

The LOGISTIC Procedure

Model Information	
Data Set	WORK.KOBE
Response Variable	shot_made_flag
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	25697
Number of Observations Used	25697

Response Profile		
Ordered Value	shot_made_flag	Total Frequency
1	0	14232
2	1	11465

Probability modeled is shot_made_flag='0'.

Backward Elimination Procedure

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Class Level Information																											
Design Variables																											
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	

The LOGISTIC Procedure

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Step 0. The following effects were entered:

Intercept action_type combined_shot_type period minutes_remaining playoffs seconds_remaining shot_distance
shot_type shot_zone_area shot_zone_basic shot_zone_range game_date attendance arena temp avgnoisedb

Model Convergence Status
Quasi-complete separation of data points detected.

Warning: The maximum likelihood estimate may not exist.

Warning: The LOGISTIC procedure continues in spite of the above warning. Results shown are based on the last maximum likelihood iteration. Validity of the model fit is questionable.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	35327.083	31111.158
SC	35335.237	31763.488
-2 Log L	35325.083	30951.158

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	4373.9248	79	<.0001
Score	4033.6304	79	<.0001
Wald	2999.4494	79	<.0001

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Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
action_type	51	2190.1836	<.0001
combined_shot_type	0	.	.
period	6	23.2532	0.0007
minutes_remaining	1	13.8627	0.0002
playoffs	1	0.0216	0.8832
seconds_remaining	1	19.0011	<.0001
shot_distance	1	0.1417	0.7066
shot_type	1	0.2955	0.5867
shot_zone_area	5	34.9737	<.0001
shot_zone_basic	6	20.4897	0.0023
shot_zone_range	2	23.7932	<.0001
game_date	1	19.2215	<.0001
attendance	1	135.6989	<.0001
arena_temp	1	26.2044	<.0001
avgnoisedb	1	0.1313	0.7171

Note: The following parameters have been set to 0, since the variables are a linear combination of other variables as shown.

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Warning: The validity of the model fit is questionable.

combined_shot_typeBank Shot =	0.05769 * Intercept - 0.05769 * action_typeAlley Oop Dunk Sh - 0.05769 * action_typeAlley Oop Layup s - 0.05769 * action_typeCutting Layup Sho + 0.94231 * action_typeDriving Bank shot - 0.05769 * action_typeDriving Dunk Shot - 0.05769 * action_typeDriving Finger Ro - 0.05769 * action_typeDriving Floating - 0.05769 * action_typeDriving Hook Shot - 0.05769 * action_typeDriving Jump shot - 0.05769 * action_typeDriving Layup Sho - 0.05769 * action_typeDriving Reverse L - 0.05769 * action_typeDriving Slam Dunk - 0.05769 * action_typeDunk Shot - 0.05769 * action_typeFadeaway Bank sho - 0.05769 * action_typeFadeaway Jump Sho - 0.05769 * action_typeFinger Roll Layup - 0.05769 * action_typeFinger Roll Shot - 0.05769 * action_typeFloating Jump sho - 0.05769 * action_typeFollow Up Dunk Sh + 0.94231 * action_typeHook Bank Shot - 0.05769 * action_typeHook Shot - 0.05769 * action_typeJump Bank Shot - 0.05769 * action_typeJump Hook Shot - 0.05769 * action_typeJump Shot - 0.05769 * action_typeLayup Shot + 0.94231 * action_typePullup Bank shot - 0.05769 * action_typePullup Jump shot - 0.05769 * action_typePutback Dunk Shot - 0.05769 * action_typePutback Layup Sho - 0.05769 * action_typePutback Slam Dunk - 0.05769 * action_typeReverse Dunk Shot - 0.05769 * action_typeReverse Layup Sho - 0.05769 * action_typeReverse Slam Dunk + 0.94231 * action_typeRunning Bank shot - 0.05769 * action_typeRunning Dunk Shot - 0.05769 * action_typeRunning Finger Ro - 0.05769 * action_typeRunning Hook Shot - 0.05769 * action_typeRunning Jump Shot - 0.05769 * action_typeRunning Layup Sho - 0.05769 * action_typeRunning Pull-Up J - 0.05769 * action_typeRunning Reverse L - 0.05769 * action_typeRunning Slam Dunk - 1.05769 * action_typeRunning Tip Shot - 0.05769 * action_typeSlam Dunk Shot - 0.05769 * action_typeStep Back Jump sh - 0.05769 * action_typeTip Layup Shot - 1.05769 * action_typeTip Shot + 0.94231 * action_typeTurnaround Bank s - 0.05769 * action_typeTurnaround Fadeaw - 0.05769 * action_typeTurnaround Finger - 0.05769 * action_typeTurnaround Hook S
combined_shot_typeDunk =	0.19231 * Intercept + 0.80769 * action_typeAlley Oop Dunk Sh - 0.19231 * action_typeAlley Oop Layup s - 0.19231 * action_typeCutting Layup Sho - 0.19231 * action_typeDriving Bank shot + 0.80769 * action_typeDriving Dunk Shot - 0.19231 * action_typeDriving Finger Ro - 0.19231 * action_typeDriving Floating - 0.19231 * action_typeDriving Hook Shot - 0.19231 * action_typeDriving Jump shot - 0.19231 * action_typeDriving Layup Sho - 0.19231 * action_typeDriving Reverse L + 0.80769 * action_typeDriving Slam Dunk + 0.80769 * action_typeDunk Shot - 0.19231 * action_typeFadeaway Bank sho - 0.19231 * action_typeFadeaway Jump Sho - 0.19231 * action_typeFinger Roll Layup - 0.19231 * action_typeFinger Roll Shot - 0.19231 * action_typeFloating Jump sho + 0.80769 * action_typeFollow Up Dunk Sh - 0.19231 * action_typeHook Bank Shot - 0.19231 * action_typeHook Shot - 0.19231 * action_typeJump Bank Shot - 0.19231 * action_typeJump Hook Shot - 0.19231 * action_typeJump Shot - 0.19231 * action_typeLayup Shot - 0.19231 * action_typePullup Bank shot - 0.19231 * action_typePullup Jump shot + 0.80769 * action_typePutback Dunk Shot - 0.19231 * action_typePutback Layup Sho + 0.80769 * action_typePutback Slam Dunk + 0.80769 * action_typeReverse Dunk Shot - 0.19231 * action_typeReverse Layup Sho + 0.80769 * action_typeReverse Slam Dunk - 0.19231 * action_typeRunning Bank shot + 0.80769 * action_typeRunning Dunk Shot - 0.19231 * action_typeRunning Finger Ro - 0.19231 * action_typeRunning Hook Shot - 0.19231 * action_typeRunning Jump Shot - 0.19231 * action_typeRunning Layup Sho - 0.19231 * action_typeRunning Pull-Up J - 0.19231 * action_typeRunning Reverse L + 0.80769 * action_typeRunning Slam Dunk - 1.19231 * action_typeRunning Tip Shot + 0.80769 * action_typeSlam Dunk Shot - 0.19231 * action_typeStep Back Jump sh - 0.19231 * action_typeTip Layup Shot - 1.19231 * action_typeTip Shot - 0.19231 * action_typeTurnaround Bank s - 0.19231 * action_typeTurnaround Fadeaw - 0.19231 * action_typeTurnaround Finger - 0.19231 * action_typeTurnaround Hook S

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Warning: The validity of the model fit is questionable.

