Challenging 70 Years of Formula1

Connor Hanan | IST 421 • Source: Vopani | Kaggle • Packages: tidyverse, lubridate

Audience

1. Formula1 fans for background information
2. Constructors in the race series to make team decisions

Data Description

The data contained thirteen different csv files, each detailing Formula1 races dating 1950 to present. The primary dataset I used was the `results` sheet, as it listed every driver in every race (25,000+ observations). The rest of the files consisted of lookup tables, joinable to the main `results` dataset from further information on race year, race outcome, placing, etc.

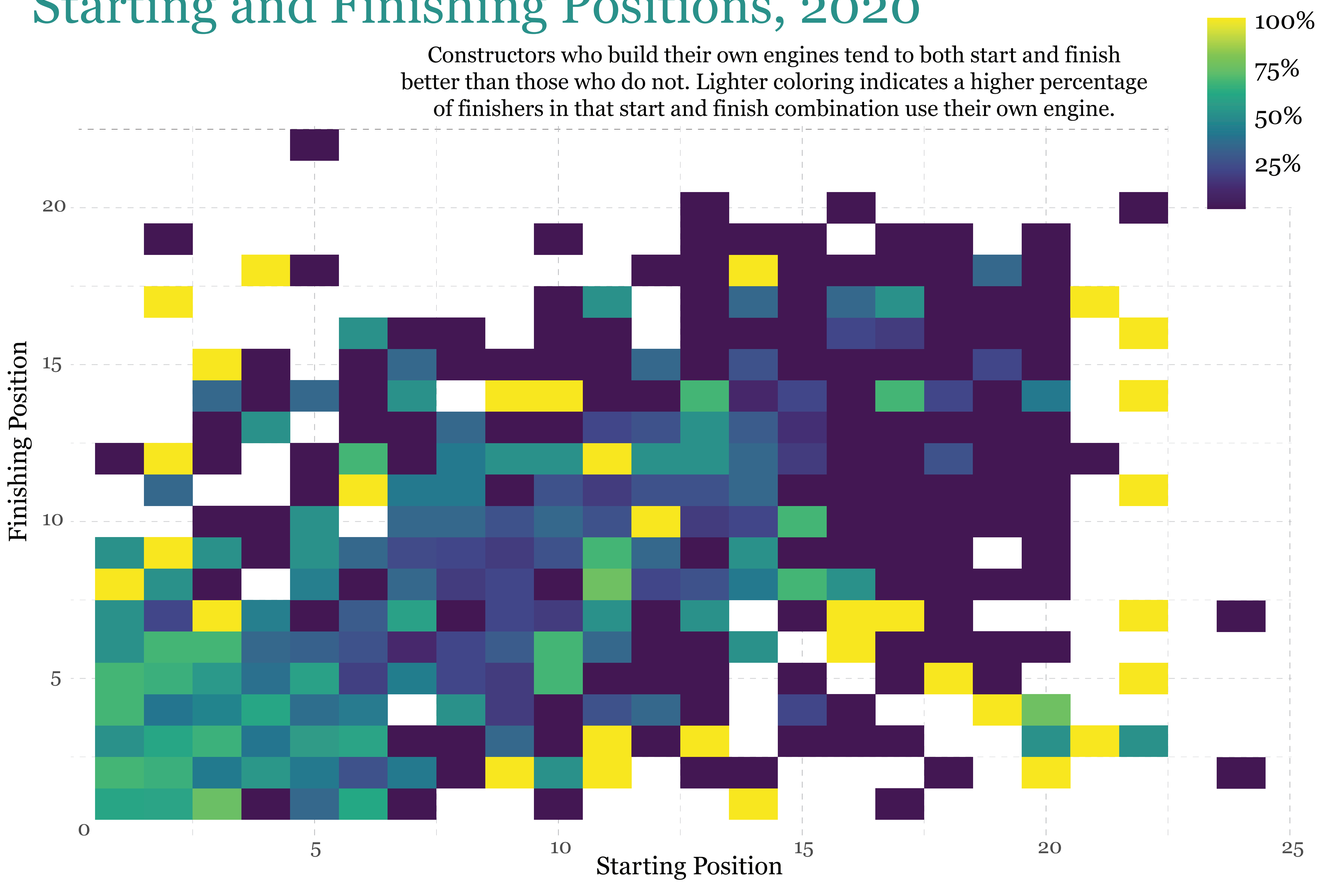
Story

This poster explores how much building their own engine impacts constructor performance in F1 racing. Though many will assume the driver is the leading factor, it turns out that the decision to construct an engine (rather than purchase one) makes just as great an impact. In exploring this situation, a few questions came up:

