Relationship Between Hand Sizes of Quarterbacks and Performance

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Introduction

Throughout NFL history, general managers, scouting departments, and coaches have often believed that quarterbacks need large hands to succeed at the highest level. The logic behind this is that larger hands provide a better grip on the football, which in turn facilitates more effective throwing. This belief carries particular weight for teams based in cold-weather cities, where the harsh conditions in December and early January can make passing the ball more difficult.

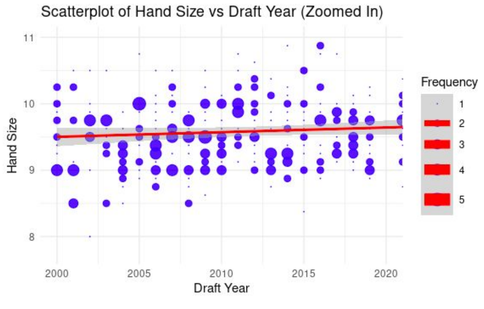
Our group was drawn to this topic because we expected a wealth of accessible data and saw multiple avenues for analyzing the relationship between hand size and quarterback performance. Metrics like fumble rate, PFF grades in varying weather conditions, big-time throws, and deep passing attempts (over 20 yards) offered us insights not only into individual performance, but also into how teams perceive and trust their quarterbacks.

Our Process

We began by collecting data on quarterbacks who played during the 2023 NFL season, recording their hand sizes along with their weekly grades and statistics. Separately, we compiled a table of temperature and wind speed for each game. By assigning a unique game ID, we linked quarterback performance data to the corresponding weather conditions.

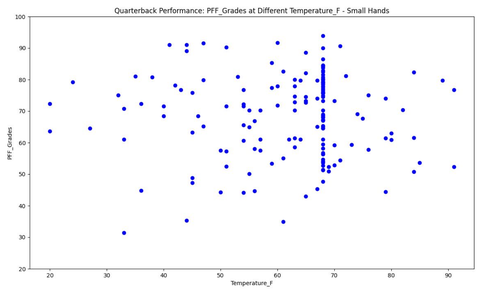
Next, we categorized quarterbacks into three groups based on hand size: small (≤ 9.25 in.), medium (9.25–9.75 in.), and large (≥ 9.75 in.). For each group, we plotted game temperature (℉) on the X-axis and a chosen performance statistic on the Y-axis. This allowed us to observe performance trends as weather conditions changed. For example, we expected large-handed quarterbacks to show relatively stable performance across temperatures, while small-handed quarterbacks might show a stronger positive or negative correlation—suggesting weather has a greater impact on their play.

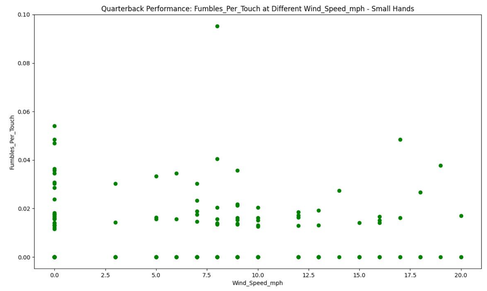
We faced many challenges in the process of gathering, cleaning, and finding creative ways to output the data. Furthermore, our sample size could be larger to prove our hypothesis with statistical significance.