combined_shot_typeHook Shot =	0.03846 * Intercept - 0.03846 * action_typeAlley Oop Dunk Sh - 0.03846 * action_typeAlley Oop Layup s - 0.03846 * action_typeCutting Layup Sho - 0.03846 * action_typeDriving Bank shot - 0.03846 * action_typeDriving Dunk Shot - 0.03846 * action_typeDriving Finger Ro - 0.03846 * action_typeDriving Floating + 0.96154 * action_typeDriving Hook Shot - 0.03846 * action_typeDriving Jump shot - 0.03846 * action_typeDriving Layup Sho - 0.03846 * action_typeDriving Reverse L - 0.03846 * action_typeDriving Slam Dunk - 0.03846 * action_typeDunk Shot - 0.03846 * action_typeFadeaway Bank sho - 0.03846 * action_typeFadeaway Jump Sho - 0.03846 * action_typeFinger Roll Layup - 0.03846 * action_typeFinger Roll Shot - 0.03846 * action_typeFloating Jump sho - 0.03846 * action_typeFollow Up Dunk Sh - 0.03846 * action_typeHook Bank Shot + 0.96154 * action_typeHook Shot - 0.03846 * action_typeJump Bank Shot - 0.03846 * action_typeJump Hook Shot - 0.03846 * action_typeJump Shot - 0.03846 * action_typeLayup Shot - 0.03846 * action_typePullup Bank shot - 0.03846 * action_typePullup Jump shot - 0.03846 * action_typePutback Dunk Shot - 0.03846 * action_typePutback Layup Sho - 0.03846 * action_typePutback Slam Dunk - 0.03846 * action_typeReverse Dunk Shot - 0.03846 * action_typeReverse Layup Sho - 0.03846 * action_typeReverse Slam Dunk - 0.03846 * action_typeRunning Bank shot - 0.03846 * action_typeRunning Dunk Shot - 0.03846 * action_typeRunning Finger Ro + 0.96154 * action_typeRunning Hook Shot - 0.03846 * action_typeRunning Jump Shot - 0.03846 * action_typeRunning Layup Sho - 0.03846 * action_typeRunning Pull-Up J - 0.03846 * action_typeRunning Reverse L - 0.03846 * action_typeRunning Slam Dunk - 1.03846 * action_typeRunning Tip Shot - 0.03846 * action_typeSlam Dunk Shot - 0.03846 * action_typeStep Back Jump sh - 0.03846 * action_typeTip Layup Shot - 1.03846 * action_typeTip Shot - 0.03846 * action_typeTurnaround Bank s - 0.03846 * action_typeTurnaround Fadeaw - 0.03846 * action_typeTurnaround Finger + 0.96154 * action_typeTurnaround Hook S
combined_shot_typeJump Shot =	0.23077 * Intercept - 0.23077 * action_typeAlley Oop Dunk Sh - 0.23077 * action_typeAlley Oop Layup s - 0.23077 * action_typeCutting Layup Sho - 0.23077 * action_typeDriving Bank shot - 0.23077 * action_typeDriving Dunk Shot - 0.23077 * action_typeDriving Finger Ro + 0.76923 * action_typeDriving Floating - 0.23077 * action_typeDriving Hook Shot + 0.76923 * action_typeDriving Jump shot - 0.23077 * action_typeDriving Layup Sho - 0.23077 * action_typeDriving Reverse L - 0.23077 * action_typeDriving Slam Dunk - 0.23077 * action_typeDunk Shot + 0.76923 * action_typeFadeaway Bank sho + 0.76923 * action_typeFadeaway Jump Sho - 0.23077 * action_typeFinger Roll Layup - 0.23077 * action_typeFinger Roll Shot + 0.76923 * action_typeFloating Jump sho - 0.23077 * action_typeFollow Up Dunk Sh - 0.23077 * action_typeHook Bank Shot - 0.23077 * action_typeHook Shot + 0.76923 * action_typeJump Bank Shot + 0.76923 * action_typeJump Hook Shot + 0.76923 * action_typeJump Shot - 0.23077 * action_typeLayup Shot - 0.23077 * action_typePullup Bank shot + 0.76923 * action_typePullup Jump shot - 0.23077 * action_typePutback Dunk Shot - 0.23077 * action_typePutback Layup Sho - 0.23077 * action_typePutback Slam Dunk - 0.23077 * action_typeReverse Dunk Shot - 0.23077 * action_typeReverse Layup Sho - 0.23077 * action_typeReverse Slam Dunk - 0.23077 * action_typeRunning Bank shot - 0.23077 * action_typeRunning Dunk Shot - 0.23077 * action_typeRunning Finger Ro - 0.23077 * action_typeRunning Hook Shot + 0.76923 * action_typeRunning Jump Shot - 0.23077 * action_typeRunning Layup Sho + 0.76923 * action_typeRunning Pull-Up J - 0.23077 * action_typeRunning Reverse L - 0.23077 * action_typeRunning Slam Dunk - 1.23077 * action_typeRunning Tip Shot - 0.23077 * action_typeSlam Dunk Shot + 0.76923 * action_typeStep Back Jump sh - 0.23077 * action_typeTip Layup Shot - 1.23077 * action_typeTip Shot - 0.23077 * action_typeTurnaround Bank s + 0.76923 * action_typeTurnaround Fadeaw - 0.23077 * action_typeTurnaround Finger - 0.23077 * action_typeTurnaround Hook S

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combined_shot_typeLayup =	$ \begin{aligned} &0.25 * \text{Intercept} - 0.25 * \text{action_typeAlley Oop Dunk Sh} + 0.75 * \text{action_typeAlley Oop Layup} \\ &s + 0.75 * \text{action_typeCutting Layup Sho} - 0.25 * \text{action_typeDriving Bank shot} - 0.25 * \text{action_typeDriving Dunk} \\ &\text{Shot} + 0.75 * \text{action_typeDriving Finger Ro} - 0.25 * \text{action_typeDriving Floating} - 0.25 * \text{action_typeDriving Hook} \\ &\text{Shot} - 0.25 * \text{action_typeDriving Jump shot} + 0.75 * \text{action_typeDriving Layup Sho} + 0.75 * \text{action_typeDriving} \\ &\text{Reverse L} - 0.25 * \text{action_typeDriving Slam Dunk} - 0.25 * \text{action_typeDunk Shot} - 0.25 * \text{action_typeFadeaway} \\ &\text{Bank sho} - 0.25 * \text{action_typeFadeaway Jump Sho} + 0.75 * \text{action_typeFinger Roll} \\ &\text{Layup} + 0.75 * \text{action_typeFinger Roll Shot} - 0.25 * \text{action_typeFloating Jump sho} - 0.25 * \text{action_typeFollow Up} \\ &\text{Dunk Sh} - 0.25 * \text{action_typeHook Bank Shot} - 0.25 * \text{action_typeHook Shot} - 0.25 * \text{action_typeJump Bank} \\ &\text{Shot} - 0.25 * \text{action_typeJump Hook Shot} - 0.25 * \text{action_typeJump Shot} + 0.75 * \text{action_typeLayup} \\ &\text{Shot} - 0.25 * \text{action_typePullup Bank shot} - 0.25 * \text{action_typePullup Jump shot} - 0.25 * \text{action_typePutback} \\ &\text{Dunk Shot} + 0.75 * \text{action_typePutback Layup Sho} - 0.25 * \text{action_typePutback Slam} \\ &\text{Dunk} - 0.25 * \text{action_typeReverse Dunk Shot} + 0.75 * \text{action_typeReverse Layup} \\ &\text{Sho} - 0.25 * \text{action_typeReverse Slam Dunk} - 0.25 * \text{action_typeRunning Bank shot} - 0.25 * \text{action_typeRunning} \\ &\text{Dunk Shot} + 0.75 * \text{action_typeRunning Finger Ro} - 0.25 * \text{action_typeRunning Hook} \\ &\text{Shot} - 0.25 * \text{action_typeRunning Jump Shot} + 0.75 * \text{action_typeRunning Layup} \\ &\text{Sho} - 0.25 * \text{action_typeRunning Pull-Up J} + 0.75 * \text{action_typeRunning Reverse L} - 0.25 * \text{action_typeRunning} \\ &\text{Slam Dunk} - 1.25 * \text{action_typeRunning Tip Shot} - 0.25 * \text{action_typeSlam Dunk Shot} - 0.25 * \text{action_typeStep} \\ &\text{Back Jump sh} + 0.75 * \text{action_typeTip Layup Shot} - 1.25 * \text{action_typeTip Shot} - 0.25 * \text{action_typeTurnaround} \\ &\text{Bank s} - 0.25 * \text{action_typeTurnaround Fadeaw} + 0.75 * \text{action_typeTurnaround} \\ &\text{Finger} - 0.25 * \text{action_typeTurnaround Hook S} \end{aligned} $
shot_zone_range8-16 ft. =	$ \begin{aligned} &-0.78571 * \text{Intercept} + 2.5 * \text{shot_zone_aBack Court(BC)} - 0.5 * \text{shot_zone_aCenter(C)} - 0.5 * \text{shot_zone_aLeft} \\ &\text{Side Center(LC)} - 0.5 * \text{shot_zone_aLeft Side(L)} - 0.5 * \text{shot_zone_aRight Side} \\ &\text{Center(RC)} - 1.71429 * \text{shot_zone_bAbove the Break} \\ &3 - 1.71429 * \text{shot_zone_bBackcourt} + 2.28571 * \text{shot_zone_bIn The Paint} \\ &(\text{Non-RA}) - 1.71429 * \text{shot_zone_bLeft Corner} \\ &3 + 2.28571 * \text{shot_zone_bMid-Range} + 2.28571 * \text{shot_zone_bRestricted Area} - \text{shot_zone_range16-24} \\ &\text{ft.} + 3 * \text{shot_zone_range24+ ft.} \end{aligned} $
shot_zone_rangeBack Court Shot =	$ \begin{aligned} &-0.2381 * \text{Intercept} + 1.66667 * \text{shot_zone_aBack} \\ &\text{Court(BC)} - 0.33333 * \text{shot_zone_aCenter(C)} - 0.33333 * \text{shot_zone_aLeft Side} \\ &\text{Center(LC)} - 0.33333 * \text{shot_zone_aLeft Side(L)} - 0.33333 * \text{shot_zone_aRight Side} \\ &\text{Center(RC)} - 0.42857 * \text{shot_zone_bAbove the Break} \\ &3 - 0.42857 * \text{shot_zone_bBackcourt} + 0.57143 * \text{shot_zone_bIn The Paint} \\ &(\text{Non-RA}) - 0.42857 * \text{shot_zone_bLeft Corner} \\ &3 + 0.57143 * \text{shot_zone_bMid-Range} + 0.57143 * \text{shot_zone_bRestricted Area} + \text{shot_zone_range24+ ft.} \end{aligned} $

