112 | 0.249 | 0.055 | 0.945 | -0.017 | 0.186 | 0.075 | 0.925 | 0.115 | 0.28 |
| Only effect modifiers in MAIC | | | | | | | | | | | | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.064 | 0.758 | 0.628 | 0.943 | 0.064 | 0.758 | 0.628 | 0.943 | 0.068 | 0.443 | 0.483 | 0.574 |
| TTE | equal | medium | 0.061 | 0.719 | 0.326 | 0.419 | 0.061 | 0.719 | 0.326 | 0.419 | 0.07 | 0.422 | 0.289 | 0.327 |
| TTE | equal | low | 0.077 | 0.823 | 0.172 | 0.245 | 0.077 | 0.823 | 0.172 | 0.245 | 0.084 | 0.752 | 0.142 | 0.184 |
| TTE | equal | no | 0.086 | 0.914 | 0.087 | 0.173 | 0.086 | 0.914 | 0.087 | 0.173 | 0.088 | 0.912 | 0.062 | 0.123 |
| TTE | diff | high | 0.073 | 0.801 | 0.697 | 1.157 | 0.083 | 0.79 | 0.707 | 1.181 | 0.075 | 0.573 | 0.509 | 0.651 |
| TTE | diff | medium | 0.062 | 0.77 | 0.346 | 0.467 | 0.064 | 0.769 | 0.347 | 0.469 | 0.063 | 0.539 | 0.289 | 0.339 |
| TTE | diff | low | 0.074 | 0.854 | 0.173 | 0.264 | 0.074 | 0.853 | 0.173 | 0.264 | 0.076 | 0.784 | 0.144 | 0.193 |
| TTE | diff | no | 0.079 | 0.921 | 0.088 | 0.191 | 0.08 | 0.92 | 0.088 | 0.191 | 0.08 | 0.92 | 0.061 | 0.131 |
| binary | equal | high | 0.049 | 0.816 | 0.593 | 0.833 | 0.2 | 0.943 | 0.05 | 0.388 | 0.044 | 0.832 | 0.593 | 0.833 |
| binary | equal | medium | 0.065 | 0.799 | 0.345 | 0.468 | 0.107 | 0.931 | 0.078 | 0.229 | 0.063 | 0.802 | 0.345 | 0.468 |
| binary | equal | low | 0.082 | 0.872 | 0.168 | 0.273 | 0.072 | 0.944 | 0.003 | 0.158 | 0.081 | 0.873 | 0.168 | 0.273 |
| binary | equal | no | 0.092 | 0.908 | 0.112 | 0.219 | 0.049 | 0.951 | -0.019 | 0.144 | 0.092 | 0.908 | 0.112 | 0.219 |
| binary | diff | high | 0.052 | 0.861 | 0.579 | 1.06 | 0.156 | 0.935 | 0.084 | 0.432 | 0.042 | 0.885 | 0.579 | 1.06 |
| binary | diff | medium | 0.063 | 0.852 | 0.34 | 0.514 | 0.096 | 0.925 | 0.092 | 0.249 | 0.061 | 0.857 | 0.34 | 0.514 |
| binary | diff | low | 0.069 | 0.897 | 0.17 | 0.303 | 0.059 | 0.949 | 0.017 | 0.165 | 0.068 | 0.899 | 0.17 | 0.303 |
| binary | diff | no | 0.081 | 0.919 | 0.112 | 0.249 | 0.05 | 0.95 | -0.01 | 0.15 | 0.081 | 0.919 | 0.112 | 0.249 |

Table 14: Simulation results for scenario III. The rows include the two endpoints, equal and different population distributions, and the considered effect sizes, the columns the evaluation measures for these scenarios power/type I error, coverage (Cov), bias, and root mean squared error (RMSE). Accordingly, for no effect, the column “Power" shows the type I error rate (α). The upper part of the following tables contains the results for considering all confounders within MAIC and the lower part those for only effect modifiers are included in MAIC. The regression models for estimating the treatment effect in trial CB are not adjusted for confounders and effect modifiers.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| All confounders considered in MAIC | | | | | | | | | | | | | | |
|  |  |  | **Bucher** | | | | **MAIC** | | | | **STC** | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.063 | 0.746 | 0.601 | 0.868 | 0.063 | 0.743 | 0.603 | 0.873 | 0.072 | 0.473 | 0.487 | 0.587 |
| TTE | equal | medium | 0.064 | 0.709 | 0.325 | 0.416 | 0.065 | 0.711 | 0.325 | 0.416 | 0.065 | 0.458 | 0.287 | 0.328 |
| TTE | equal | low | 0.076 | 0.826 | 0.17 | 0.24 | 0.076 | 0.827 | 0.17 | 0.24 | 0.079 | 0.765 | 0.142 | 0.185 |
| TTE | equal | no | 0.088 | 0.912 | 0.088 | 0.171 | 0.088 | 0.912 | 0.087 | 0.171 | 0.081 | 0.919 | 0.063 | 0.126 |
| TTE | diff | high | 0.071 | 0.793 | 0.667 | 1.076 | 0.116 | 0.793 | 0.819 | 1.484 | 0.086 | 0.659 | 0.542 | 0.75 |
| TTE | diff | medium | 0.066 | 0.763 | 0.336 | 0.456 | 0.074 | 0.814 | 0.364 | 0.56 | 0.067 | 0.626 | 0.295 | 0.361 |
| TTE | diff | low | 0.077 | 0.847 | 0.176 | 0.263 | 0.072 | 0.878 | 0.188 | 0.317 | 0.071 | 0.816 | 0.144 | 0.201 |
| TTE | diff | no | 0.083 | 0.917 | 0.091 | 0.189 | 0.076 | 0.924 | 0.099 | 0.235 | 0.077 | 0.923 | 0.065 | 0.141 |
| binary | equal | high | 0.055 | 0.817 | 0.6 | 0.905 | 0.209 | 0.945 | 0.038 | 0.39 | 0.044 | 0.859 | 0.628 | 1.066 |
| binary | equal | medium | 0.065 | 0.809 | 0.34 | 0.467 | 0.121 | 0.938 | 0.067 | 0.227 | 0.059 | 0.834 | 0.34 | 0.482 |
| binary | equal | low | 0.083 | 0.876 | 0.174 | 0.277 | 0.067 | 0.951 | 0.004 | 0.156 | 0.077 | 0.883 | 0.173 | 0.285 |
| binary | equal | no | 0.091 | 0.909 | 0.111 | 0.222 | 0.052 | 0.948 | -0.022 | 0.147 | 0.088 | 0.912 | 0.111 | 0.229 |
| binary | diff | high | 0.052 | 0.857 | 0.614 | 1.115 | 0.173 | 0.926 | 0.009 | 0.566 | 0.042 | 0.912 | 0.596 | 1.443 |
| binary | diff | medium | 0.063 | 0.843 | 0.348 | 0.523 | 0.094 | 0.938 | 0.069 | 0.309 | 0.056 | 0.878 | 0.345 | 0.57 |
| binary | diff | low | 0.07 | 0.899 | 0.171 | 0.306 | 0.06 | 0.948 | 0.004 | 0.203 | 0.068 | 0.908 | 0.172 | 0.339 |
| binary | diff | no | 0.076 | 0.924 | 0.111 | 0.248 | 0.055 | 0.945 | -0.021 | 0.184 | 0.07 | 0.93 | 0.111 | 0.277 |
