

Tables of simulation results

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Simple random sampling

Type I errors ($n = 500$)

| | Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|--------|--------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | | |
| | Wald | 1000 | 1000 | 1 | 0.100 | 0.045 | 0.008 |
| | WaldDiag,MM3 | 1000 | 1000 | 1 | 0.032 | 0.007 | 0.000 |
| | WaldVCF | 1000 | 1000 | 1 | 0.098 | 0.045 | 0.008 |
| | PearsonRS | 1000 | 1000 | 1 | 0.072 | 0.030 | 0.004 |
| | Pearson,MM3 | 1000 | 1000 | 1 | 0.073 | 0.029 | 0.004 |
| | RSS,MM3 | 1000 | 1000 | 1 | 0.076 | 0.032 | 0.004 |
| | Multn,MM3 | 1000 | 1000 | 1 | 0.082 | 0.032 | 0.006 |
| 1F 8V | | | | | | | |
| | Wald | 1000 | 1000 | 0 | 0.094 | 0.043 | 0.008 |
| | WaldDiag,MM3 | 1000 | 1000 | 0 | 0.052 | 0.023 | 0.005 |
| | WaldVCF | 1000 | 1000 | 0 | 0.092 | 0.041 | 0.008 |
| | PearsonRS | 1000 | 1000 | 0 | 0.086 | 0.043 | 0.005 |
| | Pearson,MM3 | 1000 | 1000 | 0 | 0.086 | 0.038 | 0.004 |
| | RSS,MM3 | 1000 | 1000 | 0 | 0.085 | 0.035 | 0.004 |
| | Multn,MM3 | 1000 | 1000 | 0 | 0.085 | 0.040 | 0.007 |
| 1F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 15 | 0.102 | 0.064 | 0.020 |
| | WaldDiag,MM3 | 1000 | 1000 | 15 | 0.065 | 0.033 | 0.008 |
| | WaldVCF | 1000 | 1000 | 15 | 0.101 | 0.061 | 0.019 |
| | PearsonRS | 1000 | 1000 | 15 | 0.094 | 0.047 | 0.011 |
| | Pearson,MM3 | 1000 | 1000 | 15 | 0.093 | 0.043 | 0.010 |
| | RSS,MM3 | 1000 | 1000 | 15 | 0.098 | 0.051 | 0.013 |
| | Multn,MM3 | 1000 | 1000 | 15 | 0.101 | 0.061 | 0.019 |
| 2F 10V | | | | | | | |
| | Wald | 1000 | 1000 | 8 | 0.112 | 0.053 | 0.010 |
| | WaldDiag,MM3 | 1000 | 1000 | 8 | 0.026 | 0.005 | 0.000 |
| | WaldVCF | 1000 | 1000 | 8 | 0.105 | 0.051 | 0.008 |
| | PearsonRS | 1000 | 1000 | 8 | 0.081 | 0.045 | 0.009 |
| | Pearson,MM3 | 1000 | 1000 | 8 | 0.081 | 0.044 | 0.009 |
| | RSS,MM3 | 1000 | 1000 | 8 | 0.090 | 0.044 | 0.006 |
| | Multn,MM3 | 1000 | 1000 | 8 | 0.091 | 0.047 | 0.005 |
| 3F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 25 | 0.113 | 0.063 | 0.005 |
| | WaldDiag,MM3 | 1000 | 1000 | 25 | 0.025 | 0.008 | 0.000 |
| | WaldVCF | 1000 | 1000 | 25 | 0.106 | 0.058 | 0.004 |
| | PearsonRS | 1000 | 1000 | 25 | 0.093 | 0.053 | 0.009 |
| | Pearson,MM3 | 1000 | 1000 | 25 | 0.091 | 0.050 | 0.008 |
| | RSS,MM3 | 1000 | 1000 | 25 | 0.089 | 0.049 | 0.006 |
| | Multn,MM3 | 1000 | 1000 | 25 | 0.092 | 0.044 | 0.003 |

Type I errors ($n = 1000$)

| | | | | | Rejection rate | | |
|---------------|--------------|-----------|-----------|-----------|----------------|-------|-------|
| | Name | No. repl. | Converged | Rank def. | 10% | 5% | 1% |
| 1F 5V | | | | | | | |
| | Wald | 1000 | 1000 | 0 | 0.116 | 0.064 | 0.008 |
| | WaldDiag,MM3 | 1000 | 1000 | 0 | 0.065 | 0.031 | 0.003 |
| | WaldVCF | 1000 | 1000 | 0 | 0.114 | 0.061 | 0.008 |
| | PearsonRS | 1000 | 1000 | 0 | 0.087 | 0.050 | 0.014 |
| | Pearson,MM3 | 1000 | 1000 | 0 | 0.087 | 0.046 | 0.012 |
| | RSS,MM3 | 1000 | 1000 | 0 | 0.095 | 0.050 | 0.010 |
| | Multn,MM3 | 1000 | 1000 | 0 | 0.109 | 0.059 | 0.008 |
| 1F 8V | | | | | | | |
| | Wald | 1000 | 1000 | 1 | 0.112 | 0.067 | 0.008 |
| | WaldDiag,MM3 | 1000 | 1000 | 1 | 0.083 | 0.040 | 0.008 |
| | WaldVCF | 1000 | 1000 | 1 | 0.111 | 0.066 | 0.008 |
| | PearsonRS | 1000 | 1000 | 1 | 0.096 | 0.043 | 0.008 |
| | Pearson,MM3 | 1000 | 1000 | 1 | 0.094 | 0.039 | 0.004 |
| | RSS,MM3 | 1000 | 1000 | 1 | 0.097 | 0.050 | 0.006 |
| | Multn,MM3 | 1000 | 1000 | 1 | 0.109 | 0.064 | 0.008 |
| 1F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 6 | 0.098 | 0.058 | 0.017 |
| | WaldDiag,MM3 | 1000 | 1000 | 6 | 0.066 | 0.042 | 0.010 |
| | WaldVCF | 1000 | 1000 | 6 | 0.097 | 0.058 | 0.016 |
| | PearsonRS | 1000 | 1000 | 6 | 0.095 | 0.048 | 0.014 |
| | Pearson,MM3 | 1000 | 1000 | 6 | 0.094 | 0.045 | 0.013 |
| | RSS,MM3 | 1000 | 1000 | 6 | 0.093 | 0.052 | 0.012 |
| | Multn,MM3 | 1000 | 1000 | 6 | 0.096 | 0.056 | 0.016 |
| 2F 10V | | | | | | | |
| | Wald | 1000 | 1000 | 5 | 0.101 | 0.051 | 0.012 |
| | WaldDiag,MM3 | 1000 | 1000 | 5 | 0.052 | 0.023 | 0.002 |
| | WaldVCF | 1000 | 1000 | 5 | 0.097 | 0.050 | 0.011 |
| | PearsonRS | 1000 | 1000 | 5 | 0.105 | 0.061 | 0.016 |
| | Pearson,MM3 | 1000 | 1000 | 5 | 0.104 | 0.056 | 0.014 |
| | RSS,MM3 | 1000 | 1000 | 5 | 0.103 | 0.055 | 0.011 |
| | Multn,MM3 | 1000 | 1000 | 5 | 0.096 | 0.044 | 0.010 |
| 3F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 34 | 0.115 | 0.061 | 0.013 |
| | WaldDiag,MM3 | 1000 | 1000 | 34 | 0.057 | 0.025 | 0.006 |
| | WaldVCF | 1000 | 1000 | 34 | 0.109 | 0.056 | 0.013 |
| | PearsonRS | 1000 | 1000 | 34 | 0.111 | 0.067 | 0.017 |
| | Pearson,MM3 | 1000 | 1000 | 34 | 0.108 | 0.064 | 0.012 |
| | RSS,MM3 | 1000 | 1000 | 34 | 0.106 | 0.053 | 0.010 |
| | Multn,MM3 | 1000 | 1000 | 34 | 0.101 | 0.052 | 0.013 |

Type I errors ($n = 2000$)

| | Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|--------|--------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | | |
| | Wald | 1000 | 1000 | 1 | 0.097 | 0.046 | 0.015 |
| | WaldDiag,MM3 | 1000 | 1000 | 1 | 0.067 | 0.029 | 0.010 |
| | WaldVCF | 1000 | 1000 | 1 | 0.096 | 0.046 | 0.015 |
| | PearsonRS | 1000 | 1000 | 1 | 0.088 | 0.049 | 0.015 |
| | Pearson,MM3 | 1000 | 1000 | 1 | 0.090 | 0.048 | 0.014 |
| | RSS,MM3 | 1000 | 1000 | 1 | 0.091 | 0.044 | 0.017 |
| | Multn,MM3 | 1000 | 1000 | 1 | 0.091 | 0.045 | 0.015 |
| 1F 8V | | | | | | | |
| | Wald | 1000 | 1000 | 5 | 0.099 | 0.046 | 0.007 |
| | WaldDiag,MM3 | 1000 | 1000 | 5 | 0.079 | 0.033 | 0.008 |
| | WaldVCF | 1000 | 1000 | 5 | 0.099 | 0.046 | 0.007 |
| | PearsonRS | 1000 | 1000 | 5 | 0.097 | 0.059 | 0.012 |
| | Pearson,MM3 | 1000 | 1000 | 5 | 0.097 | 0.053 | 0.009 |
| | RSS,MM3 | 1000 | 1000 | 5 | 0.109 | 0.046 | 0.008 |
| | Multn,MM3 | 1000 | 1000 | 5 | 0.099 | 0.045 | 0.007 |
| 1F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 19 | 0.090 | 0.045 | 0.006 |
| | WaldDiag,MM3 | 1000 | 1000 | 19 | 0.067 | 0.032 | 0.008 |
| | WaldVCF | 1000 | 1000 | 19 | 0.089 | 0.045 | 0.006 |
| | PearsonRS | 1000 | 1000 | 19 | 0.104 | 0.057 | 0.015 |
| | Pearson,MM3 | 1000 | 1000 | 19 | 0.103 | 0.052 | 0.013 |
| | RSS,MM3 | 1000 | 1000 | 19 | 0.106 | 0.052 | 0.009 |
| | Multn,MM3 | 1000 | 1000 | 19 | 0.088 | 0.045 | 0.006 |
| 2F 10V | | | | | | | |
| | Wald | 1000 | 1000 | 16 | 0.108 | 0.061 | 0.009 |
| | WaldDiag,MM3 | 1000 | 1000 | 16 | 0.080 | 0.042 | 0.006 |
| | WaldVCF | 1000 | 1000 | 16 | 0.107 | 0.059 | 0.008 |
| | PearsonRS | 1000 | 1000 | 16 | 0.087 | 0.050 | 0.011 |
| | Pearson,MM3 | 1000 | 1000 | 16 | 0.086 | 0.046 | 0.009 |
| | RSS,MM3 | 1000 | 1000 | 16 | 0.086 | 0.045 | 0.009 |
| | Multn,MM3 | 1000 | 1000 | 16 | 0.104 | 0.057 | 0.008 |
| 3F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 49 | 0.110 | 0.063 | 0.019 |
| | WaldDiag,MM3 | 1000 | 1000 | 49 | 0.072 | 0.043 | 0.007 |
| | WaldVCF | 1000 | 1000 | 49 | 0.096 | 0.058 | 0.016 |
| | PearsonRS | 1000 | 1000 | 49 | 0.110 | 0.050 | 0.012 |
| | Pearson,MM3 | 1000 | 1000 | 49 | 0.108 | 0.048 | 0.011 |
| | RSS,MM3 | 1000 | 1000 | 49 | 0.106 | 0.053 | 0.014 |
| | Multn,MM3 | 1000 | 1000 | 49 | 0.094 | 0.057 | 0.016 |