The LOGISTIC Procedure
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Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	4.0052	14.7446	0.0738	0.7859
action_type	Alley Oop Dunk Sh	1	-1.2698	14.4143	0.0078	0.9298
action_type	Alley Oop Layup s	1	0.7479	14.4097	0.0027	0.9586
action_type	Cutting Layup Sho	1	0.6516	14.4325	0.0020	0.9640
action_type	Driving Bank shot	1	0.7358	14.4589	0.0026	0.9594
action_type	Driving Dunk Shot	1	-2.0905	14.4129	0.0210	0.8847
action_type	Driving Finger Ro	1	-0.2528	14.4095	0.0003	0.9860
action_type	Driving Floating	1	1.2629	14.4421	0.0076	0.9303
action_type	Driving Hook Shot	1	0.9869	14.4182	0.0047	0.9454
action_type	Driving Jump shot	1	1.7949	14.4132	0.0155	0.9009
action_type	Driving Layup Sho	1	0.5820	14.4073	0.0016	0.9678
action_type	Driving Reverse L	1	0.4377	14.4094	0.0009	0.9758
action_type	Driving Slam Dunk	1	-2.2063	14.4414	0.0233	0.8786
action_type	Dunk Shot	1	0.4011	14.4081	0.0008	0.9778
action_type	Fadeaway Bank sho	1	-0.6338	14.4199	0.0019	0.9649
action_type	Fadeaway Jump Sho	1	1.3212	14.4075	0.0084	0.9269
action_type	Finger Roll Layup	1	0.0439	14.4154	0.0000	0.9976
action_type	Finger Roll Shot	1	1.7202	14.4124	0.0142	0.9050
action_type	Floating Jump sho	1	0.5480	14.4091	0.0014	0.9697
action_type	Follow Up Dunk Sh	1	-0.6005	14.4443	0.0017	0.9668
action_type	Hook Bank Shot	1	-10.7018	196.9	0.0030	0.9567
action_type	Hook Shot	1	2.0957	14.4092	0.0212	0.8844
action_type	Jump Bank Shot	1	0.2766	14.4080	0.0004	0.9847
action_type	Jump Hook Shot	1	0.4702	14.4163	0.0011	0.9740
action_type	Jump Shot	1	2.4511	14.4073	0.0289	0.8649
action_type	Layup Shot	1	2.0928	14.4073	0.0211	0.8845
action_type	Pullup Bank shot	1	1.2945	14.4198	0.0081	0.9285
action_type	Pullup Jump shot	1	0.6759	14.4078	0.0022	0.9626
action_type	Putback Dunk Shot	1	1.0210	14.4581	0.0050	0.9437
action_type	Putback Layup Sho	1	0.7202	14.4240	0.0025	0.9602
action_type	Putback Slam Dunk	1	1.6600	14.4738	0.0132	0.9087
action_type	Reverse Dunk Shot	1	-0.7619	14.4145	0.0028	0.9578
action_type	Reverse Layup Sho	1	1.0811	14.4077	0.0056	0.9402
action_type	Reverse Slam Dunk	1	-10.6337	114.7	0.0086	0.9261
action_type	Running Bank shot	1	-0.2048	14.4131	0.0002	0.9887

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Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
action_type	Running Dunk Shot	1	-0.4788	14.4261	0.0011	0.9735
action_type	Running Finger Ro	1	1.8020	14.4223	0.0156	0.9006
action_type	Running Hook Shot	1	-0.4542	14.4168	0.0010	0.9749
action_type	Running Jump Shot	1	0.5161	14.4075	0.0013	0.9714
action_type	Running Layup Sho	1	0.7177	14.4104	0.0025	0.9603
action_type	Running Pull-Up J	1	0.8706	14.4576	0.0036	0.9520
action_type	Running Reverse L	1	1.2710	14.4270	0.0078	0.9298
action_type	Running Slam Dunk	1	-10.4700	442.5	0.0006	0.9811
action_type	Running Tip Shot	1	13.9429	441.9	0.0010	0.9748
action_type	Slam Dunk Shot	1	-2.3194	14.4129	0.0259	0.8722
action_type	Step Back Jump sh	1	1.1188	14.4087	0.0060	0.9381
action_type	Tip Layup Shot	1	1.6278	14.4749	0.0126	0.9105
action_type	Tip Shot	1	2.2942	14.4082	0.0254	0.8735
action_type	Turnaround Bank s	1	0.0885	14.4109	0.0000	0.9951
action_type	Turnaround Fadeaw	1	1.2143	14.4077	0.0071	0.9328
action_type	Turnaround Finger	1	-10.2834	312.4	0.0011	0.9737
action_type	Turnaround Hook S	1	1.5785	14.4243	0.0120	0.9129
combined_shot_type	Bank Shot	0	0	.	.	.
combined_shot_type	Dunk	0	0	.	.	.
combined_shot_type	Hook Shot	0	0	.	.	.
combined_shot_type	Jump Shot	0	0	.	.	.
combined_shot_type	Layup	0	0	.	.	.
period	1	1	-0.1051	0.1342	0.6134	0.4335
period	2	1	-0.0570	0.1345	0.1796	0.6718
period	3	1	-0.0385	0.1342	0.0824	0.7741
period	4	1	0.0780	0.1344	0.3367	0.5618
period	5	1	-0.0198	0.1734	0.0130	0.9091
period	6	1	0.1705	0.3707	0.2116	0.6455
minutes_remaining		1	-0.0151	0.00405	13.8627	0.0002
playoffs	0	1	0.00285	0.0194	0.0216	0.8832
seconds_remaining		1	-0.00342	0.000785	19.0011	<.0001
shot_distance		1	-0.00315	0.00836	0.1417	0.7066
shot_type	2PT Field Goal	1	0.0701	0.1290	0.2955	0.5867
shot_zone_area	Back Court(BC)	1	9.4618	106.1	0.0080	0.9289