| Only effect modifiers in MAIC | | | | | | | | | | | | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.063 | 0.746 | 0.601 | 0.868 | 0.063 | 0.746 | 0.601 | 0.868 | 0.068 | 0.45 | 0.483 | 0.575 |
| TTE | equal | medium | 0.064 | 0.709 | 0.325 | 0.416 | 0.064 | 0.709 | 0.325 | 0.416 | 0.066 | 0.436 | 0.286 | 0.325 |
| TTE | equal | low | 0.076 | 0.826 | 0.17 | 0.24 | 0.076 | 0.826 | 0.17 | 0.24 | 0.08 | 0.757 | 0.142 | 0.184 |
| TTE | equal | no | 0.088 | 0.912 | 0.088 | 0.171 | 0.088 | 0.912 | 0.088 | 0.171 | 0.082 | 0.918 | 0.063 | 0.125 |
| TTE | diff | high | 0.071 | 0.793 | 0.667 | 1.076 | 0.076 | 0.788 | 0.672 | 1.087 | 0.08 | 0.584 | 0.513 | 0.656 |
| TTE | diff | medium | 0.066 | 0.763 | 0.336 | 0.456 | 0.067 | 0.761 | 0.336 | 0.457 | 0.064 | 0.555 | 0.292 | 0.344 |
| TTE | diff | low | 0.077 | 0.847 | 0.176 | 0.263 | 0.076 | 0.845 | 0.176 | 0.263 | 0.07 | 0.796 | 0.142 | 0.192 |
| TTE | diff | no | 0.083 | 0.917 | 0.091 | 0.189 | 0.083 | 0.917 | 0.091 | 0.189 | 0.081 | 0.919 | 0.064 | 0.134 |
| binary | equal | high | 0.055 | 0.817 | 0.6 | 0.905 | 0.209 | 0.945 | 0.038 | 0.389 | 0.046 | 0.836 | 0.6 | 0.905 |
| binary | equal | medium | 0.065 | 0.809 | 0.34 | 0.467 | 0.122 | 0.938 | 0.067 | 0.227 | 0.063 | 0.814 | 0.34 | 0.467 |
| binary | equal | low | 0.083 | 0.876 | 0.174 | 0.277 | 0.066 | 0.952 | 0.004 | 0.156 | 0.082 | 0.877 | 0.174 | 0.277 |
| binary | equal | no | 0.091 | 0.909 | 0.111 | 0.222 | 0.052 | 0.948 | -0.022 | 0.147 | 0.092 | 0.908 | 0.111 | 0.222 |
| binary | diff | high | 0.052 | 0.857 | 0.614 | 1.115 | 0.163 | 0.937 | 0.081 | 0.424 | 0.04 | 0.883 | 0.614 | 1.115 |
| binary | diff | medium | 0.063 | 0.843 | 0.348 | 0.523 | 0.095 | 0.927 | 0.094 | 0.25 | 0.061 | 0.847 | 0.348 | 0.523 |
| binary | diff | low | 0.07 | 0.899 | 0.171 | 0.306 | 0.06 | 0.947 | 0.015 | 0.164 | 0.068 | 0.901 | 0.171 | 0.306 |
| binary | diff | no | 0.076 | 0.924 | 0.111 | 0.248 | 0.05 | 0.95 | -0.012 | 0.15 | 0.075 | 0.925 | 0.111 | 0.248 |

Table 15: Simulation results for scenario IV. The rows include the two endpoints, equal and different population distributions, and the considered effect sizes, the columns the evaluation measures for these scenarios power/type I error, coverage (Cov), bias, and root mean squared error (RMSE). Accordingly, for no effect, the column “Power" shows the type I error rate (α). The upper part of the following tables contains the results for considering all confounders within MAIC and the lower part those for only effect modifiers are included in MAIC. The regression models for estimating the treatment effect in trial CB are not adjusted for confounders and effect modifiers.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| All confounders considered in MAIC | | | | | | | | | | | | | | |
|  |  |  | **Bucher** | | | | **MAIC** | | | | **STC** | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.55 | 0.852 | -0.171 | 0.271 | 0.55 | 0.852 | -0.171 | 0.273 | 0.076 | 0.43 | 0.48 | 0.572 |
| TTE | equal | medium | 0.526 | 0.881 | -0.096 | 0.168 | 0.524 | 0.88 | -0.096 | 0.168 | 0.068 | 0.429 | 0.284 | 0.323 |
| TTE | equal | low | 0.377 | 0.822 | -0.111 | 0.155 | 0.378 | 0.824 | -0.111 | 0.155 | 0.08 | 0.75 | 0.143 | 0.184 |
| TTE | equal | no | 0.301 | 0.699 | -0.151 | 0.181 | 0.301 | 0.699 | -0.151 | 0.181 | 0.087 | 0.913 | 0.061 | 0.124 |
| TTE | diff | high | 0.615 | 0.837 | -0.176 | 0.26 | 0.451 | 0.808 | -0.151 | 0.362 | 0.087 | 0.626 | 0.545 | 0.739 |
| TTE | diff | medium | 0.567 | 0.871 | -0.097 | 0.163 | 0.37 | 0.891 | -0.092 | 0.21 | 0.07 | 0.604 | 0.291 | 0.354 |
| TTE | diff | low | 0.412 | 0.808 | -0.112 | 0.154 | 0.266 | 0.863 | -0.107 | 0.178 | 0.071 | 0.813 | 0.143 | 0.198 |
| TTE | diff | no | 0.323 | 0.677 | -0.152 | 0.181 | 0.224 | 0.776 | -0.149 | 0.194 | 0.075 | 0.925 | 0.061 | 0.137 |
| binary | equal | high | 0.637 | 0.845 | -0.363 | 0.519 | 0.634 | 0.845 | -0.363 | 0.52 | 0.65 | 0.815 | -0.395 | 0.556 |
| binary | equal | medium | 0.398 | 0.903 | -0.132 | 0.25 | 0.398 | 0.903 | -0.132 | 0.25 | 0.397 | 0.9 | -0.136 | 0.257 |
| binary | equal | low | 0.225 | 0.867 | -0.129 | 0.202 | 0.225 | 0.867 | -0.129 | 0.202 | 0.224 | 0.866 | -0.13 | 0.204 |
| binary | equal | no | 0.148 | 0.852 | -0.126 | 0.192 | 0.148 | 0.852 | -0.126 | 0.192 | 0.145 | 0.855 | -0.127 | 0.193 |
| binary | diff | high | 0.629 | 0.846 | -0.376 | 0.535 | 0.435 | 0.845 | -0.432 | 0.72 | 0.367 | 0.893 | -0.567 | 1.338 |
| binary | diff | medium | 0.4 | 0.902 | -0.134 | 0.252 | 0.251 | 0.911 | -0.14 | 0.335 | 0.244 | 0.924 | -0.139 | 0.329 |
| binary | diff | low | 0.229 | 0.871 | -0.129 | 0.201 | 0.153 | 0.901 | -0.129 | 0.243 | 0.15 | 0.906 | -0.129 | 0.239 |
| binary | diff | no | 0.148 | 0.852 | -0.128 | 0.192 | 0.115 | 0.885 | -0.129 | 0.225 | 0.114 | 0.886 | -0.129 | 0.223 |