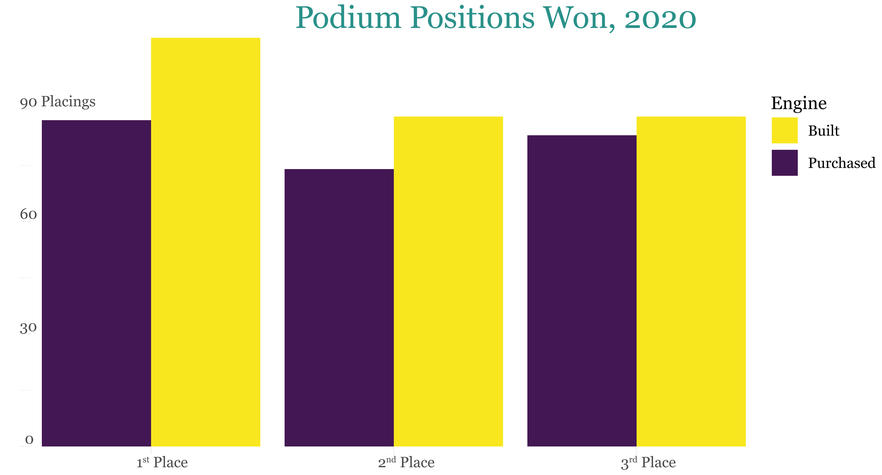
Have constructed engines always outperformed purchased engines?
How drastic of a difference is there between constructed and purchased engines?

Starting and Finishing Positions, 2020

Constructors who build their own engines tend to both start and finish better than those who do not. Lighter coloring indicates a higher percentage of finishers in that start and finish combination use their own engine.



Podium Positions Won, 2020

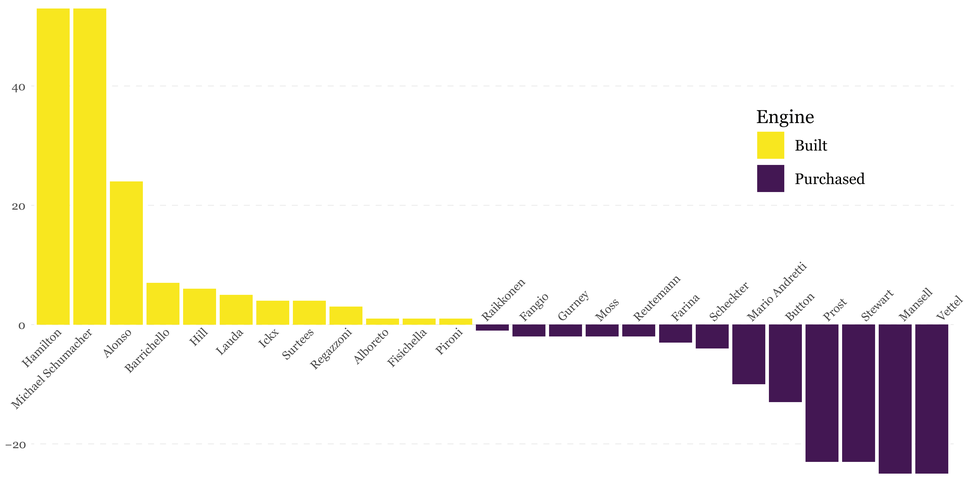


Constructors who build and use their own engines consistently finished on the podium more often than those who purchase their engines

Finishing Position and Fastest Lap Speed, 1970-2020

Engine constructors tend to finish in a better position and generally reach slightly faster lap speeds than their counterparts

Driver Differential of Wins with Built and Purchased Engines, 1970-2020



A positive score indicates the driver has won more races in a car with a built engine than in a car with a purchased one. The overall amount of constructor–built wins (303) is greater than non–constructor–built wins (276). However, Hamilton and Schumacher are World Champions, as is Vettel, so the affect of the driver cannot be discounted.