

# Risk Threshold Configuration Report

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2020-09-16

## Introduction

As we explained in the Predictive Model Report, the Student Success Predictive Model predicts a student's likelihood of success at your institution, as represented by a Success Score. Since Success Scores are estimates of probability that a student will persist, their values range between zero and one. For convenience, we express this number as a risk band in the Navigate application. Defined in this way, a student with a success score of 50% is equally likely to persist or drop-out.

For the purposes of identifying at-risk students, it is best to look at groups of students based on a predefined bracket of scores instead of using the raw percentage values. We offer this practice since the management of risk depends on the advising capacity at your institution and the score distribution of your current student population. Every institution is unique in these respects, and so it is important that the thresholds are set to best fit your institutional needs.

## Risk Thresholds and Colors

The Navigate application uses three risk bands (red, yellow, and green) as a convenient visual tool to group high, medium, and low risk students. These bands are defined based on configurable thresholds, and your EAB consultant will help you set these thresholds correctly

We provide three different types of risk threshold configurations: "Default", "Population Health", and "Terciles." You can also work with your EAB consultant to set custom thresholds that best fit your needs.

The following sections provide details about each type of configuration, including their implications for your institution.

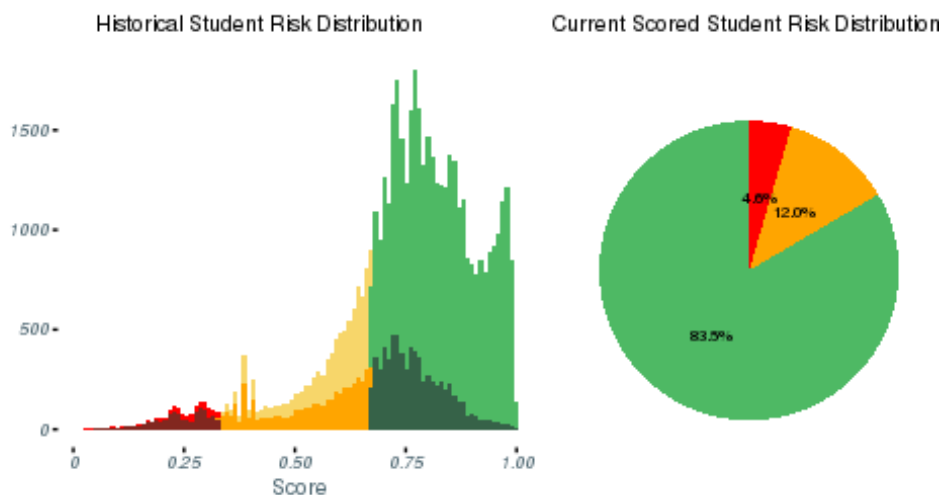
## Default Thresholds

With the "Default" thresholds, students with success scores less than 33% are categorized as high risk (red), those with scores between 33% and 67% are categorized as moderate risk (yellow), and those with scores greater than 67% are categorized as low risk (green). Defining the risk bands in this way leads to a relatively straightforward grouping where between 0 and 3 of 10 red students will persist, between 3 and 7 of 10 yellow students will persist, and between 7 and 10 of 10 green students will persist.

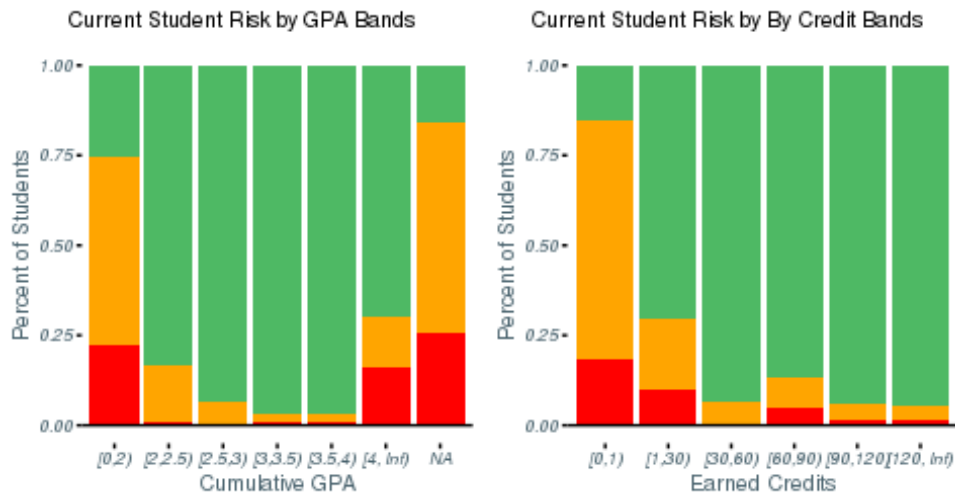
The "Default" thresholds are 0.33 and 0.67. Choosing these thresholds for your school results in the following three groups:

| Risk Band | Historical Students | Historical Success Rate | Historical Average GPA | Current Students | Current Average GPA |
|-----------|---------------------|-------------------------|------------------------|------------------|---------------------|
| Red       | 3.3%                | 27.8%                   | 2.07                   | 4.6%             | 2.55                |
| Yellow    | 19.3%               | 55.6%                   | 2.74                   | 12.0%            | 2.39                |
| Green     | 77.4%               | 82.1%                   | 3.15                   | 83.5%            | 3.18                |

The following graphs show the distribution of historical student data along with your current student population for the "Default" setting. The bar graph (left) shows the distribution of scores for the historical test set. The darker shade of each color represents students that did not persist, and the lighter shade represents students that did persist. The pie-chart (right) shows the distribution of scores among the current student population.