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
shot_zone_area	Center(C)	1	-1.9955	21.2213	0.0088	0.9251
shot_zone_area	Left Side Center(LC)	1	-1.9374	21.2213	0.0083	0.9273
shot_zone_area	Left Side(L)	1	-1.6980	21.2214	0.0064	0.9362
shot_zone_area	Right Side Center(RC)	1	-2.0374	21.2213	0.0092	0.9235
shot_zone_basic	Above the Break 3	1	1.5760	18.1908	0.0075	0.9310
shot_zone_basic	Backcourt	1	-6.7151	109.1	0.0038	0.9509
shot_zone_basic	In The Paint (Non-RA)	1	0.9626	18.1911	0.0028	0.9578
shot_zone_basic	Left Corner 3	1	1.0334	18.1911	0.0032	0.9547
shot_zone_basic	Mid-Range	1	1.0602	18.1911	0.0034	0.9535
shot_zone_basic	Restricted Area	1	0.7563	18.1917	0.0017	0.9668
shot_zone_range	16-24 ft.	1	-0.1179	0.0682	2.9831	0.0841
shot_zone_range	24+ ft.	1	-0.2986	0.0954	9.8055	0.0017
shot_zone_range	8-16 ft.	0	0	.	.	.
shot_zone_range	Back Court Shot	0	0	.	.	.
game_date		1	0.000037	8.375E-6	19.2215	<.0001
attendance		1	-0.00017	0.000015	135.6989	<.0001
arena_temp		1	-0.0347	0.00679	26.2044	<.0001
avgnoisedb		1	-0.00253	0.00697	0.1313	0.7171

Odds Ratio Estimates				
Effect		Point Estimate	95% Wald Confidence Limits	
action_type	Alley Oop Dunk Sh vs Turnaround Jump S	0.081	0.031	0.208
action_type	Alley Oop Layup s vs Turnaround Jump S	0.608	0.333	1.110
action_type	Cutting Layup Sho vs Turnaround Jump S	0.552	0.098	3.110
action_type	Driving Bank shot vs Turnaround Jump S	0.600	0.052	6.945
action_type	Driving Dunk Shot vs Turnaround Jump S	0.036	0.015	0.084
action_type	Driving Finger Ro vs Turnaround Jump S	0.223	0.125	0.399
action_type	Driving Floating vs Turnaround Jump S	1.017	0.137	7.563
action_type	Driving Hook Shot vs Turnaround Jump S	0.772	0.246	2.421
action_type	Driving Jump shot vs Turnaround Jump S	1.731	0.740	4.052
action_type	Driving Layup Sho vs Turnaround Jump S	0.515	0.381	0.695
action_type	Driving Reverse L vs Turnaround Jump S	0.446	0.252	0.789
action_type	Driving Slam Dunk vs Turnaround Jump S	0.032	0.004	0.235
action_type	Dunk Shot vs Turnaround Jump S	0.430	0.280	0.659

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Odds Ratio Estimates				
Effect		Point Estimate	95% Wald Confidence Limits	
action_type	Fadeaway Bank sho vs Turnaround Jump S	0.153	0.045	0.513
action_type	Fadeaway Jump Sho vs Turnaround Jump S	1.078	0.890	1.306
action_type	Finger Roll Layup vs Turnaround Jump S	0.301	0.110	0.820
action_type	Finger Roll Shot vs Turnaround Jump S	1.607	0.717	3.602
action_type	Floating Jump sho vs Turnaround Jump S	0.498	0.308	0.805
action_type	Follow Up Dunk Sh vs Turnaround Jump S	0.158	0.020	1.273
action_type	Hook Bank Shot vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Hook Shot vs Turnaround Jump S	2.339	1.411	3.876
action_type	Jump Bank Shot vs Turnaround Jump S	0.379	0.278	0.518
action_type	Jump Hook Shot vs Turnaround Jump S	0.460	0.163	1.300
action_type	Jump Shot vs Turnaround Jump S	3.337	2.890	3.852
action_type	Layup Shot vs Turnaround Jump S	2.332	1.737	3.131
action_type	Pullup Bank shot vs Turnaround Jump S	1.050	0.314	3.507
action_type	Pullup Jump shot vs Turnaround Jump S	0.565	0.435	0.735
action_type	Putback Dunk Shot vs Turnaround Jump S	0.798	0.070	9.155
action_type	Putback Layup Sho vs Turnaround Jump S	0.591	0.143	2.444
action_type	Putback Slam Dunk vs Turnaround Jump S	1.513	0.093	24.552
action_type	Reverse Dunk Shot vs Turnaround Jump S	0.134	0.051	0.350
action_type	Reverse Layup Sho vs Turnaround Jump S	0.848	0.592	1.215
action_type	Reverse Slam Dunk vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Running Bank shot vs Turnaround Jump S	0.234	0.102	0.536
action_type	Running Dunk Shot vs Turnaround Jump S	0.178	0.040	0.801
action_type	Running Finger Ro vs Turnaround Jump S	1.744	0.456	6.668
action_type	Running Hook Shot vs Turnaround Jump S	0.183	0.063	0.527
action_type	Running Jump Shot vs Turnaround Jump S	0.482	0.388	0.599
action_type	Running Layup Sho vs Turnaround Jump S	0.590	0.304	1.143
action_type	Running Pull-Up J vs Turnaround Jump S	0.687	0.062	7.662
action_type	Running Reverse L vs Turnaround Jump S	1.025	0.221	4.760
action_type	Running Slam Dunk vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Running Tip Shot vs Turnaround Jump S	>999.999	<0.001	>999.999
action_type	Slam Dunk Shot vs Turnaround Jump S	0.028	0.012	0.067
action_type	Step Back Jump sh vs Turnaround Jump S	0.880	0.577	1.344
action_type	Tip Layup Shot vs Turnaround Jump S	1.465	0.088	24.316
action_type	Tip Shot vs Turnaround Jump S	2.852	1.836	4.432

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Odds Ratio Estimates				
Effect		Point Estimate	95% Wald Confidence Limits	
action_type	Turnaround Bank s vs Turnaround Jump S	0.314	0.163	0.605
action_type	Turnaround Fadeaw vs Turnaround Jump S	0.969	0.753	1.246
action_type	Turnaround Finger vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Turnaround Hook S vs Turnaround Jump S	1.394	0.342	5.691
period	1 vs 7	0.926	0.187	4.592
period	2 vs 7	0.972	0.196	4.819
period	3 vs 7	0.990	0.200	4.908
period	4 vs 7	1.112	0.224	5.516
period	5 vs 7	1.008	0.199	5.100
period	6 vs 7	1.220	0.204	7.309
minutes_remaining		0.985	0.977	0.993
playoffs	0 vs 1	1.006	0.932	1.085
seconds_remaining		0.997	0.995	0.998
shot_distance		0.997	0.981	1.013
shot_type	2PT Field Goal vs 3PT Field Goal	1.151	0.694	1.907
shot_zone_area	Back Court(BC) vs Right Side(R)	>999.999	<0.001	>999.999
shot_zone_area	Center(C) vs Right Side(R)	0.817	0.729	0.916
shot_zone_area	Left Side Center(LC) vs Right Side(R)	0.866	0.765	0.980
shot_zone_area	Left Side(L) vs Right Side(R)	1.100	0.988	1.225
shot_zone_area	Right Side Center(RC) vs Right Side(R)	0.784	0.696	0.883
shot_zone_basic	Above the Break 3 vs Right Corner 3	1.283	0.989	1.666
shot_zone_basic	Backcourt vs Right Corner 3	<0.001	<0.001	>999.999
shot_zone_basic	In The Paint (Non-RA) vs Right Corner 3	0.695	0.372	1.298
shot_zone_basic	Left Corner 3 vs Right Corner 3	0.746	0.517	1.076
shot_zone_basic	Mid-Range vs Right Corner 3	0.766	0.417	1.407
shot_zone_basic	Restricted Area vs Right Corner 3	0.565	0.281	1.139
shot_zone_range	16-24 ft. vs Less Than 8 ft.	0.586	0.461	0.745
shot_zone_range	24+ ft. vs Less Than 8 ft.	0.489	0.352	0.680
game_date		1.000	1.000	1.000
attendance		1.000	1.000	1.000
arena_temp		0.966	0.953	0.979
avgnosedb		0.997	0.984	1.011

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	71.2	Somers' D	0.423
Percent Discordant	28.8	Gamma	0.423
Percent Tied	0.0	Tau-a	0.209
Pairs	163169880	c	0.712

Note: combined_shot_type was removed because of its redundancy.