Type I errors ($n = 3000$)

| | Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|--------|--------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | | |
| | Wald | 1000 | 1000 | 1 | 0.092 | 0.051 | 0.005 |
| | WaldDiag,MM3 | 1000 | 1000 | 1 | 0.072 | 0.036 | 0.002 |
| | WaldVCF | 1000 | 1000 | 1 | 0.090 | 0.050 | 0.005 |
| | PearsonRS | 1000 | 1000 | 1 | 0.084 | 0.045 | 0.008 |
| | Pearson,MM3 | 1000 | 1000 | 1 | 0.085 | 0.044 | 0.007 |
| | RSS,MM3 | 1000 | 1000 | 1 | 0.091 | 0.045 | 0.006 |
| | Multn,MM3 | 1000 | 1000 | 1 | 0.088 | 0.050 | 0.005 |
| 1F 8V | | | | | | | |
| | Wald | 1000 | 1000 | 2 | 0.104 | 0.049 | 0.005 |
| | WaldDiag,MM3 | 1000 | 1000 | 2 | 0.090 | 0.043 | 0.006 |
| | WaldVCF | 1000 | 1000 | 2 | 0.104 | 0.048 | 0.005 |
| | PearsonRS | 1000 | 1000 | 2 | 0.095 | 0.050 | 0.013 |
| | Pearson,MM3 | 1000 | 1000 | 2 | 0.094 | 0.044 | 0.010 |
| | RSS,MM3 | 1000 | 1000 | 2 | 0.097 | 0.048 | 0.009 |
| | Multn,MM3 | 1000 | 1000 | 2 | 0.103 | 0.047 | 0.005 |
| 1F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 26 | 0.109 | 0.059 | 0.006 |
| | WaldDiag,MM3 | 1000 | 1000 | 26 | 0.097 | 0.049 | 0.010 |
| | WaldVCF | 1000 | 1000 | 26 | 0.107 | 0.056 | 0.006 |
| | PearsonRS | 1000 | 1000 | 26 | 0.108 | 0.050 | 0.015 |
| | Pearson,MM3 | 1000 | 1000 | 26 | 0.107 | 0.049 | 0.011 |
| | RSS,MM3 | 1000 | 1000 | 26 | 0.111 | 0.044 | 0.012 |
| | Multn,MM3 | 1000 | 1000 | 26 | 0.106 | 0.058 | 0.006 |
| 2F 10V | | | | | | | |
| | Wald | 1000 | 1000 | 15 | 0.106 | 0.057 | 0.010 |
| | WaldDiag,MM3 | 1000 | 1000 | 15 | 0.072 | 0.043 | 0.005 |
| | WaldVCF | 1000 | 1000 | 15 | 0.104 | 0.051 | 0.009 |
| | PearsonRS | 1000 | 1000 | 15 | 0.092 | 0.037 | 0.012 |
| | Pearson,MM3 | 1000 | 1000 | 15 | 0.088 | 0.035 | 0.011 |
| | RSS,MM3 | 1000 | 1000 | 15 | 0.095 | 0.034 | 0.009 |
| | Multn,MM3 | 1000 | 1000 | 15 | 0.104 | 0.051 | 0.009 |
| 3F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 47 | 0.117 | 0.059 | 0.010 |
| | WaldDiag,MM3 | 1000 | 1000 | 47 | 0.086 | 0.038 | 0.007 |
| | WaldVCF | 1000 | 1000 | 47 | 0.104 | 0.056 | 0.010 |
| | PearsonRS | 1000 | 1000 | 47 | 0.100 | 0.054 | 0.015 |
| | Pearson,MM3 | 1000 | 1000 | 47 | 0.098 | 0.053 | 0.012 |
| | RSS,MM3 | 1000 | 1000 | 47 | 0.101 | 0.054 | 0.012 |
| | Multn,MM3 | 1000 | 1000 | 47 | 0.102 | 0.054 | 0.010 |

Power ($n = 500$)

| | Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|--------|--------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | | |
| | Wald | 1000 | 1000 | 0 | 0.328 | 0.227 | 0.089 |
| | WaldDiag,MM3 | 1000 | 1000 | 0 | 0.135 | 0.058 | 0.011 |
| | WaldVCF | 1000 | 1000 | 0 | 0.327 | 0.225 | 0.089 |
| | PearsonRS | 1000 | 1000 | 0 | 0.331 | 0.223 | 0.100 |
| | Pearson,MM3 | 1000 | 1000 | 0 | 0.333 | 0.217 | 0.089 |
| | RSS,MM3 | 1000 | 1000 | 0 | 0.349 | 0.233 | 0.097 |
| | Multn,MM3 | 1000 | 1000 | 0 | 0.312 | 0.197 | 0.074 |
| 1F 8V | | | | | | | |
| | Wald | 1000 | 1000 | 3 | 0.818 | 0.740 | 0.565 |
| | WaldDiag,MM3 | 1000 | 1000 | 3 | 0.705 | 0.561 | 0.302 |
| | WaldVCF | 1000 | 1000 | 3 | 0.815 | 0.739 | 0.561 |
| | PearsonRS | 1000 | 1000 | 3 | 0.683 | 0.576 | 0.342 |
| | Pearson,MM3 | 1000 | 1000 | 3 | 0.681 | 0.564 | 0.316 |
| | RSS,MM3 | 1000 | 1000 | 3 | 0.723 | 0.620 | 0.397 |
| | Multn,MM3 | 1000 | 1000 | 3 | 0.808 | 0.732 | 0.550 |
| 1F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 6 | 0.966 | 0.938 | 0.861 |
| | WaldDiag,MM3 | 1000 | 1000 | 6 | 0.932 | 0.883 | 0.756 |
| | WaldVCF | 1000 | 1000 | 6 | 0.966 | 0.936 | 0.859 |
| | PearsonRS | 1000 | 1000 | 6 | 0.912 | 0.866 | 0.740 |
| | Pearson,MM3 | 1000 | 1000 | 6 | 0.911 | 0.862 | 0.727 |
| | RSS,MM3 | 1000 | 1000 | 6 | 0.935 | 0.894 | 0.790 |
| | Multn,MM3 | 1000 | 1000 | 6 | 0.966 | 0.935 | 0.857 |
| 2F 10V | | | | | | | |
| | Wald | 1000 | 1000 | 11 | 0.189 | 0.123 | 0.030 |
| | WaldDiag,MM3 | 1000 | 1000 | 11 | 0.108 | 0.044 | 0.009 |
| | WaldVCF | 1000 | 1000 | 11 | 0.178 | 0.117 | 0.027 |
| | PearsonRS | 1000 | 1000 | 11 | 0.219 | 0.143 | 0.053 |
| | Pearson,MM3 | 1000 | 1000 | 11 | 0.217 | 0.136 | 0.045 |
| | RSS,MM3 | 1000 | 1000 | 11 | 0.210 | 0.135 | 0.047 |
| | Multn,MM3 | 1000 | 1000 | 11 | 0.166 | 0.099 | 0.022 |
| 3F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 26 | 0.222 | 0.152 | 0.056 |
| | WaldDiag,MM3 | 1000 | 1000 | 26 | 0.136 | 0.081 | 0.021 |
| | WaldVCF | 1000 | 1000 | 26 | 0.213 | 0.146 | 0.053 |
| | PearsonRS | 1000 | 1000 | 26 | 0.269 | 0.172 | 0.071 |
| | Pearson,MM3 | 1000 | 1000 | 26 | 0.266 | 0.168 | 0.058 |
| | RSS,MM3 | 1000 | 1000 | 26 | 0.274 | 0.180 | 0.073 |
| | Multn,MM3 | 1000 | 1000 | 26 | 0.192 | 0.134 | 0.044 |

Power ($n = 1000$)

| | Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|--------|--------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | | |
| | Wald | 1000 | 1000 | 0 | 0.527 | 0.422 | 0.228 |
| | WaldDiag,MM3 | 1000 | 1000 | 0 | 0.376 | 0.240 | 0.077 |
| | WaldVCF | 1000 | 1000 | 0 | 0.527 | 0.419 | 0.226 |
| | PearsonRS | 1000 | 1000 | 0 | 0.545 | 0.452 | 0.264 |
| | Pearson,MM3 | 1000 | 1000 | 0 | 0.545 | 0.446 | 0.258 |
| | RSS,MM3 | 1000 | 1000 | 0 | 0.561 | 0.462 | 0.268 |
| | Multn,MM3 | 1000 | 1000 | 0 | 0.522 | 0.418 | 0.216 |
| 1F 8V | | | | | | | |
| | Wald | 1000 | 1000 | 4 | 0.979 | 0.969 | 0.907 |
| | WaldDiag,MM3 | 1000 | 1000 | 4 | 0.956 | 0.925 | 0.813 |
| | WaldVCF | 1000 | 1000 | 4 | 0.979 | 0.969 | 0.906 |
| | PearsonRS | 1000 | 1000 | 4 | 0.927 | 0.886 | 0.743 |
| | Pearson,MM3 | 1000 | 1000 | 4 | 0.927 | 0.883 | 0.726 |
| | RSS,MM3 | 1000 | 1000 | 4 | 0.945 | 0.919 | 0.794 |
| | Multn,MM3 | 1000 | 1000 | 4 | 0.979 | 0.967 | 0.905 |
| 1F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 8 | 1.000 | 1.000 | 0.997 |
| | WaldDiag,MM3 | 1000 | 1000 | 8 | 1.000 | 0.999 | 0.993 |
| | WaldVCF | 1000 | 1000 | 8 | 1.000 | 1.000 | 0.997 |
| | PearsonRS | 1000 | 1000 | 8 | 0.998 | 0.996 | 0.985 |
| | Pearson,MM3 | 1000 | 1000 | 8 | 0.997 | 0.996 | 0.985 |
| | RSS,MM3 | 1000 | 1000 | 8 | 0.999 | 0.997 | 0.993 |
| | Multn,MM3 | 1000 | 1000 | 8 | 1.000 | 1.000 | 0.997 |
| 2F 10V | | | | | | | |
| | Wald | 1000 | 1000 | 13 | 0.314 | 0.210 | 0.090 |
| | WaldDiag,MM3 | 1000 | 1000 | 13 | 0.272 | 0.166 | 0.059 |
| | WaldVCF | 1000 | 1000 | 13 | 0.297 | 0.199 | 0.082 |
| | PearsonRS | 1000 | 1000 | 13 | 0.391 | 0.295 | 0.154 |
| | Pearson,MM3 | 1000 | 1000 | 13 | 0.388 | 0.284 | 0.141 |
| | RSS,MM3 | 1000 | 1000 | 13 | 0.406 | 0.307 | 0.147 |
| | Multn,MM3 | 1000 | 1000 | 13 | 0.295 | 0.195 | 0.079 |
| 3F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 25 | 0.399 | 0.298 | 0.143 |
| | WaldDiag,MM3 | 1000 | 1000 | 25 | 0.379 | 0.265 | 0.127 |
| | WaldVCF | 1000 | 1000 | 25 | 0.381 | 0.285 | 0.126 |
| | PearsonRS | 1000 | 1000 | 25 | 0.498 | 0.396 | 0.226 |
| | Pearson,MM3 | 1000 | 1000 | 25 | 0.498 | 0.383 | 0.216 |
| | RSS,MM3 | 1000 | 1000 | 25 | 0.516 | 0.414 | 0.245 |
| | Multn,MM3 | 1000 | 1000 | 25 | 0.379 | 0.279 | 0.122 |

Power ($n = 2000$)

