## Academic Tables for NFL Player Performance Models

2025-03-23

Table 1: Offense Grades Model Results

|                      |                 | Starter Models  |                   |                 | On-Field Models |                 | Attempt Models |                |                |
|----------------------|-----------------|-----------------|-------------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|
| Variable             | Starter LPM     | Starter Probit  | Starter Logit     | On-Field LPM    | On-Field Probit | On-Field Logit  | Attempt LPM    | Attempt Probit | Attempt Logit  |
| Quarterbacks         |                 |                 |                   |                 |                 |                 |                |                |                |
| Short Grades Pass    | 0.029(0.016)*   | 0.090(0.049)*   | 0.148(0.082)*     | 0.031(0.014)**  | 0.097(0.044)**  | 0.165(0.072)**  | 0.007(0.004)   | 0.030(0.021)   | 0.052(0.038)   |
| Medium Grades Pass   | -0.015(0.013)   | -0.043(0.041)   | -0.073(0.068)     | -0.002(0.015)   | -0.000(0.045)   | -0.009(0.074)   | 0.006(0.004)   | 0.022(0.017)   | 0.038(0.031)   |
| Deep Grades Pass     | -0.013(0.013)   | -0.043(0.040)   | -0.075(0.066)     | -0.021(0.013)   | -0.072(0.041)*  | -0.117(0.068)*  | 0.006(0.004)   | 0.021(0.017)   | 0.046(0.030)   |
| Running Backs        | -0.010(0.010)   | -0.040(0.040)   | -0.070(0.000)     | -0.021(0.010)   | -0.012(0.041)   | -0.117(0.000)   | 0.000(0.004)   | 0.021(0.011)   | 0.040(0.000)   |
| Grades Pass Block    | -0.021(0.010)** | -0.065(0.031)** | -0.108(0.053)**   | 0.012(0.010)    | 0.034(0.030)    | 0.057(0.050)    | -0.004(0.003)  | -0.024(0.014)* | -0.041(0.024)* |
| Grades Run           | 0.012(0.011)    | 0.038(0.032)    | 0.065(0.054)      | -0.004(0.011)   | -0.014(0.033)   | -0.025(0.055)   | -0.001(0.003)  | -0.004(0.014)  | -0.002(0.023)  |
| Short Grades Pass    | 0.004(0.011)    | 0.013(0.031)    | 0.018(0.052)      | -0.003(0.011)   | -0.006(0.031)   | -0.012(0.051)   | -0.001(0.003)  | 0.001(0.014)   | 0.001(0.024)   |
| Medium Grades Pass   | -0.015(0.009)   | -0.044(0.028)   | -0.072(0.047)     | -0.005(0.010)   | -0.015(0.027)   | -0.012(0.031)   | -0.001(0.003)  | -0.006(0.014)  | -0.009(0.022)  |
| Deep Grades Pass     | -0.005(0.009)   | -0.013(0.029)   | -0.072(0.047)     | -0.003(0.009)   | -0.013(0.027)   | -0.025(0.044)   | 0.003(0.003)   | 0.008(0.013)   | 0.014(0.021)   |
| WR1                  | -0.003(0.010)   | -0.013(0.029)   | -0.024(0.048)     | -0.003(0.003)   | -0.007(0.021)   | -0.014(0.043)   | 0.003(0.003)   | 0.000(0.012)   | 0.014(0.021)   |
|                      | 0.006(0.015)    | 0.014(0.046)    | 0.020(0.077)      | 0.011(0.010)    | 0.027(0.050)    | 0.054(0.000)    | 0.006(0.004)   | 0.024(0.010)   | 0.046(0.024)   |
| Grades Run Block     | 0.006(0.015)    | 0.014(0.046)    | 0.030(0.077)      | -0.011(0.019)   | -0.037(0.058)   | -0.054(0.098)   | -0.006(0.004)  | -0.024(0.019)  | -0.046(0.034)  |
| Short Grades Pass    | 0.003(0.013)    | 0.008(0.041)    | 0.020(0.068)      | 0.000(0.016)    | -0.004(0.046)   | -0.009(0.077)   | -0.000(0.004)  | -0.001(0.017)  | -0.007(0.030)  |
| Medium Grades Pass   | 0.015(0.013)    | 0.044(0.040)    | 0.075(0.066)      | 0.000(0.014)    | 0.003(0.043)    | 0.005(0.071)    | 0.005(0.004)   | 0.015(0.018)   | 0.034(0.031)   |
| Deep Grades Pass     | 0.001(0.011)    | 0.001(0.034)    | 0.002(0.056)      | 0.001(0.012)    | 0.011(0.036)    | 0.017(0.059)    | 0.003(0.003)   | 0.016(0.014)   | 0.027(0.025)   |
| WR2                  |                 |                 |                   |                 |                 |                 |                |                |                |
| Grades Run Block     | -0.021(0.016)   | -0.062(0.047)   | -0.101(0.077)     | 0.028(0.036)    | 0.087(0.111)    | 0.152(0.181)    | -0.001(0.004)  | -0.003(0.020)  | 0.005(0.035)   |
| Short Grades Pass    | -0.010(0.013)   | -0.031(0.039)   | -0.056(0.066)     | 0.014(0.024)    | 0.041(0.072)    | 0.067(0.120)    | 0.008(0.004)** | 0.036(0.016)** | 0.059(0.029)** |
| Medium Grades Pass   | 0.014(0.012)    | 0.043(0.035)    | 0.075(0.058)      | -0.004(0.020)   | -0.020(0.060)   | -0.029(0.101)   | 0.001(0.004)   | -0.000(0.016)  | -0.001(0.027)  |
| Deep Grades Pass     | 0.003(0.011)    | 0.014(0.033)    | 0.020(0.054)      | 0.010(0.016)    | 0.041(0.049)    | 0.062(0.082)    | 0.000(0.003)   | 0.002(0.013)   | 0.003(0.024)   |
| WR3                  |                 |                 |                   |                 |                 |                 |                |                |                |
| Grades Run Block     | -0.007(0.014)   | -0.021(0.042)   | -0.041(0.068)     | 0.017(0.027)    | 0.060(0.082)    | 0.093(0.137)    | -0.001(0.004)  | -0.002(0.017)  | -0.004(0.031)  |
| Short Grades Pass    | -0.015(0.011)   | -0.048(0.033)   | -0.076(0.055)     | -0.002(0.020)   | -0.002(0.061)   | 0.009(0.102)    | -0.003(0.003)  | -0.014(0.014)  | -0.021(0.025)  |
| Medium Grades Pass   | 0.007(0.010)    | 0.021(0.031)    | 0.036(0.051)      | 0.011(0.019)    | 0.017(0.057)    | 0.029(0.094)    | 0.006(0.003)*  | 0.021(0.014)   | 0.039(0.024)   |
| Deep Grades Pass     | 0.003(0.010)    | 0.013(0.030)    | 0.017(0.049)      | 0.015(0.015)    | 0.056(0.046)    | 0.087(0.076)    | 0.001(0.003)   | 0.009(0.013)   | 0.014(0.022)   |
| TE1                  |                 |                 |                   |                 |                 |                 |                |                |                |
| Grades Pass Block    | 0.026(0.012)**  | 0.077(0.035)**  | 0.132(0.058)**    | 0.024(0.011)**  | 0.079(0.034)**  | 0.130(0.058)**  | -0.002(0.003)  | -0.012(0.014)  | -0.016(0.026)  |
| Grades Run Block     | -0.015(0.015)   | -0.044(0.045)   | -0.077(0.074)     | -0.012(0.012)   | -0.040(0.038)   | -0.067(0.063)   | -0.000(0.004)  | 0.007(0.019)   | 0.007(0.034)   |
| Short Grades Pass    | 0.004(0.013)    | 0.009(0.037)    | 0.014(0.063)      | 0.000(0.013)    | -0.003(0.038)   | -0.006(0.063)   | 0.003(0.004)   | 0.010(0.018)   | 0.021(0.030)   |
| Medium Grades Pass   | -0.016(0.011)   | -0.049(0.032)   | -0.082(0.053)     | 0.017(0.011)    | 0.051(0.032)    | 0.088(0.052)*   | 0.002(0.003)   | 0.008(0.014)   | 0.008(0.024)   |
| Deep Grades Pass     | -0.004(0.010)   | -0.012(0.029)   | -0.018(0.049)     | -0.015(0.009)   | -0.046(0.028)   | -0.076(0.047)   | 0.002(0.003)   | 0.009(0.012)   | 0.018(0.022)   |
| OL1                  | ( ,             | ( ,             | ( ,               | ( ,             | ( ,             | ( )             | ( ,            | ( )            | ( )            |
| Grades Pass Block    | 0.016(0.012)    | 0.053(0.036)    | 0.090(0.060)      | -0.010(0.010)   | -0.030(0.029)   | -0.050(0.048)   | -0.004(0.003)  | -0.017(0.015)  | -0.027(0.027)  |
| Grades Run Block     | 0.004(0.014)    | 0.015(0.042)    | 0.019(0.070)      | 0.006(0.010)    | 0.018(0.030)    | 0.035(0.050)    | 0.001(0.004)   | 0.000(0.017)   | 0.002(0.031)   |
| OL2                  | 0.001(0.011)    | 0.010(0.012)    | 0.010(0.010)      | 0.000(0.010)    | 0.010(0.000)    | 0.000(0.000)    | 0.001(0.001)   | 0.000(0.011)   | 0.002(0.001)   |
| Grades Pass Block    | -0.009(0.012)   | -0.025(0.035)   | -0.042(0.058)     | -0.005(0.010)   | -0.015(0.029)   | -0.026(0.048)   | -0.000(0.003)  | -0.006(0.015)  | -0.015(0.026)  |
| Grades Run Block     | -0.003(0.014)   | -0.009(0.042)   | -0.014(0.070)     | -0.012(0.010)   | -0.038(0.030)   | -0.068(0.049)   | 0.003(0.004)   | 0.020(0.017)   | 0.037(0.031)   |
| OL3                  | 0.000(0.011)    | 0.000(0.012)    | 0.011(0.010)      | 0.012(0.010)    | 0.000(0.000)    | 0.000(0.010)    | 0.000(0.001)   | 0.020(0.011)   | 0.001(0.001)   |
| Grades Pass Block    | 0.009(0.012)    | 0.026(0.035)    | 0.050(0.059)      | 0.007(0.009)    | 0.024(0.029)    | 0.039(0.048)    | 0.001(0.003)   | 0.006(0.015)   | 0.006(0.027)   |
| Grades Run Block     | -0.015(0.014)   | -0.047(0.043)   | -0.080(0.070)     | 0.004(0.009)    | 0.016(0.029)    | 0.023(0.048)    | -0.004(0.004)  | -0.019(0.018)  | -0.038(0.032)  |
| OL4                  | -0.010(0.014)   | -0.047 (0.040)  | -0.000(0.010)     | 0.004(0.000)    | 0.010(0.023)    | 0.023(0.040)    | -0.004(0.004)  | -0.013(0.010)  | -0.000(0.002)  |
| Grades Pass Block    | 0.022(0.012)*   | 0.065(0.036)*   | 0.112(0.060)*     | 0.007(0.010)    | 0.018(0.030)    | 0.033(0.050)    | -0.003(0.003)  | -0.016(0.015)  | -0.023(0.026)  |
| Grades Run Block     | -0.006(0.013)   | -0.021(0.039)   | -0.038(0.065)     | -0.013(0.010)   | -0.036(0.029)   | -0.063(0.048)   | 0.000(0.004)   | 0.005(0.017)   | 0.007(0.030)   |
| OL5                  | -0.000(0.013)   | -0.021(0.039)   | -0.038(0.003)     | -0.013(0.010)   | -0.030(0.029)   | -0.003(0.048)   | 0.000(0.004)   | 0.003(0.017)   | 0.007(0.030)   |
| Grades Pass Block    | 0.031(0.012)**  | 0.089(0.037)**  | 0.149(0.062)**    | -0.012(0.010)   | -0.038(0.031)   | -0.063(0.051)   | 0.001(0.003)   | 0.015(0.015)   | 0.020(0.027)   |
|                      |                 |                 |                   |                 |                 |                 |                |                |                |
| Grades Run Block     | -0.031(0.013)** | -0.093(0.040)** | -0.151(0.067)**   | 0.010(0.010)    | 0.026(0.030)    | 0.043(0.051)    | -0.002(0.004)  | -0.010(0.017)  | -0.020(0.030)  |
| Perf. Measures       | 0.000/0.000\*** | 0.005(0.005)*** | 0.044 (0.044) *** | 0.000(0.000)*** | 0.005(0.005)*** | 0.040(0.044)*** |                |                |                |
| GIMR                 | 0.009(0.002)*** | 0.025(0.007)*** | 0.041(0.011)***   | 0.008(0.002)*** | 0.025(0.007)*** | 0.040(0.011)*** |                |                |                |
| Control Variables    |                 |                 |                   | **              | 1,              | **              | 37             | **             | .,             |
| Game Situation       | Yes             | Yes             | Yes               | Yes             | Yes             | Yes             | Yes            | Yes            | Yes            |
| Coach Variables      | Yes             | Yes             | Yes               | Yes             | Yes             | Yes             | Yes            | Yes            | Yes            |
| Team Stats           | Yes             | Yes             | Yes               | Yes             | Yes             | Yes             | Yes            | Yes            | Yes            |
| Season/Team FE       | Yes             | Yes             | Yes               | Yes             | Yes             | Yes             | No             | No             | No             |
| Coach FE             | No              | No              | No                | Yes             | Yes             | Yes             | Yes            | Yes            | Yes            |
| Player Presence      | Yes             | Yes             | Yes               | Yes             | Yes             | Yes             | No             | No             | No             |
| Control Def. Players | Yes             | Yes             | Yes               | Yes             | Yes             | Yes             | Yes            | Yes            | Yes            |
| Control Off. Players | No              | No              | No                | No              | No              | No              | No             | No             | No             |

Table 2: Offense Yards Model Results

|                      |                  | Starter Models   |                  |                 | On-Field Models |                 | Attempt Models |                 |                |
|----------------------|------------------|------------------|------------------|-----------------|-----------------|-----------------|----------------|-----------------|----------------|