| Only effect modifiers in MAIC | | | | | | | | | | | | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.55 | 0.852 | -0.171 | 0.271 | 0.55 | 0.852 | -0.171 | 0.271 | 0.07 | 0.41 | 0.479 | 0.563 |
| TTE | equal | medium | 0.526 | 0.881 | -0.096 | 0.168 | 0.526 | 0.881 | -0.096 | 0.168 | 0.07 | 0.413 | 0.284 | 0.321 |
| TTE | equal | low | 0.377 | 0.822 | -0.111 | 0.155 | 0.377 | 0.822 | -0.111 | 0.155 | 0.079 | 0.748 | 0.143 | 0.183 |
| TTE | equal | no | 0.301 | 0.699 | -0.151 | 0.181 | 0.301 | 0.699 | -0.151 | 0.181 | 0.088 | 0.912 | 0.061 | 0.123 |
| TTE | diff | high | 0.615 | 0.837 | -0.176 | 0.26 | 0.565 | 0.832 | -0.174 | 0.275 | 0.076 | 0.526 | 0.506 | 0.629 |
| TTE | diff | medium | 0.567 | 0.871 | -0.097 | 0.163 | 0.523 | 0.875 | -0.096 | 0.171 | 0.069 | 0.513 | 0.288 | 0.336 |
| TTE | diff | low | 0.412 | 0.808 | -0.112 | 0.154 | 0.376 | 0.822 | -0.112 | 0.158 | 0.08 | 0.792 | 0.141 | 0.189 |
| TTE | diff | no | 0.323 | 0.677 | -0.152 | 0.181 | 0.298 | 0.702 | -0.152 | 0.182 | 0.078 | 0.922 | 0.06 | 0.128 |
| binary | equal | high | 0.637 | 0.845 | -0.363 | 0.519 | 0.637 | 0.845 | -0.363 | 0.519 | 0.65 | 0.828 | -0.372 | 0.53 |
| binary | equal | medium | 0.398 | 0.903 | -0.132 | 0.25 | 0.398 | 0.903 | -0.132 | 0.25 | 0.399 | 0.901 | -0.133 | 0.253 |
| binary | equal | low | 0.225 | 0.867 | -0.129 | 0.202 | 0.225 | 0.867 | -0.129 | 0.202 | 0.227 | 0.866 | -0.129 | 0.203 |
| binary | equal | no | 0.148 | 0.852 | -0.126 | 0.192 | 0.148 | 0.852 | -0.126 | 0.192 | 0.146 | 0.854 | -0.127 | 0.192 |
| binary | diff | high | 0.629 | 0.846 | -0.376 | 0.535 | 0.566 | 0.849 | -0.387 | 0.567 | 0.581 | 0.84 | -0.393 | 0.582 |
| binary | diff | medium | 0.4 | 0.902 | -0.134 | 0.252 | 0.362 | 0.905 | -0.135 | 0.266 | 0.357 | 0.907 | -0.136 | 0.27 |
| binary | diff | low | 0.229 | 0.871 | -0.129 | 0.201 | 0.208 | 0.878 | -0.128 | 0.207 | 0.204 | 0.88 | -0.129 | 0.21 |
| binary | diff | no | 0.148 | 0.852 | -0.128 | 0.192 | 0.14 | 0.86 | -0.128 | 0.197 | 0.138 | 0.862 | -0.129 | 0.199 |

Table 16: Simulation results for scenario V. The rows include the two endpoints, equal and different population distributions, and the considered effect sizes, the columns the evaluation measures for these scenarios power/type I error, coverage (Cov), bias, and root mean squared error (RMSE). Accordingly, for no effect, the column “Power" shows the type I error rate (α). The upper part of the following tables contains the results for considering all confounders within MAIC and the lower part those for only effect modifiers are included in MAIC. The regression models for estimating the treatment effect in trial CB are not adjusted for confounders and effect modifiers.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| All confounders considered in MAIC | | | | | | | | | | | | | | |
|  |  |  | **Bucher** | | | | **MAIC** | | | | **STC** | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.655 | 0.794 | -0.207 | 0.277 | 0.65 | 0.791 | -0.208 | 0.277 | 0.073 | 0.441 | 0.475 | 0.566 |
| TTE | equal | medium | 0.677 | 0.778 | -0.156 | 0.202 | 0.674 | 0.777 | -0.156 | 0.203 | 0.07 | 0.436 | 0.288 | 0.327 |
| TTE | equal | low | 0.555 | 0.655 | -0.181 | 0.212 | 0.555 | 0.656 | -0.181 | 0.212 | 0.077 | 0.757 | 0.142 | 0.184 |
| TTE | equal | no | 0.484 | 0.516 | -0.224 | 0.248 | 0.483 | 0.517 | -0.224 | 0.248 | 0.085 | 0.915 | 0.06 | 0.124 |
| TTE | diff | high | 0.706 | 0.772 | -0.208 | 0.27 | 0.531 | 0.782 | -0.19 | 0.334 | 0.083 | 0.638 | 0.525 | 0.711 |
| TTE | diff | medium | 0.712 | 0.766 | -0.156 | 0.198 | 0.5 | 0.826 | -0.15 | 0.225 | 0.066 | 0.61 | 0.292 | 0.354 |
| TTE | diff | low | 0.589 | 0.634 | -0.183 | 0.212 | 0.433 | 0.734 | -0.179 | 0.224 | 0.075 | 0.806 | 0.145 | 0.201 |
| TTE | diff | no | 0.514 | 0.486 | -0.225 | 0.248 | 0.388 | 0.612 | -0.223 | 0.255 | 0.074 | 0.926 | 0.06 | 0.136 |
| binary | equal | high | 0.644 | 0.848 | -0.367 | 0.52 | 0.641 | 0.849 | -0.367 | 0.521 | 0.652 | 0.82 | -0.393 | 0.552 |
| binary | equal | medium | 0.405 | 0.908 | -0.135 | 0.25 | 0.405 | 0.908 | -0.135 | 0.251 | 0.4 | 0.905 | -0.139 | 0.257 |
| binary | equal | low | 0.227 | 0.869 | -0.131 | 0.204 | 0.226 | 0.869 | -0.131 | 0.204 | 0.222 | 0.87 | -0.132 | 0.206 |
| binary | equal | no | 0.143 | 0.857 | -0.129 | 0.193 | 0.143 | 0.857 | -0.129 | 0.193 | 0.139 | 0.861 | -0.13 | 0.195 |
| binary | diff | high | 0.624 | 0.847 | -0.368 | 0.527 | 0.422 | 0.848 | -0.413 | 0.697 | 0.363 | 0.888 | -0.538 | 1.265 |
| binary | diff | medium | 0.408 | 0.906 | -0.134 | 0.252 | 0.258 | 0.91 | -0.139 | 0.333 | 0.241 | 0.918 | -0.137 | 0.331 |
| binary | diff | low | 0.224 | 0.867 | -0.129 | 0.2 | 0.159 | 0.899 | -0.128 | 0.24 | 0.155 | 0.9 | -0.128 | 0.24 |
| binary | diff | no | 0.147 | 0.853 | -0.131 | 0.192 | 0.113 | 0.887 | -0.131 | 0.224 | 0.113 | 0.887 | -0.131 | 0.223 |
| Only effect modifiers in MAIC | | | | | | | | | | | | | | |