| | | | | | Rejection rate | | |
|---------------|--------------|-----------|-----------|-----------|----------------|-------|-------|
| | Name | No. repl. | Converged | Rank def. | 10% | 5% | 1% |
| 1F 5V | | | | | | | |
| | Wald | 1000 | 1000 | 0 | 0.796 | 0.708 | 0.513 |
| | WaldDiag,MM3 | 1000 | 1000 | 0 | 0.672 | 0.543 | 0.284 |
| | WaldVCF | 1000 | 1000 | 0 | 0.796 | 0.708 | 0.510 |
| | PearsonRS | 1000 | 1000 | 0 | 0.811 | 0.749 | 0.552 |
| | Pearson,MM3 | 1000 | 1000 | 0 | 0.811 | 0.744 | 0.537 |
| | RSS,MM3 | 1000 | 1000 | 0 | 0.827 | 0.752 | 0.568 |
| | Multn,MM3 | 1000 | 1000 | 0 | 0.792 | 0.705 | 0.505 |
| 1F 8V | | | | | | | |
| | Wald | 1000 | 1000 | 4 | 1.000 | 1.000 | 0.999 |
| | WaldDiag,MM3 | 1000 | 1000 | 4 | 1.000 | 1.000 | 0.995 |
| | WaldVCF | 1000 | 1000 | 4 | 1.000 | 1.000 | 0.999 |
| | PearsonRS | 1000 | 1000 | 4 | 0.998 | 0.993 | 0.978 |
| | Pearson,MM3 | 1000 | 1000 | 4 | 0.998 | 0.993 | 0.974 |
| | RSS,MM3 | 1000 | 1000 | 4 | 1.000 | 0.999 | 0.992 |
| | Multn,MM3 | 1000 | 1000 | 4 | 1.000 | 1.000 | 0.999 |
| 1F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 14 | 1.000 | 1.000 | 1.000 |
| | WaldDiag,MM3 | 1000 | 1000 | 14 | 1.000 | 1.000 | 1.000 |
| | WaldVCF | 1000 | 1000 | 14 | 1.000 | 1.000 | 1.000 |
| | PearsonRS | 1000 | 1000 | 14 | 1.000 | 1.000 | 1.000 |
| | Pearson,MM3 | 1000 | 1000 | 14 | 1.000 | 1.000 | 1.000 |
| | RSS,MM3 | 1000 | 1000 | 14 | 1.000 | 1.000 | 1.000 |
| | Multn,MM3 | 1000 | 1000 | 14 | 1.000 | 1.000 | 1.000 |
| 2F 10V | | | | | | | |
| | Wald | 1000 | 1000 | 10 | 0.534 | 0.424 | 0.260 |
| | WaldDiag,MM3 | 1000 | 1000 | 10 | 0.527 | 0.418 | 0.250 |
| | WaldVCF | 1000 | 1000 | 10 | 0.520 | 0.406 | 0.240 |
| | PearsonRS | 1000 | 1000 | 10 | 0.611 | 0.513 | 0.372 |
| | Pearson,MM3 | 1000 | 1000 | 10 | 0.609 | 0.505 | 0.340 |
| | RSS,MM3 | 1000 | 1000 | 10 | 0.629 | 0.534 | 0.379 |
| | Multn,MM3 | 1000 | 1000 | 10 | 0.522 | 0.411 | 0.244 |
| 3F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 42 | 0.662 | 0.575 | 0.384 |
| | WaldDiag,MM3 | 1000 | 1000 | 42 | 0.698 | 0.592 | 0.400 |
| | WaldVCF | 1000 | 1000 | 42 | 0.650 | 0.552 | 0.363 |
| | PearsonRS | 1000 | 1000 | 42 | 0.769 | 0.689 | 0.531 |
| | Pearson,MM3 | 1000 | 1000 | 42 | 0.768 | 0.686 | 0.515 |
| | RSS,MM3 | 1000 | 1000 | 42 | 0.802 | 0.716 | 0.560 |
| | Multn,MM3 | 1000 | 1000 | 42 | 0.648 | 0.551 | 0.365 |

Power ($n = 3000$)

| | | | | | Rejection rate | | |
|---------------|--------------|-----------|-----------|-----------|----------------|-------|-------|
| | Name | No. repl. | Converged | Rank def. | 10% | 5% | 1% |
| 1F 5V | | | | | | | |
| | Wald | 1000 | 1000 | 0 | 0.924 | 0.879 | 0.740 |
| | WaldDiag,MM3 | 1000 | 1000 | 0 | 0.854 | 0.782 | 0.546 |
| | WaldVCF | 1000 | 1000 | 0 | 0.923 | 0.879 | 0.739 |
| | PearsonRS | 1000 | 1000 | 0 | 0.933 | 0.891 | 0.770 |
| | Pearson,MM3 | 1000 | 1000 | 0 | 0.933 | 0.889 | 0.756 |
| | RSS,MM3 | 1000 | 1000 | 0 | 0.937 | 0.901 | 0.784 |
| | Multn,MM3 | 1000 | 1000 | 0 | 0.922 | 0.877 | 0.739 |
| 1F 8V | | | | | | | |
| | Wald | 1000 | 1000 | 3 | 1.000 | 1.000 | 1.000 |
| | WaldDiag,MM3 | 1000 | 1000 | 3 | 1.000 | 1.000 | 1.000 |
| | WaldVCF | 1000 | 1000 | 3 | 1.000 | 1.000 | 1.000 |
| | PearsonRS | 1000 | 1000 | 3 | 1.000 | 1.000 | 0.998 |
| | Pearson,MM3 | 1000 | 1000 | 3 | 1.000 | 1.000 | 0.997 |
| | RSS,MM3 | 1000 | 1000 | 3 | 1.000 | 1.000 | 0.999 |
| | Multn,MM3 | 1000 | 1000 | 3 | 1.000 | 1.000 | 1.000 |
| 1F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 15 | 1.000 | 1.000 | 1.000 |
| | WaldDiag,MM3 | 1000 | 1000 | 15 | 1.000 | 1.000 | 1.000 |
| | WaldVCF | 1000 | 1000 | 15 | 1.000 | 1.000 | 1.000 |
| | PearsonRS | 1000 | 1000 | 15 | 1.000 | 1.000 | 1.000 |
| | Pearson,MM3 | 1000 | 1000 | 15 | 1.000 | 1.000 | 1.000 |
| | RSS,MM3 | 1000 | 1000 | 15 | 1.000 | 1.000 | 1.000 |
| | Multn,MM3 | 1000 | 1000 | 15 | 1.000 | 1.000 | 1.000 |
| 2F 10V | | | | | | | |
| | Wald | 1000 | 1000 | 12 | 0.651 | 0.557 | 0.393 |
| | WaldDiag,MM3 | 1000 | 1000 | 12 | 0.680 | 0.567 | 0.397 |
| | WaldVCF | 1000 | 1000 | 12 | 0.636 | 0.541 | 0.373 |
| | PearsonRS | 1000 | 1000 | 12 | 0.710 | 0.646 | 0.497 |
| | Pearson,MM3 | 1000 | 1000 | 12 | 0.709 | 0.635 | 0.473 |
| | RSS,MM3 | 1000 | 1000 | 12 | 0.745 | 0.672 | 0.525 |
| | Multn,MM3 | 1000 | 1000 | 12 | 0.639 | 0.546 | 0.380 |
| 3F 15V | | | | | | | |
| | Wald | 1000 | 1000 | 39 | 0.812 | 0.731 | 0.578 |
| | WaldDiag,MM3 | 1000 | 1000 | 39 | 0.844 | 0.784 | 0.622 |
| | WaldVCF | 1000 | 1000 | 39 | 0.801 | 0.718 | 0.557 |
| | PearsonRS | 1000 | 1000 | 39 | 0.871 | 0.817 | 0.700 |
| | Pearson,MM3 | 1000 | 1000 | 39 | 0.869 | 0.811 | 0.682 |
| | RSS,MM3 | 1000 | 1000 | 39 | 0.892 | 0.836 | 0.731 |
| | Multn,MM3 | 1000 | 1000 | 39 | 0.804 | 0.716 | 0.560 |

Stratified sampling

Type I errors ($n = 500$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 1 | 0.161 | 0.091 | 0.030 |
| WaldDiag,MM3 | 1000 | 1000 | 1 | 0.050 | 0.019 | 0.001 |
| WaldVCF | 1000 | 1000 | 1 | 0.117 | 0.066 | 0.010 |
| PearsonRS | 1000 | 1000 | 1 | 0.087 | 0.040 | 0.009 |
| Pearson,MM3 | 1000 | 1000 | 1 | 0.088 | 0.038 | 0.008 |
| RSS,MM3 | 1000 | 1000 | 1 | 0.088 | 0.033 | 0.003 |
| Multn,MM3 | 1000 | 1000 | 1 | 0.129 | 0.067 | 0.012 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 5 | 0.349 | 0.259 | 0.129 |
| WaldDiag,MM3 | 1000 | 1000 | 5 | 0.061 | 0.030 | 0.004 |
| WaldVCF | 1000 | 1000 | 5 | 0.176 | 0.113 | 0.037 |
| PearsonRS | 1000 | 1000 | 5 | 0.104 | 0.049 | 0.012 |
| Pearson,MM3 | 1000 | 1000 | 5 | 0.104 | 0.045 | 0.009 |
| RSS,MM3 | 1000 | 1000 | 5 | 0.103 | 0.046 | 0.008 |
| Multn,MM3 | 1000 | 1000 | 5 | 0.283 | 0.194 | 0.087 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 15 | 0.988 | 0.980 | 0.940 |
| WaldDiag,MM3 | 1000 | 1000 | 15 | 0.050 | 0.014 | 0.003 |
| WaldVCF | 1000 | 1000 | 15 | 0.864 | 0.803 | 0.617 |
| PearsonRS | 1000 | 1000 | 15 | 0.088 | 0.045 | 0.005 |
| Pearson,MM3 | 1000 | 1000 | 15 | 0.087 | 0.044 | 0.004 |
| RSS,MM3 | 1000 | 1000 | 15 | 0.075 | 0.037 | 0.002 |
| Multn,MM3 | 1000 | 1000 | 15 | 0.980 | 0.957 | 0.879 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 19 | 0.468 | 0.372 | 0.198 |
| WaldDiag,MM3 | 1000 | 1000 | 19 | 0.033 | 0.012 | 0.002 |
| WaldVCF | 1000 | 1000 | 19 | 0.287 | 0.180 | 0.059 |
| PearsonRS | 1000 | 1000 | 19 | 0.096 | 0.050 | 0.007 |
| Pearson,MM3 | 1000 | 1000 | 19 | 0.096 | 0.045 | 0.005 |
| RSS,MM3 | 1000 | 1000 | 19 | 0.091 | 0.036 | 0.002 |
| Multn,MM3 | 1000 | 1000 | 19 | 0.441 | 0.344 | 0.178 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 65 | 0.939 | 0.904 | 0.797 |
| WaldDiag,MM3 | 1000 | 1000 | 65 | 0.027 | 0.008 | 0.000 |
| WaldVCF | 1000 | 1000 | 65 | 0.755 | 0.670 | 0.466 |
| PearsonRS | 1000 | 1000 | 65 | 0.066 | 0.025 | 0.003 |
| Pearson,MM3 | 1000 | 1000 | 65 | 0.063 | 0.019 | 0.002 |
| RSS,MM3 | 1000 | 1000 | 65 | 0.043 | 0.015 | 0.002 |
| Multn,MM3 | 1000 | 1000 | 65 | 0.932 | 0.876 | 0.742 |

Type I errors ($n = 1000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 1 | 0.110 | 0.061 | 0.013 |
| WaldDiag,MM3 | 1000 | 1000 | 1 | 0.066 | 0.026 | 0.002 |
| WaldVCF | 1000 | 1000 | 1 | 0.095 | 0.051 | 0.006 |
| PearsonRS | 1000 | 1000 | 1 | 0.083 | 0.039 | 0.009 |
| Pearson,MM3 | 1000 | 1000 | 1 | 0.085 | 0.039 | 0.008 |
| RSS,MM3 | 1000 | 1000 | 1 | 0.084 | 0.040 | 0.007 |
| Multn,MM3 | 1000 | 1000 | 1 | 0.094 | 0.052 | 0.007 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 2 | 0.226 | 0.131 | 0.038 |
| WaldDiag,MM3 | 1000 | 1000 | 2 | 0.071 | 0.032 | 0.004 |
| WaldVCF | 1000 | 1000 | 2 | 0.146 | 0.074 | 0.016 |
| PearsonRS | 1000 | 1000 | 2 | 0.092 | 0.049 | 0.010 |
| Pearson,MM3 | 1000 | 1000 | 2 | 0.091 | 0.049 | 0.008 |
| RSS,MM3 | 1000 | 1000 | 2 | 0.088 | 0.046 | 0.006 |
| Multn,MM3 | 1000 | 1000 | 2 | 0.206 | 0.111 | 0.032 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 18 | 0.723 | 0.616 | 0.425 |
| WaldDiag,MM3 | 1000 | 1000 | 18 | 0.077 | 0.039 | 0.006 |
| WaldVCF | 1000 | 1000 | 18 | 0.499 | 0.386 | 0.194 |
| PearsonRS | 1000 | 1000 | 18 | 0.077 | 0.034 | 0.006 |
| Pearson,MM3 | 1000 | 1000 | 18 | 0.076 | 0.031 | 0.006 |
| RSS,MM3 | 1000 | 1000 | 18 | 0.081 | 0.026 | 0.005 |
| Multn,MM3 | 1000 | 1000 | 18 | 0.728 | 0.629 | 0.445 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 9 | 0.220 | 0.141 | 0.054 |
| WaldDiag,MM3 | 1000 | 1000 | 9 | 0.057 | 0.027 | 0.004 |
| WaldVCF | 1000 | 1000 | 9 | 0.155 | 0.089 | 0.027 |
| PearsonRS | 1000 | 1000 | 9 | 0.080 | 0.046 | 0.008 |
| Pearson,MM3 | 1000 | 1000 | 9 | 0.079 | 0.040 | 0.006 |
| RSS,MM3 | 1000 | 1000 | 9 | 0.083 | 0.047 | 0.004 |
| Multn,MM3 | 1000 | 1000 | 9 | 0.227 | 0.137 | 0.062 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 41 | 0.607 | 0.492 | 0.278 |
| WaldDiag,MM3 | 1000 | 1000 | 41 | 0.057 | 0.024 | 0.002 |
| WaldVCF | 1000 | 1000 | 41 | 0.433 | 0.310 | 0.140 |
| PearsonRS | 1000 | 1000 | 41 | 0.068 | 0.048 | 0.009 |
| Pearson,MM3 | 1000 | 1000 | 41 | 0.068 | 0.046 | 0.008 |
| RSS,MM3 | 1000 | 1000 | 41 | 0.068 | 0.036 | 0.009 |
| Multn,MM3 | 1000 | 1000 | 41 | 0.642 | 0.553 | 0.342 |

