lec10_4

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Test for effect of field perform a LR test on each variable For field: H0: beta_2 = 0, Ha:beta_2 != 0

```
library(car)
```

```
## Loading required package: carData
```

```
placekick <- read.csv("Placekick.csv")
typeof(placekick$field)
```

```
## [1] "integer"
```

```
placekick <- transform(placekick, field = as.factor(field))
mod.fit <- glm(good ~ distance + field, family = binomial(link = "logit"), data = placekick)
Anova(mod.fit, test = "LR")
```

```
## Analysis of Deviance Table (Type II tests)
##
## Response: good
##          LR Chisq Df Pr(>Chisq)
## distance  237.237  1     <2e-16 ***
## field       0.003  1     0.9533
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

For the output we see the variable “field” is not significant for model fit. So we conclude there is no effect on probability of success due to type of field.

At different distances

```
beta.hat <- coef(mod.fit)[-1]
all.dist <- seq(from = 20, to = 60, by = 10)
OR.field <- exp(beta.hat[1]*all.dist + beta.hat[2])
round(cbind(all.dist, OR.field), digits=2)
```

```
##      all.dist OR.field
## [1,]       20     0.10
## [2,]       30     0.03
## [3,]       40     0.01
## [4,]       50     0.00
## [5,]       60     0.00
```

The effect of field at different distances varies. At distance 20 the effect appears to be the strongest, then diminishes when distance gets larger and larger.