| **EP** | **Pat Char** | **Effect** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** | **Power (α)** | **Cov** | **Bias** | **RMSE** |
| TTE | equal | high | 0.655 | 0.794 | -0.207 | 0.277 | 0.655 | 0.794 | -0.207 | 0.277 | 0.07 | 0.419 | 0.474 | 0.558 |
| TTE | equal | medium | 0.677 | 0.778 | -0.156 | 0.202 | 0.677 | 0.778 | -0.156 | 0.202 | 0.069 | 0.421 | 0.287 | 0.324 |
| TTE | equal | low | 0.555 | 0.655 | -0.181 | 0.212 | 0.555 | 0.655 | -0.181 | 0.212 | 0.08 | 0.754 | 0.142 | 0.183 |
| TTE | equal | no | 0.484 | 0.516 | -0.224 | 0.248 | 0.484 | 0.516 | -0.224 | 0.248 | 0.086 | 0.914 | 0.06 | 0.122 |
| TTE | diff | high | 0.706 | 0.772 | -0.208 | 0.27 | 0.647 | 0.778 | -0.206 | 0.28 | 0.075 | 0.536 | 0.499 | 0.622 |
| TTE | diff | medium | 0.712 | 0.766 | -0.156 | 0.198 | 0.662 | 0.783 | -0.155 | 0.202 | 0.064 | 0.526 | 0.29 | 0.339 |
| TTE | diff | low | 0.589 | 0.634 | -0.183 | 0.212 | 0.557 | 0.656 | -0.183 | 0.214 | 0.079 | 0.79 | 0.143 | 0.192 |
| TTE | diff | no | 0.514 | 0.486 | -0.225 | 0.248 | 0.483 | 0.517 | -0.225 | 0.249 | 0.075 | 0.925 | 0.059 | 0.128 |
| binary | equal | high | 0.644 | 0.848 | -0.367 | 0.52 | 0.644 | 0.848 | -0.367 | 0.52 | 0.652 | 0.829 | -0.377 | 0.532 |
| binary | equal | medium | 0.405 | 0.908 | -0.135 | 0.25 | 0.405 | 0.908 | -0.135 | 0.25 | 0.403 | 0.905 | -0.136 | 0.253 |
| binary | equal | low | 0.227 | 0.869 | -0.131 | 0.204 | 0.227 | 0.869 | -0.131 | 0.204 | 0.226 | 0.868 | -0.131 | 0.205 |
| binary | equal | no | 0.143 | 0.857 | -0.129 | 0.193 | 0.143 | 0.857 | -0.129 | 0.193 | 0.14 | 0.86 | -0.129 | 0.194 |
| binary | diff | high | 0.624 | 0.847 | -0.368 | 0.527 | 0.56 | 0.856 | -0.372 | 0.554 | 0.57 | 0.845 | -0.381 | 0.58 |
| binary | diff | medium | 0.408 | 0.906 | -0.134 | 0.252 | 0.364 | 0.906 | -0.135 | 0.265 | 0.355 | 0.906 | -0.136 | 0.271 |
| binary | diff | low | 0.224 | 0.867 | -0.129 | 0.2 | 0.207 | 0.875 | -0.129 | 0.207 | 0.202 | 0.878 | -0.129 | 0.21 |
| binary | diff | no | 0.147 | 0.853 | -0.131 | 0.192 | 0.14 | 0.86 | -0.13 | 0.197 | 0.139 | 0.861 | -0.131 | 0.2 |

Table 17: Simulation results for scenario II. The rows include the two endpoints, equal and different population distributions, and the considered effect sizes, the columns the evaluation measures for these scenarios power/type I error, coverage (Cov), bias, and root mean squared error (RMSE). Accordingly, for no effect, the column “Power" shows the type I error rate (α). The upper part of the following tables contains the results for considering all confounders within MAIC and the lower part those for only effect modifiers are included in MAIC. The regression models for estimating the treatment effect in trial AB and CB do not include an interaction for the effect modification.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| All confounders considered in MAIC | | | | | | | | | | |
|  |  |  | Bucher | | | | MAIC | | | |
| EP | Pat Char | Effect | Power (α) | Cov | Bias | RMSE | Power (α) | Cov | Bias | RMSE |
| TTE | equal | high | 0.114 | 0.901 | 0.213 | 0.414 | 0.116 | 0.902 | 0.213 | 0.416 |
| TTE | equal | medium | 0.085 | 0.885 | 0.134 | 0.219 | 0.086 | 0.886 | 0.134 | 0.219 |
| TTE | equal | low | 0.061 | 0.938 | 0.049 | 0.137 | 0.061 | 0.936 | 0.049 | 0.137 |
| TTE | equal | no | 0.053 | 0.947 | -0.014 | 0.117 | 0.053 | 0.947 | -0.014 | 0.117 |
| TTE | diff | high | 0.247 | 0.942 | 0.057 | 0.278 | 0.151 | 0.88 | 0.258 | 0.63 |
| TTE | diff | medium | 0.192 | 0.939 | 0.054 | 0.163 | 0.078 | 0.9 | 0.155 | 0.292 |
| TTE | diff | low | 0.124 | 0.946 | -0.006 | 0.119 | 0.062 | 0.932 | 0.056 | 0.179 |
| TTE | diff | no | 0.093 | 0.907 | -0.058 | 0.123 | 0.058 | 0.942 | -0.009 | 0.148 |
| binary | equal | high | 0.2 | 0.943 | 0.05 | 0.388 | 0.2 | 0.942 | 0.05 | 0.39 |
| binary | equal | medium | 0.107 | 0.931 | 0.078 | 0.229 | 0.107 | 0.931 | 0.078 | 0.229 |
| binary | equal | low | 0.072 | 0.944 | 0.003 | 0.158 | 0.071 | 0.944 | 0.003 | 0.158 |
| binary | equal | no | 0.049 | 0.951 | -0.019 | 0.144 | 0.049 | 0.951 | -0.019 | 0.144 |
| binary | diff | high | 0.315 | 0.945 | -0.085 | 0.399 | 0.175 | 0.922 | 0.012 | 0.576 |
| binary | diff | medium | 0.18 | 0.947 | 0.006 | 0.216 | 0.095 | 0.933 | 0.071 | 0.314 |
| binary | diff | low | 0.098 | 0.941 | -0.036 | 0.16 | 0.065 | 0.946 | 0.005 | 0.207 |
| binary | diff | no | 0.064 | 0.936 | -0.053 | 0.151 | 0.055 | 0.945 | -0.017 | 0.186 |
| Only effect modifiers in MAIC | | | | | | | | | | |
| EP | Pat Char | Effect | Power (α) | Cov | Bias | RMSE | Power (α) | Cov | Bias | RMSE |
| TTE | equal | high | 0.114 | 0.901 | 0.213 | 0.414 | 0.114 | 0.901 | 0.213 | 0.414 |
| TTE | equal | medium | 0.085 | 0.885 | 0.134 | 0.219 | 0.085 | 0.885 | 0.134 | 0.219 |
| TTE | equal | low | 0.061 | 0.938 | 0.049 | 0.137 | 0.061 | 0.938 | 0.049 | 0.137 |
