AIC BIC

```
library(dplyr)
library(knitr)

load("data/input.RData")
load("data/input_mod_1.RData")

load("data/mod_0_goals.RData")
load("data/mod_1_goals.RData")
load("data/mod_2_goals.RData")
load("data/mod_3_goals.RData")
load("data/mod_4_goals.RData")
load("data/mod_5_goals.RData")
load("data/mod_6_goals.RData")
load("data/mod_7_goals.RData")
load("data/mod_8_goals.RData")
load("data/mod_9_goals.RData")
load("data/mod_10_goals.RData")
load("data/mod_11_goals.RData")
load("data/mod_12_goals.RData")

load("data/mod_0_year.RData")
load("data/mod_1_year.RData")
load("data/mod_1_year.RData")
load("data/mod_2_year.RData")
load("data/mod_3_year.RData")
load("data/mod_4_year.RData")
load("data/mod_5_year.RData")
load("data/mod_6_year.RData")
load("data/mod_7_year.RData")
load("data/mod_8_year.RData")
load("data/mod_9_year.RData")
load("data/mod_10_year.RData")
load("data/mod_11_year.RData")
load("data/mod_12_year.RData")
```

```
aic <- function(loglik, k) {
  2*k - 2*loglik
}

bic <- function(loglik, k, n) {
  k*log(n) - 2*loglik
}
```

```
tib = tibble(Model = rep(0:12, 2),
             Param = c(rep("Constant", 13), rep("Per season", 13)),
```

```
            loglik = c(mod_0_goals$loglik,
                       mod_1_goals$loglik, mod_2_goals$loglik, mod_3_goals$loglik,
                       mod_4_goals$loglik, mod_5_goals$loglik, mod_6_goals$loglik,
                       mod_7_goals$loglik, mod_8_goals$loglik, mod_9_goals$loglik,
                       mod_10_goals$loglik, mod_11_goals$loglik, mod_12_goals$loglik,
                       mod_0_year$loglik,
                       mod_1_year$loglik, mod_2_year$loglik, mod_3_year$loglik,
                       mod_4_year$loglik, mod_5_year$loglik, mod_6_year$loglik,
                       mod_7_year$loglik, mod_8_year$loglik, mod_9_year$loglik,
                       mod_10_year$loglik, mod_11_year$loglik, mod_12_year$loglik),
            k = c(length(unlist(mod_0_goals)) - 2,
                  length(unlist(mod_1_goals)) - 2,
                  length(unlist(mod_2_goals)) - 2,
                  length(unlist(mod_3_goals)) - 2,
                  length(unlist(mod_4_goals)) - 2,
                  length(unlist(mod_5_goals)) - 2,
                  length(unlist(mod_6_goals)) - 2,
                  length(unlist(mod_7_goals)) - 2,
                  length(unlist(mod_8_goals)) - 2,
                  length(unlist(mod_9_goals)) - 2,
                  length(unlist(mod_10_goals)) - 2,
                  length(unlist(mod_11_goals)) - 2,
                  length(unlist(mod_12_goals)) - 2,
                  length(unlist(mod_0_year)) - 2,
                  length(unlist(mod_1_year)) - 2,
                  length(unlist(mod_2_year)) - 2,
                  length(unlist(mod_3_year)) - 2,
                  length(unlist(mod_4_year)) - 2,
                  length(unlist(mod_5_year)) - 2,
                  length(unlist(mod_6_year)) - 2,
                  length(unlist(mod_7_year)) - 2,
                  length(unlist(mod_8_year)) - 2,
                  length(unlist(mod_9_year)) - 2,
                  length(unlist(mod_10_year)) - 2,
                  length(unlist(mod_11_year)) - 2,
                  length(unlist(mod_12_year)) - 2),
            n = L1 + L2) %>%
  rowwise() %>%
  mutate(AIC = aic(loglik, k),
         BIC = bic(loglik, k, n))
```

```
tib %>%
  filter(Param == "Constant") %>%
  arrange(AIC) %>%
  kable()
```

