# Tabel 1. Hasil 5-Fold Cross-Validation untuk Berbagai Model dan Skenario

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| --- | --- | --- | --- | --- | --- |
| **Skenario / Model** | **ROC-AUC** | **Accuracy** | **Precision** | **Recall** | **F1-Score** |
| **No\_FE** |  |  |  |  |  |
| AdaBoost Name: 20, dtype: object | 0.840±0.022 | 0.800±0.011 | 0.656±0.030 | 0.522±0.027 | 0.581±0.024 |
| CatBoost Name: 21, dtype: object | 0.822±0.014 | 0.783±0.010 | 0.615±0.027 | 0.491±0.021 | 0.545±0.017 |
| DecisionTree Name: 22, dtype: object | 0.805±0.012 | 0.779±0.007 | 0.602±0.021 | 0.494±0.015 | 0.542±0.013 |
| GBM Name: 23, dtype: object | 0.827±0.012 | 0.784±0.013 | 0.619±0.031 | 0.487±0.032 | 0.545±0.030 |
| LightGBM Name: 24, dtype: object | 0.836±0.017 | 0.793±0.008 | 0.637±0.021 | 0.512±0.016 | 0.568±0.017 |
| LogisticRegression Name: 25, dtype: object | **0.844±0.016** | **0.806±0.011** | 0.661±0.023 | 0.553±0.042 | **0.602±0.030** |
| NeuralNet Name: 26, dtype: object | 0.836±0.020 | 0.802±0.015 | 0.647±0.030 | **0.558±0.041** | 0.599±0.035 |
| RandomForest Name: 27, dtype: object | 0.824±0.013 | 0.787±0.010 | 0.631±0.024 | 0.477±0.030 | 0.543±0.025 |
| SVC Name: 28, dtype: object | 0.800±0.024 | 0.806±0.011 | **0.679±0.030** | 0.509±0.030 | 0.581±0.026 |
| XGBoost Name: 29, dtype: object | 0.838±0.012 | 0.795±0.005 | 0.643±0.017 | 0.514±0.023 | 0.571±0.014 |
| **SMOTE\_Only** |  |  |  |  |  |
| AdaBoost Name: 30, dtype: object | 0.911±0.011 | 0.823±0.016 | 0.804±0.015 | 0.855±0.017 | 0.829±0.015 |
| CatBoost Name: 31, dtype: object | 0.932±0.011 | **0.856±0.017** | **0.853±0.017** | **0.860±0.022** | **0.857±0.017** |
| DecisionTree Name: 32, dtype: object | 0.859±0.014 | 0.786±0.012 | 0.772±0.020 | 0.814±0.011 | 0.792±0.009 |
| GBM Name: 33, dtype: object | 0.932±0.009 | 0.853±0.015 | 0.852±0.019 | 0.855±0.019 | 0.853±0.014 |
| LightGBM Name: 34, dtype: object | 0.933±0.009 | 0.849±0.014 | 0.847±0.020 | 0.854±0.022 | 0.850±0.014 |
| LogisticRegression Name: 35, dtype: object | 0.857±0.016 | 0.777±0.017 | 0.758±0.023 | 0.816±0.013 | 0.785±0.014 |
| NeuralNet Name: 36, dtype: object | 0.867±0.015 | 0.783±0.015 | 0.774±0.023 | 0.800±0.032 | 0.786±0.015 |
| RandomForest Name: 37, dtype: object | 0.917±0.013 | 0.845±0.013 | 0.840±0.014 | 0.854±0.020 | 0.846±0.013 |
| SVC Name: 38, dtype: object | 0.885±0.015 | 0.800±0.018 | 0.781±0.021 | 0.834±0.016 | 0.807±0.017 |
| XGBoost Name: 39, dtype: object | **0.933±0.009** | 0.852±0.012 | 0.847±0.016 | 0.859±0.017 | 0.853±0.012 |