| Variable             | Starter LPM      | Starter Probit   | Starter Logit    | On-Field LPM    | On-Field Probit | On-Field Logit  | Attempt LPM    | Attempt Probit  | Attempt Logit  |
| Quarterbacks         |                  |                  |                  |                 |                 |                 |                |                 |                |
| Short Yards          | 0.018(0.013)     | 0.052(0.040)     | 0.082(0.066)     | 0.020(0.014)    | 0.058(0.041)    | 0.092(0.069)    | 0.002(0.004)   | 0.004(0.017)    | 0.015(0.030)   |
| Medium Yards         | 0.029(0.013)**   | 0.097(0.040)**   | 0.157(0.068)**   | 0.004(0.014)    | 0.015(0.042)    | 0.024(0.069)    | 0.006(0.004)   | 0.022(0.018)    | 0.032(0.032)   |
| Deep Yards           | -0.037(0.012)*** | -0.114(0.036)*** | -0.188(0.060)*** | -0.018(0.012)   | -0.055(0.035)   | -0.089(0.058)   | 0.007(0.004)*  | 0.025(0.017)    | 0.044(0.029)   |
| Running Backs        | ` '              |                  |                  |                 | ` ′             | ` ′             |                |                 |                |
| Grades Pass Block    | -0.016(0.010)    | -0.047(0.030)    | -0.078(0.049)    | 0.009(0.009)    | 0.025(0.027)    | 0.041(0.046)    | -0.005(0.003)  | -0.025(0.013)*  | -0.041(0.022)* |
| Yards                | 0.001(0.010)     | 0.008(0.029)     | 0.011(0.049)     | 0.016(0.009)*   | 0.049(0.027)*   | 0.079(0.045)*   | 0.005(0.003)*  | 0.024(0.013)*   | 0.043(0.023)*  |
| Short Yards          | -0.007(0.010)    | -0.021(0.030)    | -0.033(0.050)    | -0.015(0.010)   | -0.043(0.029)   | -0.068(0.048)   | 0.001(0.003)   | 0.008(0.013)    | 0.015(0.023)   |
| Medium Yards         | -0.020(0.009)**  | -0.060(0.026)**  | -0.100(0.043)**  | -0.007(0.008)   | -0.022(0.024)   | -0.039(0.040)   | -0.003(0.002)  | -0.025(0.012)** | -0.041(0.022)* |
| Deep Yards           | 0.003(0.009)     | 0.013(0.030)     | 0.018(0.051)     | -0.001(0.009)   | -0.007(0.027)   | -0.012(0.044)   | -0.004(0.003)  | -0.016(0.011)   | -0.024(0.020)  |
| WR1                  |                  |                  |                  |                 |                 |                 |                |                 |                |
| Grades Run Block     | 0.010(0.015)     | 0.023(0.045)     | 0.043(0.075)     | -0.009(0.019)   | -0.032(0.056)   | -0.048(0.095)   | -0.003(0.004)  | -0.011(0.018)   | -0.021(0.032)  |
| Short Yards          | -0.005(0.010)    | -0.016(0.031)    | -0.025(0.052)    | -0.001(0.011)   | -0.007(0.031)   | -0.010(0.052)   | -0.003(0.003)  | -0.017(0.013)   | -0.030(0.024)  |
| Medium Yards         | -0.002(0.011)    | -0.003(0.033)    | -0.004(0.055)    | -0.005(0.011)   | -0.010(0.033)   | -0.020(0.054)   | 0.001(0.003)   | 0.001(0.014)    | 0.005(0.026)   |
| Deep Yards           | 0.027(0.010)***  | 0.083(0.030)***  | 0.138(0.049)***  | 0.018(0.010)*   | 0.053(0.029)*   | 0.088(0.049)*   | 0.001(0.003)   | 0.007(0.013)    | 0.008(0.023)   |
| WR2                  |                  |                  |                  |                 |                 |                 |                |                 |                |
| Grades Run Block     | -0.022(0.015)    | -0.066(0.046)    | -0.111(0.076)    | 0.043(0.035)    | 0.131(0.108)    | 0.226(0.178)    | 0.002(0.004)   | 0.010(0.019)    | 0.027(0.034)   |
| Short Yards          | -0.009(0.010)    | -0.023(0.031)    | -0.043(0.051)    | -0.000(0.011)   | -0.001(0.034)   | -0.003(0.057)   | 0.004(0.003)   | 0.014(0.013)    | 0.026(0.023)   |
| Medium Yards         | -0.009(0.011)    | -0.030(0.033)    | -0.050(0.055)    | -0.016(0.012)   | -0.042(0.036)   | -0.075(0.060)   | -0.003(0.003)  | -0.013(0.014)   | -0.023(0.025)  |
| Deep Yards           | 0.016(0.010)     | 0.049(0.030)     | 0.082(0.050)     | 0.008(0.010)    | 0.025(0.031)    | 0.042(0.051)    | 0.002(0.003)   | 0.010(0.013)    | 0.016(0.023)   |
| WR3                  |                  |                  |                  |                 |                 |                 |                |                 |                |
| Grades Run Block     | -0.008(0.013)    | -0.024(0.041)    | -0.044(0.066)    | 0.024(0.024)    | 0.080(0.074)    | 0.128(0.125)    | 0.001(0.004)   | 0.004(0.017)    | 0.009(0.030)   |
| Short Yards          | -0.013(0.011)    | -0.038(0.031)    | -0.059(0.052)    | 0.010(0.012)    | 0.025(0.035)    | 0.046(0.057)    | -0.002(0.003)  | -0.011(0.013)   | -0.017(0.024)  |
| Medium Yards         | -0.018(0.011)*   | -0.057(0.033)*   | -0.095(0.055)*   | 0.004(0.011)    | 0.010(0.033)    | 0.015(0.054)    | 0.003(0.003)   | 0.012(0.014)    | 0.023(0.025)   |
| Deep Yards           | 0.015(0.010)     | 0.048(0.029)*    | 0.078(0.048)     | 0.002(0.010)    | 0.009(0.030)    | 0.013(0.049)    | 0.000(0.003)   | 0.006(0.013)    | 0.006(0.022)   |
| TE1                  |                  |                  |                  |                 |                 |                 |                |                 |                |
| Grades Pass Block    | 0.025(0.011)**   | 0.079(0.035)**   | 0.134(0.059)**   | 0.024(0.011)**  | 0.082(0.033)**  | 0.134(0.056)**  | -0.001(0.003)  | -0.009(0.014)   | -0.011(0.025)  |
| Grades Run Block     | -0.019(0.014)    | -0.061(0.042)    | -0.102(0.069)    | -0.009(0.011)   | -0.032(0.034)   | -0.051(0.057)   | 0.003(0.004)   | 0.016(0.018)    | 0.024(0.031)   |
| Short Yards          | 0.003(0.011)     | 0.009(0.034)     | 0.015(0.056)     | -0.007(0.011)   | -0.022(0.032)   | -0.037(0.053)   | 0.002(0.003)   | 0.012(0.016)    | 0.010(0.028)   |
| Medium Yards         | -0.014(0.011)    | -0.045(0.033)    | -0.075(0.054)    | 0.008(0.010)    | 0.019(0.031)    | 0.034(0.051)    | -0.000(0.003)  | -0.007(0.015)   | -0.010(0.027)  |
| Deep Yards           | -0.010(0.010)    | -0.033(0.029)    | -0.053(0.049)    | -0.004(0.009)   | -0.013(0.027)   | -0.021(0.045)   | -0.001(0.003)  | -0.005(0.013)   | -0.006(0.023)  |
| OL1                  |                  |                  |                  |                 |                 |                 |                |                 |                |
| Grades Pass Block    | 0.014(0.012)     | 0.043(0.035)     | 0.075(0.059)     | -0.012(0.010)   | -0.035(0.029)   | -0.058(0.049)   | -0.004(0.003)  | -0.018(0.015)   | -0.030(0.027)  |
| Grades Run Block     | 0.007(0.014)     | 0.021(0.041)     | 0.032(0.069)     | 0.006(0.010)    | 0.017(0.030)    | 0.033(0.050)    | 0.001(0.004)   | 0.001(0.017)    | 0.004(0.031)   |
| OL2                  |                  |                  |                  |                 |                 |                 |                |                 |                |
| Grades Pass Block    | -0.008(0.012)    | -0.025(0.035)    | -0.043(0.058)    | -0.004(0.010)   | -0.011(0.029)   | -0.020(0.048)   | -0.001(0.003)  | -0.008(0.015)   | -0.019(0.026)  |
| Grades Run Block     | -0.004(0.014)    | -0.011(0.041)    | -0.019(0.069)    | -0.013(0.010)   | -0.042(0.030)   | -0.074(0.050)   | 0.004(0.004)   | 0.025(0.017)    | 0.048(0.030)   |
| OL3                  |                  |                  |                  |                 |                 |                 |                |                 |                |
| Grades Pass Block    | 0.010(0.012)     | 0.030(0.035)     | 0.054(0.059)     | 0.007(0.009)    | 0.024(0.029)    | 0.039(0.048)    | 0.001(0.003)   | 0.006(0.015)    | 0.006(0.027)   |
| Grades Run Block     | -0.015(0.014)    | -0.046(0.042)    | -0.079(0.071)    | 0.003(0.009)    | 0.014(0.029)    | 0.020(0.048)    | -0.004(0.004)  | -0.017(0.018)   | -0.035(0.032)  |
| OL4                  |                  |                  |                  |                 |                 |                 |                |                 |                |
| Grades Pass Block    | 0.020(0.012)*    | 0.057(0.036)     | 0.100(0.061)     | 0.005(0.010)    | 0.015(0.030)    | 0.027(0.049)    | -0.002(0.003)  | -0.013(0.015)   | -0.017(0.026)  |
| Grades Run Block     | -0.005(0.013)    | -0.017(0.039)    | -0.032(0.065)    | -0.012(0.010)   | -0.033(0.029)   | -0.059(0.047)   | 0.000(0.004)   | 0.006(0.017)    | 0.010(0.030)   |
| OL5                  |                  |                  |                  |                 |                 |                 |                |                 |                |
| Grades Pass Block    | 0.022(0.012)*    | 0.063(0.037)*    | 0.106(0.061)*    | -0.012(0.010)   | -0.038(0.031)   | -0.063(0.052)   | 0.001(0.003)   | 0.013(0.015)    | 0.018(0.027)   |
| Grades Run Block     | -0.024(0.013)*   | -0.072(0.039)*   | -0.117(0.066)*   | 0.009(0.010)    | 0.024(0.030)    | 0.040(0.051)    | -0.001(0.004)  | -0.007(0.017)   | -0.014(0.030)  |
| Perf. Measures       |                  |                  |                  |                 |                 |                 |                |                 |                |
| GIMR                 | 0.008(0.002)***  | 0.024(0.006)***  | 0.041(0.011)***  | 0.008(0.002)*** | 0.023(0.006)*** | 0.038(0.010)*** |                |                 |                |
| Control Variables    |                  |                  |                  |                 |                 |                 |                |                 |                |
| Game Situation       | Yes              | Yes              | Yes              | Yes             | Yes             | Yes             | Yes            | Yes             | Yes            |
| Coach Variables      | Yes              | Yes              | Yes              | Yes             | Yes             | Yes             | Yes            | Yes             | Yes            |
| Team Stats           | Yes              | Yes              | Yes              | Yes             | Yes             | Yes             | Yes            | Yes             | Yes            |
| Season/Team FE       | Yes              | Yes              | Yes              | Yes             | Yes             | Yes             | No             | No              | No             |
| Coach FE             | No               | No               | No               | Yes             | Yes             | Yes             | Yes            | Yes             | Yes            |
| Player Presence      | Yes              | Yes              | Yes              | Yes             | Yes             | Yes             | No             | No              | No             |
| Control Def. Players | Yes              | Yes              | Yes              | Yes             | Yes             | Yes             | Yes            | Yes             | Yes            |
| Control Off. Players | No               | No               | No               | No              | No              | No              | No             | No              | No             |

Table 3: Offense Completions Model Results

|                      |                  | Starter Models                          |                   |   | On-Field Models              |                  | Attempt Models                |   |                               |
|----------------------|------------------|---|-------------------|---|------------------------------|------------------|-------------------------------|---|-------------------------------|
| Variable             | Starter LPM      | Starter Probit                          | Starter Logit     | On-Field LPM                            | On-Field Probit              | On-Field Logit   | Attempt LPM                   | Attempt Probit                          | Attempt Logit                 |
| Quarterbacks         |                  |   |                   |   |                              |                  |                               |   |                               |
| Short Completions    | 0.023(0.014)*    | 0.068(0.041)*                           | 0.108(0.068)      | 0.029(0.014)**                          | 0.085(0.043)**               | 0.137(0.072)*    | -0.001(0.004)                 | -0.004(0.018)                           | 0.002(0.031)                  |