Type I errors ($n = 2000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 1 | 0.115 | 0.060 | 0.011 |
| WaldDiag,MM3 | 1000 | 1000 | 1 | 0.082 | 0.036 | 0.007 |
| WaldVCF | 1000 | 1000 | 1 | 0.103 | 0.054 | 0.010 |
| PearsonRS | 1000 | 1000 | 1 | 0.094 | 0.054 | 0.011 |
| Pearson,MM3 | 1000 | 1000 | 1 | 0.095 | 0.052 | 0.010 |
| RSS,MM3 | 1000 | 1000 | 1 | 0.096 | 0.048 | 0.010 |
| Multn,MM3 | 1000 | 1000 | 1 | 0.107 | 0.056 | 0.011 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 1 | 0.147 | 0.084 | 0.028 |
| WaldDiag,MM3 | 1000 | 1000 | 1 | 0.095 | 0.046 | 0.008 |
| WaldVCF | 1000 | 1000 | 1 | 0.119 | 0.063 | 0.020 |
| PearsonRS | 1000 | 1000 | 1 | 0.122 | 0.065 | 0.021 |
| Pearson,MM3 | 1000 | 1000 | 1 | 0.121 | 0.060 | 0.018 |
| RSS,MM3 | 1000 | 1000 | 1 | 0.109 | 0.061 | 0.021 |
| Multn,MM3 | 1000 | 1000 | 1 | 0.141 | 0.074 | 0.027 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 24 | 0.337 | 0.236 | 0.073 |
| WaldDiag,MM3 | 1000 | 1000 | 24 | 0.051 | 0.025 | 0.003 |
| WaldVCF | 1000 | 1000 | 24 | 0.245 | 0.145 | 0.034 |
| PearsonRS | 1000 | 1000 | 24 | 0.089 | 0.046 | 0.009 |
| Pearson,MM3 | 1000 | 1000 | 24 | 0.089 | 0.044 | 0.006 |
| RSS,MM3 | 1000 | 1000 | 24 | 0.082 | 0.036 | 0.008 |
| Multn,MM3 | 1000 | 1000 | 24 | 0.358 | 0.262 | 0.098 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 11 | 0.178 | 0.105 | 0.041 |
| WaldDiag,MM3 | 1000 | 1000 | 11 | 0.084 | 0.043 | 0.008 |
| WaldVCF | 1000 | 1000 | 11 | 0.142 | 0.085 | 0.030 |
| PearsonRS | 1000 | 1000 | 11 | 0.100 | 0.056 | 0.014 |
| Pearson,MM3 | 1000 | 1000 | 11 | 0.098 | 0.054 | 0.014 |
| RSS,MM3 | 1000 | 1000 | 11 | 0.103 | 0.058 | 0.010 |
| Multn,MM3 | 1000 | 1000 | 11 | 0.180 | 0.110 | 0.042 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 45 | 0.345 | 0.223 | 0.074 |
| WaldDiag,MM3 | 1000 | 1000 | 45 | 0.082 | 0.037 | 0.004 |
| WaldVCF | 1000 | 1000 | 45 | 0.255 | 0.149 | 0.037 |
| PearsonRS | 1000 | 1000 | 45 | 0.084 | 0.050 | 0.015 |
| Pearson,MM3 | 1000 | 1000 | 45 | 0.084 | 0.048 | 0.014 |
| RSS,MM3 | 1000 | 1000 | 45 | 0.084 | 0.045 | 0.011 |
| Multn,MM3 | 1000 | 1000 | 45 | 0.370 | 0.265 | 0.095 |

Type I errors ($n = 3000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 1 | 0.124 | 0.063 | 0.014 |
| WaldDiag,MM3 | 1000 | 1000 | 1 | 0.091 | 0.048 | 0.013 |
| WaldVCF | 1000 | 1000 | 1 | 0.112 | 0.060 | 0.013 |
| PearsonRS | 1000 | 1000 | 1 | 0.100 | 0.060 | 0.008 |
| Pearson,MM3 | 1000 | 1000 | 1 | 0.101 | 0.059 | 0.006 |
| RSS,MM3 | 1000 | 1000 | 1 | 0.100 | 0.052 | 0.006 |
| Multn,MM3 | 1000 | 1000 | 1 | 0.116 | 0.060 | 0.014 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 4 | 0.129 | 0.079 | 0.021 |
| WaldDiag,MM3 | 1000 | 1000 | 4 | 0.090 | 0.041 | 0.007 |
| WaldVCF | 1000 | 1000 | 4 | 0.113 | 0.066 | 0.016 |
| PearsonRS | 1000 | 1000 | 4 | 0.098 | 0.056 | 0.017 |
| Pearson,MM3 | 1000 | 1000 | 4 | 0.098 | 0.054 | 0.013 |
| RSS,MM3 | 1000 | 1000 | 4 | 0.095 | 0.057 | 0.015 |
| Multn,MM3 | 1000 | 1000 | 4 | 0.122 | 0.078 | 0.021 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 23 | 0.247 | 0.152 | 0.055 |
| WaldDiag,MM3 | 1000 | 1000 | 23 | 0.084 | 0.040 | 0.008 |
| WaldVCF | 1000 | 1000 | 23 | 0.178 | 0.105 | 0.033 |
| PearsonRS | 1000 | 1000 | 23 | 0.078 | 0.039 | 0.007 |
| Pearson,MM3 | 1000 | 1000 | 23 | 0.077 | 0.038 | 0.006 |
| RSS,MM3 | 1000 | 1000 | 23 | 0.083 | 0.033 | 0.007 |
| Multn,MM3 | 1000 | 1000 | 23 | 0.271 | 0.167 | 0.066 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 15 | 0.140 | 0.075 | 0.027 |
| WaldDiag,MM3 | 1000 | 1000 | 15 | 0.081 | 0.037 | 0.007 |
| WaldVCF | 1000 | 1000 | 15 | 0.116 | 0.064 | 0.018 |
| PearsonRS | 1000 | 1000 | 15 | 0.093 | 0.047 | 0.012 |
| Pearson,MM3 | 1000 | 1000 | 15 | 0.092 | 0.043 | 0.011 |
| RSS,MM3 | 1000 | 1000 | 15 | 0.095 | 0.042 | 0.013 |
| Multn,MM3 | 1000 | 1000 | 15 | 0.143 | 0.079 | 0.027 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 55 | 0.252 | 0.144 | 0.040 |
| WaldDiag,MM3 | 1000 | 1000 | 55 | 0.078 | 0.040 | 0.006 |
| WaldVCF | 1000 | 1000 | 55 | 0.197 | 0.106 | 0.029 |
| PearsonRS | 1000 | 1000 | 55 | 0.101 | 0.052 | 0.016 |
| Pearson,MM3 | 1000 | 1000 | 55 | 0.100 | 0.050 | 0.014 |
| RSS,MM3 | 1000 | 1000 | 55 | 0.099 | 0.048 | 0.009 |
| Multn,MM3 | 1000 | 1000 | 55 | 0.274 | 0.171 | 0.048 |

Power ($n = 500$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 4 | 0.362 | 0.242 | 0.099 |
| WaldDiag,MM3 | 1000 | 1000 | 4 | 0.124 | 0.052 | 0.005 |
| WaldVCF | 1000 | 1000 | 4 | 0.307 | 0.184 | 0.061 |
| PearsonRS | 1000 | 1000 | 4 | 0.308 | 0.213 | 0.065 |
| Pearson,MM3 | 1000 | 1000 | 4 | 0.310 | 0.206 | 0.055 |
| RSS,MM3 | 1000 | 1000 | 4 | 0.317 | 0.206 | 0.058 |
| Multn,MM3 | 1000 | 1000 | 4 | 0.291 | 0.152 | 0.048 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 6 | 0.882 | 0.825 | 0.676 |
| WaldDiag,MM3 | 1000 | 1000 | 6 | 0.627 | 0.471 | 0.209 |
| WaldVCF | 1000 | 1000 | 6 | 0.735 | 0.612 | 0.346 |
| PearsonRS | 1000 | 1000 | 6 | 0.599 | 0.466 | 0.262 |
| Pearson,MM3 | 1000 | 1000 | 6 | 0.599 | 0.450 | 0.241 |
| RSS,MM3 | 1000 | 1000 | 6 | 0.646 | 0.503 | 0.272 |
| Multn,MM3 | 1000 | 1000 | 6 | 0.832 | 0.741 | 0.550 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 43 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 43 | 0.850 | 0.743 | 0.466 |
| WaldVCF | 1000 | 1000 | 43 | 0.995 | 0.988 | 0.944 |
| PearsonRS | 1000 | 1000 | 43 | 0.793 | 0.682 | 0.441 |
| Pearson,MM3 | 1000 | 1000 | 43 | 0.793 | 0.670 | 0.406 |
| RSS,MM3 | 1000 | 1000 | 43 | 0.841 | 0.730 | 0.487 |
| Multn,MM3 | 1000 | 1000 | 43 | 1.000 | 0.999 | 0.993 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 29 | 0.589 | 0.488 | 0.294 |
| WaldDiag,MM3 | 1000 | 1000 | 29 | 0.081 | 0.032 | 0.005 |
| WaldVCF | 1000 | 1000 | 29 | 0.341 | 0.236 | 0.094 |
| PearsonRS | 1000 | 1000 | 29 | 0.190 | 0.115 | 0.036 |
| Pearson,MM3 | 1000 | 1000 | 29 | 0.190 | 0.104 | 0.027 |
| RSS,MM3 | 1000 | 1000 | 29 | 0.181 | 0.101 | 0.024 |
| Multn,MM3 | 1000 | 1000 | 29 | 0.508 | 0.391 | 0.210 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 46 | 0.979 | 0.962 | 0.902 |
| WaldDiag,MM3 | 1000 | 1000 | 46 | 0.075 | 0.020 | 0.002 |
| WaldVCF | 1000 | 1000 | 46 | 0.874 | 0.793 | 0.570 |
| PearsonRS | 1000 | 1000 | 46 | 0.216 | 0.132 | 0.037 |
| Pearson,MM3 | 1000 | 1000 | 46 | 0.215 | 0.127 | 0.033 |
| RSS,MM3 | 1000 | 1000 | 46 | 0.186 | 0.106 | 0.015 |
| Multn,MM3 | 1000 | 1000 | 46 | 0.963 | 0.944 | 0.833 |

Power ($n = 1000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 0 | 0.480 | 0.380 | 0.188 |
| WaldDiag,MM3 | 1000 | 1000 | 0 | 0.295 | 0.177 | 0.043 |
| WaldVCF | 1000 | 1000 | 0 | 0.455 | 0.347 | 0.158 |
| PearsonRS | 1000 | 1000 | 0 | 0.516 | 0.387 | 0.213 |
| Pearson,MM3 | 1000 | 1000 | 0 | 0.516 | 0.380 | 0.193 |
| RSS,MM3 | 1000 | 1000 | 0 | 0.527 | 0.403 | 0.205 |
| Multn,MM3 | 1000 | 1000 | 0 | 0.452 | 0.345 | 0.156 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 4 | 0.980 | 0.954 | 0.868 |
| WaldDiag,MM3 | 1000 | 1000 | 4 | 0.951 | 0.882 | 0.696 |
| WaldVCF | 1000 | 1000 | 4 | 0.950 | 0.912 | 0.749 |
| PearsonRS | 1000 | 1000 | 4 | 0.886 | 0.804 | 0.621 |
| Pearson,MM3 | 1000 | 1000 | 4 | 0.886 | 0.796 | 0.601 |
| RSS,MM3 | 1000 | 1000 | 4 | 0.920 | 0.861 | 0.675 |
| Multn,MM3 | 1000 | 1000 | 4 | 0.969 | 0.940 | 0.840 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 11 | 1.000 | 1.000 | 0.998 |
| WaldDiag,MM3 | 1000 | 1000 | 11 | 0.998 | 0.995 | 0.976 |
| WaldVCF | 1000 | 1000 | 11 | 0.998 | 0.993 | 0.964 |
| PearsonRS | 1000 | 1000 | 11 | 0.993 | 0.985 | 0.925 |
| Pearson,MM3 | 1000 | 1000 | 11 | 0.993 | 0.984 | 0.919 |
| RSS,MM3 | 1000 | 1000 | 11 | 0.996 | 0.991 | 0.953 |
| Multn,MM3 | 1000 | 1000 | 11 | 1.000 | 1.000 | 0.999 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 10 | 0.432 | 0.313 | 0.145 |
| WaldDiag,MM3 | 1000 | 1000 | 10 | 0.186 | 0.100 | 0.023 |
| WaldVCF | 1000 | 1000 | 10 | 0.293 | 0.196 | 0.068 |
| PearsonRS | 1000 | 1000 | 10 | 0.320 | 0.214 | 0.081 |
| Pearson,MM3 | 1000 | 1000 | 10 | 0.319 | 0.200 | 0.071 |
| RSS,MM3 | 1000 | 1000 | 10 | 0.303 | 0.202 | 0.067 |
| Multn,MM3 | 1000 | 1000 | 10 | 0.401 | 0.292 | 0.130 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 37 | 0.813 | 0.726 | 0.504 |
| WaldDiag,MM3 | 1000 | 1000 | 37 | 0.223 | 0.134 | 0.030 |
| WaldVCF | 1000 | 1000 | 37 | 0.645 | 0.519 | 0.300 |
| PearsonRS | 1000 | 1000 | 37 | 0.429 | 0.314 | 0.151 |
| Pearson,MM3 | 1000 | 1000 | 37 | 0.425 | 0.305 | 0.135 |
| RSS,MM3 | 1000 | 1000 | 37 | 0.429 | 0.294 | 0.123 |
| Multn,MM3 | 1000 | 1000 | 37 | 0.834 | 0.749 | 0.545 |

