|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MAF  Methods  Heritability | 0.2 | | | | 0.4 | | | |
| geXGB | AGGrE  GATOr | KCCU | GBIGM | geXGB | AGGrE  GATOr | KCCU | GBIGM |
| 0.01 | 0.554 | 0.46 | 0.256 | 0.108 | 0.84 | 0.618 | 0.377 | 0.107 |
| 0.025 | 0.971 | 0.675 | 0.408 | 0.116 | 1 | 0.553 | 0.375 | 0.1 |
| 0.05 | 1 | 0.763 | 0.626 | 0.159 | 1 | 0.658 | 0.562 | 0.107 |
| 0.1 | 1 | 1 | 0.879 | 0.168 | 1 | 0.9 | 0.874 | 0.152 |
| 0.2 | 1 | 1 | 0.935 | 0.229 | 1 | 0.634 | 0.583 | 0.231 |

Table2:

Table3:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Method  Heritability Sample Size | | geXGB | AGGrGETOr | KCCU | GBIGM |
| 0.2 | 1000 | 0.67 | 0.15 | 0.11 | 0.2 |
| 2000 | 1 | 0.18 | 0.38 | 0.16 |
| 3000 | 1 | 0.11 | 0.55 | 0.23 |
| 4000 | 1 | 0.31 | 0.76 | 0.21 |
| 5000 | 1 | 0.26 | 0.87 | 0.12 |
| 0.4 | 1000 | 0.68 | 0.18 | 0.13 | 0 |
| 2000 | 0.97 | 0.16 | 0.11 | 0.04 |
| 3000 | 1 | 0.35 | 0.2 | 0.11 |
| 4000 | 1 | 0.54 | 0.37 | 0.11 |
| 5000 | 1 | 0.65 | 0.58 | 0.05 |

Table1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Model  MAF Heritability Method | | | M1 | M2 | M3 | M4 | M5 | M6 | M7 | M8 | M9 | M10 |
| 0.2 | 0.01 | geXGB | 0.14 | **0.17** | **0.58** | 0.75 | **0.48** | **0.38** | 0.71 | 0.91 | **0.93** | **0.49** |
| AGGrEGATOr | 0.12 | 0.14 | 0.12 | **0.89** | 0.12 | 0.1 | **0.89** | **1** | 0.88 | 0.34 |
| KCCU | **0.15** | 0.09 | 0.09 | 0.29 | 0.14 | 0.1 | 0.43 | 0.62 | 0.52 | 0.13 |
| GBIGM | 0.09 | 0.08 | 0.11 | 0.13 | 0.12 | 0.17 | 0.11 | 0.08 | 0.1 | 0.09 |
| 0.025 | geXGB | 0.98 | **0.97** | **0.94** | **1** | **1** | **0.99** | **0.99** | **1** | **0.9** | **0.94** |
| AGGrEGATOr | **1** | 0.15 | 0.27 | **1** | **1** | 0.46 | 0.37 | **1** | 0.69 | 0.81 |
| KCCU | 0.58 | 0.09 | 0.09 | 0.74 | 0.71 | 0.59 | 0.24 | 0.8 | 0.12 | 0.12 |
| GBIGM | 0.08 | 0.11 | 0.07 | 0.11 | 0.1 | 0.12 | 0.13 | 0.2 | 0.14 | 0.1 |
| 0.05 | geXGB | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| AGGrEGATOr | 0.09 | 0.09 | 0.59 | 0.89 | 0.98 | 0.99 | 1 | 1 | 1 | 1 |
| KCCU | 0.13 | 0.1 | 0.57 | 0.65 | 0.71 | 0.8 | 0.84 | 0.85 | 0.84 | 0.77 |
| GBIGM | 0.18 | 0.16 | 0.08 | 0.22 | 0.23 | 0.12 | 0.17 | 0.19 | 0.12 | 0.12 |
| 0.1 | geXGB | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| AGGrEGATOr | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| KCCU | 0.81 | 0.88 | 0.93 | 0.9 | 0.9 | 0.83 | 0.86 | 0.91 | 0.84 | 0.93 |
| GBIGM | 0.15 | 0.14 | 0.14 | 0.23 | 0.19 | 0.17 | 0.16 | 0.16 | 0.15 | 0.19 |
| 0.2 | geXGB | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| AGGrEGATOr | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| KCCU | 0.89 | 0.91 | 0.97 | 0.94 | 0.95 | 0.92 | 0.89 | 0.97 | 0.94 | 0.97 |
| GBIGM | 0.19 | 0.21 | 0.31 | 0.18 | 0.29 | 0.23 | 0.22 | 0.21 | 0.23 | 0.22 |
| 0.4 | 0.01 | geXGB | 0.9 | 0.74 | 0.82 | 0.82 | 0.83 | 0.96 | 0.96 | 0.66 | 0.82 | 0.89 |
| AGGrEGATOr | 0.71 | 0.73 | 0.09 | 0.1 | 0.77 | 0.96 | 0.94 | 0.17 | 0.9 | 0.81 |
| KCCU | 0.34 | 0.34 | 0.05 | 0.08 | 0.4 | 0.29 | 0.77 | 0.16 | 0.73 | 0.61 |
| GBIGM | 0.09 | 0.11 | 0.08 | 0.1 | 0.11 | 0.07 | 0.11 | 0.18 | 0.11 | 0.11 |
| 0.025 | geXGB | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| AGGrEGATOr | 0.99 | 1 | 0.56 | 0.12 | 0.06 | 0.26 | 0.91 | 0.51 | 0.12 | 1 |
| KCCU | 0.58 | 1 | 0.24 | 0.08 | 0.06 | 0.11 | 0.24 | 0.32 | 0.12 | 1 |
| GBIGM | 0.15 | 0.1 | 0.12 | 0.14 | 0.08 | 0.09 | 0.11 | 0.08 | 0.05 | 0.08 |
| 0.05 | geXGB | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| AGGrEGATOr | 1 | 0.68 | 0.97 | 0.91 | 0.15 | 0.42 | 0.35 | 0.19 | 0.91 | 1 |
| KCCU | 0.86 | 0.15 | 0.9 | 0.95 | 0.1 | 0.37 | 0.41 | 0.14 | 0.74 | 1 |
| GBIGM | 0.11 | 0.07 | 0.12 | 0.09 | 0.13 | 0.1 | 0.08 | 0.08 | 0.13 | 0.16 |
| 0.1 | geXGB | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| AGGrEGATOr | 0.98 | 0.06 | 1 | 0.96 | 1 | 1 | 1 | 1 | 1 | 1 |
| KCCU | 0.62 | 0.17 | 1 | 0.95 | 1 | 1 | 1 | 1 | 1 | 1 |
| GBIGM | 0.12 | 0.17 | 0.19 | 0.18 | 0.12 | 0.2 | 0.13 | 0.1 | 0.19 | 0.12 |
| 0.2 | geXGB | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| AGGrEGATOr | 0.93 | 1 | 1 | 0.99 | 1 | 0.8 | 0.27 | 0.09 | 0.14 | 0.12 |
| KCCU | 0.28 | 1 | 1 | 0.83 | 1 | 0.76 | 0.41 | 0.15 | 0.28 | 0.12 |
| GBIGM | 0.19 | 0.2 | 0.25 | 0.31 | 0.23 | 0.26 | 0.26 | 0.29 | 0.22 | 0.1 |