| Medium Completions   | 0.025(0.014)*    | 0.084(0.042)**                          | 0.135(0.070)*     | 0.001(0.015)                            | 0.007(0.044)                 | 0.009(0.073)     | 0.008(0.004)*                 | 0.026(0.018)                            | 0.040(0.033)                  |
| Deep Completions     | -0.033(0.012)*** | -0.101(0.037)***                        | -0.165(0.062)***  | -0.026(0.012)**                         | -0.078(0.036)**              | -0.126(0.059)**  | 0.005(0.004)                  | 0.017(0.017)                            | 0.030(0.029)                  |
| Running Backs        | ( )              | ( ,                                     | ( )               | ( ,                                     | ( )                          |                  | ( ,                           | ( )                                     | ( )                           |
| Grades Pass Block    | -0.017(0.010)*   | -0.051(0.029)*                          | -0.085(0.049)*    | 0.010(0.009)                            | 0.029(0.027)                 | 0.047(0.046)     | -0.004(0.003)                 | -0.024(0.013)*                          | -0.039(0.022)*                |
| Attempts             | 0.002(0.010)     | 0.010(0.030)                            | 0.013(0.049)      | 0.014(0.009)                            | 0.041(0.027)                 | 0.067(0.045)     | 0.003(0.003)                  | 0.012(0.013)                            | 0.023(0.024)                  |
| Short Receptions     | -0.003(0.010)    | -0.012(0.031)                           | -0.018(0.052)     | -0.017(0.010)*                          | -0.050(0.029)*               | -0.078(0.048)*   | 0.002(0.003)                  | 0.014(0.014)                            | 0.023(0.025)                  |
| Medium Receptions    | -0.016(0.009)*   | -0.048(0.026)*                          | -0.081(0.043)*    | -0.008(0.008)                           | -0.022(0.024)                | -0.039(0.040)    | -0.004(0.002)                 | -0.021(0.011)*                          | -0.036(0.020)*                |
| Deep Receptions      | -0.001(0.009)    | 0.001(0.030)                            | -0.003(0.051)     | -0.005(0.009)                           | -0.016(0.026)                | -0.027(0.044)    | -0.001(0.003)                 | -0.006(0.012)                           | -0.007(0.021)                 |
| WR1                  | 0.002(0.000)     | *************************************** | 0.000(0.001)      | *************************************** | 0.010(0.020)                 | 0.027(0.022)     | 0.002(0.000)                  | *****(********************************* | 0.001(0.022)                  |
| Grades Run Block     | 0.009(0.015)     | 0.020(0.045)                            | 0.039(0.075)      | -0.009(0.019)                           | -0.032(0.056)                | -0.048(0.095)    | -0.003(0.004)                 | -0.011(0.018)                           | -0.021(0.032)                 |
| Short Receptions     | -0.008(0.011)    | -0.024(0.031)                           | -0.038(0.052)     | -0.004(0.011)                           | -0.015(0.032)                | -0.024(0.054)    | -0.002(0.003)                 | -0.011(0.010)                           | -0.018(0.024)                 |
| Medium Receptions    | 0.005(0.011)     | 0.018(0.034)                            | 0.030(0.056)      | -0.002(0.011)                           | -0.002(0.034)                | -0.006(0.056)    | -0.002(0.003)                 | -0.009(0.014)                           | -0.012(0.024)                 |
| Deep Receptions      | 0.023(0.010)**   | 0.069(0.030)**                          | 0.114(0.050)**    | 0.014(0.010)                            | 0.044(0.030)                 | 0.073(0.050)     | 0.001(0.003)                  | 0.005(0.013)                            | 0.006(0.023)                  |
| WR2                  | 0.025(0.010)     | 0.005(0.050)                            | 0.114(0.000)      | 0.014(0.010)                            | 0.011(0.000)                 | 0.010(0.000)     | 0.001(0.000)                  | 0.000(0.010)                            | 0.000(0.020)                  |
| Grades Run Block     | -0.022(0.015)    | -0.065(0.045)                           | -0.110(0.075)     | 0.043(0.034)                            | 0.131(0.105)                 | 0.223(0.174)     | 0.002(0.004)                  | 0.011(0.019)                            | 0.029(0.034)                  |
| Short Receptions     | -0.022(0.013)    | -0.029(0.031)                           | -0.052(0.052)     | -0.004(0.012)                           | -0.012(0.035)                | -0.021(0.058)    | 0.002(0.004)                  | 0.017(0.019)                            | 0.030(0.023)                  |
| Medium Receptions    | -0.004(0.011)    | -0.014(0.033)                           | -0.032(0.032)     | -0.004(0.012)                           | -0.012(0.033)                | -0.049(0.063)    | -0.003(0.003)                 | -0.016(0.014)                           | -0.025(0.025)                 |
| Deep Receptions      | 0.011(0.010)     | 0.035(0.030)                            | 0.056(0.050)      | 0.008(0.010)                            | 0.024(0.031)                 | 0.049(0.063)     | 0.002(0.003)                  | 0.011(0.013)                            | 0.015(0.023)                  |
| WR3                  | 0.011(0.010)     | 0.055(0.050)                            | 0.030(0.030)      | 0.008(0.010)                            | 0.024(0.031)                 | 0.041(0.032)     | 0.002(0.003)                  | 0.011(0.013)                            | 0.013(0.023)                  |
|                      | 0.000(0.010)     | -0.024(0.040)                           | 0.045(0.000)      | 0.020(0.024)                            | 0.005(0.055)                 | 0.107(0.100)     | 0.000(0.004)                  | 0.000(0.015)                            | 0.000(0.000)                  |
| Grades Run Block     | -0.008(0.013)    |   | -0.045(0.066)     |   | 0.067(0.075)<br>0.035(0.037) | 0.107(0.126)     | 0.000(0.004)                  | 0.003(0.017)                            | 0.006(0.030)                  |
| Short Receptions     | -0.013(0.011)    | -0.040(0.032)                           | -0.061(0.054)     | 0.014(0.012)<br>0.003(0.012)            | 0.035(0.037)                 | 0.066(0.061)     | -0.000(0.003)<br>0.002(0.003) | -0.004(0.014)<br>0.006(0.015)           | -0.005(0.024)<br>0.011(0.026) |
| Medium Receptions    | -0.014(0.012)    | -0.046(0.035)                           | -0.077(0.058)     |   |                              | 0.010(0.058)     |                               |   |                               |
| Deep Receptions      | 0.009(0.010)     | 0.032(0.030)                            | 0.050(0.050)      | 0.006(0.010)                            | 0.018(0.030)                 | 0.029(0.050)     | 0.000(0.003)                  | 0.004(0.013)                            | 0.004(0.022)                  |
| TE1                  | 0.00=(0.044)**   | 0.004(0.00#)**                          | 0.4.44 (0.080) 99 | 0.000(0.044)**                          | 0.000(0.000)**               | 0.444 (0.080) 99 | 0.000(0.000)                  | 0.010(0.014)                            | 0.044(0.00%)                  |
| Grades Pass Block    | 0.027(0.011)**   | 0.084(0.035)**                          | 0.141(0.059)**    | 0.026(0.011)**                          | 0.086(0.033)**               | 0.141(0.056)**   | -0.002(0.003)                 | -0.010(0.014)                           | -0.014(0.025)                 |
| Grades Run Block     | -0.019(0.014)    | -0.060(0.042)                           | -0.101(0.070)     | -0.009(0.011)                           | -0.030(0.034)                | -0.048(0.057)    | 0.003(0.004)                  | 0.017(0.018)                            | 0.025(0.031)                  |
| Short Receptions     | 0.002(0.012)     | 0.006(0.035)                            | 0.009(0.058)      | -0.015(0.011)                           | -0.045(0.033)                | -0.076(0.054)    | 0.003(0.004)                  | 0.015(0.016)                            | 0.017(0.028)                  |
| Medium Receptions    | -0.018(0.011)    | -0.058(0.034)*                          | -0.094(0.056)*    | 0.007(0.011)                            | 0.018(0.032)                 | 0.032(0.053)     | -0.000(0.004)                 | -0.006(0.016)                           | -0.011(0.028)                 |
| Deep Receptions      | -0.006(0.010)    | -0.020(0.030)                           | -0.033(0.050)     | 0.001(0.009)                            | 0.002(0.028)                 | 0.005(0.047)     | -0.003(0.003)                 | -0.011(0.013)                           | -0.017(0.023)                 |
| OL1                  |                  |   |                   |   |                              |                  |                               |   |                               |
| Grades Pass Block    | 0.014(0.012)     | 0.044(0.035)                            | 0.075(0.059)      | -0.011(0.010)                           | -0.033(0.029)                | -0.055(0.049)    | -0.004(0.003)                 | -0.018(0.015)                           | -0.029(0.026)                 |
| Grades Run Block     | 0.006(0.014)     | 0.021(0.041)                            | 0.032(0.069)      | 0.007(0.010)                            | 0.019(0.030)                 | 0.036(0.050)     | 0.002(0.004)                  | 0.002(0.017)                            | 0.006(0.031)                  |
| OL2                  |                  |   |                   |   |                              |                  |                               |   |                               |
| Grades Pass Block    | -0.008(0.012)    | -0.024(0.035)                           | -0.041(0.058)     | -0.002(0.010)                           | -0.008(0.029)                | -0.014(0.048)    | -0.000(0.003)                 | -0.007(0.015)                           | -0.016(0.026)                 |
| Grades Run Block     | -0.003(0.014)    | -0.010(0.041)                           | -0.016(0.069)     | -0.013(0.010)                           | -0.041(0.030)                | -0.071(0.050)    | 0.004(0.004)                  | 0.026(0.017)                            | 0.050(0.030)                  |
| OL3                  |                  |   |                   |   |                              |                  |                               |   |                               |
| Grades Pass Block    | 0.011(0.012)     | 0.031(0.035)                            | 0.057(0.059)      | 0.008(0.009)                            | 0.024(0.029)                 | 0.040(0.048)     | 0.001(0.003)                  | 0.005(0.015)                            | 0.005(0.027)                  |
| Grades Run Block     | -0.014(0.014)    | -0.045(0.042)                           | -0.077(0.071)     | 0.004(0.009)                            | 0.018(0.029)                 | 0.026(0.048)     | -0.003(0.004)                 | -0.016(0.018)                           | -0.034(0.032)                 |
| OL4                  |                  |   |                   |   |                              |                  |                               |   |                               |
| Grades Pass Block    | 0.021(0.012)*    | 0.061(0.036)*                           | 0.106(0.061)*     | 0.005(0.010)                            | 0.015(0.030)                 | 0.028(0.049)     | -0.002(0.003)                 | -0.013(0.015)                           | -0.017(0.026)                 |
| Grades Run Block     | -0.007(0.013)    | -0.022(0.039)                           | -0.040(0.065)     | -0.012(0.010)                           | -0.035(0.029)                | -0.062(0.047)    | 0.001(0.004)                  | 0.007(0.017)                            | 0.011(0.030)                  |