Power ($n = 2000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 1 | 0.771 | 0.669 | 0.444 |
| WaldDiag,MM3 | 1000 | 1000 | 1 | 0.605 | 0.472 | 0.212 |
| WaldVCF | 1000 | 1000 | 1 | 0.758 | 0.656 | 0.425 |
| PearsonRS | 1000 | 1000 | 1 | 0.811 | 0.731 | 0.550 |
| Pearson,MM3 | 1000 | 1000 | 1 | 0.811 | 0.730 | 0.535 |
| RSS,MM3 | 1000 | 1000 | 1 | 0.820 | 0.739 | 0.558 |
| Multn,MM3 | 1000 | 1000 | 1 | 0.757 | 0.655 | 0.425 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 1 | 1.000 | 0.999 | 0.999 |
| WaldDiag,MM3 | 1000 | 1000 | 1 | 0.999 | 0.999 | 0.997 |
| WaldVCF | 1000 | 1000 | 1 | 1.000 | 0.999 | 0.997 |
| PearsonRS | 1000 | 1000 | 1 | 0.996 | 0.994 | 0.982 |
| Pearson,MM3 | 1000 | 1000 | 1 | 0.996 | 0.994 | 0.979 |
| RSS,MM3 | 1000 | 1000 | 1 | 0.999 | 0.997 | 0.990 |
| Multn,MM3 | 1000 | 1000 | 1 | 1.000 | 0.999 | 0.999 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 21 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 21 | 1.000 | 1.000 | 1.000 |
| WaldVCF | 1000 | 1000 | 21 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 21 | 1.000 | 1.000 | 1.000 |
| Pearson,MM3 | 1000 | 1000 | 21 | 1.000 | 1.000 | 1.000 |
| RSS,MM3 | 1000 | 1000 | 21 | 1.000 | 1.000 | 1.000 |
| Multn,MM3 | 1000 | 1000 | 21 | 1.000 | 1.000 | 1.000 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 7 | 0.505 | 0.374 | 0.176 |
| WaldDiag,MM3 | 1000 | 1000 | 7 | 0.430 | 0.279 | 0.115 |
| WaldVCF | 1000 | 1000 | 7 | 0.432 | 0.291 | 0.111 |
| PearsonRS | 1000 | 1000 | 7 | 0.568 | 0.450 | 0.247 |
| Pearson,MM3 | 1000 | 1000 | 7 | 0.565 | 0.437 | 0.228 |
| RSS,MM3 | 1000 | 1000 | 7 | 0.570 | 0.439 | 0.221 |
| Multn,MM3 | 1000 | 1000 | 7 | 0.493 | 0.367 | 0.169 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 35 | 0.772 | 0.655 | 0.417 |
| WaldDiag,MM3 | 1000 | 1000 | 35 | 0.592 | 0.455 | 0.209 |
| WaldVCF | 1000 | 1000 | 35 | 0.672 | 0.546 | 0.324 |
| PearsonRS | 1000 | 1000 | 35 | 0.808 | 0.705 | 0.497 |
| Pearson,MM3 | 1000 | 1000 | 35 | 0.806 | 0.697 | 0.465 |
| RSS,MM3 | 1000 | 1000 | 35 | 0.793 | 0.686 | 0.472 |
| Multn,MM3 | 1000 | 1000 | 35 | 0.790 | 0.683 | 0.452 |

Power ($n = 3000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 0 | 0.936 | 0.868 | 0.708 |
| WaldDiag,MM3 | 1000 | 1000 | 0 | 0.845 | 0.725 | 0.438 |
| WaldVCF | 1000 | 1000 | 0 | 0.931 | 0.866 | 0.699 |
| PearsonRS | 1000 | 1000 | 0 | 0.959 | 0.911 | 0.788 |
| Pearson,MM3 | 1000 | 1000 | 0 | 0.959 | 0.909 | 0.776 |
| RSS,MM3 | 1000 | 1000 | 0 | 0.963 | 0.921 | 0.798 |
| Multn,MM3 | 1000 | 1000 | 0 | 0.930 | 0.865 | 0.697 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 2 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 2 | 1.000 | 1.000 | 1.000 |
| WaldVCF | 1000 | 1000 | 2 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 2 | 1.000 | 1.000 | 1.000 |
| Pearson,MM3 | 1000 | 1000 | 2 | 1.000 | 1.000 | 1.000 |
| RSS,MM3 | 1000 | 1000 | 2 | 1.000 | 1.000 | 1.000 |
| Multn,MM3 | 1000 | 1000 | 2 | 1.000 | 1.000 | 1.000 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 16 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 16 | 1.000 | 1.000 | 1.000 |
| WaldVCF | 1000 | 1000 | 16 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 16 | 1.000 | 1.000 | 1.000 |
| Pearson,MM3 | 1000 | 1000 | 16 | 1.000 | 1.000 | 1.000 |
| RSS,MM3 | 1000 | 1000 | 16 | 1.000 | 1.000 | 1.000 |
| Multn,MM3 | 1000 | 1000 | 16 | 1.000 | 1.000 | 1.000 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 11 | 0.633 | 0.500 | 0.251 |
| WaldDiag,MM3 | 1000 | 1000 | 11 | 0.637 | 0.505 | 0.252 |
| WaldVCF | 1000 | 1000 | 11 | 0.578 | 0.426 | 0.186 |
| PearsonRS | 1000 | 1000 | 11 | 0.770 | 0.685 | 0.483 |
| Pearson,MM3 | 1000 | 1000 | 11 | 0.768 | 0.675 | 0.450 |
| RSS,MM3 | 1000 | 1000 | 11 | 0.770 | 0.667 | 0.447 |
| Multn,MM3 | 1000 | 1000 | 11 | 0.629 | 0.493 | 0.246 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 39 | 0.854 | 0.775 | 0.558 |
| WaldDiag,MM3 | 1000 | 1000 | 39 | 0.837 | 0.734 | 0.480 |
| WaldVCF | 1000 | 1000 | 39 | 0.800 | 0.703 | 0.462 |
| PearsonRS | 1000 | 1000 | 39 | 0.941 | 0.899 | 0.767 |
| Pearson,MM3 | 1000 | 1000 | 39 | 0.940 | 0.893 | 0.750 |
| RSS,MM3 | 1000 | 1000 | 39 | 0.938 | 0.898 | 0.758 |
| Multn,MM3 | 1000 | 1000 | 39 | 0.859 | 0.782 | 0.583 |

Cluster sampling

Type I errors ($n = 500$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|--------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 12 | 0.703 | 0.642 | 0.488 |
| WaldDiag,MM3 | 1000 | 1000 | 12 | 0.042 | 0.016 | 0.001 |
| WaldVCF | 1000 | 1000 | 12 | 0.204 | 0.130 | 0.052 |
| PearsonRS | 1000 | 1000 | 12 | 0.066 | 0.031 | 0.003 |
| Pearson,MM3 | 1000 | 1000 | 12 | 0.069 | 0.029 | 0.002 |
| RSS,MM3 | 1000 | 1000 | 12 | 0.074 | 0.022 | 0.003 |
| Multn,MM3 | 1000 | 1000 | 12 | 0.191 | 0.094 | 0.031 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.041 | 0.011 | 0.000 |
| WaldVCF | 1000 | 1000 | 1000 | 0.999 | 0.995 | 0.990 |
| PearsonRS | 1000 | 1000 | 1000 | 0.059 | 0.026 | 0.001 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.060 | 0.020 | 0.000 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.045 | 0.011 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.303 | 0.209 | 0.087 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 0.997 | 0.997 | 0.962 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.005 | 0.000 | 0.000 |
| WaldVCF | 1000 | 1000 | 1000 | 0.024 | 0.018 | 0.012 |
| PearsonRS | 1000 | 1000 | 1000 | 0.008 | 0.001 | 0.000 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.008 | 0.001 | 0.000 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.001 | 0.001 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.007 | 0.003 | 0.002 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 0.995 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.016 | 0.004 | 0.000 |
| WaldVCF | 1000 | 1000 | 1000 | 0.774 | 0.718 | 0.637 |
| PearsonRS | 1000 | 1000 | 1000 | 0.032 | 0.011 | 0.000 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.031 | 0.007 | 0.000 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.022 | 0.003 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.084 | 0.050 | 0.017 |
| 3F 15V | | | | | | |
| Wald | 1000 | 999 | 1000 | | | |
| WaldDiag,MM3 | 1000 | 999 | 1000 | 0.007 | 0.000 | 0.000 |
| WaldVCF | 1000 | 999 | 1000 | 0.000 | 0.000 | 0.000 |
| PearsonRS | 1000 | 999 | 1000 | 0.012 | 0.003 | 0.000 |
| Pearson,MM3 | 1000 | 999 | 1000 | 0.012 | 0.002 | 0.000 |
| RSS,MM3 | 1000 | 999 | 1000 | 0.007 | 0.000 | 0.000 |
| Multn,MM3 | 1000 | 999 | 1000 | 0.001 | 0.001 | 0.000 |

Type I errors ($n = 1000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 2 | 0.382 | 0.294 | 0.179 |
| WaldDiag,MM3 | 1000 | 1000 | 2 | 0.091 | 0.037 | 0.002 |
| WaldVCF | 1000 | 1000 | 2 | 0.165 | 0.095 | 0.032 |
| PearsonRS | 1000 | 1000 | 2 | 0.102 | 0.051 | 0.013 |
| Pearson,MM3 | 1000 | 1000 | 2 | 0.106 | 0.048 | 0.012 |
| RSS,MM3 | 1000 | 1000 | 2 | 0.107 | 0.048 | 0.009 |
| Multn,MM3 | 1000 | 1000 | 2 | 0.183 | 0.101 | 0.038 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 10 | 0.995 | 0.991 | 0.982 |
| WaldDiag,MM3 | 1000 | 1000 | 10 | 0.066 | 0.020 | 0.005 |
| WaldVCF | 1000 | 1000 | 10 | 0.701 | 0.608 | 0.419 |
| PearsonRS | 1000 | 1000 | 10 | 0.070 | 0.037 | 0.006 |
| Pearson,MM3 | 1000 | 1000 | 10 | 0.070 | 0.034 | 0.004 |
| RSS,MM3 | 1000 | 1000 | 10 | 0.066 | 0.025 | 0.004 |
| Multn,MM3 | 1000 | 1000 | 10 | 0.438 | 0.291 | 0.103 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 0.999 | 0.999 | 0.996 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.011 | 0.000 | 0.000 |
| WaldVCF | 1000 | 1000 | 1000 | 0.757 | 0.709 | 0.619 |
| PearsonRS | 1000 | 1000 | 1000 | 0.022 | 0.005 | 0.000 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.022 | 0.005 | 0.000 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.016 | 0.002 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.232 | 0.153 | 0.065 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.034 | 0.008 | 0.000 |
| WaldVCF | 1000 | 1000 | 1000 | 0.993 | 0.988 | 0.970 |
| PearsonRS | 1000 | 1000 | 1000 | 0.059 | 0.024 | 0.004 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.059 | 0.023 | 0.002 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.042 | 0.013 | 0.001 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.512 | 0.371 | 0.173 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.014 | 0.003 | 0.000 |
| WaldVCF | 1000 | 1000 | 1000 | 0.424 | 0.378 | 0.286 |
| PearsonRS | 1000 | 1000 | 1000 | 0.021 | 0.003 | 0.000 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.021 | 0.001 | 0.000 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.014 | 0.000 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.081 | 0.044 | 0.010 |

