| Method | Average MCC scores | | | |
| --- | --- | --- | --- | --- |
| IR < 10 | 10 ≤ IR < 30 | IR ≥ 30 | ALL |
| 1. SVM with no sampling | 59.9066 | 41.4498 | 36.2987 | 46.8520 |
| 1. ROS | 63.0640 | 59.16717 | 50.01539 | 57.8051 |
| 1. ADASYN | 60.6251 | 60.31106 | 50.02387 | 57.2376 |
| 1. SMOTE | 64.4388 | 60.95442 | 50.36484 | 58.9897 |
| 1. Borderline- SMOTE | 61.8858 | 60.70964 | 52.00332 | 58.4538 |
| 1. Polynom-fit-SMOTE | 63.6602 | 59.67400 | 49.46852 | 58.0188 |
| 1. ProWSyn | 63.5236 | 60.01100 | 50.10668 | 58.2696 |
| 1. SMOTE-IPF | 64.2148 | 60.80276 | 50.10144 | 58.7759 |
| 1. SMOBD | 64.1260 | 59.67873 | 52.75457 | 59.2167 |
| 1. G- SMOTE | 63.9946 | 60.53311 | 50.60008 | 58.7634 |
| 1. CCR | 57.3101 | 41.89904 | 40.50158 | 47.3109 |
| 1. LEE | **66.0069** | 59.55648 | **53.11975** | **60.0056** |
| 1. LVQ- SMOTE | 61.9744 | 55.60123 | 52.10993 | 56.9351 |
| 1. Assembled- SMOTE | 63.7104 | 60.76362 | 50.04900 | 58.5561 |
| 1. RUS | 59.8243 | 48.69019 | 38.97676 | 49.8989 |
| 1. NC | 64.7720 | 48.78341 | 38.87265 | 51.7723 |
| 1. ENN | 63.3109 | 48.12443 | 39.68862 | 51.2668 |
| 1. CNN | 59.6868 | 42.83827 | 34.56104 | 46.6603 |
| 1. OSS | 61.7677 | 40.46503 | 36.35419 | 47.2696 |
| 1. Tomek-Link | 61.5356 | 42.02024 | 37.03837 | 47.8765 |
| 1. Near-Miss | 43.8894 | 30.95112 | 33.13978 | 36.5380 |
| 1. SMOTE-ENN | 62.6756 | 59.89414 | 49.89829 | 57.8470 |
| 1. SMOTE-Tomek | 64.3823 | **60.99517** | 50.36499 | 58.9809 |
| 1. BRF | 64.5724 | 54.06098 | 40.57675 | 53.8633 |
| 1. Balanced-Bagging | 62.6736 | 52.80105 | 40.66337 | 52.7790 |
| 1. Over-Bagging | 64.2763 | 52.07287 | 38.16327 | 52.3850 |
| 1. SMOTE-Bagging | 65.7740 | 51.44609 | 41.58057 | 53.8749 |
| 1. RUSBoost | 57.1440 | 52.88587 | 39.27448 | 50.2768 |
| 1. Over-Boost | 63.5572 | 58.50652 | 43.72800 | 55.8358 |
| 1. Easy Ensemble | 60.0863 | 53.03603 | 36.31342 | 50.5205 |
| 1. Cost-Sensitive SVM | 63.3358 | 59.27992 | 49.99665 | 57.9374 |