| OL5                  |                  |   |                   |   |                              |                  |                               |   |                               |
| Grades Pass Block    | 0.024(0.012)*    | 0.068(0.037)*                           | 0.114(0.061)*     | -0.012(0.010)                           | -0.037(0.031)                | -0.061(0.052)    | 0.001(0.003)                  | 0.013(0.015)                            | 0.018(0.027)                  |
| Grades Run Block     | -0.024(0.013)*   | -0.073(0.039)*                          | -0.118(0.066)*    | 0.009(0.010)                            | 0.023(0.030)                 | 0.038(0.051)     | -0.001(0.004)                 | -0.007(0.017)                           | -0.014(0.030)                 |
| Perf. Measures       |                  |   |                   |   |                              |                  |                               |   |                               |
| GIMR                 | 0.007(0.002)***  | 0.021(0.007)***                         | 0.036(0.012)***   | 0.007(0.002)***                         | 0.021(0.007)***              | 0.034(0.011)***  |                               |   |                               |
| Control Variables    |                  |   |                   |   |                              |                  |                               |   |                               |
| Game Situation       | Yes              | Yes                                     | Yes               | Yes                                     | Yes                          | Yes              | Yes                           | Yes                                     | Yes                           |
| Coach Variables      | Yes              | Yes                                     | Yes               | Yes                                     | Yes                          | Yes              | Yes                           | Yes                                     | Yes                           |
| Team Stats           | Yes              | Yes                                     | Yes               | Yes                                     | Yes                          | Yes              | Yes                           | Yes                                     | Yes                           |
| Season/Team FE       | Yes              | Yes                                     | Yes               | Yes                                     | Yes                          | Yes              | No                            | No                                      | No                            |
| Coach FE             | No               | No                                      | No                | Yes                                     | Yes                          | Yes              | Yes                           | Yes                                     | Yes                           |
| Player Presence      | Yes              | Yes                                     | Yes               | Yes                                     | Yes                          | Yes              | No                            | No                                      | No                            |
| Control Def. Players | Yes              | Yes                                     | Yes               | Yes                                     | Yes                          | Yes              | Yes                           | Yes                                     | Yes                           |
| Control Off. Players | No               | No                                      | No                | No                                      | No                           | No               | No                            | No                                      | No                            |
| Control On. 1 layers | 110              | 110                                     | 110               | 110                                     | 110                          | 110              | 110                           | 110                                     | 110                           |

Table 4: Defense Stops Model Results

|                      |                 | Starter Models                          |   |   | On-Field Models |                 | Attempt Models  |   |                 |
|----------------------|-----------------|---|---|---|-----------------|-----------------|-----------------|---|-----------------|
| Variable             | Starter LPM     | Starter Probit                          | Starter Logit                           | On-Field LPM                            | On-Field Probit | On-Field Logit  | Attempt LPM     | Attempt Probit                          | Attempt Logit   |
| DL1                  |                 |   |   |   |                 |                 |                 |   |                 |
| Grades Stops         | -0.002(0.009)   | -0.007(0.027)                           | -0.008(0.046)                           | -0.007(0.009)                           | -0.022(0.027)   | -0.037(0.045)   | 0.002(0.003)    | 0.009(0.012)                            | 0.020(0.020)    |
| Productivity Stops   | 0.015(0.009)*   | 0.047(0.027)*                           | 0.078(0.045)*                           | -0.004(0.009)                           | -0.008(0.026)   | -0.015(0.044)   | -0.001(0.003)   | -0.003(0.011)                           | -0.008(0.020)   |
| DL2                  | 0.020(0.000)    | *************************************** | *************************************** | *************************************** | 0.000(0.020)    | 0.010(0.011)    | 0.002(0.000)    | *************************************** | 0.000(0.020)    |
| Grades Stops         | 0.009(0.009)    | 0.025(0.027)                            | 0.037(0.044)                            | 0.010(0.009)                            | 0.034(0.028)    | 0.051(0.046)    | 0.002(0.003)    | 0.009(0.012)                            | 0.010(0.021)    |
| Productivity Stops   | -0.000(0.009)   | 0.000(0.026)                            | -0.001(0.043)                           | -0.015(0.009)                           | -0.042(0.027)   | -0.068(0.045)   | -0.006(0.003)** | -0.023(0.012)*                          | -0.038(0.021)*  |
| DL3                  | 0.000(0.000)    | 0.000(0.020)                            | 0.001(0.010)                            | 0.010(0.000)                            | 0.012(0.021)    | 0.000(0.010)    | 0.000(0.000)    | 0.020(0.012)                            | 0.000(0.021)    |
| Grades Stops         | -0.005(0.009)   | -0.014(0.027)                           | -0.026(0.045)                           | 0.007(0.011)                            | 0.017(0.034)    | 0.025(0.056)    | -0.001(0.003)   | -0.009(0.011)                           | -0.014(0.020)   |
| Productivity Stops   | 0.001(0.009)    | 0.001(0.027)                            | 0.005(0.045)                            | -0.008(0.010)                           | -0.022(0.030)   | -0.038(0.050)   | -0.001(0.003)   | 0.002(0.011)                            | 0.001(0.020)    |
| DL4                  | 0.001(0.000)    | 0.001(0.021)                            | 0.000(0.010)                            | 0.000(0.010)                            | 0.022(0.000)    | 0.000(0.000)    | 0.001(0.000)    | 0.002(0.011)                            | 0.001(0.020)    |
| Grades Stops         | -0.008(0.009)   | -0.028(0.029)                           | -0.043(0.048)                           | 0.000(0.011)                            | 0.002(0.034)    | 0.003(0.057)    | -0.000(0.003)   | -0.007(0.012)                           | -0.008(0.021)   |
| Productivity Stops   | -0.002(0.009)   | -0.008(0.026)                           | -0.012(0.044)                           | -0.021(0.010)**                         | -0.062(0.031)** | -0.105(0.051)** | -0.005(0.003)** | -0.019(0.011)*                          | -0.031(0.020)   |
| LB1                  | -0.002(0.003)   | -0.000(0.020)                           | -0.012(0.044)                           | -0.021(0.010)                           | -0.002(0.001)   | -0.100(0.001)   | -0.000(0.000)   | -0.013(0.011)                           | -0.001(0.020)   |
| Grades Stops         | 0.033(0.010)*** | 0.101(0.028)***                         | 0.165(0.047)***                         | -0.002(0.010)                           | -0.004(0.029)   | -0.008(0.049)   | 0.003(0.003)    | 0.014(0.013)                            | 0.026(0.023)    |
| Zone Stops           | -0.010(0.010)   | -0.026(0.029)                           | -0.040(0.048)                           | -0.002(0.010)                           | -0.009(0.029)   | -0.018(0.052)   | 0.000(0.003)    | 0.005(0.013)                            | 0.007(0.022)    |
| Man Stops            | 0.007(0.009)    | 0.018(0.028)                            | 0.033(0.047)                            | -0.003(0.010)                           | -0.003(0.031)   | 0.001(0.046)    | -0.003(0.003)   | -0.012(0.011)                           | -0.019(0.022)   |
| LB2                  | 0.007(0.009)    | 0.016(0.026)                            | 0.055(0.047)                            | -0.001(0.009)                           | -0.001(0.028)   | 0.001(0.040)    | -0.003(0.003)   | -0.012(0.011)                           | -0.019(0.020)   |
| Grades Stops         | 0.012(0.010)    | 0.038(0.030)                            | 0.059(0.050)                            | -0.017(0.010)*                          | -0.050(0.031)   | -0.086(0.051)*  | 0.002(0.003)    | 0.016(0.013)                            | 0.024(0.023)    |
|                      |                 |   |   |   |                 |                 |                 |   | -0.022(0.023)   |
| Zone Stops           | -0.008(0.010)   | -0.027(0.029)                           | -0.044(0.048)                           | 0.011(0.010)                            | 0.031(0.031)    | 0.054(0.052)    | -0.002(0.003)   | -0.011(0.013)                           |                 |
| Man Stops            | 0.017(0.009)*   | 0.057(0.028)**                          | 0.096(0.046)**                          | -0.013(0.010)                           | -0.038(0.028)   | -0.064(0.047)   | 0.001(0.003)    | -0.002(0.011)                           | 0.002(0.020)    |
| LB3                  | / /-            |   | /                                       |   |                 |                 |                 |   |                 |
| Grades Stops         | 0.020(0.010)*   | 0.056(0.031)*                           | 0.094(0.052)*                           | -0.010(0.013)                           | -0.031(0.038)   | -0.054(0.063)   | 0.001(0.003)    | 0.008(0.014)                            | 0.018(0.024)    |
| Zone Stops           | -0.004(0.010)   | -0.005(0.030)                           | -0.014(0.049)                           | 0.010(0.011)                            | 0.028(0.033)    | 0.046(0.054)    | -0.002(0.003)   | -0.007(0.013)                           | -0.020(0.023)   |
| Man Stops            | -0.004(0.009)   | -0.012(0.028)                           | -0.018(0.046)                           | -0.002(0.009)                           | -0.003(0.028)   | -0.007(0.046)   | -0.000(0.003)   | -0.002(0.012)                           | 0.004(0.021)    |
| LB4                  |                 |   |   |   |                 |                 |                 |   |                 |
| Grades Stops         | 0.002(0.011)    | 0.012(0.033)                            | 0.014(0.054)                            | -0.001(0.013)                           | -0.006(0.038)   | -0.013(0.064)   | -0.001(0.003)   | 0.001(0.014)                            | -0.007(0.025)   |