Type I errors ($n = 2000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 1 | 0.236 | 0.158 | 0.059 |
| WaldDiag,MM3 | 1000 | 1000 | 1 | 0.102 | 0.054 | 0.008 |
| WaldVCF | 1000 | 1000 | 1 | 0.144 | 0.077 | 0.021 |
| PearsonRS | 1000 | 1000 | 1 | 0.099 | 0.046 | 0.009 |
| Pearson,MM3 | 1000 | 1000 | 1 | 0.100 | 0.044 | 0.008 |
| RSS,MM3 | 1000 | 1000 | 1 | 0.100 | 0.044 | 0.008 |
| Multn,MM3 | 1000 | 1000 | 1 | 0.152 | 0.088 | 0.026 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 6 | 0.818 | 0.746 | 0.605 |
| WaldDiag,MM3 | 1000 | 1000 | 6 | 0.081 | 0.033 | 0.003 |
| WaldVCF | 1000 | 1000 | 6 | 0.347 | 0.249 | 0.103 |
| PearsonRS | 1000 | 1000 | 6 | 0.082 | 0.034 | 0.009 |
| Pearson,MM3 | 1000 | 1000 | 6 | 0.082 | 0.032 | 0.007 |
| RSS,MM3 | 1000 | 1000 | 6 | 0.074 | 0.032 | 0.006 |
| Multn,MM3 | 1000 | 1000 | 6 | 0.450 | 0.328 | 0.168 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.031 | 0.008 | 0.001 |
| WaldVCF | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 1000 | 0.053 | 0.020 | 0.000 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.051 | 0.016 | 0.000 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.040 | 0.011 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.926 | 0.853 | 0.657 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 42 | 0.975 | 0.958 | 0.905 |
| WaldDiag,MM3 | 1000 | 1000 | 42 | 0.066 | 0.028 | 0.002 |
| WaldVCF | 1000 | 1000 | 42 | 0.743 | 0.663 | 0.448 |
| PearsonRS | 1000 | 1000 | 42 | 0.092 | 0.034 | 0.009 |
| Pearson,MM3 | 1000 | 1000 | 42 | 0.092 | 0.032 | 0.006 |
| RSS,MM3 | 1000 | 1000 | 42 | 0.080 | 0.028 | 0.007 |
| Multn,MM3 | 1000 | 1000 | 42 | 0.701 | 0.585 | 0.323 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.030 | 0.010 | 0.001 |
| WaldVCF | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 1000 | 0.045 | 0.019 | 0.004 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.044 | 0.017 | 0.003 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.033 | 0.010 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.880 | 0.786 | 0.582 |

Type I errors ($n = 3000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 3 | 0.176 | 0.102 | 0.024 |
| WaldDiag,MM3 | 1000 | 1000 | 3 | 0.084 | 0.032 | 0.006 |
| WaldVCF | 1000 | 1000 | 3 | 0.118 | 0.058 | 0.015 |
| PearsonRS | 1000 | 1000 | 3 | 0.086 | 0.043 | 0.010 |
| Pearson,MM3 | 1000 | 1000 | 3 | 0.088 | 0.041 | 0.009 |
| RSS,MM3 | 1000 | 1000 | 3 | 0.089 | 0.039 | 0.008 |
| Multn,MM3 | 1000 | 1000 | 3 | 0.130 | 0.068 | 0.017 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 8 | 0.597 | 0.490 | 0.286 |
| WaldDiag,MM3 | 1000 | 1000 | 8 | 0.077 | 0.034 | 0.006 |
| WaldVCF | 1000 | 1000 | 8 | 0.231 | 0.144 | 0.054 |
| PearsonRS | 1000 | 1000 | 8 | 0.073 | 0.031 | 0.004 |
| Pearson,MM3 | 1000 | 1000 | 8 | 0.073 | 0.028 | 0.003 |
| RSS,MM3 | 1000 | 1000 | 8 | 0.075 | 0.024 | 0.004 |
| Multn,MM3 | 1000 | 1000 | 8 | 0.352 | 0.234 | 0.090 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 137 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 137 | 0.052 | 0.013 | 0.001 |
| WaldVCF | 1000 | 1000 | 137 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 137 | 0.069 | 0.029 | 0.006 |
| Pearson,MM3 | 1000 | 1000 | 137 | 0.069 | 0.027 | 0.004 |
| RSS,MM3 | 1000 | 1000 | 137 | 0.060 | 0.022 | 0.003 |
| Multn,MM3 | 1000 | 1000 | 137 | 0.901 | 0.822 | 0.575 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 26 | 0.824 | 0.752 | 0.594 |
| WaldDiag,MM3 | 1000 | 1000 | 26 | 0.063 | 0.026 | 0.005 |
| WaldVCF | 1000 | 1000 | 26 | 0.511 | 0.389 | 0.206 |
| PearsonRS | 1000 | 1000 | 26 | 0.081 | 0.032 | 0.006 |
| Pearson,MM3 | 1000 | 1000 | 26 | 0.077 | 0.029 | 0.004 |
| RSS,MM3 | 1000 | 1000 | 26 | 0.078 | 0.028 | 0.002 |
| Multn,MM3 | 1000 | 1000 | 26 | 0.588 | 0.477 | 0.279 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 204 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 204 | 0.070 | 0.029 | 0.002 |
| WaldVCF | 1000 | 1000 | 204 | 1.000 | 1.000 | 0.999 |
| PearsonRS | 1000 | 1000 | 204 | 0.081 | 0.036 | 0.005 |
| Pearson,MM3 | 1000 | 1000 | 204 | 0.080 | 0.032 | 0.004 |
| RSS,MM3 | 1000 | 1000 | 204 | 0.068 | 0.027 | 0.001 |
| Multn,MM3 | 1000 | 1000 | 204 | 0.945 | 0.900 | 0.697 |

Power ($n = 500$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 1 | 0.821 | 0.767 | 0.635 |
| WaldDiag,MM3 | 1000 | 1000 | 1 | 0.157 | 0.055 | 0.005 |
| WaldVCF | 1000 | 1000 | 1 | 0.436 | 0.313 | 0.155 |
| PearsonRS | 1000 | 1000 | 1 | 0.301 | 0.176 | 0.051 |
| Pearson,MM3 | 1000 | 1000 | 1 | 0.307 | 0.171 | 0.044 |
| RSS,MM3 | 1000 | 1000 | 1 | 0.306 | 0.172 | 0.042 |
| Multn,MM3 | 1000 | 1000 | 1 | 0.328 | 0.202 | 0.067 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.505 | 0.308 | 0.067 |
| WaldVCF | 1000 | 1000 | 1000 | 1.000 | 0.999 | 0.997 |
| PearsonRS | 1000 | 1000 | 1000 | 0.497 | 0.335 | 0.119 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.497 | 0.319 | 0.101 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.516 | 0.325 | 0.095 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.580 | 0.448 | 0.237 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.574 | 0.286 | 0.036 |
| WaldVCF | 1000 | 1000 | 1000 | 0.062 | 0.051 | 0.040 |
| PearsonRS | 1000 | 1000 | 1000 | 0.561 | 0.324 | 0.073 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.559 | 0.298 | 0.056 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.569 | 0.301 | 0.038 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.064 | 0.033 | 0.011 |
| 2F 10V | | | | | | |
| Wald | 999 | 998 | 999 | 1.000 | 1.000 | 0.997 |
| WaldDiag,MM3 | 999 | 998 | 999 | 0.050 | 0.009 | 0.000 |
| WaldVCF | 999 | 998 | 999 | 0.804 | 0.746 | 0.650 |
| PearsonRS | 999 | 998 | 999 | 0.104 | 0.039 | 0.004 |
| Pearson,MM3 | 999 | 998 | 999 | 0.104 | 0.036 | 0.003 |
| RSS,MM3 | 999 | 998 | 999 | 0.078 | 0.017 | 0.002 |
| Multn,MM3 | 999 | 998 | 999 | 0.102 | 0.054 | 0.022 |
| 3F 15V | | | | | | |
| Wald | 1000 | 999 | 1000 | | | |
| WaldDiag,MM3 | 1000 | 999 | 1000 | 0.022 | 0.004 | 0.000 |
| WaldVCF | 1000 | 999 | 1000 | 0.000 | 0.000 | 0.000 |
| PearsonRS | 1000 | 999 | 1000 | 0.071 | 0.019 | 0.000 |
| Pearson,MM3 | 1000 | 999 | 1000 | 0.071 | 0.014 | 0.000 |
| RSS,MM3 | 1000 | 999 | 1000 | 0.038 | 0.003 | 0.000 |
| Multn,MM3 | 1000 | 999 | 1000 | 0.004 | 0.002 | 0.000 |

Power ($n = 1000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 2 | 0.773 | 0.683 | 0.495 |
| WaldDiag,MM3 | 1000 | 1000 | 2 | 0.357 | 0.207 | 0.056 |
| WaldVCF | 1000 | 1000 | 2 | 0.560 | 0.433 | 0.240 |
| PearsonRS | 1000 | 1000 | 2 | 0.558 | 0.448 | 0.230 |
| Pearson,MM3 | 1000 | 1000 | 2 | 0.561 | 0.442 | 0.208 |
| RSS,MM3 | 1000 | 1000 | 2 | 0.567 | 0.442 | 0.209 |
| Multn,MM3 | 1000 | 1000 | 2 | 0.549 | 0.420 | 0.228 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 8 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 8 | 0.936 | 0.850 | 0.572 |
| WaldVCF | 1000 | 1000 | 8 | 0.989 | 0.983 | 0.948 |
| PearsonRS | 1000 | 1000 | 8 | 0.918 | 0.853 | 0.620 |
| Pearson,MM3 | 1000 | 1000 | 8 | 0.918 | 0.848 | 0.579 |
| RSS,MM3 | 1000 | 1000 | 8 | 0.939 | 0.880 | 0.632 |
| Multn,MM3 | 1000 | 1000 | 8 | 0.916 | 0.839 | 0.610 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.989 | 0.959 | 0.717 |
| WaldVCF | 1000 | 1000 | 1000 | 0.974 | 0.965 | 0.922 |
| PearsonRS | 1000 | 1000 | 1000 | 0.988 | 0.957 | 0.790 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.988 | 0.949 | 0.751 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.991 | 0.965 | 0.786 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.867 | 0.785 | 0.557 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.180 | 0.062 | 0.007 |
| WaldVCF | 1000 | 1000 | 1000 | 0.995 | 0.995 | 0.983 |
| PearsonRS | 1000 | 1000 | 1000 | 0.275 | 0.174 | 0.050 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.274 | 0.163 | 0.040 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.248 | 0.133 | 0.022 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.615 | 0.481 | 0.275 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.129 | 0.037 | 0.000 |
| WaldVCF | 1000 | 1000 | 1000 | 0.530 | 0.465 | 0.354 |
| PearsonRS | 1000 | 1000 | 1000 | 0.303 | 0.174 | 0.039 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.302 | 0.169 | 0.033 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.256 | 0.123 | 0.013 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.215 | 0.126 | 0.038 |

