STATISTICAL ANALYSIS IDENTIFIES FACTORS THAT PREDICT LONG-TERM CAREER SUCCESS FOR NFL TIGHT ENDS

*Teams use other factors for drafting, suggesting tight ends
are not being drafted using an optimal method*

ALEXANDRIA, VA, APRIL 22, 2015 – An analysis of tight ends recently drafted into the National Football League (NFL) finds the measures that are the most predictive of draft order are not necessarily the most predictive measures of long-term career success.

In fact, only two of the factors NFL scouts and team general managers use to decide when to draft a tight end also are indicators of a long and productive career in the league, meaning they are overlooking key factors that could better inform draft-day decision and lessen the likelihood of selecting a draft-day bust.

An article authored by Shane T. Jensen and Jason Mulholland that outlines the study findings is published in a recent issue of the *Journal of Quantitative Analysis in Sports*, a sports-focused analytical journal published by the American Statistical Association (ASA). Jensen is an associate professor of statistics at the Wharton School of the University of Pennsylvania and Mulholland is an undergraduate student at Wharton.

The duo focused on tight end because it is a unique offensive position that requires its players to block defensive players as well as run routes and catch passes. As the NFL has evolved, the tight end position has emerged as an integral part of league offenses. Before the advent of current high-octane offenses, the tight end was primarily a blocker and only occasionally targeted for passing plays. In today's professional football, the tight end has become a primary weapon for the quarterback.

"Our analysis…suggests tight ends are not currently being drafted in an optimal way with respect to predicted career success," note Jensen and Mulholland in their article. "These findings suggest that drafting strategy could be improved by focusing more on measures that are predictive of NFL career-long performance."

Through their analysis of the draft order of tight ends, they learned NFL talent evaluators put most stock in size (height, weight and Body-Mass Index), all-around athletic ability, and NFL combine results, e.g., bench press, to determine when to select a tight end during the league's annual player draft. Though some college measures also were significant, there was much more emphasis on the NFL combine and physical measures as predictive of draft order.

Conversely, Jensen and Mulholland found that college performance was a more important indicator of superior NFL career performance. The best predictors of a successful NFL career were a mix of size, some NFL Combine variables as well as several college variables, including total receptions, yards per reception and touchdowns

during a college career. Factors common to the predictive models for both the draft and career performance were the Combine 40-yard dash time and whether the player attended a Bowl Championship Series (BCS) school.

"The 'draft-selected' variables are substantially worse predictors of each NFL career performance measure, which confirms current NFL drafting decisions are not optimally calibrated in terms of subsequent NFL performance," the duo wrote.

"In short, teams that want to draft a tight end who will be productive throughout his playing days should put more emphasis on the factors that are indicative of career-long success as they decide which player to draft," explained Jensen. "This new draft approach can help teams better target their on-field needs."

Jensen and Mulholland's research focused on determining which quantitative measures of NFL career success can be predicted based on quantitative pre-draft data. Specifically, they used data from the NFL Combine and player college careers to predict NFL Draft selections and the NFL career statistics of tight ends. Their analysis included each tight end who participated in the NFL Combine or was selected in the NFL Draft between 1999 and 2013. (Players from earlier than 1999 were not considered because of the unavailability of NFL Combine data.)

As a validation of their approach, Jensen and Mulholland applied it to two tight ends—Richard Quinn and Jared Cook—selected in the second and third rounds, respectively, of the 2009 NFL Draft. Quinn was selected 64th overall by the Denver Broncos while the Tennessee Titans chose Cook 89th overall. Based on their pre-draft college and combine measures and using their career predictive modeling approach, Jensen and Mulholland's model would have predicted NFL career scores of 2308 for Cook and 463 for Quinn.

"Our model suggests in this example that Cook should have been drafted earlier that Quinn," wrote the authors. The NFL careers of the two players are consistent with the model predictions. Cook was the starting tight end for the St. Louis Rams during the 2014 NLF season after having four productive seasons with the Titans and Quinn is a free agent and has not played an NFL game since the 2011 season.

Jensen and Mulholland point out that their model also can be applied to other NFL position as well as positions in other professional sports to identify the factors that will predict career success.

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