| Zone Stops           | -0.011(0.010)   | -0.035(0.031)                           | -0.052(0.052)                           | 0.000(0.011)                            | 0.001(0.034)    | 0.008(0.057)    | 0.002(0.003)    | 0.005(0.013)                            | 0.013(0.023)    |
| Man Stops            | 0.010(0.009)    | 0.029(0.028)                            | 0.050(0.047)                            | 0.001(0.009)                            | 0.001(0.027)    | 0.003(0.045)    | -0.003(0.003)   | -0.010(0.012)                           | -0.016(0.022)   |
| CB1                  |                 |   |   |   |                 |                 |                 |   |                 |
| Grades Stops         | -0.008(0.009)   | -0.022(0.026)                           | -0.040(0.044)                           | 0.016(0.009)*                           | 0.048(0.029)*   | 0.080(0.047)*   | 0.002(0.003)    | 0.011(0.012)                            | 0.023(0.021)    |
| Zone Stops           | -0.018(0.009)** | -0.056(0.028)**                         | -0.094(0.046)**                         | 0.011(0.009)                            | 0.032(0.028)    | 0.057(0.046)    | 0.003(0.003)    | 0.013(0.012)                            | 0.020(0.020)    |
| Man Stops            | 0.005(0.009)    | 0.015(0.026)                            | 0.025(0.043)                            | 0.012(0.009)                            | 0.035(0.027)    | 0.059(0.045)    | -0.004(0.003)   | -0.018(0.011)                           | -0.033(0.020)   |
| CB2                  |                 |   |   |   |                 |                 |                 |   |                 |
| Grades Stops         | 0.004(0.009)    | 0.012(0.026)                            | 0.021(0.043)                            | 0.001(0.009)                            | 0.003(0.028)    | 0.005(0.047)    | -0.004(0.003)   | -0.017(0.012)                           | -0.031(0.021)   |
| Zone Stops           | -0.001(0.009)   | -0.003(0.027)                           | -0.005(0.044)                           | 0.002(0.009)                            | 0.010(0.028)    | 0.012(0.046)    | 0.003(0.003)    | 0.013(0.012)                            | 0.027(0.021)    |
| Man Stops            | -0.014(0.009)   | -0.041(0.026)                           | -0.067(0.043)                           | 0.001(0.009)                            | 0.000(0.028)    | -0.003(0.046)   | 0.004(0.003)    | 0.016(0.011)                            | 0.029(0.020)    |
| CB3                  |                 |   |   |   |                 |                 |                 |   |                 |
| Grades Stops         | -0.020(0.009)** | -0.058(0.027)**                         | -0.096(0.045)**                         | 0.000(0.009)                            | -0.001(0.028)   | -0.002(0.047)   | -0.001(0.003)   | -0.002(0.011)                           | -0.001(0.020)   |
| Zone Stops           | -0.000(0.009)   | 0.002(0.028)                            | 0.004(0.046)                            | 0.005(0.010)                            | 0.017(0.031)    | 0.031(0.052)    | 0.002(0.003)    | 0.008(0.012)                            | 0.010(0.021)    |
| Man Stops            | -0.008(0.009)   | -0.025(0.027)                           | -0.041(0.045)                           | 0.010(0.009)                            | 0.025(0.027)    | 0.048(0.045)    | 0.006(0.003)**  | 0.027(0.012)**                          | 0.049(0.020)**  |
| S1                   |                 |   |   |   |                 |                 |                 |   |                 |
| Grades Stops         | -0.001(0.010)   | 0.002(0.029)                            | 0.004(0.049)                            | -0.004(0.010)                           | -0.009(0.030)   | -0.022(0.049)   | 0.005(0.003)*   | 0.026(0.013)**                          | 0.040(0.023)*   |
| Zone Stops           | -0.005(0.009)   | -0.016(0.028)                           | -0.030(0.047)                           | -0.002(0.009)                           | -0.005(0.027)   | -0.011(0.046)   | 0.002(0.003)    | 0.005(0.012)                            | 0.006(0.022)    |
| Man Stops            | 0.001(0.009)    | 0.005(0.028)                            | 0.006(0.046)                            | 0.008(0.010)                            | 0.023(0.029)    | 0.041(0.048)    | -0.006(0.003)** | -0.027(0.012)**                         | -0.045(0.021)** |
| S2                   |                 |   |   |   |                 |                 |                 |   |                 |
| Grades Stops         | 0.009(0.010)    | 0.029(0.030)                            | 0.044(0.050)                            | 0.019(0.010)*                           | 0.056(0.031)*   | 0.093(0.051)*   | 0.002(0.003)    | 0.006(0.013)                            | 0.012(0.023)    |
| Zone Stops           | -0.001(0.009)   | -0.004(0.028)                           | -0.001(0.047)                           | -0.006(0.010)                           | -0.013(0.031)   | -0.025(0.051)   | 0.003(0.003)    | 0.015(0.012)                            | 0.027(0.021)    |
| Man Stops            | -0.003(0.009)   | -0.008(0.028)                           | -0.013(0.046)                           | -0.004(0.009)                           | -0.014(0.028)   | -0.027(0.047)   | -0.000(0.003)   | -0.004(0.012)                           | -0.006(0.021)   |
| S3                   | ( ,             | ,                                       | ( ,                                     | ( ,                                     | ()              | ( /             | ( )             | ( ,                                     | ( /             |
| Grades Stops         | 0.016(0.010)*   | 0.048(0.029)                            | 0.082(0.048)*                           | -0.006(0.011)                           | -0.017(0.034)   | -0.029(0.056)   | -0.002(0.003)   | -0.007(0.012)                           | -0.008(0.022)   |
| Zone Stops           | -0.009(0.010)   | -0.026(0.029)                           | -0.050(0.048)                           | 0.002(0.011)                            | 0.003(0.033)    | 0.006(0.055)    | 0.001(0.003)    | 0.002(0.012)                            | 0.004(0.022)    |
| Man Stops            | -0.006(0.009)   | -0.022(0.028)                           | -0.032(0.047)                           | 0.013(0.010)                            | 0.040(0.030)    | 0.069(0.050)    | 0.001(0.003)    | 0.009(0.012)                            | 0.011(0.022)    |
| Perf. Measures       | 0.000(0.000)    | 0.022(0.020)                            | 0.002(0.011)                            | 0.010(0.010)                            | 0.010(0.000)    | 0.000(0.000)    | 0.001(0.000)    | 0.000(0.012)                            | 0.011(0.022)    |
| GIMR                 | 0.009(0.002)*** | 0.027(0.006)***                         | 0.044(0.011)***                         | 0.009(0.002)***                         | 0.026(0.007)*** | 0.043(0.011)*** |                 |   |                 |
| Control Variables    | 0.000(0.002)    | 3.321(0.000)                            |   | (0.002)                                 | 0.020(0.001)    | (0.011)         |                 |   |                 |
| Game Situation       | Yes             | Yes                                     | Yes                                     | Yes                                     | Yes             | Yes             | Yes             | Yes                                     | Yes             |
| Coach Variables      | Yes             | Yes                                     | Yes                                     | Yes                                     | Yes             | Yes             | Yes             | Yes                                     | Yes             |
| Team Stats           | Yes             | Yes                                     | Yes                                     | Yes                                     | Yes             | Yes             | Yes             | Yes                                     | Yes             |
| Season/Team FE       | Yes             | Yes                                     | Yes                                     | Yes                                     | Yes             | Yes             | No              | No                                      | No              |
| Coach FE             | Yes<br>No       | No<br>No                                | No                                      | Yes                                     | Yes             | Yes             | Yes             | Yes                                     | Yes             |
|                      |                 |   |   |   |                 |                 |                 |   |                 |
| Player Presence      | Yes             | Yes                                     | Yes                                     | Yes                                     | Yes             | Yes             | No              | No                                      | No              |
| Control Off. Players | Yes<br>N-       | Yes<br>N-                               | Yes<br>N-                               | Yes<br>N-                               | Yes<br>N-       | Yes             | Yes             | Yes<br>N-                               | Yes             |
| Control Def. Players | No              | No                                      | No                                      | No                                      | No              | No              | No              | No                                      | No              |

Table 5: Defense Grades Model Results

|  |                                | Starter Models                 |                                |                                | On-Field Models                         |                                |   | Attempt Models                          |                               |
|--|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---|--------------------------------|---|---|-------------------------------|
| Variable                                     | Starter LPM                    | Starter Probit                 | Starter Logit                  | On-Field LPM                   | On-Field Probit                         | On-Field Logit                 | Attempt LPM                             | Attempt Probit                          | Attempt Logit                 |
| DL1  |                                |                                |                                |                                |   |                                |   |   |                               |
| Grades Run Defense                           | 0.001(0.015)                   | 0.005(0.046)                   | 0.006(0.077)                   | -0.005(0.011)                  | -0.014(0.034)                           | -0.020(0.056)                  | -0.006(0.004)                           | -0.023(0.019)                           | -0.035(0.034)                 |
| Grds Pass Rush Def                           | 0.009(0.015)                   | 0.030(0.045)                   | 0.053(0.074)                   | -0.014(0.011)                  | -0.045(0.034)                           | -0.077(0.056)                  | 0.008(0.004)*                           | 0.036(0.019)*                           | 0.068(0.033)**                |
| DL2  |                                |                                |                                | ` ` `                          | ` ′                                     | ` ′                            | . ,                                     |   | ` ′                           |
| Grades Run Defense                           | 0.026(0.015)*                  | 0.079(0.044)*                  | 0.128(0.073)*                  | 0.005(0.024)                   | 0.022(0.071)                            | 0.031(0.119)                   | -0.002(0.004)                           | -0.009(0.019)                           | -0.010(0.034)                 |