Analysis of Effects Eligible for Removal			
Effect	DF	Wald Chi-Square	Pr > ChiSq
action_type	51	2190.1836	<.0001
period	6	23.2532	0.0007
minutes_remaining	1	13.8627	0.0002
playoffs	1	0.0216	0.8832
seconds_remaining	1	19.0011	<.0001
shot_distance	1	0.1417	0.7066
shot_type	1	0.2955	0.5867
shot_zone_area	5	34.9737	<.0001
shot_zone_basic	6	20.4897	0.0023
shot_zone_range	2	23.7932	<.0001
game_date	1	19.2215	<.0001
attendance	1	135.6989	<.0001
arena_temp	1	26.2044	<.0001
avgnoisedb	1	0.1313	0.7171

Step 1. Effect playoffs is removed:

Model Convergence Status
Quasi-complete separation of data points detected.

Warning: The maximum likelihood estimate may not exist.

Warning: The LOGISTIC procedure continues in spite of the above warning. Results shown are based on the last maximum likelihood iteration. Validity of the model fit is questionable.

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	35327.083	31109.180
SC	35335.237	31753.356
-2 Log L	35325.083	30951.180

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	4373.9032	78	<.0001
Score	4033.6103	78	<.0001
Wald	2999.4112	78	<.0001

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
action_type	51	2190.1939	<.0001
period	6	23.2444	0.0007
minutes_remaining	1	13.8735	0.0002
seconds_remaining	1	18.9960	<.0001
shot_distance	1	0.1410	0.7073
shot_type	1	0.2942	0.5876
shot_zone_area	5	34.9783	<.0001
shot_zone_basic	6	20.4776	0.0023
shot_zone_range	2	23.8070	<.0001
game_date	1	19.3232	<.0001
attendance	1	135.7037	<.0001
arena_temp	1	26.1901	<.0001
avgnoisedb	1	0.1317	0.7167

Note: The following parameters have been set to 0, since the variables are a linear combination of other variables as shown.

shot_zone_range8-16 ft. =	-0.78571 * Intercept + 2.5 * shot_zone_aBack Court(BC) - 0.5 * shot_zone_aCenter(C) - 0.5 * shot_zone_aLeft Side Center(LC) - 0.5 * shot_zone_aLeft Side(L) - 0.5 * shot_zone_aRight Side Center(RC) - 1.71429 * shot_zone_bAbove the Break 3 - 1.71429 * shot_zone_bBackcourt + 2.28571 * shot_zone_bIn The Paint (Non-RA) - 1.71429 * shot_zone_bLeft Corner 3 + 2.28571 * shot_zone_bMid-Range + 2.28571 * shot_zone_bRestricted Area - shot_zone_range16-24 ft. + 3 * shot_zone_range24+ ft.
shot_zone_rangeBack Court Shot =	- 0.2381 * Intercept + 1.66667 * shot_zone_aBack Court(BC) - 0.33333 * shot_zone_aCenter(C) - 0.33333 * shot_zone_aLeft Side Center(LC) - 0.33333 * shot_zone_aLeft Side(L) - 0.33333 * shot_zone_aRight Side Center(RC) - 0.42857 * shot_zone_bAbove the Break 3 - 0.42857 * shot_zone_bBackcourt + 0.57143 * shot_zone_bIn The Paint (Non-RA) - 0.42857 * shot_zone_bLeft Corner 3 + 0.57143 * shot_zone_bMid-Range + 0.57143 * shot_zone_bRestricted Area + shot_zone_range24+ ft.

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	4.0036	14.7446	0.0737	0.7860
action_type	Alley Oop Dunk Sh	1	-1.2701	14.4143	0.0078	0.9298
action_type	Alley Oop Layup s	1	0.7481	14.4097	0.0027	0.9586
action_type	Cutting Layup Sho	1	0.6520	14.4325	0.0020	0.9640
action_type	Driving Bank shot	1	0.7365	14.4589	0.0026	0.9594
action_type	Driving Dunk Shot	1	-2.0908	14.4129	0.0210	0.8847
action_type	Driving Finger Ro	1	-0.2533	14.4095	0.0003	0.9860
action_type	Driving Floating	1	1.2636	14.4421	0.0077	0.9303
action_type	Driving Hook Shot	1	0.9871	14.4182	0.0047	0.9454
action_type	Driving Jump shot	1	1.7942	14.4132	0.0155	0.9009
action_type	Driving Layup Sho	1	0.5817	14.4073	0.0016	0.9678
action_type	Driving Reverse L	1	0.4376	14.4094	0.0009	0.9758
action_type	Driving Slam Dunk	1	-2.2065	14.4414	0.0233	0.8786
action_type	Dunk Shot	1	0.4010	14.4081	0.0008	0.9778
action_type	Fadeaway Bank sho	1	-0.6344	14.4199	0.0019	0.9649
action_type	Fadeaway Jump Sho	1	1.3211	14.4075	0.0084	0.9269
action_type	Finger Roll Layup	1	0.0431	14.4154	0.0000	0.9976
action_type	Finger Roll Shot	1	1.7200	14.4124	0.0142	0.9050
action_type	Floating Jump sho	1	0.5476	14.4091	0.0014	0.9697
action_type	Follow Up Dunk Sh	1	-0.5999	14.4443	0.0017	0.9669
action_type	Hook Bank Shot	1	-10.7010	196.9	0.0030	0.9567
action_type	Hook Shot	1	2.0960	14.4092	0.0212	0.8843
action_type	Jump Bank Shot	1	0.2765	14.4080	0.0004	0.9847
action_type	Jump Hook Shot	1	0.4704	14.4163	0.0011	0.9740
action_type	Jump Shot	1	2.4509	14.4073	0.0289	0.8649
action_type	Layup Shot	1	2.0925	14.4073	0.0211	0.8845
action_type	Pullup Bank shot	1	1.2947	14.4198	0.0081	0.9285
action_type	Pullup Jump shot	1	0.6760	14.4078	0.0022	0.9626
action_type	Putback Dunk Shot	1	1.0198	14.4581	0.0050	0.9438
action_type	Putback Layup Sho	1	0.7195	14.4240	0.0025	0.9602
action_type	Putback Slam Dunk	1	1.6605	14.4738	0.0132	0.9087
action_type	Reverse Dunk Shot	1	-0.7618	14.4145	0.0028	0.9579
action_type	Reverse Layup Sho	1	1.0809	14.4077	0.0056	0.9402
action_type	Reverse Slam Dunk	1	-10.6340	114.7	0.0086	0.9261

