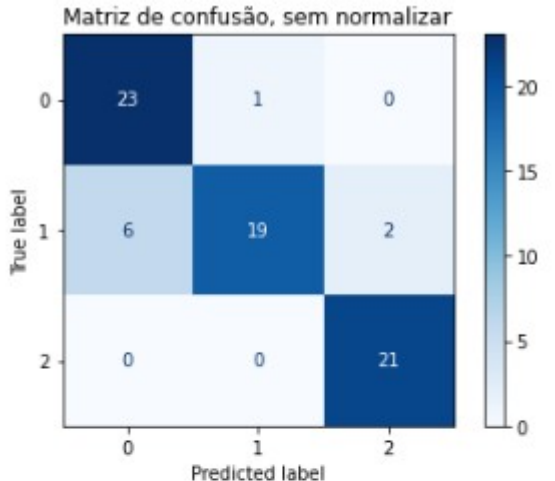
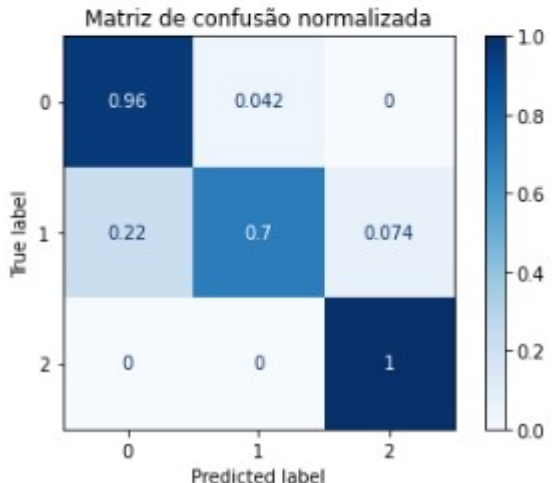
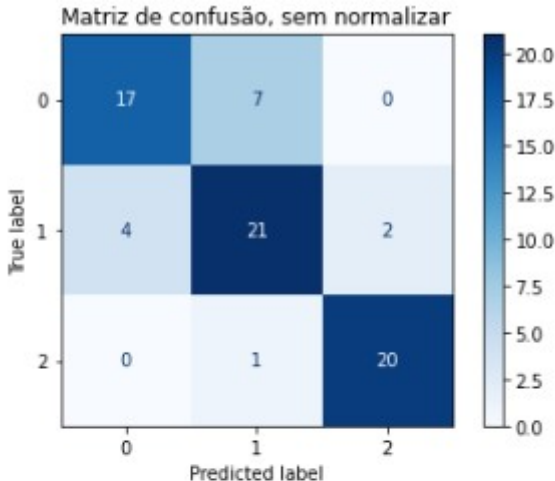
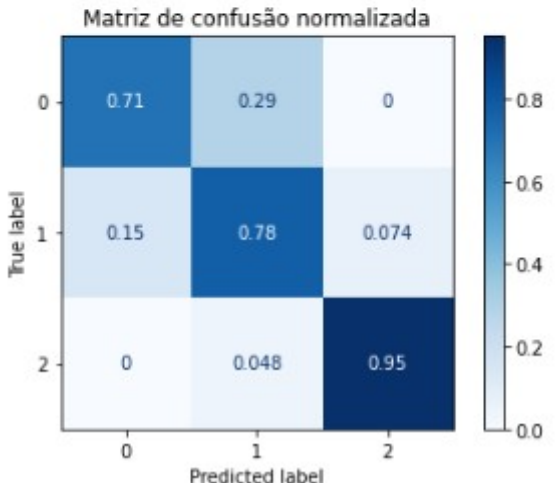
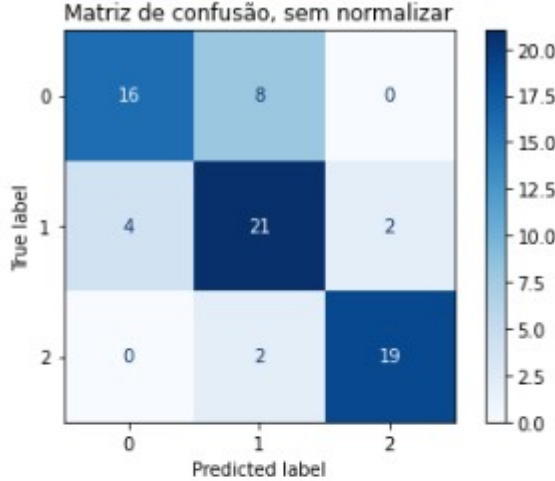