The following bar charts show the distribution of risk among your current student population for the "Default" configuration. The graph on the left shows the breakdown of risk for different bands of cumulative GPA, the graph on the right shows the breakdown for students at different bands of credit accumulation.



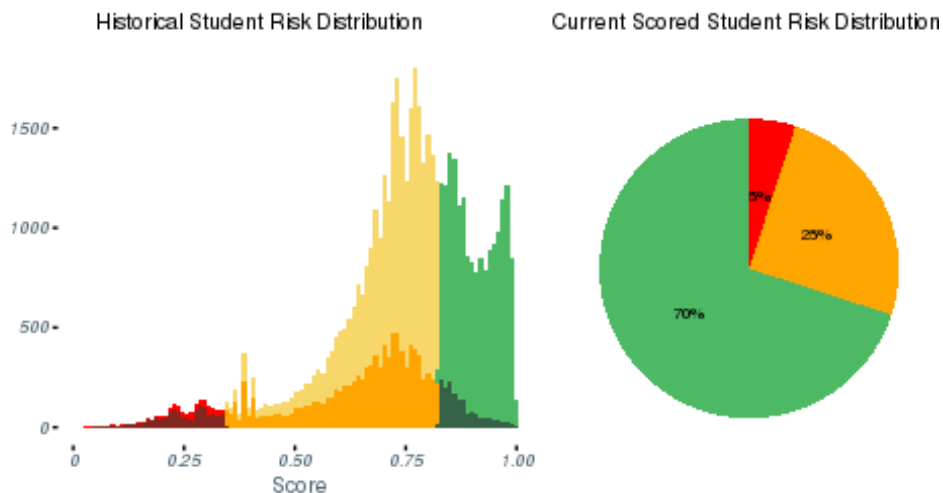
## Population Health

For "Population Health," the thresholds are determined as the 5th and 30th percentiles of current students. These thresholds are frequently used in healthcare settings, and are valuable for institutions focused on students at highest risk. The "Population Health" thresholds encourage your advisors to focus only on the 30% most acute cases of students who are unlikely to persist, and particularly encourages them to focus on the moderate risk population as the best possibility for return on the investment of their time.

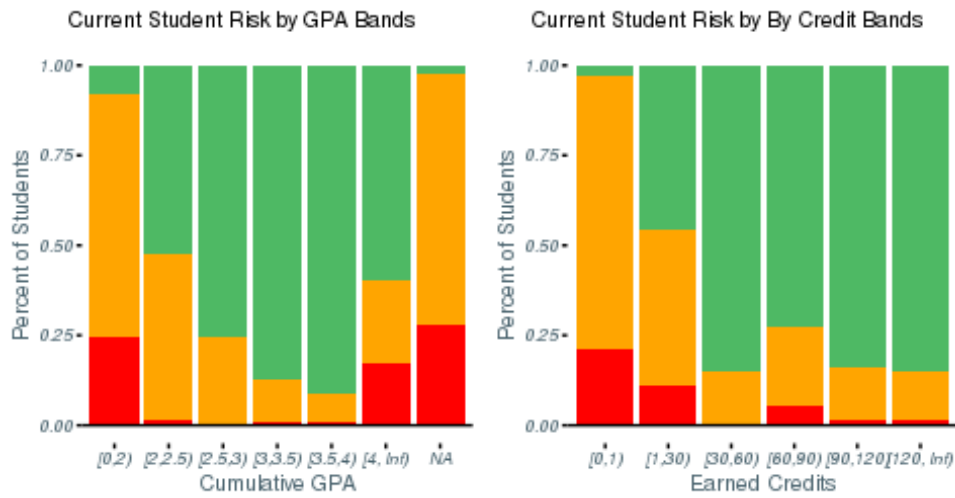
The "Population Health" thresholds for your institution are 0.34 and 0.82. Choosing "Population Health" for your institution results in the following three groups:

| Risk Band | Historical Students | Historical Success Rate | Historical Average GPA | Current Students | Current Average GPA |
|-----------|---------------------|-------------------------|------------------------|------------------|---------------------|
| Red       | 3.5%                | 27.7%                   | 2.12                   | 5%               | 2.55                |
| Yellow    | 61.5%               | 69.1%                   | 2.86                   | 25%              | 2.64                |
| Green     | 35.0%               | 90.7%                   | 3.23                   | 70%              | 3.25                |

The following graphs show the distribution of historical student data along with your current student population for the "Population Health" setting. The bar graph (left) shows the distribution of scores for the historical test set. The darker shade of each color represents students that did not persist, and the lighter shade represents students that did persist. The pie-chart (right) shows the distribution of scores among the current student population.