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
action_type	Running Bank shot	1	-0.2059	14.4131	0.0002	0.9886
action_type	Running Dunk Shot	1	-0.4785	14.4261	0.0011	0.9735
action_type	Running Finger Ro	1	1.8026	14.4223	0.0156	0.9005
action_type	Running Hook Shot	1	-0.4543	14.4168	0.0010	0.9749
action_type	Running Jump Shot	1	0.5158	14.4075	0.0013	0.9714
action_type	Running Layup Sho	1	0.7176	14.4104	0.0025	0.9603
action_type	Running Pull-Up J	1	0.8711	14.4576	0.0036	0.9520
action_type	Running Reverse L	1	1.2715	14.4270	0.0078	0.9298
action_type	Running Slam Dunk	1	-10.4697	442.5	0.0006	0.9811
action_type	Running Tip Shot	1	13.9433	441.9	0.0010	0.9748
action_type	Slam Dunk Shot	1	-2.3194	14.4129	0.0259	0.8722
action_type	Step Back Jump sh	1	1.1189	14.4087	0.0060	0.9381
action_type	Tip Layup Shot	1	1.6281	14.4749	0.0127	0.9104
action_type	Tip Shot	1	2.2938	14.4082	0.0253	0.8735
action_type	Turnaround Bank s	1	0.0888	14.4109	0.0000	0.9951
action_type	Turnaround Fadeaw	1	1.2145	14.4077	0.0071	0.9328
action_type	Turnaround Finger	1	-10.2829	312.4	0.0011	0.9737
action_type	Turnaround Hook S	1	1.5792	14.4243	0.0120	0.9128
period	1	1	-0.1053	0.1342	0.6159	0.4326
period	2	1	-0.0572	0.1345	0.1811	0.6704
period	3	1	-0.0387	0.1342	0.0832	0.7731
period	4	1	0.0777	0.1344	0.3345	0.5630
period	5	1	-0.0200	0.1734	0.0134	0.9080
period	6	1	0.1711	0.3707	0.2130	0.6444
minutes_remaining		1	-0.0151	0.00405	13.8735	0.0002
seconds_remaining		1	-0.00342	0.000785	18.9960	<.0001
shot_distance		1	-0.00314	0.00836	0.1410	0.7073
shot_type	2PT Field Goal	1	0.0699	0.1290	0.2942	0.5876
shot_zone_area	Back Court(BC)	1	9.4622	106.1	0.0080	0.9289
shot_zone_area	Center(C)	1	-1.9956	21.2213	0.0088	0.9251
shot_zone_area	Left Side Center(LC)	1	-1.9374	21.2213	0.0083	0.9273
shot_zone_area	Left Side(L)	1	-1.6981	21.2213	0.0064	0.9362
shot_zone_area	Right Side Center(RC)	1	-2.0374	21.2213	0.0092	0.9235
shot_zone_basic	Above the Break 3	1	1.5761	18.1907	0.0075	0.9310

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
shot_zone_basic	Backcourt	1	-6.7169	109.1	0.0038	0.9509
shot_zone_basic	In The Paint (Non-RA)	1	0.9630	18.1911	0.0028	0.9578
shot_zone_basic	Left Corner 3	1	1.0337	18.1910	0.0032	0.9547
shot_zone_basic	Mid-Range	1	1.0605	18.1910	0.0034	0.9535
shot_zone_basic	Restricted Area	1	0.7569	18.1916	0.0017	0.9668
shot_zone_range	16-24 ft.	1	-0.1178	0.0682	2.9821	0.0842
shot_zone_range	24+ ft.	1	-0.2988	0.0954	9.8154	0.0017
shot_zone_range	8-16 ft.	0	0	.	.	.
shot_zone_range	Back Court Shot	0	0	.	.	.
game_date		1	0.000037	8.366E-6	19.3232	<.0001
attendance		1	-0.00017	0.000015	135.7037	<.0001
arena_temp		1	-0.0347	0.00678	26.1901	<.0001
avgnoisedb		1	-0.00253	0.00697	0.1317	0.7167

Odds Ratio Estimates				
Effect		Point Estimate	95% Wald Confidence Limits	
action_type	Alley Oop Dunk Sh vs Turnaround Jump S	0.081	0.031	0.208
action_type	Alley Oop Layup s vs Turnaround Jump S	0.608	0.333	1.110
action_type	Cutting Layup Sho vs Turnaround Jump S	0.552	0.098	3.111
action_type	Driving Bank shot vs Turnaround Jump S	0.601	0.052	6.950
action_type	Driving Dunk Shot vs Turnaround Jump S	0.036	0.015	0.084
action_type	Driving Finger Ro vs Turnaround Jump S	0.223	0.125	0.399
action_type	Driving Floating vs Turnaround Jump S	1.018	0.137	7.568
action_type	Driving Hook Shot vs Turnaround Jump S	0.772	0.246	2.421
action_type	Driving Jump shot vs Turnaround Jump S	1.730	0.739	4.049
action_type	Driving Layup Sho vs Turnaround Jump S	0.515	0.381	0.695
action_type	Driving Reverse L vs Turnaround Jump S	0.446	0.252	0.789
action_type	Driving Slam Dunk vs Turnaround Jump S	0.032	0.004	0.235
action_type	Dunk Shot vs Turnaround Jump S	0.430	0.280	0.659
action_type	Fadeaway Bank sho vs Turnaround Jump S	0.153	0.045	0.513
action_type	Fadeaway Jump Sho vs Turnaround Jump S	1.078	0.890	1.306
action_type	Finger Roll Layup vs Turnaround Jump S	0.300	0.110	0.820
action_type	Finger Roll Shot vs Turnaround Jump S	1.606	0.716	3.602
action_type	Floating Jump sho vs Turnaround Jump S	0.497	0.308	0.805

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Odds Ratio Estimates				
Effect		Point Estimate	95% Wald Confidence Limits	
action_type	Follow Up Dunk Sh vs Turnaround Jump S	0.158	0.020	1.274
action_type	Hook Bank Shot vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Hook Shot vs Turnaround Jump S	2.340	1.412	3.878
action_type	Jump Bank Shot vs Turnaround Jump S	0.379	0.278	0.518
action_type	Jump Hook Shot vs Turnaround Jump S	0.460	0.163	1.300
action_type	Jump Shot vs Turnaround Jump S	3.337	2.890	3.852
action_type	Layup Shot vs Turnaround Jump S	2.332	1.736	3.131
action_type	Pullup Bank shot vs Turnaround Jump S	1.050	0.314	3.508
action_type	Pullup Jump shot vs Turnaround Jump S	0.566	0.435	0.735
action_type	Putback Dunk Shot vs Turnaround Jump S	0.798	0.070	9.142
action_type	Putback Layup Sho vs Turnaround Jump S	0.591	0.143	2.443
action_type	Putback Slam Dunk vs Turnaround Jump S	1.514	0.093	24.567
action_type	Reverse Dunk Shot vs Turnaround Jump S	0.134	0.051	0.351
action_type	Reverse Layup Sho vs Turnaround Jump S	0.848	0.591	1.215
action_type	Reverse Slam Dunk vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Running Bank shot vs Turnaround Jump S	0.234	0.102	0.535
action_type	Running Dunk Shot vs Turnaround Jump S	0.178	0.040	0.801
action_type	Running Finger Ro vs Turnaround Jump S	1.745	0.456	6.673
action_type	Running Hook Shot vs Turnaround Jump S	0.183	0.063	0.527
action_type	Running Jump Shot vs Turnaround Jump S	0.482	0.388	0.599
action_type	Running Layup Sho vs Turnaround Jump S	0.590	0.304	1.143
action_type	Running Pull-Up J vs Turnaround Jump S	0.687	0.062	7.668
action_type	Running Reverse L vs Turnaround Jump S	1.026	0.221	4.763
action_type	Running Slam Dunk vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Running Tip Shot vs Turnaround Jump S	>999.999	<0.001	>999.999
action_type	Slam Dunk Shot vs Turnaround Jump S	0.028	0.012	0.067
action_type	Step Back Jump sh vs Turnaround Jump S	0.881	0.577	1.344
action_type	Tip Layup Shot vs Turnaround Jump S	1.465	0.088	24.324
action_type	Tip Shot vs Turnaround Jump S	2.852	1.835	4.431
action_type	Turnaround Bank s vs Turnaround Jump S	0.314	0.163	0.605
action_type	Turnaround Fadeaw vs Turnaround Jump S	0.969	0.754	1.246
action_type	Turnaround Finger vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Turnaround Hook S vs Turnaround Jump S	1.395	0.342	5.695
period	1 vs 7	0.925	0.187	4.589