| TTE | equal | no | 0.053 | 0.947 | -0.014 | 0.117 | 0.053 | 0.947 | -0.014 | 0.117 |
| TTE | diff | high | 0.247 | 0.942 | 0.057 | 0.278 | 0.13 | 0.896 | 0.205 | 0.424 |
| TTE | diff | medium | 0.192 | 0.939 | 0.054 | 0.163 | 0.084 | 0.882 | 0.138 | 0.227 |
| TTE | diff | low | 0.124 | 0.946 | -0.006 | 0.119 | 0.064 | 0.936 | 0.048 | 0.141 |
| TTE | diff | no | 0.093 | 0.907 | -0.058 | 0.123 | 0.055 | 0.945 | -0.013 | 0.12 |
| binary | equal | high | 0.2 | 0.943 | 0.05 | 0.388 | 0.2 | 0.943 | 0.05 | 0.388 |
| binary | equal | medium | 0.107 | 0.931 | 0.078 | 0.229 | 0.107 | 0.931 | 0.078 | 0.229 |
| binary | equal | low | 0.072 | 0.944 | 0.003 | 0.158 | 0.072 | 0.944 | 0.003 | 0.158 |
| binary | equal | no | 0.049 | 0.951 | -0.019 | 0.144 | 0.049 | 0.951 | -0.019 | 0.144 |
| binary | diff | high | 0.315 | 0.945 | -0.085 | 0.399 | 0.156 | 0.935 | 0.084 | 0.432 |
| binary | diff | medium | 0.18 | 0.947 | 0.006 | 0.216 | 0.096 | 0.925 | 0.092 | 0.249 |
| binary | diff | low | 0.098 | 0.941 | -0.036 | 0.16 | 0.059 | 0.949 | 0.017 | 0.165 |
| binary | diff | no | 0.064 | 0.936 | -0.053 | 0.151 | 0.05 | 0.95 | -0.01 | 0.15 |

Table 18: Simulation results for scenario III. The rows include the two endpoints, equal and different population distributions, and the considered effect sizes, the columns the evaluation measures for these scenarios power/type I error, coverage (Cov), bias, and root mean squared error (RMSE). Accordingly, for no effect, the column “Power" shows the type I error rate (α). The upper part of the following tables contains the results for considering all confounders within MAIC and the lower part those for only effect modifiers are included in MAIC. The regression models for estimating the treatment effect in trial AB and CB do not include an interaction for the effect modification.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| All confounders considered in MAIC | | | | | | | | | | |
|  |  |  | Bucher | | | | MAIC | | | |
| EP | Pat Char | Effect | Power (α) | Cov | Bias | RMSE | Power (α) | Cov | Bias | RMSE |
| TTE | equal | high | 0.121 | 0.9 | 0.202 | 0.381 | 0.121 | 0.899 | 0.202 | 0.383 |
| TTE | equal | medium | 0.09 | 0.874 | 0.133 | 0.216 | 0.091 | 0.875 | 0.133 | 0.216 |
| TTE | equal | low | 0.06 | 0.94 | 0.046 | 0.133 | 0.06 | 0.939 | 0.046 | 0.133 |
| TTE | equal | no | 0.056 | 0.944 | -0.014 | 0.114 | 0.056 | 0.944 | -0.014 | 0.114 |
| TTE | diff | high | 0.27 | 0.946 | 0.047 | 0.257 | 0.148 | 0.886 | 0.246 | 0.576 |
| TTE | diff | medium | 0.208 | 0.942 | 0.05 | 0.157 | 0.089 | 0.896 | 0.145 | 0.276 |
| TTE | diff | low | 0.124 | 0.948 | -0.006 | 0.116 | 0.06 | 0.935 | 0.056 | 0.172 |
| TTE | diff | no | 0.092 | 0.908 | -0.057 | 0.12 | 0.056 | 0.944 | -0.007 | 0.142 |
| binary | equal | high | 0.209 | 0.945 | 0.038 | 0.389 | 0.209 | 0.945 | 0.038 | 0.39 |
| binary | equal | medium | 0.122 | 0.938 | 0.067 | 0.227 | 0.121 | 0.938 | 0.067 | 0.227 |
| binary | equal | low | 0.066 | 0.952 | 0.004 | 0.156 | 0.067 | 0.951 | 0.004 | 0.156 |
| binary | equal | no | 0.052 | 0.948 | -0.022 | 0.147 | 0.052 | 0.948 | -0.022 | 0.147 |
| binary | diff | high | 0.321 | 0.946 | -0.09 | 0.393 | 0.173 | 0.926 | 0.009 | 0.566 |
| binary | diff | medium | 0.184 | 0.95 | 0.008 | 0.216 | 0.094 | 0.938 | 0.069 | 0.309 |
| binary | diff | low | 0.098 | 0.941 | -0.037 | 0.16 | 0.06 | 0.948 | 0.004 | 0.203 |
| binary | diff | no | 0.071 | 0.929 | -0.053 | 0.153 | 0.055 | 0.945 | -0.021 | 0.184 |
| Only effect modifiers in MAIC | | | | | | | | | | |
| EP | Pat Char | Effect | Power (α) | Cov | Bias | RMSE | Power (α) | Cov | Bias | RMSE |
| TTE | equal | high | 0.121 | 0.9 | 0.202 | 0.381 | 0.121 | 0.9 | 0.202 | 0.381 |
| TTE | equal | medium | 0.09 | 0.874 | 0.133 | 0.216 | 0.09 | 0.874 | 0.133 | 0.216 |
| TTE | equal | low | 0.06 | 0.94 | 0.046 | 0.133 | 0.06 | 0.94 | 0.046 | 0.133 |
| TTE | equal | no | 0.056 | 0.944 | -0.014 | 0.114 | 0.056 | 0.944 | -0.014 | 0.114 |
| TTE | diff | high | 0.27 | 0.946 | 0.047 | 0.257 | 0.132 | 0.901 | 0.195 | 0.393 |
| TTE | diff | medium | 0.208 | 0.942 | 0.05 | 0.157 | 0.091 | 0.884 | 0.132 | 0.22 |
| TTE | diff | low | 0.124 | 0.948 | -0.006 | 0.116 | 0.063 | 0.933 | 0.049 | 0.139 |
| TTE | diff | no | 0.092 | 0.908 | -0.057 | 0.12 | 0.056 | 0.944 | -0.012 | 0.117 |
| binary | equal | high | 0.209 | 0.945 | 0.038 | 0.389 | 0.209 | 0.945 | 0.038 | 0.389 |
| binary | equal | medium | 0.122 | 0.938 | 0.067 | 0.227 | 0.122 | 0.938 | 0.067 | 0.227 |
| binary | equal | low | 0.066 | 0.952 | 0.004 | 0.156 | 0.066 | 0.952 | 0.004 | 0.156 |
| binary | equal | no | 0.052 | 0.948 | -0.022 | 0.147 | 0.052 | 0.948 | -0.022 | 0.147 |
| binary | diff | high | 0.321 | 0.946 | -0.09 | 0.393 | 0.163 | 0.937 | 0.081 | 0.424 |
| binary | diff | medium | 0.184 | 0.95 | 0.008 | 0.216 | 0.095 | 0.927 | 0.094 | 0.25 |