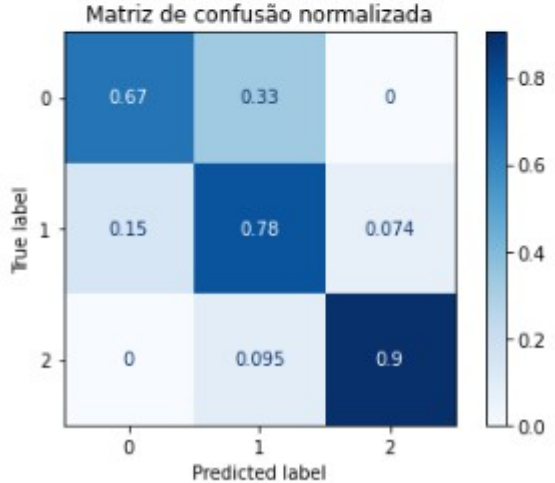
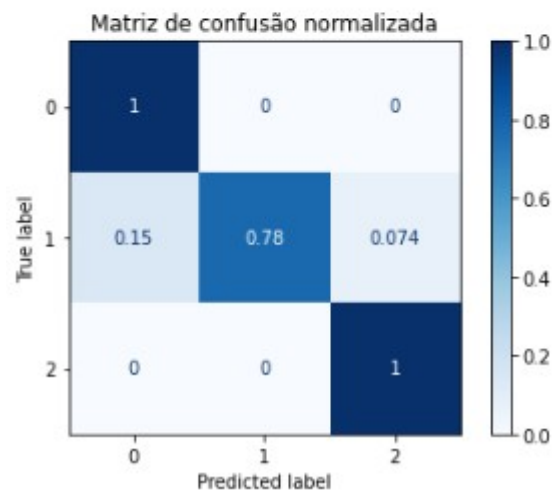
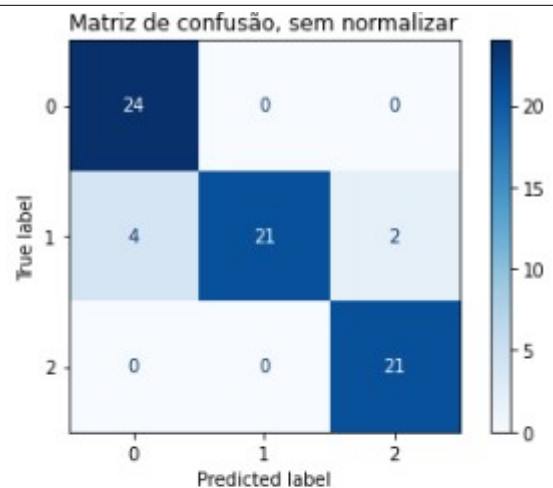
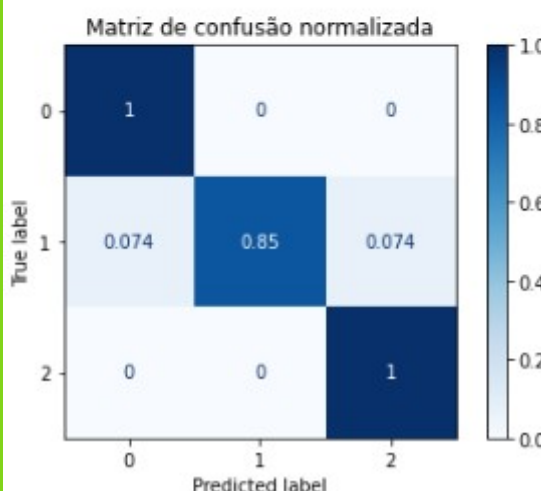
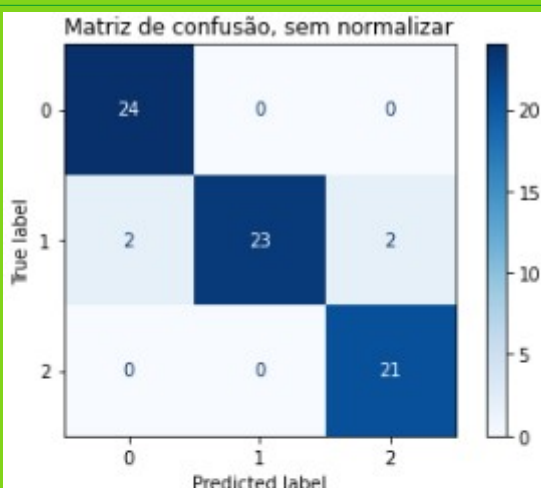