Power ($n = 2000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 2 | 0.897 | 0.834 | 0.671 |
| WaldDiag,MM3 | 1000 | 1000 | 2 | 0.686 | 0.546 | 0.285 |
| WaldVCF | 1000 | 1000 | 2 | 0.831 | 0.745 | 0.530 |
| PearsonRS | 1000 | 1000 | 2 | 0.880 | 0.813 | 0.616 |
| Pearson,MM3 | 1000 | 1000 | 2 | 0.881 | 0.812 | 0.593 |
| RSS,MM3 | 1000 | 1000 | 2 | 0.884 | 0.816 | 0.612 |
| Multn,MM3 | 1000 | 1000 | 2 | 0.838 | 0.748 | 0.541 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 3 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 3 | 1.000 | 1.000 | 0.991 |
| WaldVCF | 1000 | 1000 | 3 | 1.000 | 1.000 | 0.998 |
| PearsonRS | 1000 | 1000 | 3 | 1.000 | 0.999 | 0.990 |
| Pearson,MM3 | 1000 | 1000 | 3 | 1.000 | 0.999 | 0.987 |
| RSS,MM3 | 1000 | 1000 | 3 | 1.000 | 1.000 | 0.994 |
| Multn,MM3 | 1000 | 1000 | 3 | 1.000 | 1.000 | 0.998 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldVCF | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| RSS,MM3 | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 1.000 | 0.999 | 0.997 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 15 | 0.998 | 0.996 | 0.977 |
| WaldDiag,MM3 | 1000 | 1000 | 15 | 0.439 | 0.294 | 0.094 |
| WaldVCF | 1000 | 1000 | 15 | 0.926 | 0.871 | 0.742 |
| PearsonRS | 1000 | 1000 | 15 | 0.640 | 0.491 | 0.272 |
| Pearson,MM3 | 1000 | 1000 | 15 | 0.638 | 0.474 | 0.248 |
| RSS,MM3 | 1000 | 1000 | 15 | 0.620 | 0.446 | 0.209 |
| Multn,MM3 | 1000 | 1000 | 15 | 0.893 | 0.800 | 0.609 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.543 | 0.374 | 0.097 |
| WaldVCF | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 1000 | 0.793 | 0.669 | 0.407 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.791 | 0.654 | 0.367 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.764 | 0.615 | 0.316 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.980 | 0.956 | 0.813 |

Power ($n = 3000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 0 | 0.968 | 0.937 | 0.845 |
| WaldDiag,MM3 | 1000 | 1000 | 0 | 0.887 | 0.794 | 0.506 |
| WaldVCF | 1000 | 1000 | 0 | 0.952 | 0.912 | 0.745 |
| PearsonRS | 1000 | 1000 | 0 | 0.971 | 0.943 | 0.857 |
| Pearson,MM3 | 1000 | 1000 | 0 | 0.973 | 0.941 | 0.841 |
| RSS,MM3 | 1000 | 1000 | 0 | 0.978 | 0.946 | 0.855 |
| Multn,MM3 | 1000 | 1000 | 0 | 0.954 | 0.910 | 0.775 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 4 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 4 | 1.000 | 1.000 | 1.000 |
| WaldVCF | 1000 | 1000 | 4 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 4 | 1.000 | 1.000 | 1.000 |
| Pearson,MM3 | 1000 | 1000 | 4 | 1.000 | 1.000 | 1.000 |
| RSS,MM3 | 1000 | 1000 | 4 | 1.000 | 1.000 | 1.000 |
| Multn,MM3 | 1000 | 1000 | 4 | 1.000 | 1.000 | 1.000 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 88 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 88 | 1.000 | 1.000 | 1.000 |
| WaldVCF | 1000 | 1000 | 88 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 88 | 1.000 | 1.000 | 1.000 |
| Pearson,MM3 | 1000 | 1000 | 88 | 1.000 | 1.000 | 1.000 |
| RSS,MM3 | 1000 | 1000 | 88 | 1.000 | 1.000 | 1.000 |
| Multn,MM3 | 1000 | 1000 | 88 | 1.000 | 1.000 | 1.000 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 16 | 0.972 | 0.958 | 0.903 |
| WaldDiag,MM3 | 1000 | 1000 | 16 | 0.623 | 0.488 | 0.235 |
| WaldVCF | 1000 | 1000 | 16 | 0.869 | 0.797 | 0.624 |
| PearsonRS | 1000 | 1000 | 16 | 0.770 | 0.688 | 0.496 |
| Pearson,MM3 | 1000 | 1000 | 16 | 0.769 | 0.679 | 0.452 |
| RSS,MM3 | 1000 | 1000 | 16 | 0.761 | 0.655 | 0.426 |
| Multn,MM3 | 1000 | 1000 | 16 | 0.900 | 0.829 | 0.678 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 173 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 173 | 0.825 | 0.702 | 0.387 |
| WaldVCF | 1000 | 1000 | 173 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 173 | 0.946 | 0.908 | 0.782 |
| Pearson,MM3 | 1000 | 1000 | 173 | 0.945 | 0.905 | 0.759 |
| RSS,MM3 | 1000 | 1000 | 173 | 0.941 | 0.905 | 0.726 |
| Multn,MM3 | 1000 | 1000 | 173 | 0.991 | 0.978 | 0.892 |

Strat-clust sampling

Type I errors ($n = 500$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 6 | 0.743 | 0.672 | 0.563 |
| WaldDiag,MM3 | 1000 | 1000 | 6 | 0.089 | 0.051 | 0.005 |
| WaldVCF | 1000 | 1000 | 6 | 0.311 | 0.232 | 0.122 |
| PearsonRS | 1000 | 1000 | 6 | 0.086 | 0.046 | 0.006 |
| Pearson,MM3 | 1000 | 1000 | 6 | 0.086 | 0.042 | 0.005 |
| RSS,MM3 | 1000 | 1000 | 6 | 0.087 | 0.038 | 0.004 |
| Multn,MM3 | 1000 | 1000 | 6 | 0.175 | 0.113 | 0.044 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.077 | 0.030 | 0.002 |
| WaldVCF | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 1000 | 0.055 | 0.020 | 0.001 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.057 | 0.016 | 0.001 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.044 | 0.012 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.273 | 0.177 | 0.068 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | | | |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.023 | 0.001 | 0.000 |
| WaldVCF | 1000 | 1000 | 1000 | 0.115 | 0.106 | 0.083 |
| PearsonRS | 1000 | 1000 | 1000 | 0.003 | 0.000 | 0.000 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.003 | 0.000 | 0.000 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.000 | 0.000 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.012 | 0.006 | 0.000 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.045 | 0.011 | 0.000 |
| WaldVCF | 1000 | 1000 | 1000 | 0.960 | 0.947 | 0.922 |
| PearsonRS | 1000 | 1000 | 1000 | 0.028 | 0.007 | 0.000 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.028 | 0.004 | 0.000 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.018 | 0.004 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.107 | 0.060 | 0.021 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | | | |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.010 | 0.001 | 0.000 |
| WaldVCF | 1000 | 1000 | 1000 | 0.018 | 0.015 | 0.009 |
| PearsonRS | 1000 | 1000 | 1000 | 0.005 | 0.000 | 0.000 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.005 | 0.000 | 0.000 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.000 | 0.000 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.016 | 0.004 | 0.000 |

Type I errors ($n = 1000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 1 | 0.360 | 0.275 | 0.146 |
| WaldDiag,MM3 | 1000 | 1000 | 1 | 0.077 | 0.035 | 0.003 |
| WaldVCF | 1000 | 1000 | 1 | 0.196 | 0.121 | 0.041 |
| PearsonRS | 1000 | 1000 | 1 | 0.096 | 0.046 | 0.006 |
| Pearson,MM3 | 1000 | 1000 | 1 | 0.097 | 0.043 | 0.006 |
| RSS,MM3 | 1000 | 1000 | 1 | 0.094 | 0.047 | 0.006 |
| Multn,MM3 | 1000 | 1000 | 1 | 0.176 | 0.104 | 0.028 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 13 | 0.996 | 0.995 | 0.987 |
| WaldDiag,MM3 | 1000 | 1000 | 13 | 0.083 | 0.036 | 0.003 |
| WaldVCF | 1000 | 1000 | 13 | 0.867 | 0.810 | 0.691 |
| PearsonRS | 1000 | 1000 | 13 | 0.071 | 0.035 | 0.005 |
| Pearson,MM3 | 1000 | 1000 | 13 | 0.071 | 0.033 | 0.004 |
| RSS,MM3 | 1000 | 1000 | 13 | 0.059 | 0.026 | 0.005 |
| Multn,MM3 | 1000 | 1000 | 13 | 0.409 | 0.291 | 0.152 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.029 | 0.007 | 0.000 |
| WaldVCF | 1000 | 1000 | 1000 | 0.999 | 0.999 | 0.998 |
| PearsonRS | 1000 | 1000 | 1000 | 0.020 | 0.004 | 0.000 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.020 | 0.003 | 0.000 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.016 | 0.002 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.334 | 0.201 | 0.069 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.032 | 0.013 | 0.001 |
| WaldVCF | 1000 | 1000 | 1000 | 0.999 | 0.999 | 0.997 |
| PearsonRS | 1000 | 1000 | 1000 | 0.053 | 0.018 | 0.003 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.052 | 0.013 | 0.003 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.038 | 0.010 | 0.001 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.447 | 0.318 | 0.151 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.028 | 0.007 | 0.000 |
| WaldVCF | 1000 | 1000 | 1000 | 0.978 | 0.970 | 0.954 |
| PearsonRS | 1000 | 1000 | 1000 | 0.030 | 0.008 | 0.000 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.029 | 0.007 | 0.000 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.020 | 0.003 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.240 | 0.139 | 0.045 |

Type I errors ($n = 2000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 2 | 0.211 | 0.147 | 0.053 |
| WaldDiag,MM3 | 1000 | 1000 | 2 | 0.086 | 0.040 | 0.005 |
| WaldVCF | 1000 | 1000 | 2 | 0.139 | 0.084 | 0.026 |
| PearsonRS | 1000 | 1000 | 2 | 0.090 | 0.047 | 0.014 |
| Pearson,MM3 | 1000 | 1000 | 2 | 0.090 | 0.046 | 0.007 |
| RSS,MM3 | 1000 | 1000 | 2 | 0.094 | 0.045 | 0.007 |
| Multn,MM3 | 1000 | 1000 | 2 | 0.146 | 0.081 | 0.023 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 10 | 0.762 | 0.702 | 0.542 |
| WaldDiag,MM3 | 1000 | 1000 | 10 | 0.076 | 0.037 | 0.004 |
| WaldVCF | 1000 | 1000 | 10 | 0.501 | 0.382 | 0.209 |
| PearsonRS | 1000 | 1000 | 10 | 0.073 | 0.036 | 0.010 |
| Pearson,MM3 | 1000 | 1000 | 10 | 0.073 | 0.034 | 0.008 |
| RSS,MM3 | 1000 | 1000 | 10 | 0.069 | 0.028 | 0.007 |
| Multn,MM3 | 1000 | 1000 | 10 | 0.427 | 0.318 | 0.156 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.044 | 0.009 | 0.000 |
| WaldVCF | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 1000 | 0.039 | 0.012 | 0.003 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.037 | 0.011 | 0.002 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.032 | 0.008 | 0.001 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.864 | 0.767 | 0.501 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 39 | 0.975 | 0.965 | 0.922 |
| WaldDiag,MM3 | 1000 | 1000 | 39 | 0.081 | 0.032 | 0.004 |
| WaldVCF | 1000 | 1000 | 39 | 0.850 | 0.797 | 0.648 |
| PearsonRS | 1000 | 1000 | 39 | 0.087 | 0.040 | 0.003 |
| Pearson,MM3 | 1000 | 1000 | 39 | 0.087 | 0.037 | 0.003 |
| RSS,MM3 | 1000 | 1000 | 39 | 0.071 | 0.024 | 0.001 |
| Multn,MM3 | 1000 | 1000 | 39 | 0.649 | 0.526 | 0.301 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.034 | 0.013 | 0.001 |
| WaldVCF | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 1000 | 0.033 | 0.009 | 0.001 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.033 | 0.008 | 0.000 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.028 | 0.009 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.829 | 0.734 | 0.477 |