| binary | diff | low | 0.098 | 0.941 | -0.037 | 0.16 | 0.06 | 0.947 | 0.015 | 0.164 |
| binary | diff | no | 0.071 | 0.929 | -0.053 | 0.153 | 0.052 | 0.948 | -0.012 | 0.15 |

Table 19: Simulation results for scenario IV. The rows include the two endpoints, equal and different population distributions, and the considered effect sizes, the columns the evaluation measures for these scenarios power/type I error, coverage (Cov), bias, and root mean squared error (RMSE). Accordingly, for no effect, the column “Power" shows the type I error rate (α). The upper part of the following tables contains the results for considering all confounders within MAIC and the lower part those for only effect modifiers are included in MAIC. The regression models for estimating the treatment effect in trial AB and CB do not include an interaction for the effect modification.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| All confounders considered in MAIC | | | | | | | | | | |
|  |  |  | Bucher | | | | MAIC | | | |
| EP | Pat Char | Effect | Power (α) | Cov | Bias | RMSE | Power (α) | Cov | Bias | RMSE |
| TTE | equal | high | 0.55 | 0.852 | -0.171 | 0.271 | 0.55 | 0.852 | -0.171 | 0.273 |
| TTE | equal | medium | 0.526 | 0.881 | -0.096 | 0.168 | 0.524 | 0.88 | -0.096 | 0.168 |
| TTE | equal | low | 0.377 | 0.822 | -0.111 | 0.155 | 0.378 | 0.824 | -0.111 | 0.155 |
| TTE | equal | no | 0.301 | 0.699 | -0.151 | 0.181 | 0.301 | 0.699 | -0.151 | 0.181 |
| TTE | diff | high | 0.615 | 0.837 | -0.176 | 0.26 | 0.451 | 0.808 | -0.151 | 0.362 |
| TTE | diff | medium | 0.567 | 0.871 | -0.097 | 0.163 | 0.37 | 0.891 | -0.092 | 0.21 |
| TTE | diff | low | 0.412 | 0.808 | -0.112 | 0.154 | 0.266 | 0.863 | -0.107 | 0.178 |
| TTE | diff | no | 0.323 | 0.677 | -0.152 | 0.181 | 0.224 | 0.776 | -0.149 | 0.194 |
| binary | equal | high | 0.637 | 0.845 | -0.363 | 0.519 | 0.634 | 0.845 | -0.363 | 0.52 |
| binary | equal | medium | 0.398 | 0.903 | -0.132 | 0.25 | 0.398 | 0.903 | -0.132 | 0.25 |
| binary | equal | low | 0.225 | 0.867 | -0.129 | 0.202 | 0.225 | 0.867 | -0.129 | 0.202 |
| binary | equal | no | 0.148 | 0.852 | -0.126 | 0.192 | 0.148 | 0.852 | -0.126 | 0.192 |
| binary | diff | high | 0.629 | 0.846 | -0.376 | 0.535 | 0.435 | 0.845 | -0.432 | 0.72 |
| binary | diff | medium | 0.4 | 0.902 | -0.134 | 0.252 | 0.251 | 0.911 | -0.14 | 0.335 |
| binary | diff | low | 0.229 | 0.871 | -0.129 | 0.201 | 0.153 | 0.901 | -0.129 | 0.243 |
| binary | diff | no | 0.148 | 0.852 | -0.128 | 0.192 | 0.115 | 0.885 | -0.129 | 0.225 |
| Only effect modifiers in MAIC | | | | | | | | | | |
| EP | Pat Char | Effect | Power (α) | Cov | Bias | RMSE | Power (α) | Cov | Bias | RMSE |
| TTE | equal | high | 0.55 | 0.852 | -0.171 | 0.271 | 0.55 | 0.852 | -0.171 | 0.271 |
| TTE | equal | medium | 0.526 | 0.881 | -0.096 | 0.168 | 0.526 | 0.881 | -0.096 | 0.168 |
| TTE | equal | low | 0.377 | 0.822 | -0.111 | 0.155 | 0.377 | 0.822 | -0.111 | 0.155 |
| TTE | equal | no | 0.301 | 0.699 | -0.151 | 0.181 | 0.301 | 0.699 | -0.151 | 0.181 |
| TTE | diff | high | 0.615 | 0.837 | -0.176 | 0.26 | 0.565 | 0.832 | -0.174 | 0.275 |
| TTE | diff | medium | 0.567 | 0.871 | -0.097 | 0.163 | 0.523 | 0.875 | -0.096 | 0.171 |
| TTE | diff | low | 0.412 | 0.808 | -0.112 | 0.154 | 0.376 | 0.822 | -0.112 | 0.158 |
| TTE | diff | no | 0.323 | 0.677 | -0.152 | 0.181 | 0.298 | 0.702 | -0.152 | 0.182 |
| binary | equal | high | 0.637 | 0.845 | -0.363 | 0.519 | 0.637 | 0.845 | -0.363 | 0.519 |
| binary | equal | medium | 0.398 | 0.903 | -0.132 | 0.25 | 0.398 | 0.903 | -0.132 | 0.25 |
| binary | equal | low | 0.225 | 0.867 | -0.129 | 0.202 | 0.225 | 0.867 | -0.129 | 0.202 |
| binary | equal | no | 0.148 | 0.852 | -0.126 | 0.192 | 0.148 | 0.852 | -0.126 | 0.192 |
| binary | diff | high | 0.629 | 0.846 | -0.376 | 0.535 | 0.566 | 0.849 | -0.387 | 0.567 |
| binary | diff | medium | 0.4 | 0.902 | -0.134 | 0.252 | 0.362 | 0.905 | -0.135 | 0.266 |
| binary | diff | low | 0.229 | 0.871 | -0.129 | 0.201 | 0.208 | 0.878 | -0.128 | 0.207 |
| binary | diff | no | 0.148 | 0.852 | -0.128 | 0.192 | 0.14 | 0.86 | -0.128 | 0.197 |

Table 20: Simulation results for scenario V. The rows include the two endpoints, equal and different population distributions, and the considered effect sizes, the columns the evaluation measures for these scenarios power/type I error, coverage (Cov), bias, and root mean squared error (RMSE). Accordingly, for no effect, the column “Power" shows the type I error rate (α). The upper part of the following tables contains the results for considering all confounders within MAIC and the lower part those for only effect modifiers are included in MAIC. The regression models for estimating the treatment effect in trial AB and CB do not include an interaction for the effect modification.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| All confounders considered in MAIC | | | | | | | | | | |