| Grds Pass Rush Def                           | -0.017(0.014)                  | -0.051(0.042)                  | -0.088(0.070)                  | -0.018(0.023)                  | -0.059(0.069)                           | -0.093(0.116)                  | -0.003(0.004)                           | -0.012(0.019)                           | -0.032(0.033)                 |
| DL3  | ` ` `                          | ` ′                            | ` ′                            | ` ′                            | ` ′                                     | ` ′                            | ` ′                                     | ` ′                                     |                               |
| Grades Run Defense                           | -0.005(0.015)                  | -0.017(0.045)                  | -0.028(0.075)                  | -0.015(0.042)                  | -0.051(0.123)                           | -0.076(0.202)                  | -0.004(0.004)                           | -0.028(0.020)                           | -0.048(0.035)                 |
| Grds Pass Rush Def                           | 0.003(0.015)                   | 0.015(0.044)                   | 0.020(0.073)                   | -0.001(0.045)                  | 0.011(0.134)                            | -0.009(0.220)                  | 0.001(0.004)                            | 0.016(0.019)                            | 0.024(0.033)                  |
| DL4  |                                |                                |                                |                                |   |                                |   |   |                               |
| Grades Run Defense                           | 0.012(0.015)                   | 0.031(0.044)                   | 0.055(0.073)                   | -0.042(0.050)                  | -0.136(0.151)                           | -0.227(0.252)                  | 0.000(0.004)                            | -0.010(0.020)                           | -0.007(0.035)                 |
| Grds Pass Rush Def                           | -0.004(0.015)                  | -0.008(0.044)                  | -0.017(0.073)                  | -0.017(0.053)                  | -0.040(0.157)                           | -0.079(0.262)                  | -0.002(0.004)                           | 0.001(0.021)                            | -0.007(0.035)                 |
| LB1  |                                |                                |                                |                                |   |                                |   |   |                               |
| Grades Run Defense                           | 0.027(0.013)**                 | 0.084(0.039)**                 | 0.139(0.065)**                 | 0.005(0.010)                   | 0.014(0.030)                            | 0.023(0.050)                   | 0.001(0.004)                            | 0.001(0.017)                            | -0.003(0.030)                 |
| Man Grades Cov Def                           | -0.022(0.009)**                | -0.069(0.029)**                | -0.110(0.048)**                | 0.005(0.008)                   | 0.018(0.025)                            | 0.028(0.042)                   | 0.002(0.003)                            | 0.013(0.013)                            | 0.028(0.023)                  |
| Zone Grades Cov Def                          | -0.007(0.012)                  | -0.020(0.037)                  | -0.030(0.062)                  | -0.002(0.010)                  | -0.010(0.030)                           | -0.012(0.049)                  | -0.005(0.004)                           | -0.018(0.015)                           | -0.039(0.027)                 |
| LB2  |                                |                                |                                |                                |   |                                |   |   |                               |
| Grades Run Defense                           | 0.026(0.013)**                 | 0.084(0.040)**                 | 0.137(0.067)**                 | -0.014(0.017)                  | -0.040(0.052)                           | -0.067(0.086)                  | 0.002(0.004)                            | 0.018(0.017)                            | 0.030(0.031)                  |
| Man Grades Cov Def                           | -0.011(0.010)                  | -0.033(0.030)                  | -0.057(0.051)                  | 0.004(0.013)                   | 0.015(0.040)                            | 0.020(0.067)                   | -0.001(0.003)                           | -0.007(0.013)                           | -0.009(0.023)                 |
| Zone Grades Cov Def                          | -0.014(0.012)                  | -0.043(0.035)                  | -0.069(0.058)                  | 0.013(0.017)                   | 0.033(0.051)                            | 0.057(0.084)                   | 0.002(0.003)                            | 0.013(0.015)                            | 0.021(0.026)                  |
| LB3  | 0.011(0.012)                   | 01010(01000)                   | 0.000(0.000)                   | 0.010(0.011)                   | *************************************** | 0.007 (0.002)                  | *************************************** | 0.010(0.010)                            | 0.022(0.020)                  |
| Grades Run Defense                           | -0.004(0.013)                  | -0.012(0.040)                  | -0.022(0.067)                  | -0.036(0.036)                  | -0.099(0.109)                           | -0.173(0.178)                  | -0.002(0.004)                           | -0.011(0.016)                           | -0.023(0.029)                 |
| Man Grades Cov Def                           | 0.018(0.011)                   | 0.053(0.033)                   | 0.089(0.056)                   | 0.018(0.019)                   | 0.054(0.055)                            | 0.091(0.092)                   | 0.005(0.003)*                           | 0.018(0.014)                            | 0.038(0.024)                  |
| Zone Grades Cov Def                          | -0.001(0.012)                  | -0.005(0.038)                  | -0.004(0.064)                  | -0.042(0.028)                  | -0.124(0.084)                           | -0.211(0.140)                  | 0.005(0.004)                            | 0.027(0.016)*                           | 0.046(0.028)*                 |
| LB4  | 0.00-(0.0)                     | 0.000(0.000)                   | 0.00 -(0.00 -)                 | 0.0.1=(0.0=0)                  | 0.1-1(0.001)                            | v. <u>_</u> (vv)               | 0.000(0.00-)                            | *************************************** | 0.0.0(0.0=0)                  |
| Grades Run Defense                           | -0.029(0.012)**                | -0.084(0.035)**                | -0.146(0.058)**                | 0.032(0.040)                   | 0.084(0.119)                            | 0.142(0.199)                   | 0.002(0.003)                            | 0.010(0.016)                            | 0.017(0.027)                  |
| Man Grades Cov Def                           | 0.024(0.012)**                 | 0.072(0.035)**                 | 0.120(0.058)**                 | -0.003(0.018)                  | -0.016(0.054)                           | -0.025(0.090)                  | -0.000(0.003)                           | -0.004(0.015)                           | -0.001(0.026)                 |
| Zone Grades Cov Def                          | 0.003(0.013)                   | 0.011(0.040)                   | 0.021(0.065)                   | -0.003(0.029)                  | -0.005(0.091)                           | -0.012(0.152)                  | -0.001(0.004)                           | -0.007(0.016)                           | -0.017(0.029)                 |
| CB1  | 0.000(0.010)                   | 0.011(0.010)                   | 0.021(0.000)                   | 0.000(0.020)                   | 0.000(0.001)                            | 0.012(0.102)                   | 0.001(0.001)                            | 0.007(0.010)                            | 0.017(0.020)                  |
| Grades Run Defense                           | -0.013(0.015)                  | -0.039(0.045)                  | -0.059(0.075)                  | 0.008(0.016)                   | 0.027(0.049)                            | 0.042(0.081)                   | -0.002(0.004)                           | -0.009(0.019)                           | -0.018(0.034)                 |
| Man Grades Cov Def                           | -0.010(0.013)                  | -0.034(0.038)                  | -0.052(0.064)                  | -0.029(0.014)**                | -0.083(0.042)**                         | -0.144(0.069)**                | 0.000(0.004)                            | 0.002(0.017)                            | 0.011(0.029)                  |
| Zone Grades Cov Def                          | 0.007(0.015)                   | 0.025(0.044)                   | 0.036(0.073)                   | -0.012(0.015)                  | -0.036(0.046)                           | -0.056(0.077)                  | 0.000(0.004)                            | -0.003(0.018)                           | -0.012(0.032)                 |
| CB2  | 0.001(0.010)                   | 0.020(0.044)                   | 0.030(0.013)                   | -0.012(0.010)                  | -0.030(0.040)                           | -0.000(0.011)                  | 0.000(0.004)                            | -0.000(0.010)                           | -0.012(0.002)                 |
| Grades Run Defense                           | 0.033(0.014)**                 | 0.104(0.042)**                 | 0.176(0.070)**                 | -0.019(0.020)                  | -0.054(0.060)                           | -0.093(0.098)                  | -0.008(0.004)*                          | -0.023(0.018)                           | -0.048(0.032)                 |
| Man Grades Cov Def                           | -0.013(0.012)                  | -0.046(0.036)                  | -0.072(0.060)                  | 0.008(0.018)                   | 0.023(0.055)                            | 0.036(0.091)                   | -0.004(0.004)                           | -0.016(0.016)                           | -0.024(0.027)                 |
| Zone Grades Cov Def                          | -0.011(0.014)                  | -0.037(0.042)                  | -0.062(0.070)                  | -0.007(0.021)                  | -0.023(0.064)                           | -0.035(0.106)                  | 0.002(0.004)                            | 0.002(0.018)                            | 0.008(0.031)                  |
| CB3  | -0.011(0.014)                  | -0.007(0.042)                  | -0.002(0.010)                  | -0.007(0.021)                  | -0.025(0.004)                           | -0.000(0.100)                  | 0.002(0.004)                            | 0.002(0.010)                            | 0.000(0.001)                  |
| Grades Run Defense                           | -0.018(0.012)                  | -0.060(0.036)                  | -0.094(0.061)                  | 0.032(0.033)                   | 0.100(0.098)                            | 0.160(0.163)                   | -0.005(0.004)                           | -0.027(0.016)*                          | -0.050(0.029)*                |
| Man Grades Cov Def                           | 0.018(0.012)                   | 0.062(0.037)*                  | 0.101(0.062)                   | -0.001(0.030)                  | 0.009(0.087)                            | 0.017(0.144)                   | 0.011(0.004)***                         | 0.043(0.016)***                         | 0.077(0.029)***               |