| Primeiro Resultado (Todas as Características)   | Segundo Resultado (4 var correlacionadas) | Terceiro Resultado (2 var correlacionadas) |          |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
|---|---|--|----------|----------|---------|----|------|------|------|----|----|------|------|------|----|----|------------------------------|------|------|----|----------|------|-------|------|----|-----------|------|-------|------|----|--------------|------|--|------------------------------|----|---|---|-----------|--------|----------|---------|---|------|------|------|----|---|------|------|------------------------------|----|---|------|------|------|------|----------|---|------|------|-------|-----------|------|-------|------|---|------------------------------|------|------|------|----|---|---|-----------|--------|----------|---------|---|------|------|------|----|------------------------------|------|------|------|----|------|------|------|------|------|----------|-------|---|------|-------|-----------|------|------|------|----|--------------|------|------|------|----|
| <div><p>Matriz de confusão, sem normalizar</p><table><tr><th>True label \ Predicted label</th><th>0</th><th>1</th><th>2</th></tr><tr><th>0</th><td>23</td><td>1</td><td>0</td></tr><tr><th>1</th><td>6</td><td>19</td><td>2</td></tr><tr><th>2</th><td>0</td><td>0</td><td>21</td></tr></table><p>Matriz de confusão normalizada</p><table><tr><th>True label \ Predicted label</th><th>0</th><th>1</th><th>2</th></tr><tr><th>0</th><td>0.96</td><td>0.042</td><td>0</td></tr><tr><th>1</th><td>0.22</td><td>0.7</td><td>0.074</td></tr><tr><th>2</th><td>0</td><td>0</td><td>1</td></tr></table></div> | True label \ Predicted label              | 0  | 1        | 2        | 0       | 23 | 1    | 0    | 1    | 6  | 19 | 2    | 2    | 0    | 0  | 21 | True label \ Predicted label | 0    | 1    | 2  | 0        | 0.96 | 0.042 | 0    | 1  | 0.22      | 0.7  | 0.074 | 2    | 0  | 0            | 1    | <div><p>Matriz de confusão, sem normalizar</p><table><tr><th>True label \ Predicted label</th><th>0</th><th>1</th><th>2</th></tr><tr><th>0</th><td>17</td><td>7</td><td>0</td></tr><tr><th>1</th><td>4</td><td>21</td><td>2</td></tr><tr><th>2</th><td>0</td><td>1</td><td>20</td></tr></table><p>Matriz de confusão normalizada</p><table><tr><th>True label \ Predicted label</th><th>0</th><th>1</th><th>2</th></tr><tr><th>0</th><td>0.71</td><td>0.29</td><td>0</td></tr><tr><th>1</th><td>0.15</td><td>0.78</td><td>0.074</td></tr><tr><th>2</th><td>0</td><td>0.048</td><td>0.95</td></tr></table></div> | True label \ Predicted label | 0  | 1   | 2 | 0         | 17     | 7        | 0       | 1 | 4    | 21   | 2    | 2  | 0 | 1    | 20   | True label \ Predicted label | 0  | 1 | 2    | 0    | 0.71 | 0.29 | 0        | 1 | 0.15 | 0.78 | 0.074 | 2         | 0    | 0.048 | 0.95 | <div><p>Matriz de confusão, sem normalizar</p><table><tr><th>True label \ Predicted label</th><th>0</th><th>1</th><th>2</th></tr><tr><th>0</th><td>16</td><td>8</td><td>0</td></tr><tr><th>1</th><td>4</td><td>21</td><td>2</td></tr><tr><th>2</th><td>0</td><td>2</td><td>19</td></tr></table><p>Matriz de confusão normalizada</p><table><tr><th>True label \ Predicted label</th><th>0</th><th>1</th><th>2</th></tr><tr><th>0</th><td>0.67</td><td>0.33</td><td>0</td></tr><tr><th>1</th><td>0.15</td><td>0.78</td><td>0.074</td></tr><tr><th>2</th><td>0</td><td>0.095</td><td>0.9</td></tr></table></div> | True label \ Predicted label | 0    | 1    | 2    | 0  | 16  | 8 | 0         | 1      | 4        | 21      | 2 | 2    | 0    | 2    | 19 | True label \ Predicted label | 0    | 1    | 2    | 0  | 0.67 | 0.33 | 0    | 1    | 0.15 | 0.78     | 0.074 | 2 | 0    | 0.095 | 0.9       |      |      |      |    |              |      |      |      |    |
| True label \ Predicted label  | 0   | 1  | 2        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 0   | 23  | 1  | 0        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 1   | 6   | 19   | 2        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 2   | 0   | 0  | 21       |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| True label \ Predicted label  | 0   | 1  | 2        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 0   | 0.96                                      | 0.042                                      | 0        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 1   | 0.22                                      | 0.7  | 0.074    |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 2   | 0   | 0  | 1        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| True label \ Predicted label  | 0   | 1  | 2        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 0   | 17  | 7  | 0        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 1   | 4   | 21   | 2        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 2   | 0   | 1  | 20       |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| True label \ Predicted label  | 0   | 1  | 2        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 0   | 0.71                                      | 0.29                                       | 0        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 1   | 0.15                                      | 0.78                                       | 0.074    |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 2   | 0   | 0.048                                      | 0.95     |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| True label \ Predicted label  | 0   | 1  | 2        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 0   | 16  | 8  | 0        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 1   | 4   | 21   | 2        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 2   | 0   | 2  | 19       |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| True label \ Predicted label  | 0   | 1  | 2        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 0   | 0.67                                      | 0.33                                       | 0        |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 1   | 0.15                                      | 0.78                                       | 0.074    |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 2   | 0   | 0.095                                      | 0.9      |          |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| <table><tr><th></th><th>precision</th><th>recall</th><th>f1-score</th><th>support</th></tr><tr><td>0</td><td>0.79</td><td>0.96</td><td>0.87</td><td>24</td></tr><tr><td>1</td><td>0.95</td><td>0.70</td><td>0.81</td><td>27</td></tr><tr><td>2</td><td>0.91</td><td>1.00</td><td>0.95</td><td>21</td></tr><tr><td>accuracy</td><td></td><td></td><td>0.88</td><td>72</td></tr><tr><td>macro avg</td><td>0.89</td><td>0.89</td><td>0.88</td><td>72</td></tr><tr><td>weighted avg</td><td>0.89</td><td>0.88</td><td>0.87</td><td>72</td></tr></table>   |   | precision                                  | recall   | f1-score | support | 0  | 0.79 | 0.96 | 0.87 | 24 | 1  | 0.95 | 0.70 | 0.81 | 27 | 2  | 0.91                         | 1.00 | 0.95 | 21 | accuracy |      |       | 0.88 | 72 | macro avg | 0.89 | 0.89  | 0.88 | 72 | weighted avg | 0.89 | 0.88   | 0.87                         | 72 | <table><tr><th></th><th>precision</th><th>recall</th><th>f1-score</th><th>support</th></tr><tr><td>0</td><td>0.81</td><td>0.71</td><td>0.76</td><td>24</td></tr><tr><td>1</td><td>0.72</td><td>0.78</td><td>0.75</td><td>27</td></tr><tr><td>2</td><td>0.91</td><td>0.95</td><td>0.93</td><td>21</td></tr><tr><td>accuracy</td><td></td><td></td><td>0.81</td><td>72</td></tr><tr><td>macro avg</td><td>0.81</td><td>0.81</td><td>0.81</td><td>72</td></tr><tr><td>weighted avg</td><td>0.81</td><td>0.81</td><td>0.80</td><td>72</td></tr></table> |   | precision | recall | f1-score | support | 0 | 0.81 | 0.71 | 0.76 | 24 | 1 | 0.72 | 0.78 | 0.75                         | 27 | 2 | 0.91 | 0.95 | 0.93 | 21   | accuracy |   |      | 0.81 | 72    | macro avg | 0.81 | 0.81  | 0.81 | 72  | weighted avg                 | 0.81 | 0.81 | 0.80 | 72 | <table><tr><th></th><th>precision</th><th>recall</th><th>f1-score</th><th>support</th></tr><tr><td>0</td><td>0.80</td><td>0.67</td><td>0.73</td><td>24</td></tr><tr><td>1</td><td>0.68</td><td>0.78</td><td>0.72</td><td>27</td></tr><tr><td>2</td><td>0.90</td><td>0.90</td><td>0.90</td><td>21</td></tr><tr><td>accuracy</td><td></td><td></td><td>0.78</td><td>72</td></tr><tr><td>macro avg</td><td>0.79</td><td>0.78</td><td>0.79</td><td>72</td></tr><tr><td>weighted avg</td><td>0.78</td><td>0.78</td><td>0.78</td><td>72</td></tr></table> |   | precision | recall | f1-score | support | 0 | 0.80 | 0.67 | 0.73 | 24 | 1                            | 0.68 | 0.78 | 0.72 | 27 | 2    | 0.90 | 0.90 | 0.90 | 21   | accuracy |       |   | 0.78 | 72    | macro avg | 0.79 | 0.78 | 0.79 | 72 | weighted avg | 0.78 | 0.78 | 0.78 | 72 |
|   | precision                                 | recall                                     | f1-score | support  |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 0   | 0.79                                      | 0.96                                       | 0.87     | 24       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 1   | 0.95                                      | 0.70                                       | 0.81     | 27       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 2   | 0.91                                      | 1.00                                       | 0.95     | 21       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| accuracy  |   |  | 0.88     | 72       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| macro avg   | 0.89                                      | 0.89                                       | 0.88     | 72       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| weighted avg  | 0.89                                      | 0.88                                       | 0.87     | 72       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
|   | precision                                 | recall                                     | f1-score | support  |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 0   | 0.81                                      | 0.71                                       | 0.76     | 24       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 1   | 0.72                                      | 0.78                                       | 0.75     | 27       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 2   | 0.91                                      | 0.95                                       | 0.93     | 21       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| accuracy  |   |  | 0.81     | 72       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| macro avg   | 0.81                                      | 0.81                                       | 0.81     | 72       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| weighted avg  | 0.81                                      | 0.81                                       | 0.80     | 72       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
|   | precision                                 | recall                                     | f1-score | support  |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 0   | 0.80                                      | 0.67                                       | 0.73     | 24       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 1   | 0.68                                      | 0.78                                       | 0.72     | 27       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| 2   | 0.90                                      | 0.90                                       | 0.90     | 21       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| accuracy  |   |  | 0.78     | 72       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| macro avg   | 0.79                                      | 0.78                                       | 0.79     | 72       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |
| weighted avg  | 0.78                                      | 0.78                                       | 0.78     | 72       |         |    |      |      |      |    |    |      |      |      |    |    |                              |      |      |    |          |      |       |      |    |           |      |       |      |    |              |      |  |                              |    |   |   |           |        |          |         |   |      |      |      |    |   |      |      |                              |    |   |      |      |      |      |          |   |      |      |       |           |      |       |      |   |                              |      |      |      |    |   |   |           |        |          |         |   |      |      |      |    |                              |      |      |      |    |      |      |      |      |      |          |       |   |      |       |           |      |      |      |    |              |      |      |      |    |