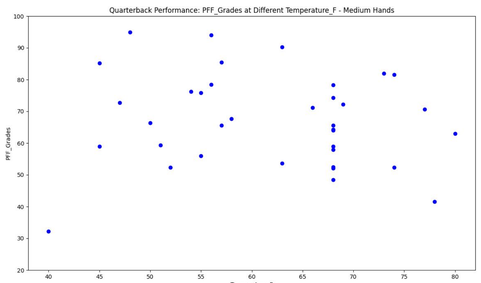


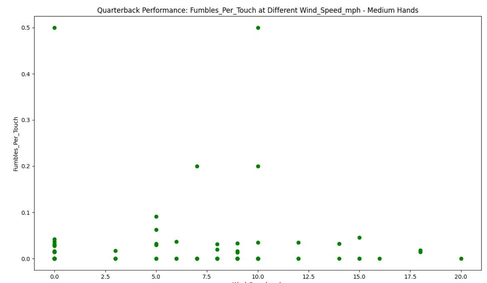
Historical Trends

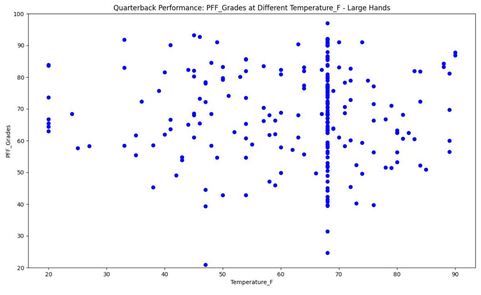
In addition to analyzing quarterback performance across weather conditions, we also wanted to explore whether scouting departments' opinions on hand size have shifted over time. Specifically, we looked for trends in the distribution of quarterback hand sizes across draft years to see if teams have become more or less willing to draft quarterbacks with smaller hands.

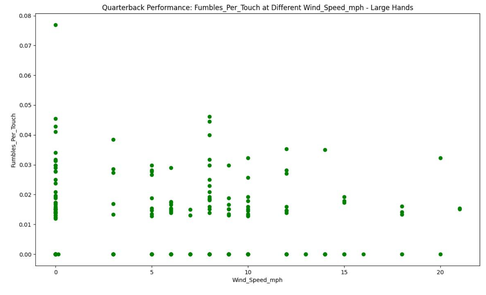




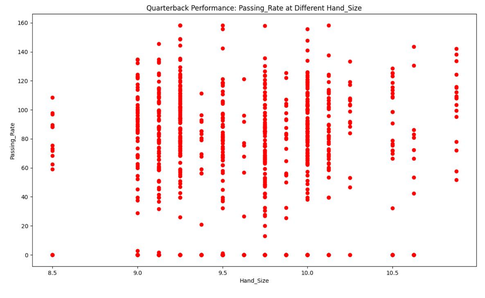






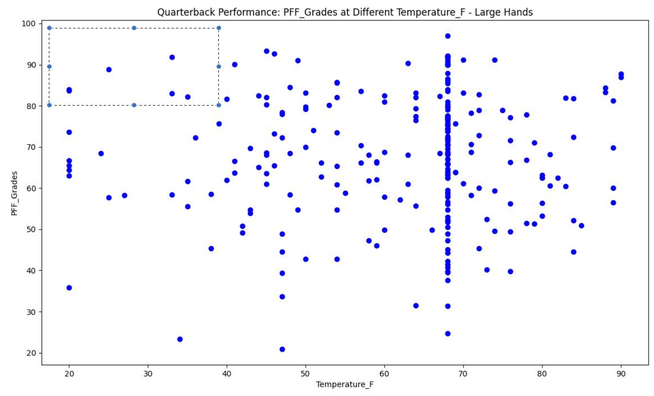


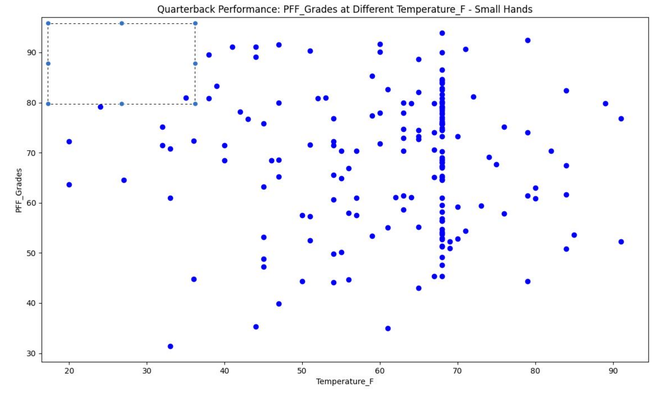
Based on the partitioned plots, there appears to be no clear relationship between hand size and how a quarterback performs under different weather conditions, as none of the three hand-size groups show a discernible trend.



Conclusions

Based on the data we analyzed, there does not appear to be a meaningful correlation between quarterback hand size and overall performance, even in adverse or cold-weather conditions. While our results do not reveal a consistent trend linking hand size to changes in performance, one notable observation emerged: quarterbacks with larger hands tend to be more frequently represented among the higher PFF grades in colder temperatures. In contrast, quarterbacks with smaller hands rarely achieved top performance grades in those same cold-weather games. This slight nuance is reflected in the images below, specifically in the top left region in each image.





References

1. Pro Football Reference
2. Mock Draft Database
3. Wunderground
4. Pro Football Focus