Type I errors ($n = 3000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 0 | 0.173 | 0.112 | 0.036 |
| WaldDiag,MM3 | 1000 | 1000 | 0 | 0.096 | 0.045 | 0.010 |
| WaldVCF | 1000 | 1000 | 0 | 0.133 | 0.079 | 0.019 |
| PearsonRS | 1000 | 1000 | 0 | 0.089 | 0.052 | 0.012 |
| Pearson,MM3 | 1000 | 1000 | 0 | 0.089 | 0.050 | 0.010 |
| RSS,MM3 | 1000 | 1000 | 0 | 0.088 | 0.047 | 0.012 |
| Multn,MM3 | 1000 | 1000 | 0 | 0.130 | 0.076 | 0.020 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 7 | 0.556 | 0.452 | 0.258 |
| WaldDiag,MM3 | 1000 | 1000 | 7 | 0.085 | 0.038 | 0.006 |
| WaldVCF | 1000 | 1000 | 7 | 0.341 | 0.235 | 0.094 |
| PearsonRS | 1000 | 1000 | 7 | 0.096 | 0.045 | 0.009 |
| Pearson,MM3 | 1000 | 1000 | 7 | 0.095 | 0.041 | 0.008 |
| RSS,MM3 | 1000 | 1000 | 7 | 0.085 | 0.039 | 0.005 |
| Multn,MM3 | 1000 | 1000 | 7 | 0.327 | 0.216 | 0.091 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 159 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 159 | 0.069 | 0.022 | 0.004 |
| WaldVCF | 1000 | 1000 | 159 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 159 | 0.059 | 0.028 | 0.007 |
| Pearson,MM3 | 1000 | 1000 | 159 | 0.058 | 0.025 | 0.005 |
| RSS,MM3 | 1000 | 1000 | 159 | 0.052 | 0.018 | 0.002 |
| Multn,MM3 | 1000 | 1000 | 159 | 0.921 | 0.843 | 0.626 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 34 | 0.811 | 0.753 | 0.593 |
| WaldDiag,MM3 | 1000 | 1000 | 34 | 0.081 | 0.037 | 0.003 |
| WaldVCF | 1000 | 1000 | 34 | 0.621 | 0.507 | 0.318 |
| PearsonRS | 1000 | 1000 | 34 | 0.084 | 0.040 | 0.010 |
| Pearson,MM3 | 1000 | 1000 | 34 | 0.084 | 0.035 | 0.008 |
| RSS,MM3 | 1000 | 1000 | 34 | 0.072 | 0.033 | 0.003 |
| Multn,MM3 | 1000 | 1000 | 34 | 0.557 | 0.428 | 0.228 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 268 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 268 | 0.054 | 0.022 | 0.002 |
| WaldVCF | 1000 | 1000 | 268 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 268 | 0.054 | 0.018 | 0.003 |
| Pearson,MM3 | 1000 | 1000 | 268 | 0.054 | 0.016 | 0.003 |
| RSS,MM3 | 1000 | 1000 | 268 | 0.045 | 0.013 | 0.001 |
| Multn,MM3 | 1000 | 1000 | 268 | 0.928 | 0.845 | 0.622 |

Power ($n = 500$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 2 | 0.878 | 0.831 | 0.739 |
| WaldDiag,MM3 | 1000 | 1000 | 2 | 0.178 | 0.084 | 0.017 |
| WaldVCF | 1000 | 1000 | 2 | 0.515 | 0.407 | 0.256 |
| PearsonRS | 1000 | 1000 | 2 | 0.274 | 0.170 | 0.048 |
| Pearson,MM3 | 1000 | 1000 | 2 | 0.275 | 0.165 | 0.043 |
| RSS,MM3 | 1000 | 1000 | 2 | 0.282 | 0.164 | 0.043 |
| Multn,MM3 | 1000 | 1000 | 2 | 0.308 | 0.189 | 0.085 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.633 | 0.439 | 0.129 |
| WaldVCF | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 1000 | 0.476 | 0.324 | 0.108 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.478 | 0.310 | 0.079 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.507 | 0.328 | 0.077 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.447 | 0.331 | 0.194 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | | | |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.716 | 0.435 | 0.075 |
| WaldVCF | 1000 | 1000 | 1000 | 0.271 | 0.244 | 0.203 |
| PearsonRS | 1000 | 1000 | 1000 | 0.451 | 0.212 | 0.030 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.450 | 0.188 | 0.021 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.471 | 0.208 | 0.018 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.090 | 0.043 | 0.005 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.091 | 0.021 | 0.002 |
| WaldVCF | 1000 | 1000 | 1000 | 0.963 | 0.946 | 0.925 |
| PearsonRS | 1000 | 1000 | 1000 | 0.109 | 0.041 | 0.007 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.109 | 0.038 | 0.005 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.074 | 0.026 | 0.001 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.151 | 0.082 | 0.022 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | | | |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.046 | 0.002 | 0.000 |
| WaldVCF | 1000 | 1000 | 1000 | 0.018 | 0.014 | 0.009 |
| PearsonRS | 1000 | 1000 | 1000 | 0.042 | 0.010 | 0.000 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.042 | 0.010 | 0.000 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.025 | 0.002 | 0.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.014 | 0.002 | 0.000 |

Power ($n = 1000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 1 | 0.763 | 0.692 | 0.525 |
| WaldDiag,MM3 | 1000 | 1000 | 1 | 0.380 | 0.252 | 0.072 |
| WaldVCF | 1000 | 1000 | 1 | 0.605 | 0.499 | 0.316 |
| PearsonRS | 1000 | 1000 | 1 | 0.575 | 0.446 | 0.242 |
| Pearson,MM3 | 1000 | 1000 | 1 | 0.576 | 0.444 | 0.232 |
| RSS,MM3 | 1000 | 1000 | 1 | 0.580 | 0.457 | 0.236 |
| Multn,MM3 | 1000 | 1000 | 1 | 0.570 | 0.450 | 0.251 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 10 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 10 | 0.958 | 0.913 | 0.679 |
| WaldVCF | 1000 | 1000 | 10 | 0.999 | 0.999 | 0.994 |
| PearsonRS | 1000 | 1000 | 10 | 0.919 | 0.832 | 0.622 |
| Pearson,MM3 | 1000 | 1000 | 10 | 0.919 | 0.820 | 0.574 |
| RSS,MM3 | 1000 | 1000 | 10 | 0.943 | 0.871 | 0.636 |
| Multn,MM3 | 1000 | 1000 | 10 | 0.849 | 0.746 | 0.539 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.997 | 0.985 | 0.865 |
| WaldVCF | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 1000 | 0.987 | 0.953 | 0.759 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.987 | 0.942 | 0.713 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.994 | 0.968 | 0.774 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.836 | 0.743 | 0.497 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.206 | 0.086 | 0.010 |
| WaldVCF | 1000 | 1000 | 1000 | 1.000 | 1.000 | 0.999 |
| PearsonRS | 1000 | 1000 | 1000 | 0.274 | 0.162 | 0.053 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.273 | 0.155 | 0.036 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.245 | 0.136 | 0.024 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.533 | 0.407 | 0.211 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.172 | 0.058 | 0.007 |
| WaldVCF | 1000 | 1000 | 1000 | 0.992 | 0.987 | 0.977 |
| PearsonRS | 1000 | 1000 | 1000 | 0.313 | 0.168 | 0.034 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.312 | 0.157 | 0.027 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.265 | 0.120 | 0.014 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.403 | 0.281 | 0.115 |

Power ($n = 2000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 0 | 0.874 | 0.813 | 0.620 |
| WaldDiag,MM3 | 1000 | 1000 | 0 | 0.641 | 0.496 | 0.228 |
| WaldVCF | 1000 | 1000 | 0 | 0.827 | 0.713 | 0.496 |
| PearsonRS | 1000 | 1000 | 0 | 0.833 | 0.754 | 0.542 |
| Pearson,MM3 | 1000 | 1000 | 0 | 0.834 | 0.749 | 0.524 |
| RSS,MM3 | 1000 | 1000 | 0 | 0.846 | 0.767 | 0.543 |
| Multn,MM3 | 1000 | 1000 | 0 | 0.814 | 0.699 | 0.477 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 2 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 2 | 1.000 | 1.000 | 0.994 |
| WaldVCF | 1000 | 1000 | 2 | 1.000 | 1.000 | 0.999 |
| PearsonRS | 1000 | 1000 | 2 | 1.000 | 0.999 | 0.985 |
| Pearson,MM3 | 1000 | 1000 | 2 | 1.000 | 0.999 | 0.979 |
| RSS,MM3 | 1000 | 1000 | 2 | 1.000 | 1.000 | 0.992 |
| Multn,MM3 | 1000 | 1000 | 2 | 1.000 | 0.999 | 0.996 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldVCF | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 1000 | 1.000 | 1.000 | 0.999 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 1.000 | 1.000 | 0.999 |
| RSS,MM3 | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| Multn,MM3 | 1000 | 1000 | 1000 | 1.000 | 0.997 | 0.960 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 14 | 0.993 | 0.992 | 0.982 |
| WaldDiag,MM3 | 1000 | 1000 | 14 | 0.429 | 0.280 | 0.086 |
| WaldVCF | 1000 | 1000 | 14 | 0.961 | 0.932 | 0.851 |
| PearsonRS | 1000 | 1000 | 14 | 0.560 | 0.440 | 0.225 |
| Pearson,MM3 | 1000 | 1000 | 14 | 0.559 | 0.422 | 0.199 |
| RSS,MM3 | 1000 | 1000 | 14 | 0.538 | 0.404 | 0.172 |
| Multn,MM3 | 1000 | 1000 | 14 | 0.857 | 0.753 | 0.532 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 1000 | 0.531 | 0.346 | 0.079 |
| WaldVCF | 1000 | 1000 | 1000 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 1000 | 0.745 | 0.605 | 0.318 |
| Pearson,MM3 | 1000 | 1000 | 1000 | 0.741 | 0.591 | 0.286 |
| RSS,MM3 | 1000 | 1000 | 1000 | 0.710 | 0.548 | 0.215 |
| Multn,MM3 | 1000 | 1000 | 1000 | 0.953 | 0.887 | 0.690 |

Power ($n = 3000$)

| Name | No. repl. | Converged | Rank def. | Rejection rate | | |
|---------------|-----------|-----------|-----------|----------------|-------|-------|
| | | | | 10% | 5% | 1% |
| 1F 5V | | | | | | |
| Wald | 1000 | 1000 | 1 | 0.953 | 0.912 | 0.801 |
| WaldDiag,MM3 | 1000 | 1000 | 1 | 0.869 | 0.744 | 0.480 |
| WaldVCF | 1000 | 1000 | 1 | 0.941 | 0.882 | 0.740 |
| PearsonRS | 1000 | 1000 | 1 | 0.960 | 0.913 | 0.803 |
| Pearson,MM3 | 1000 | 1000 | 1 | 0.960 | 0.911 | 0.789 |
| RSS,MM3 | 1000 | 1000 | 1 | 0.964 | 0.924 | 0.807 |
| Multn,MM3 | 1000 | 1000 | 1 | 0.938 | 0.877 | 0.730 |
| 1F 8V | | | | | | |
| Wald | 1000 | 1000 | 3 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 3 | 1.000 | 1.000 | 1.000 |
| WaldVCF | 1000 | 1000 | 3 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 3 | 1.000 | 1.000 | 1.000 |
| Pearson,MM3 | 1000 | 1000 | 3 | 1.000 | 1.000 | 1.000 |
| RSS,MM3 | 1000 | 1000 | 3 | 1.000 | 1.000 | 1.000 |
| Multn,MM3 | 1000 | 1000 | 3 | 1.000 | 1.000 | 1.000 |
| 1F 15V | | | | | | |
| Wald | 1000 | 1000 | 105 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 105 | 1.000 | 1.000 | 1.000 |
| WaldVCF | 1000 | 1000 | 105 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 105 | 1.000 | 1.000 | 1.000 |
| Pearson,MM3 | 1000 | 1000 | 105 | 1.000 | 1.000 | 1.000 |
| RSS,MM3 | 1000 | 1000 | 105 | 1.000 | 1.000 | 1.000 |
| Multn,MM3 | 1000 | 1000 | 105 | 1.000 | 1.000 | 0.999 |
| 2F 10V | | | | | | |
| Wald | 1000 | 1000 | 9 | 0.982 | 0.969 | 0.917 |
| WaldDiag,MM3 | 1000 | 1000 | 9 | 0.654 | 0.512 | 0.230 |
| WaldVCF | 1000 | 1000 | 9 | 0.916 | 0.864 | 0.731 |
| PearsonRS | 1000 | 1000 | 9 | 0.778 | 0.680 | 0.455 |
| Pearson,MM3 | 1000 | 1000 | 9 | 0.775 | 0.667 | 0.411 |
| RSS,MM3 | 1000 | 1000 | 9 | 0.768 | 0.636 | 0.379 |
| Multn,MM3 | 1000 | 1000 | 9 | 0.877 | 0.820 | 0.631 |
| 3F 15V | | | | | | |
| Wald | 1000 | 1000 | 188 | 1.000 | 1.000 | 1.000 |
| WaldDiag,MM3 | 1000 | 1000 | 188 | 0.821 | 0.690 | 0.361 |
| WaldVCF | 1000 | 1000 | 188 | 1.000 | 1.000 | 1.000 |
| PearsonRS | 1000 | 1000 | 188 | 0.940 | 0.897 | 0.727 |
| Pearson,MM3 | 1000 | 1000 | 188 | 0.938 | 0.895 | 0.688 |
| RSS,MM3 | 1000 | 1000 | 188 | 0.935 | 0.877 | 0.664 |
| Multn,MM3 | 1000 | 1000 | 188 | 0.991 | 0.975 | 0.894 |