| Zone Grades Cov Def                          | -0.010(0.012)                  | -0.028(0.041)                  | -0.052(0.069)                  | 0.030(0.034)                   | 0.005(0.087)                            | 0.145(0.167)                   | 0.002(0.004)                            | 0.016(0.018)                            | 0.031(0.031)                  |
| S1   | -0.010(0.010)                  | -0.020(0.041)                  | -0.002(0.000)                  | 0.000(0.004)                   | 0.001(0.100)                            | 0.140(0.101)                   | 0.002(0.004)                            | 0.010(0.010)                            | 0.001(0.001)                  |
| Grades Run Defense                           | 0.002(0.016)                   | 0.008(0.048)                   | 0.019(0.081)                   | -0.020(0.013)                  | -0.058(0.040)                           | -0.097(0.067)                  | -0.003(0.005)                           | -0.016(0.023)                           | -0.021(0.039)                 |
| Man Grades Cov Def                           | -0.006(0.014)                  | -0.014(0.043)                  | -0.028(0.071)                  | 0.000(0.013)                   | -0.004(0.039)                           | -0.008(0.066)                  | -0.003(0.003)                           | -0.020(0.019)                           | -0.040(0.033)                 |
| Zone Grades Cov Def                          | -0.006(0.014)                  | -0.021(0.044)                  | -0.028(0.071)                  | 0.000(0.012)                   | 0.044(0.037)                            | 0.071(0.063)                   | 0.006(0.004)                            | 0.027(0.019)                            | 0.048(0.033)                  |
| S2   | -0.000(0.014)                  | -0.021(0.044)                  | -0.034(0.073)                  | 0.013(0.012)                   | 0.044(0.037)                            | 0.071(0.003)                   | 0.000(0.004)                            | 0.027(0.019)                            | 0.048(0.033)                  |
| U-   | 0.000(0.015)                   | 0.096(0.047)                   | 0.044(0.070)                   | 0.009(0.097)                   | 0.000(0.078)                            | 0.004(0.100)                   | 0.009(0.005)                            | 0.017(0.020)                            | 0.002(0.026)                  |
| Grades Run Defense<br>Man Grades Cov Def     | -0.008(0.015)<br>-0.009(0.013) | -0.026(0.047)<br>-0.024(0.040) | -0.044(0.079)<br>-0.038(0.066) | -0.002(0.027)<br>-0.008(0.025) | -0.009(0.078)<br>-0.026(0.079)          | -0.024(0.129)<br>-0.041(0.131) | -0.002(0.005)<br>0.003(0.004)           | -0.017(0.020)<br>0.014(0.018)           | -0.023(0.036)<br>0.015(0.033) |
|  |                                |                                |                                |                                |   |                                |   |   |                               |
| Zone Grades Cov Def                          | -0.004(0.014)                  | -0.015(0.041)                  | -0.025(0.068)                  | 0.006(0.026)                   | 0.024(0.080)                            | 0.042(0.134)                   | 0.002(0.005)                            | 0.010(0.020)                            | 0.024(0.036)                  |
| Condon Don Defense                           | 0.007/0.010                    | 0.010(0.040)                   | 0.000(0.00%)                   | 0.000(0.044)                   | 0.000(0.100)                            | 0.007(0.007)                   | 0.000(0.004)                            | 0.005/0.016)                            | 0.001/0.000                   |
| Grades Run Defense                           | -0.007(0.013)                  | -0.018(0.040)                  | -0.029(0.067)                  | 0.009(0.044)                   | 0.022(0.139)                            | 0.027(0.237)                   | -0.002(0.004)                           | -0.005(0.016)                           | -0.001(0.028)                 |
| Man Grades Cov Def                           | -0.003(0.013)                  | -0.010(0.040)                  | -0.018(0.066)                  | -0.018(0.043)                  | -0.041(0.127)                           | -0.070(0.213)                  | 0.004(0.004)                            | 0.012(0.016)                            | 0.026(0.029)                  |
| Zone Grades Cov Def                          | 0.020(0.015)                   | 0.062(0.045)                   | 0.102(0.075)                   | 0.019(0.047)                   | 0.046(0.146)                            | 0.089(0.247)                   | -0.005(0.004)                           | -0.018(0.018)                           | -0.039(0.032)                 |
| Perf. Measures                               | 0.007(0.000)***                | 0.004(0.005)***                | 0.040(0.010)***                | 0.007(0.000)***                | 0.004(0.00=)***                         | 0.040(0.010)***                |   |   |                               |
| GIMR   | 0.007(0.002)***                | 0.024(0.007)***                | 0.042(0.012)***                | 0.007(0.002)***                | 0.024(0.007)***                         | 0.040(0.012)***                |   |   |                               |
| Control Variables                            | V                              | V                              | V                              | V                              | V                                       | V                              | V                                       | V                                       | v                             |
| Game Situation                               | Yes                            | Yes                            | Yes                            | Yes                            | Yes                                     | Yes                            | Yes                                     | Yes                                     | Yes                           |
| Coach Variables                              | Yes                            | Yes                            | Yes                            | Yes                            | Yes                                     | Yes                            | Yes                                     | Yes                                     | Yes                           |
| Team Stats                                   | Yes                            | Yes                            | Yes                            | Yes                            | Yes                                     | Yes                            | Yes                                     | Yes                                     | Yes                           |
| Season/Team FE                               | Yes                            | Yes                            | Yes                            | Yes                            | Yes                                     | Yes                            | No                                      | No                                      | No                            |
| Coach FE                                     | No                             | No                             | No                             | Yes                            | Yes                                     | Yes                            | Yes                                     | Yes                                     | Yes                           |
| Player Presence                              | Yes                            | Yes                            | Yes                            | Yes                            | Yes                                     | Yes                            | No                                      | No                                      | No                            |
|  |                                |                                |                                |                                |   |                                |   |   |                               |
| Control Off. Players<br>Control Def. Players | Yes<br>No                      | Yes<br>No                      | Yes<br>No                      | Yes<br>No                      | Yes<br>No                               | Yes<br>No                      | Yes<br>No                               | Yes<br>No                               | Yes<br>No                     |

Table 6: Defense Tackles Model Results

|                      |                 | Starter Models  |  |                 | On-Field Models |                       | Attempt Models  |   |                |  |
|----------------------|-----------------|-----------------|--|-----------------|-----------------|-----------------------|-----------------|---|----------------|--|
| Variable             | Starter LPM     | Starter Probit  | Starter Logit                          | On-Field LPM    | On-Field Probit | On-Field Logit        | Attempt LPM     | Attempt Probit                          | Attempt Logit  |  |
| DL1                  |                 |                 |  |                 |                 |                       |                 |   |                |  |
| Grades Tackles       | -0.003(0.009)   | -0.012(0.027)   | -0.016(0.045)                          | -0.008(0.009)   | -0.025(0.026)   | -0.042(0.044)         | 0.001(0.003)    | 0.003(0.012)                            | 0.008(0.021)   |  |
| Productivity Sacks   | 0.011(0.009)    | 0.037(0.026)    | 0.059(0.044)                           | -0.007(0.009)   | -0.019(0.027)   | -0.033(0.044)         | 0.000(0.003)    | 0.001(0.011)                            | -0.002(0.020)  |  |
| DL2                  | ` ′             |                 |  |                 | ` ′             | ` ′                   |                 |   | ` ′            |  |
| Grades Tackles       | 0.009(0.009)    | 0.027(0.027)    | 0.044(0.045)                           | 0.016(0.009)*   | 0.051(0.028)*   | 0.078(0.047)*         | 0.002(0.003)    | 0.007(0.012)                            | 0.007(0.021)   |  |
| Productivity Sacks   | -0.000(0.009)   | 0.002(0.026)    | -0.001(0.043)                          | -0.009(0.009)   | -0.025(0.027)   | -0.040(0.044)         | -0.006(0.003)** | -0.023(0.012)*                          | -0.041(0.021)* |  |
| DL3                  |                 | ( ,             | ( ,                                    |                 | ( ,             | ( )                   | ( ,             | ( ,                                     | ( ,            |  |
| Grades Tackles       | -0.007(0.009)   | -0.021(0.027)   | -0.035(0.045)                          | 0.001(0.012)    | 0.000(0.035)    | -0.004(0.058)         | 0.002(0.003)    | 0.006(0.012)                            | 0.011(0.021)   |  |
| Productivity Sacks   | -0.002(0.009)   | -0.004(0.026)   | -0.006(0.044)                          | -0.001(0.010)   | -0.001(0.030)   | -0.003(0.049)         | -0.002(0.003)   | -0.003(0.011)                           | -0.008(0.020)  |  |
| DL4                  |                 |                 |  |                 |                 |                       |                 |   |                |  |
| Grades Tackles       | -0.009(0.010)   | -0.031(0.029)   | -0.048(0.048)                          | 0.008(0.012)    | 0.025(0.037)    | 0.039(0.061)          | -0.000(0.003)   | -0.007(0.012)                           | -0.008(0.021)  |  |
| Productivity Sacks   | -0.002(0.009)   | -0.007(0.027)   | -0.011(0.045)                          | -0.017(0.010)*  | -0.049(0.030)*  | -0.081(0.049)*        | -0.006(0.003)** | -0.019(0.011)*                          | -0.033(0.020)* |  |
| LB1                  |                 |                 |  |                 |                 |                       |                 |   |                |  |