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Odds Ratio Estimates				
Effect		Point Estimate	95% Wald Confidence Limits	
period	2 vs 7	0.971	0.196	4.815
period	3 vs 7	0.989	0.199	4.905
period	4 vs 7	1.111	0.224	5.511
period	5 vs 7	1.007	0.199	5.096
period	6 vs 7	1.220	0.204	7.309
minutes_remaining		0.985	0.977	0.993
seconds_remaining		0.997	0.995	0.998
shot_distance		0.997	0.981	1.013
shot_type	2PT Field Goal vs 3PT Field Goal	1.150	0.694	1.907
shot_zone_area	Back Court(BC) vs Right Side(R)	>999.999	<0.001	>999.999
shot_zone_area	Center(C) vs Right Side(R)	0.817	0.729	0.916
shot_zone_area	Left Side Center(LC) vs Right Side(R)	0.866	0.765	0.980
shot_zone_area	Left Side(L) vs Right Side(R)	1.100	0.988	1.225
shot_zone_area	Right Side Center(RC) vs Right Side(R)	0.784	0.696	0.883
shot_zone_basic	Above the Break 3 vs Right Corner 3	1.283	0.989	1.665
shot_zone_basic	Backcourt vs Right Corner 3	<0.001	<0.001	>999.999
shot_zone_basic	In The Paint (Non-RA) vs Right Corner 3	0.695	0.372	1.298
shot_zone_basic	Left Corner 3 vs Right Corner 3	0.746	0.517	1.076
shot_zone_basic	Mid-Range vs Right Corner 3	0.766	0.417	1.407
shot_zone_basic	Restricted Area vs Right Corner 3	0.566	0.281	1.139
shot_zone_range	16-24 ft. vs Less Than 8 ft.	0.586	0.461	0.745
shot_zone_range	24+ ft. vs Less Than 8 ft.	0.489	0.352	0.680
game_date		1.000	1.000	1.000
attendance		1.000	1.000	1.000
arena_temp		0.966	0.953	0.979
avgnoisedb		0.997	0.984	1.011

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	71.2	Somers' D	0.423
Percent Discordant	28.8	Gamma	0.423
Percent Tied	0.0	Tau-a	0.209
Pairs	163169880	c	0.712

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
0.0218	1	0.8828

Analysis of Effects Eligible for Removal			
Effect	DF	Wald Chi-Square	Pr > ChiSq
action_type	51	2190.1939	<.0001
period	6	23.2444	0.0007
minutes_remaining	1	13.8735	0.0002
seconds_remaining	1	18.9960	<.0001
shot_distance	1	0.1410	0.7073
shot_type	1	0.2942	0.5876
shot_zone_area	5	34.9783	<.0001
shot_zone_basic	6	20.4776	0.0023
shot_zone_range	2	23.8070	<.0001
game_date	1	19.3232	<.0001
attendance	1	135.7037	<.0001
arena_temp	1	26.1901	<.0001
avgnosedb	1	0.1317	0.7167

Step 2. Effect avgnosedb is removed:

Model Convergence Status
Quasi-complete separation of data points detected.

Warning: The maximum likelihood estimate may not exist.

Warning: The LOGISTIC procedure continues in spite of the above warning. Results shown are based on the last maximum likelihood iteration. Validity of the model fit is questionable.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	35327.083	31107.311
SC	35335.237	31743.333
-2 Log L	35325.083	30951.311

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	4373.7715	77	<.0001
Score	4033.4670	77	<.0001
Wald	2999.2379	77	<.0001

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
action_type	51	2190.5022	<.0001
period	6	23.2973	0.0007
minutes_remaining	1	13.8775	0.0002
seconds_remaining	1	18.9978	<.0001
shot_distance	1	0.1419	0.7064
shot_type	1	0.2954	0.5868
shot_zone_area	5	34.9374	<.0001
shot_zone_basic	6	20.4375	0.0023
shot_zone_range	2	23.7794	<.0001
game_date	1	19.3021	<.0001
attendance	1	188.5737	<.0001
arena_temp	1	26.1925	<.0001

Note: The following parameters have been set to 0, since the variables are a linear combination of other variables as shown.

shot_zone_range8-16 ft. =	-0.78571 * Intercept + 2.5 * shot_zone_aBack Court(BC) - 0.5 * shot_zone_aCenter(C) - 0.5 * shot_zone_aLeft Side Center(LC) - 0.5 * shot_zone_aLeft Side(L) - 0.5 * shot_zone_aRight Side Center(RC) - 1.71429 * shot_zone_bAbove the Break 3 - 1.71429 * shot_zone_bBackcourt + 2.28571 * shot_zone_bIn The Paint (Non-RA) - 1.71429 * shot_zone_bLeft Corner 3 + 2.28571 * shot_zone_bMid-Range + 2.28571 * shot_zone_bRestricted Area - shot_zone_range16-24 ft. + 3 * shot_zone_range24+ ft.
shot_zone_rangeBack Court Shot =	- 0.2381 * Intercept + 1.66667 * shot_zone_aBack Court(BC) - 0.33333 * shot_zone_aCenter(C) - 0.33333 * shot_zone_aLeft Side Center(LC) - 0.33333 * shot_zone_aLeft Side(L) - 0.33333 * shot_zone_aRight Side Center(RC) - 0.42857 * shot_zone_bAbove the Break 3 - 0.42857 * shot_zone_bBackcourt + 0.57143 * shot_zone_bIn The Paint (Non-RA) - 0.42857 * shot_zone_bLeft Corner 3 + 0.57143 * shot_zone_bMid-Range + 0.57143 * shot_zone_bRestricted Area + shot_zone_range24+ ft.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	3.8047	14.7345	0.0667	0.7962
action_type	Alley Oop Dunk Sh	1	-1.2708	14.4144	0.0078	0.9297
action_type	Alley Oop Layup s	1	0.7489	14.4098	0.0027	0.9586
action_type	Cutting Layup Sho	1	0.6509	14.4326	0.0020	0.9640
action_type	Driving Bank shot	1	0.7382	14.4590	0.0026	0.9593

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
action_type	Driving Dunk Shot	1	-2.0910	14.4130	0.0210	0.8847
action_type	Driving Finger Ro	1	-0.2532	14.4096	0.0003	0.9860
action_type	Driving Floating	1	1.2630	14.4421	0.0076	0.9303
action_type	Driving Hook Shot	1	0.9878	14.4183	0.0047	0.9454
action_type	Driving Jump shot	1	1.7960	14.4133	0.0155	0.9008
action_type	Driving Layup Sho	1	0.5818	14.4074	0.0016	0.9678
action_type	Driving Reverse L	1	0.4377	14.4095	0.0009	0.9758
action_type	Driving Slam Dunk	1	-2.2071	14.4415	0.0234	0.8785
action_type	Dunk Shot	1	0.4015	14.4082	0.0008	0.9778
action_type	Fadeaway Bank sho	1	-0.6347	14.4200	0.0019	0.9649
action_type	Fadeaway Jump Sho	1	1.3214	14.4076	0.0084	0.9269
action_type	Finger Roll Layup	1	0.0427	14.4155	0.0000	0.9976
action_type	Finger Roll Shot	1	1.7193	14.4125	0.0142	0.9050
action_type	Floating Jump sho	1	0.5462	14.4092	0.0014	0.9698
action_type	Follow Up Dunk Sh	1	-0.6015	14.4444	0.0017	0.9668
action_type	Hook Bank Shot	1	-10.7014	197.0	0.0030	0.9567
action_type	Hook Shot	1	2.0966	14.4093	0.0212	0.8843
action_type	Jump Bank Shot	1	0.2765	14.4081	0.0004	0.9847
action_type	Jump Hook Shot	1	0.4725	14.4164	0.0011	0.9739
action_type	Jump Shot	1	2.4513	14.4074	0.0289	0.8649
action_type	Layup Shot	1	2.0924	14.4074	0.0211	0.8845
action_type	Pullup Bank shot	1	1.2951	14.4199	0.0081	0.9284
action_type	Pullup Jump shot	1	0.6759	14.4078	0.0022	0.9626
action_type	Putback Dunk Shot	1	1.0219	14.4582	0.0050	0.9437
action_type	Putback Layup Sho	1	0.7209	14.4241	0.0025	0.9601
action_type	Putback Slam Dunk	1	1.6604	14.4739	0.0132	0.9087
action_type	Reverse Dunk Shot	1	-0.7614	14.4146	0.0028	0.9579
action_type	Reverse Layup Sho	1	1.0809	14.4078	0.0056	0.9402
action_type	Reverse Slam Dunk	1	-10.6342	114.7	0.0086	0.9261
action_type	Running Bank shot	1	-0.2063	14.4131	0.0002	0.9886
action_type	Running Dunk Shot	1	-0.4790	14.4262	0.0011	0.9735
action_type	Running Finger Ro	1	1.8032	14.4224	0.0156	0.9005
action_type	Running Hook Shot	1	-0.4537	14.4169	0.0010	0.9749
action_type	Running Jump Shot	1	0.5162	14.4076	0.0013	0.9714