The following bar charts show the distribution of risk among your current student population for the "Population Health" configuration. The graph on the left shows the breakdown of risk for different bands of cumulative GPA, the graph on the right shows the breakdown for students at different bands of credit accumulation



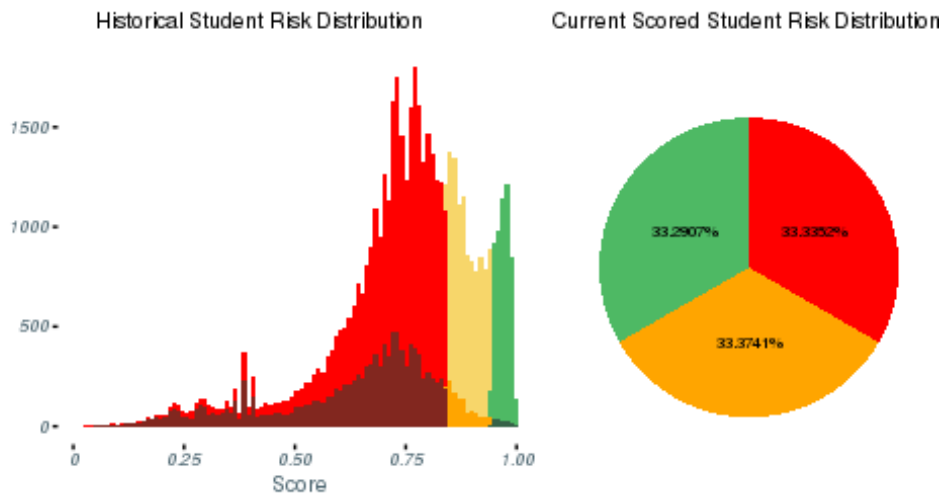
## Terciles

The "Terciles" thresholds setting divides the current student population into three groups of approximately equal size based on the distribution of scores. Students in the low tercile (i.e., lowest third) of success scores are in the high risk category (red), students in the middle tercile are in the moderate risk category (yellow), and students in the high tercile are in the low risk category (green).

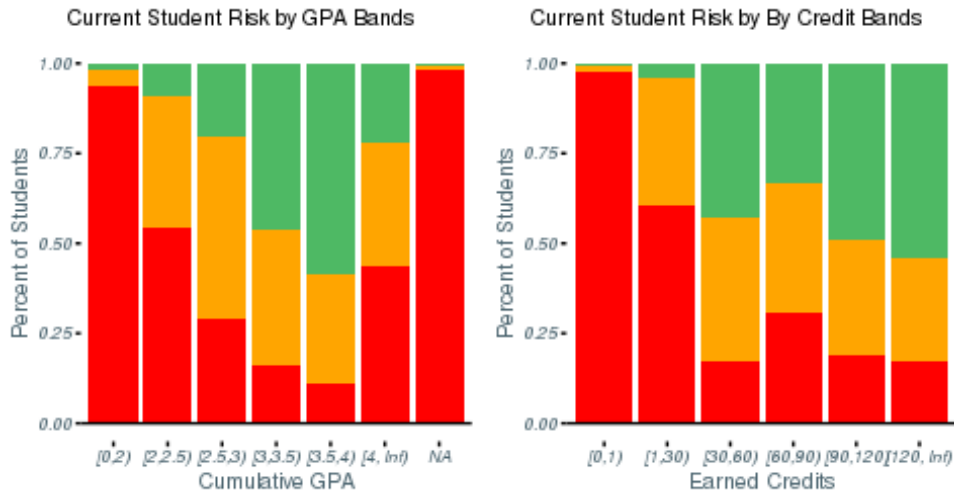
The "Terciles" thresholds for your institution are 0.84 and 0.94. Choosing "Terciles" thresholds for your institution results in the following three groups:

| Risk Band | Historical Students | Historical Success Rate | Historical Average GPA | Current Students | Current Average GPA |
|-----------|---------------------|-------------------------|------------------------|------------------|---------------------|
| Red       | 69.6%               | 67.8%                   | 2.82                   | 33.3352%         | 2.68                |
| Yellow    | 19.7%               | 89.5%                   | 3.1                    | 33.3741%         | 3.12                |
| Green     | 10.7%               | 96.9%                   | 3.43                   | 33.2907%         | 3.41                |

The following graphs show the distribution of historical student data along with your current student population for the "Terciles" setting. The bar graph (left) shows the distribution of scores for the historical test set. The darker shade of each color represents students that did not persist, and the lighter shade represents students that did persist. The pie-chart (right) shows the distribution of scores among the current student population.



The following bar charts show the distribution of risk among your current student population for the "Terciles" configuration. The graph on the left shows the breakdown of risk for different bands of cumulative GPA, the graph on the right shows the breakdown for students at different bands of credit accumulation



## **Custom Thresholds**

In addition to the above pre-defined configurations, there is also the option to set custom thresholds. Please contact your EAB consultant if you wish to do so.