Model	Param	loglik	k	n	AIC	BIC
11	Constant	-15174.04	67	10382	30482.08	30967.69
12	Constant	-15175.80	67	10382	30485.61	30971.21
9	Constant	-15176.67	68	10382	30489.35	30982.20
10	Constant	-15178.48	68	10382	30492.96	30985.81
3	Constant	-15188.09	66	10382	30508.18	30986.54

Model	Param	loglik	k	n	AIC	BIC
4	Constant	-15188.07	67	10382	30510.15	30995.75
2	Constant	-15187.70	68	10382	30511.40	31004.26
8	Constant	-15189.68	67	10382	30513.35	30998.96
1	Constant	-15185.34	72	10382	30514.68	31036.53
7	Constant	-15189.56	69	10382	30517.12	31017.22
5	Constant	-15183.19	77	10382	30520.37	31078.45
6	Constant	-15188.70	73	10382	30523.40	31052.50
0	Constant	-15254.00	63	10382	30634.01	31090.62

```
tib %>%
  filter(Param == "Constant") %>%
  arrange(BIC) %>%
  kable()
```

Model	Param	loglik	k	n	AIC	BIC
11	Constant	-15174.04	67	10382	30482.08	30967.69
12	Constant	-15175.80	67	10382	30485.61	30971.21
9	Constant	-15176.67	68	10382	30489.35	30982.20
10	Constant	-15178.48	68	10382	30492.96	30985.81
3	Constant	-15188.09	66	10382	30508.18	30986.54
4	Constant	-15188.07	67	10382	30510.15	30995.75
8	Constant	-15189.68	67	10382	30513.35	30998.96
2	Constant	-15187.70	68	10382	30511.40	31004.26
7	Constant	-15189.56	69	10382	30517.12	31017.22
1	Constant	-15185.34	72	10382	30514.68	31036.53
6	Constant	-15188.70	73	10382	30523.40	31052.50
5	Constant	-15183.19	77	10382	30520.37	31078.45
0	Constant	-15254.00	63	10382	30634.01	31090.62

```
tib %>%
  filter(Param == "Per season") %>%
  arrange(AIC) %>%
  kable()
```

Model	Param	loglik	k	n	AIC	BIC
11	Per season	-15059.43	245	10382	30608.87	32384.59
12	Per season	-15059.83	245	10382	30609.67	32385.38
3	Per season	-15063.59	244	10382	30615.19	32383.66
4	Per season	-15063.15	245	10382	30616.29	32392.01
2	Per season	-15063.20	246	10382	30618.39	32401.36
9	Per season	-15064.80	246	10382	30621.61	32404.57
10	Per season	-15065.10	246	10382	30622.20	32405.17
1	Per season	-15061.77	250	10382	30623.55	32435.50
8	Per season	-15068.66	245	10382	30627.31	32403.03
5	Per season	-15059.68	255	10382	30629.36	32477.55
7	Per season	-15068.59	247	10382	30631.18	32421.40
6	Per season	-15067.19	251	10382	30636.37	32455.58
0	Per season	-15143.85	241	10382	30769.71	32516.44

```
tib %>%
  filter(Param == "Per season") %>%
  arrange(BIC) %>%
  kable()
```

Model	Param	loglik	k	n	AIC	BIC
3	Per season	-15063.59	244	10382	30615.19	32383.66
11	Per season	-15059.43	245	10382	30608.87	32384.59
12	Per season	-15059.83	245	10382	30609.67	32385.38
4	Per season	-15063.15	245	10382	30616.29	32392.01
2	Per season	-15063.20	246	10382	30618.39	32401.36
8	Per season	-15068.66	245	10382	30627.31	32403.03
9	Per season	-15064.80	246	10382	30621.61	32404.57
10	Per season	-15065.10	246	10382	30622.20	32405.17
7	Per season	-15068.59	247	10382	30631.18	32421.40
1	Per season	-15061.77	250	10382	30623.55	32435.50
6	Per season	-15067.19	251	10382	30636.37	32455.58
5	Per season	-15059.68	255	10382	30629.36	32477.55
0	Per season	-15143.85	241	10382	30769.71	32516.44