| **FE\_Only** |  |  |  |  |  |
| AdaBoost Name: 0, dtype: object | 0.839±0.019 | 0.800±0.015 | 0.656±0.041 | 0.521±0.027 | 0.580±0.030 |
| CatBoost Name: 1, dtype: object | 0.822±0.010 | 0.790±0.002 | 0.631±0.006 | 0.502±0.011 | 0.559±0.006 |
| DecisionTree Name: 2, dtype: object | 0.799±0.015 | 0.778±0.008 | 0.600±0.020 | 0.491±0.012 | 0.540±0.015 |
| GBM Name: 3, dtype: object | 0.830±0.013 | 0.792±0.011 | 0.639±0.032 | 0.500±0.015 | 0.561±0.019 |
| LightGBM Name: 4, dtype: object | 0.836±0.014 | 0.796±0.007 | 0.645±0.024 | 0.515±0.002 | 0.572±0.009 |
| LogisticRegression Name: 5, dtype: object | **0.845±0.017** | **0.806±0.011** | 0.670±0.028 | 0.533±0.037 | **0.593±0.028** |
| NeuralNet Name: 6, dtype: object | 0.834±0.018 | 0.801±0.015 | 0.654±0.038 | **0.535±0.024** | 0.588±0.028 |
| RandomForest Name: 7, dtype: object | 0.828±0.009 | 0.791±0.006 | 0.641±0.018 | 0.481±0.015 | 0.549±0.014 |
| SVC Name: 8, dtype: object | 0.796±0.027 | 0.800±0.016 | **0.682±0.047** | 0.463±0.038 | 0.551±0.039 |
| XGBoost Name: 9, dtype: object | 0.838±0.012 | 0.795±0.007 | 0.644±0.021 | 0.510±0.022 | 0.569±0.015 |
| **FE\_SMOTE** |  |  |  |  |  |
| AdaBoost Name: 10, dtype: object | 0.916±0.012 | 0.830±0.019 | 0.807±0.021 | 0.868±0.018 | 0.836±0.017 |
| CatBoost Name: 11, dtype: object | **0.937±0.010** | **0.862±0.012** | **0.858±0.013** | **0.868±0.019** | **0.863±0.013** |
| DecisionTree Name: 12, dtype: object | 0.864±0.011 | 0.792±0.016 | 0.770±0.027 | 0.836±0.017 | 0.801±0.010 |
| GBM Name: 13, dtype: object | 0.934±0.008 | 0.856±0.011 | 0.855±0.011 | 0.858±0.022 | 0.856±0.012 |
| LightGBM Name: 14, dtype: object | 0.936±0.007 | 0.852±0.011 | 0.851±0.015 | 0.854±0.017 | 0.853±0.011 |
| LogisticRegression Name: 15, dtype: object | 0.856±0.015 | 0.774±0.018 | 0.755±0.023 | 0.813±0.016 | 0.783±0.015 |
| NeuralNet Name: 16, dtype: object | 0.870±0.009 | 0.792±0.012 | 0.766±0.014 | 0.840±0.034 | 0.801±0.014 |
| RandomForest Name: 17, dtype: object | 0.924±0.012 | 0.850±0.012 | 0.842±0.016 | 0.861±0.021 | 0.851±0.012 |
| SVC Name: 18, dtype: object | 0.887±0.013 | 0.796±0.016 | 0.778±0.019 | 0.830±0.019 | 0.803±0.015 |
| XGBoost Name: 19, dtype: object | 0.934±0.008 | 0.854±0.013 | 0.850±0.013 | 0.862±0.022 | 0.855±0.013 |

*Catatan: Nilai yang ditampilkan adalah rata-rata ± standar deviasi dari 5-fold cross-validation. No\_FE: Tanpa Feature Engineering; FE\_Only: Dengan Feature Engineering; FE\_SMOTE: Feature Engineering dengan SMOTE. Nilai terbaik untuk setiap metrik ditandai dengan tebal.*