| Grades Tackles       | 0.021(0.012)*   | 0.064(0.035)*   | 0.107(0.059)*                          | 0.011(0.011)    | 0.035(0.034)    | 0.055(0.057)          | 0.004(0.003)    | 0.018(0.015)                            | 0.034(0.027)   |  |
| Man Tackles          | 0.005(0.011)    | 0.016(0.033)    | 0.029(0.054)                           | -0.003(0.011)   | -0.010(0.032)   | -0.016(0.054)         | -0.004(0.003)   | -0.017(0.014)                           | -0.032(0.024)  |  |
| Zone Tackles         | -0.008(0.012)   | -0.023(0.037)   | -0.040(0.062)                          | -0.012(0.013)   | -0.037(0.039)   | -0.057(0.064)         | 0.000(0.004)    | 0.007(0.016)                            | 0.012(0.028)   |  |
| LB2                  |                 |                 |  |                 |                 |                       |                 |   |                |  |
| Grades Tackles       | -0.002(0.012)   | -0.005(0.035)   | -0.008(0.058)                          | -0.024(0.012)*  | -0.070(0.037)*  | -0.116(0.062)*        | 0.007(0.003)*   | 0.037(0.015)**                          | 0.065(0.027)** |  |
| Man Tackles          | 0.007(0.011)    | 0.026(0.033)    | 0.042(0.055)                           | 0.003(0.011)    | 0.008(0.032)    | 0.012(0.053)          | -0.006(0.003)*  | -0.030(0.014)**                         | -0.047(0.024)* |  |
| Zone Tackles         | -0.000(0.012)   | -0.005(0.037)   | -0.008(0.062)                          | 0.012(0.012)    | 0.036(0.037)    | 0.059(0.062)          | -0.001(0.004)   | -0.007(0.016)                           | -0.021(0.028)  |  |
| LB3                  | 0.000(0.012)    | 0.000(0.001)    | ************************************** | *****(******)   | ()              | *****(**** <u>*</u> ) | 0.002(0.002)    | *************************************** | 0.022(0.020)   |  |
| Grades Tackles       | 0.026(0.012)**  | 0.076(0.036)**  | 0.124(0.059)**                         | -0.018(0.016)   | -0.055(0.046)   | -0.090(0.077)         | 0.002(0.004)    | 0.011(0.016)                            | 0.020(0.028)   |  |
| Man Tackles          | -0.001(0.010)   | -0.005(0.032)   | -0.006(0.053)                          | 0.007(0.011)    | 0.022(0.033)    | 0.034(0.055)          | -0.001(0.003)   | -0.003(0.014)                           | 0.002(0.025)   |  |
| Zone Tackles         | -0.017(0.013)   | -0.046(0.038)   | -0.076(0.063)                          | 0.009(0.014)    | 0.026(0.041)    | 0.042(0.068)          | -0.000(0.004)   | -0.004(0.016)                           | -0.012(0.029)  |  |
| LB4                  | 0.011(0.010)    | 0.010(0.000)    | 0.010(0.000)                           | 0.000(0.011)    | 0.020(0.011)    | 0.012(0.000)          | 0.000(0.001)    | 0.001(0.010)                            | 0.012(0.020)   |  |
| Grades Tackles       | -0.018(0.012)   | -0.049(0.036)   | -0.087(0.060)                          | -0.002(0.015)   | -0.013(0.046)   | -0.021(0.077)         | -0.001(0.004)   | -0.002(0.016)                           | -0.010(0.028)  |  |
| Man Tackles          | 0.008(0.011)    | 0.023(0.031)    | 0.039(0.052)                           | -0.016(0.011)   | -0.049(0.033)   | -0.077(0.054)         | -0.004(0.003)   | -0.020(0.014)                           | -0.031(0.025)  |  |
| Zone Tackles         | 0.009(0.011)    | 0.026(0.033)    | 0.049(0.055)                           | 0.015(0.013)    | 0.048(0.041)    | 0.080(0.069)          | 0.004(0.003)    | 0.014(0.015)                            | 0.027(0.026)   |  |
| CB1                  | 0.009(0.011)    | 0.020(0.033)    | 0.045(0.055)                           | 0.013(0.013)    | 0.040(0.041)    | 0.000(0.009)          | 0.004(0.003)    | 0.014(0.013)                            | 0.027(0.020)   |  |
| Grades Tackles       | -0.013(0.009)   | -0.035(0.028)   | -0.061(0.046)                          | 0.005(0.009)    | 0.014(0.028)    | 0.022(0.046)          | 0.002(0.003)    | 0.009(0.012)                            | 0.018(0.020)   |  |
| Man Tackles          | -0.013(0.009)   | -0.019(0.031)   | -0.032(0.051)                          | 0.003(0.009)    | 0.068(0.031)**  | 0.113(0.051)**        | -0.001(0.003)   | 0.000(0.012)                            | -0.001(0.023)  |  |
| Zone Tackles         | -0.015(0.009)   | -0.019(0.031)   | -0.073(0.047)                          | 0.005(0.010)    | 0.019(0.030)    | 0.033(0.049)          | 0.003(0.003)    | 0.013(0.012)                            | 0.026(0.022)   |  |
| CB2                  | -0.013(0.003)   | -0.044(0.028)   | -0.073(0.047)                          | 0.000(0.010)    | 0.019(0.030)    | 0.055(0.045)          | 0.003(0.003)    | 0.013(0.012)                            | 0.020(0.022)   |  |
| Grades Tackles       | 0.021(0.009)**  | 0.061(0.027)**  | 0.101(0.045)**                         | 0.002(0.010)    | 0.008(0.030)    | 0.015(0.050)          | -0.005(0.003)** | -0.019(0.012)                           | -0.032(0.021)  |  |
| Man Tackles          | -0.008(0.010)   | -0.024(0.029)   | -0.038(0.049)                          | 0.002(0.010)    | 0.003(0.030)    | 0.036(0.052)          | -0.002(0.003)   | -0.019(0.012)                           | -0.032(0.021)  |  |
| Zone Tackles         | -0.016(0.010)   | -0.024(0.029)   | -0.074(0.048)                          | -0.002(0.010)   | -0.006(0.031)   | -0.014(0.052)         | 0.002(0.003)    | 0.009(0.013)                            | 0.022(0.023)   |  |
| CB3                  | -0.010(0.010)   | -0.044(0.029)   | -0.074(0.048)                          | -0.002(0.010)   | -0.000(0.031)   | -0.014(0.032)         | 0.002(0.003)    | 0.009(0.013)                            | 0.022(0.023)   |  |
| Grades Tackles       | -0.011(0.009)   | -0.033(0.028)   | -0.058(0.047)                          | 0.002(0.011)    | 0.004(0.034)    | 0.009(0.056)          | 0.001(0.003)    | 0.008(0.012)                            | 0.015(0.022)   |  |
| Man Tackles          | -0.011(0.009)   | -0.035(0.028)   | -0.051(0.051)                          | -0.007(0.011)   | -0.021(0.034)   | -0.032(0.056)         | 0.001(0.003)    | 0.008(0.012)                            | 0.013(0.022)   |  |
| Zone Tackles         | -0.011(0.010)   | -0.023(0.031)   | -0.039(0.051)                          | 0.003(0.011)    | 0.010(0.037)    | 0.017(0.062)          | -0.001(0.003)   | 0.012(0.013)                            | -0.001(0.023)  |  |
| S1                   | -0.009(0.010)   | -0.023(0.031)   | -0.059(0.051)                          | 0.003(0.013)    | 0.010(0.037)    | 0.017(0.002)          | -0.001(0.003)   | 0.001(0.013)                            | -0.001(0.023)  |  |
| Grades Tackles       | 0.009(0.010)    | 0.029(0.029)    | 0.049(0.048)                           | 0.004(0.010)    | 0.012(0.029)    | 0.018(0.048)          | 0.004(0.003)    | 0.021(0.012)*                           | 0.033(0.022)   |  |
|                      |                 |                 |  |                 |                 |                       |                 |   |                |  |
| Man Tackles          | 0.007(0.010)    | 0.022(0.030)    | 0.034(0.050)                           | 0.004(0.010)    | 0.007(0.031)    | 0.018(0.051)          | 0.004(0.003)    | 0.018(0.013)                            | 0.030(0.023)   |  |
| Zone Tackles<br>S2   | -0.018(0.009)*  | -0.052(0.028)*  | -0.088(0.047)*                         | -0.001(0.010)   | -0.004(0.029)   | -0.010(0.048)         | -0.003(0.003)   | -0.015(0.012)                           | -0.028(0.021)  |  |
| U_                   | 0.000(0.010)    | 0.000(0.000)    | 0.011(0.050)                           | 0.000(0.016)    | 0.004(0.005)    | 0.000(0.050)          | 0.000(0.000)    | 0.000(0.010)                            | 0.010(0.002)   |  |
| Grades Tackles       | 0.002(0.010)    | 0.008(0.030)    | 0.011(0.050)                           | 0.008(0.012)    | 0.024(0.035)    | 0.039(0.058)          | 0.002(0.003)    | 0.006(0.013)                            | 0.012(0.023)   |  |
| Man Tackles          | 0.006(0.010)    | 0.016(0.031)    | 0.029(0.052)                           | -0.001(0.011)   | 0.001(0.033)    | -0.004(0.055)         | -0.002(0.003)   | -0.011(0.013)                           | -0.012(0.024)  |  |
| Zone Tackles         | -0.007(0.010)   | -0.020(0.029)   | -0.033(0.049)                          | -0.002(0.012)   | -0.007(0.036)   | -0.013(0.060)         | -0.003(0.003)   | -0.013(0.013)                           | -0.023(0.023)  |  |
| S3                   |                 |                 |  |                 |                 |                       |                 |   |                |  |
| Grades Tackles       | 0.008(0.011)    | 0.024(0.031)    | 0.041(0.052)                           | 0.014(0.013)    | 0.047(0.040)    | 0.080(0.067)          | -0.000(0.003)   | -0.004(0.014)                           | -0.001(0.024)  |  |
| Man Tackles          | -0.012(0.010)   | -0.035(0.031)   | -0.058(0.051)                          | -0.005(0.013)   | -0.014(0.039)   | -0.021(0.065)         | 0.003(0.003)    | 0.015(0.014)                            | 0.024(0.024)   |  |
| Zone Tackles         | -0.003(0.011)   | -0.010(0.033)   | -0.020(0.055)                          | -0.008(0.014)   | -0.028(0.042)   | -0.049(0.070)         | -0.001(0.003)   | 0.000(0.015)                            | -0.004(0.026)  |  |
| Perf. Measures       |                 |                 |  |                 |                 |                       |                 |   |                |  |
| GIMR                 | 0.009(0.002)*** | 0.028(0.006)*** | 0.045(0.011)***                        | 0.009(0.002)*** | 0.026(0.006)*** | 0.042(0.011)***       |                 |   |                |  |
| Control Variables    |                 |                 |  |                 |                 |                       |                 |   |                |  |
| Game Situation       | Yes             | Yes             | Yes                                    | Yes             | Yes             | Yes                   | Yes             | Yes                                     | Yes            |  |
| Coach Variables      | Yes             | Yes             | Yes                                    | Yes             | Yes             | Yes                   | Yes             | Yes                                     | Yes            |  |
| Team Stats           | Yes             | Yes             | Yes                                    | Yes             | Yes             | Yes                   | Yes             | Yes                                     | Yes            |  |
| Season/Team FE       | Yes             | Yes             | Yes                                    | Yes             | Yes             | Yes                   | No              | No                                      | No             |  |
| Coach FE             | No              | No              | No                                     | Yes             | Yes             | Yes                   | Yes             | Yes                                     | Yes            |  |
| Player Presence      | Yes             | Yes             | Yes                                    | Yes             | Yes             | Yes                   | No              | No                                      | No             |  |
| Control Off. Players | Yes             | Yes             | Yes                                    | Yes             | Yes             | Yes                   | Yes             | Yes                                     | Yes            |  |
| Control Def. Players | No              | No              | No                                     | No              | No              | No                    | No              | No                                      | No             |  |
| Note:                |                 |                 |  |                 |                 |                       |                 |   |                |  |