### Regressão Logística (Todas as Características)

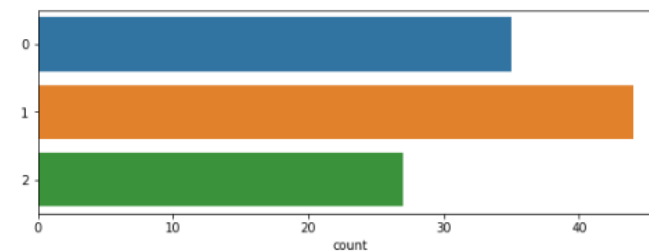


### Árvore de Decisão (Todas as Características)

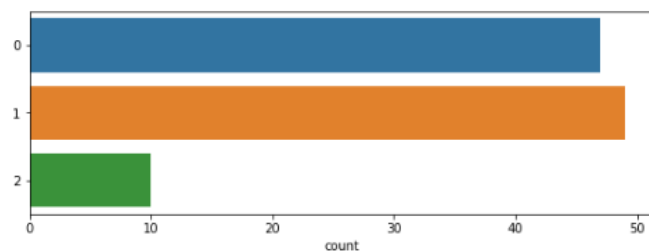


### K\_means (Todas as Características)

Contagem das Características:



Contagem da Clusterização por Kmeans:



|              | precision | recall | f1-score | support |
|--------------|-----------|--------|----------|---------|
| 0            | 0.86      | 1.00   | 0.92     | 24      |
| 1            | 1.00      | 0.78   | 0.88     | 27      |
| 2            | 0.91      | 1.00   | 0.95     | 21      |
| accuracy     |           |        | 0.92     | 72      |
| macro avg    | 0.92      | 0.93   | 0.92     | 72      |
| weighted avg | 0.93      | 0.92   | 0.91     | 72      |

|              | precision | recall | f1-score | support |
|--------------|-----------|--------|----------|---------|
| 0            | 0.92      | 1.00   | 0.96     | 24      |
| 1            | 1.00      | 0.85   | 0.92     | 27      |
| 2            | 0.91      | 1.00   | 0.95     | 21      |
| accuracy     |           |        | 0.94     | 72      |
| macro avg    | 0.95      | 0.95   | 0.94     | 72      |
| weighted avg | 0.95      | 0.94   | 0.94     | 72      |