|  |  |  | Bucher | | | | MAIC | | | |
| EP | Pat Char | Effect | Power (α) | Cov | Bias | RMSE | Power (α) | Cov | Bias | RMSE |
| TTE | equal | high | 0.58 | 0.846 | -0.168 | 0.26 | 0.579 | 0.848 | -0.168 | 0.26 |
| TTE | equal | medium | 0.552 | 0.879 | -0.095 | 0.164 | 0.552 | 0.88 | -0.095 | 0.164 |
| TTE | equal | low | 0.391 | 0.822 | -0.11 | 0.153 | 0.391 | 0.822 | -0.11 | 0.153 |
| TTE | equal | no | 0.311 | 0.689 | -0.15 | 0.18 | 0.31 | 0.69 | -0.15 | 0.18 |
| TTE | diff | high | 0.631 | 0.836 | -0.169 | 0.251 | 0.47 | 0.818 | -0.15 | 0.333 |
| TTE | diff | medium | 0.586 | 0.878 | -0.095 | 0.157 | 0.385 | 0.896 | -0.089 | 0.199 |
| TTE | diff | low | 0.42 | 0.803 | -0.112 | 0.152 | 0.281 | 0.859 | -0.108 | 0.173 |
| TTE | diff | no | 0.331 | 0.669 | -0.151 | 0.18 | 0.229 | 0.771 | -0.149 | 0.192 |
| binary | equal | high | 0.644 | 0.848 | -0.367 | 0.52 | 0.641 | 0.849 | -0.367 | 0.521 |
| binary | equal | medium | 0.405 | 0.908 | -0.135 | 0.25 | 0.405 | 0.908 | -0.135 | 0.251 |
| binary | equal | low | 0.227 | 0.869 | -0.131 | 0.204 | 0.226 | 0.869 | -0.131 | 0.204 |
| binary | equal | no | 0.143 | 0.857 | -0.129 | 0.193 | 0.143 | 0.857 | -0.129 | 0.193 |
| binary | diff | high | 0.624 | 0.847 | -0.368 | 0.527 | 0.422 | 0.848 | -0.413 | 0.697 |
| binary | diff | medium | 0.408 | 0.906 | -0.134 | 0.252 | 0.258 | 0.91 | -0.139 | 0.333 |
| binary | diff | low | 0.224 | 0.867 | -0.129 | 0.2 | 0.159 | 0.899 | -0.128 | 0.24 |
| binary | diff | no | 0.147 | 0.853 | -0.131 | 0.192 | 0.113 | 0.887 | -0.131 | 0.224 |
| Only effect modifiers in MAIC | | | | | | | | | | |
| EP | Pat Char | Effect | Power (α) | Cov | Bias | RMSE | Power (α) | Cov | Bias | RMSE |
| TTE | equal | high | 0.58 | 0.846 | -0.168 | 0.26 | 0.58 | 0.846 | -0.168 | 0.26 |
| TTE | equal | medium | 0.552 | 0.879 | -0.095 | 0.164 | 0.552 | 0.879 | -0.095 | 0.164 |
| TTE | equal | low | 0.391 | 0.822 | -0.11 | 0.153 | 0.391 | 0.822 | -0.11 | 0.153 |
| TTE | equal | no | 0.311 | 0.689 | -0.15 | 0.18 | 0.311 | 0.689 | -0.15 | 0.18 |
| TTE | diff | high | 0.631 | 0.836 | -0.169 | 0.251 | 0.576 | 0.833 | -0.167 | 0.264 |
| TTE | diff | medium | 0.586 | 0.878 | -0.095 | 0.157 | 0.533 | 0.885 | -0.094 | 0.164 |
| TTE | diff | low | 0.42 | 0.803 | -0.112 | 0.152 | 0.388 | 0.816 | -0.112 | 0.156 |
| TTE | diff | no | 0.331 | 0.669 | -0.151 | 0.18 | 0.305 | 0.695 | -0.15 | 0.182 |
| binary | equal | high | 0.644 | 0.848 | -0.367 | 0.52 | 0.644 | 0.848 | -0.367 | 0.52 |
| binary | equal | medium | 0.405 | 0.908 | -0.135 | 0.25 | 0.405 | 0.908 | -0.135 | 0.25 |
| binary | equal | low | 0.227 | 0.869 | -0.131 | 0.204 | 0.227 | 0.869 | -0.131 | 0.204 |
| binary | equal | no | 0.143 | 0.857 | -0.129 | 0.193 | 0.143 | 0.857 | -0.129 | 0.193 |
| binary | diff | high | 0.624 | 0.847 | -0.368 | 0.527 | 0.56 | 0.856 | -0.372 | 0.554 |
| binary | diff | medium | 0.408 | 0.906 | -0.134 | 0.252 | 0.364 | 0.906 | -0.135 | 0.265 |
| binary | diff | low | 0.224 | 0.867 | -0.129 | 0.2 | 0.207 | 0.875 | -0.129 | 0.207 |
| binary | diff | no | 0.147 | 0.853 | -0.131 | 0.192 | 0.14 | 0.86 | -0.13 | 0.197 |

Table 21: Effective Sample Size (ESS) for scenario I for binary as well as time-to-event endpoints (TTE).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| EP | Population | Effect | Sample Size | ESS  All  confounders |
| TTE | equal | high | 94 | 92.883 |
| TTE | equal | medium | 396 | 394.731 |
| TTE | equal | low | 1044 | 1042.307 |
| TTE | equal | no | 1578 | 1575.991 |
| TTE | different | high | 94 | 38.927 |
| TTE | different | medium | 396 | 161.756 |
| TTE | different | low | 1044 | 423.204 |
| TTE | different | no | 1578 | 639 |
| binary | equal | high | 192 | 190.883 |
| binary | equal | medium | 648 | 646.692 |
| binary | equal | low | 1600 | 1598.248 |
| binary | equal | no | 2176 | 2174.037 |
| binary | different | high | 192 | 79.788 |
| binary | different | medium | 648 | 264.013 |
| binary | different | low | 1600 | 646.443 |
| binary | different | no | 2176 | 878.08 |

Table 22: Effective Sample Size (ESS) for scenario II for binary as well as time-to-event endpoints (TTE).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Endpoint | Population | Effect | Sample Size | ESS  All Confounders | ESS  Effect Modifier  only |
| TTE | equal | high | 94 | 92.903 | 94 |
| TTE | equal | medium | 396 | 394.759 | 396 |
| TTE | equal | low | 1044 | 1042.348 | 1044 |
| TTE | equal | no | 1578 | 1575.976 | 1578 |
| TTE | different | high | 94 | 38.927 | 78.638 |
| TTE | different | medium | 396 | 161.868 | 332.638 |
| TTE | different | low | 1044 | 423.169 | 876.646 |
| TTE | different | no | 1578 | 639.26 | 1326.495 |
| binary | equal | high | 192 | 190.86 | 192 |
| binary | equal | medium | 648 | 646.708 | 648 |
| binary | equal | low | 1600 | 1598.201 | 1600 |
