NFL Placekicking data

Brief Background:

In American football, points may be scored by kicking the ball through a set of goal posts at either end of the field. A successful kick goes through a target on the u-shaped goal posts bounded by the crossbar below and two upright goal posts on either side. There are two types of kicks. After a touchdown is scored, a kick may be attempted to receive one extra point (denoted point after touchdown, PAT). At any other time, the offense may attempt a field goal (FG) kick for three points. We will analyze the data from Bilder and Loughin (1998, Chance), examining the following explanatory variables on the success of 1438 kicks from the 1995 National Football League (NFL) season.

Variable	Defintion
good	response: successful kick
week	week of the season
distance	distance of the kick
change	lead-change (1) vs. non-lead-change (0)
elap30	# minutes before end of the half
PAT	whether kick is a PAT (0/1)
type	outdoor (1) vs. dome (0) stadium
field	grass (1) vs. artificial turf (0)
wind	windy (1) vs. not windy (0)
altitude	altitude in feet of the city
home	kicker at home (1) vs. away (0) stadium
precip	rain (1) vs. no rain (0)
temp72	temperature (domes set at 72 degrees)

The variable `change` accounts for whether a successful kick would result in the kicking team taking the lead. The variable `elap30` sets kicks during an overtime period as zero. The variable `wind` considers windy condition as a wind stronger than 15 miles per hour. The goals are to develop a model to predict the odds of a successful kick based on these explanatory variables and to identify the strongest predictors of kick success.