| binary | equal | no | 2176 | 2173.999 | 2176 |
| binary | different | high | 192 | 80 | 161.92 |
| binary | different | medium | 648 | 264.195 | 545.278 |
| binary | different | low | 1600 | 646.039 | 1344.015 |
| binary | different | no | 2176 | 877.268 | 1828.161 |

Table 23: Effective Sample Size (ESS) for scenario III for binary as well as time-to-event endpoints (TTE).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Endpoint | Population | Effect | Sample Size | ESS  All Confounders | ESS  Effect Modifier  only |
| TTE | equal | high | 94 | 92.873 | 94 |
| TTE | equal | medium | 396 | 394.721 | 396 |
| TTE | equal | low | 1044 | 1042.343 | 1044 |
| TTE | equal | no | 1578 | 1576.018 | 1578 |
| TTE | different | high | 94 | 40.584 | 78.638 |
| TTE | different | medium | 396 | 169.355 | 332.638 |
| TTE | different | low | 1044 | 443.025 | 876.646 |
| TTE | different | no | 1578 | 669.056 | 1326.495 |
| binary | equal | high | 192 | 190.923 | 192 |
| binary | equal | medium | 648 | 646.681 | 648 |
| binary | equal | low | 1600 | 1598.25 | 1600 |
| binary | equal | no | 2176 | 2174.023 | 2176 |
| binary | different | high | 192 | 83.314 | 161.92 |
| binary | different | medium | 648 | 276.291 | 545.278 |
| binary | different | low | 1600 | 676.922 | 1344.015 |
| binary | different | no | 2176 | 919.657 | 1828.161 |

Table 24: Effective Sample Size (ESS) for scenario IV for binary as well as time-to-event endpoints (TTE).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Endpoint | Population | Effect | Sample | ESS  All Confounders | ESS  Effect Modifier  only |
| TTE | equal | high | 94 | 92.898 | 94 |
| TTE | equal | medium | 396 | 394.726 | 396 |
| TTE | equal | low | 1044 | 1042.335 | 1044 |
| TTE | equal | no | 1578 | 1575.942 | 1578 |
| TTE | different | high | 94 | 38.847 | 78.638 |
| TTE | different | medium | 396 | 161.79 | 332.638 |
| TTE | different | low | 1044 | 423.595 | 876.646 |
| TTE | different | no | 1578 | 638.925 | 1326.495 |
| binary | equal | high | 192 | 190.867 | 192 |
| binary | equal | medium | 648 | 646.692 | 648 |
| binary | equal | low | 1600 | 1598.27 | 1600 |
| binary | equal | no | 2176 | 2174.004 | 2176 |
| binary | different | high | 192 | 79.816 | 161.92 |
| binary | different | medium | 648 | 264.143 | 545.278 |
| binary | different | low | 1600 | 646.77 | 1344.015 |
| binary | different | no | 2176 | 877.447 | 1828.161 |

Table 25: Effective Sample Size (ESS) for scenario V for binary as well as time-to-event endpoints (TTE).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Endpoint | Population | Effect | Sample | ESS  All Confounders | ESS  Effect Modifier  only |
| TTE | equal | high | 94 | 92.884 | 94 |
| TTE | equal | medium | 396 | 394.747 | 396 |
| TTE | equal | low | 1044 | 1042.346 | 1044 |
| TTE | equal | no | 1578 | 1576.017 | 1578 |
| TTE | different | high | 94 | 40.588 | 78.638 |
| TTE | different | medium | 396 | 169.266 | 332.638 |
| TTE | different | low | 1044 | 443.368 | 876.646 |
| TTE | different | no | 1578 | 668.927 | 1326.495 |
| binary | equal | high | 192 | 190.911 | 192 |
| binary | equal | medium | 648 | 646.72 | 648 |
| binary | equal | low | 1600 | 1598.301 | 1600 |
| binary | equal | no | 2176 | 2173.999 | 2176 |
| binary | different | high | 192 | 83.332 | 161.92 |
| binary | different | medium | 648 | 276.422 | 545.278 |
| binary | different | low | 1600 | 676.12 | 1344.015 |
| binary | different | no | 2176 | 919.719 | 1828.161 |

Table 26: Power for indirect comparison under consideration of trials with individual planned power of 80% in the aggregated data trial. The results are given for scenario I having similar patient populations without interaction. They demonstrate the influence of the power of the individual trials on the power of the indirect comparison. The power is given for both endpoints, in case of no effect the column shows the type I error rate (α).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Planned Power | Binary | | Time-to-event | |
| Effect | IPD trial (AB) | Bucher | MAIC | Bucher | MAIC |
| no | 80% | 0.046 | 0.046 | 0.060 | 0.058 |
| low | 80% | 0.071 | 0.071 | 0.065 | 0.064 |
| medium | 80% | 0.160 | 0.162 | 0.173 | 0.173 |
| high | 80% | 0.253 | 0.253 | 0.243 | 0.249 |
| no | 90% | 0.048 | 0.048 | 0.047 | 0.048 |
| low | 90% | 0.076 | 0.077 | 0.069 | 0.070 |
| medium | 90% | 0.188 | 0.187 | 0.179 | 0.183 |
| high | 90% | 0.306 | 0.305 | 0.346 | 0.348 |
| no | 95% | 0.053 | 0.053 | 0.041 | 0.041 |
| low | 95% | 0.081 | 0.081 | 0.074 | 0.074 |
| medium | 95% | 0.215 | 0.216 | 0.225 | 0.226 |
| high | 95% | 0.363 | 0.363 | 0.414 | 0.411 |
| no | 99% | 0.049 | 0.050 | 0.067 | 0.066 |
| low | 99% | 0.089 | 0.089 | 0.060 | 0.060 |
| medium | 99% | 0.267 | 0.266 | 0.234 | 0.233 |
| high | 99% | 0.453 | 0.453 | 0.531 | 0.526 |