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
action_type	Running Layup Sho	1	0.7167	14.4105	0.0025	0.9603
action_type	Running Pull-Up J	1	0.8736	14.4577	0.0037	0.9518
action_type	Running Reverse L	1	1.2726	14.4271	0.0078	0.9297
action_type	Running Slam Dunk	1	-10.4751	442.5	0.0006	0.9811
action_type	Running Tip Shot	1	13.9407	441.9	0.0010	0.9748
action_type	Slam Dunk Shot	1	-2.3189	14.4130	0.0259	0.8722
action_type	Step Back Jump sh	1	1.1202	14.4088	0.0060	0.9380
action_type	Tip Layup Shot	1	1.6305	14.4750	0.0127	0.9103
action_type	Tip Shot	1	2.2943	14.4083	0.0254	0.8735
action_type	Turnaround Bank s	1	0.0892	14.4109	0.0000	0.9951
action_type	Turnaround Fadeaw	1	1.2146	14.4078	0.0071	0.9328
action_type	Turnaround Finger	1	-10.2879	312.4	0.0011	0.9737
action_type	Turnaround Hook S	1	1.5785	14.4244	0.0120	0.9129
period	1	1	-0.1047	0.1342	0.6082	0.4355
period	2	1	-0.0565	0.1345	0.1765	0.6744
period	3	1	-0.0380	0.1342	0.0804	0.7768
period	4	1	0.0786	0.1344	0.3420	0.5587
period	5	1	-0.0199	0.1734	0.0132	0.9086
period	6	1	0.1701	0.3707	0.2107	0.6462
minutes_remaining		1	-0.0151	0.00405	13.8775	0.0002
seconds_remaining		1	-0.00342	0.000785	18.9978	<.0001
shot_distance		1	-0.00315	0.00836	0.1419	0.7064
shot_type	2PT Field Goal	1	0.0701	0.1290	0.2954	0.5868
shot_zone_area	Back Court(BC)	1	9.4656	106.1	0.0080	0.9289
shot_zone_area	Center(C)	1	-1.9964	21.2199	0.0089	0.9250
shot_zone_area	Left Side Center(LC)	1	-1.9381	21.2199	0.0083	0.9272
shot_zone_area	Left Side(L)	1	-1.6990	21.2199	0.0064	0.9362
shot_zone_area	Right Side Center(RC)	1	-2.0379	21.2199	0.0092	0.9235
shot_zone_basic	Above the Break 3	1	1.5764	18.1895	0.0075	0.9309
shot_zone_basic	Backcourt	1	-6.7200	109.1	0.0038	0.9509
shot_zone_basic	In The Paint (Non-RA)	1	0.9634	18.1899	0.0028	0.9578
shot_zone_basic	Left Corner 3	1	1.0344	18.1898	0.0032	0.9547
shot_zone_basic	Mid-Range	1	1.0608	18.1898	0.0034	0.9535
shot_zone_basic	Restricted Area	1	0.7577	18.1904	0.0017	0.9668

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
shot_zone_range	16-24 ft.	1	-0.1179	0.0682	2.9854	0.0840
shot_zone_range	24+ ft.	1	-0.2984	0.0954	9.7944	0.0018
shot_zone_range	8-16 ft.	0	0	.	.	.
shot_zone_range	Back Court Shot	0	0	.	.	.
game_date		1	0.000037	8.366E-6	19.3021	<.0001
attendance		1	-0.00018	0.000013	188.5737	<.0001
arena_temp		1	-0.0347	0.00678	26.1925	<.0001

Odds Ratio Estimates				
Effect		Point Estimate	95% Wald Confidence Limits	
action_type	Alley Oop Dunk Sh vs Turnaround Jump S	0.081	0.031	0.208
action_type	Alley Oop Layup s vs Turnaround Jump S	0.608	0.333	1.111
action_type	Cutting Layup Sho vs Turnaround Jump S	0.551	0.098	3.107
action_type	Driving Bank shot vs Turnaround Jump S	0.602	0.052	6.957
action_type	Driving Dunk Shot vs Turnaround Jump S	0.036	0.015	0.084
action_type	Driving Finger Ro vs Turnaround Jump S	0.223	0.125	0.399
action_type	Driving Floating vs Turnaround Jump S	1.017	0.137	7.558
action_type	Driving Hook Shot vs Turnaround Jump S	0.772	0.246	2.423
action_type	Driving Jump shot vs Turnaround Jump S	1.733	0.740	4.056
action_type	Driving Layup Sho vs Turnaround Jump S	0.515	0.381	0.695
action_type	Driving Reverse L vs Turnaround Jump S	0.446	0.252	0.789
action_type	Driving Slam Dunk vs Turnaround Jump S	0.032	0.004	0.235
action_type	Dunk Shot vs Turnaround Jump S	0.430	0.280	0.660
action_type	Fadeaway Bank sho vs Turnaround Jump S	0.152	0.045	0.513
action_type	Fadeaway Jump Sho vs Turnaround Jump S	1.078	0.890	1.306
action_type	Finger Roll Layup vs Turnaround Jump S	0.300	0.110	0.819
action_type	Finger Roll Shot vs Turnaround Jump S	1.605	0.716	3.599
action_type	Floating Jump sho vs Turnaround Jump S	0.497	0.307	0.803
action_type	Follow Up Dunk Sh vs Turnaround Jump S	0.158	0.020	1.271
action_type	Hook Bank Shot vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Hook Shot vs Turnaround Jump S	2.341	1.412	3.880
action_type	Jump Bank Shot vs Turnaround Jump S	0.379	0.278	0.518
action_type	Jump Hook Shot vs Turnaround Jump S	0.461	0.163	1.303
action_type	Jump Shot vs Turnaround Jump S	3.337	2.891	3.853

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Odds Ratio Estimates					
Effect			Point Estimate	95% Wald Confidence Limits	
action_type	Layup Shot	vs Turnaround Jump S	2.331	1.736	3.130
action_type	Pullup Bank shot	vs Turnaround Jump S	1.050	0.314	3.508
action_type	Pullup Jump shot	vs Turnaround Jump S	0.565	0.435	0.735
action_type	Putback Dunk Shot	vs Turnaround Jump S	0.799	0.070	9.152
action_type	Putback Layup Sho	vs Turnaround Jump S	0.591	0.143	2.445
action_type	Putback Slam Dunk	vs Turnaround Jump S	1.513	0.093	24.558
action_type	Reverse Dunk Shot	vs Turnaround Jump S	0.134	0.051	0.351
action_type	Reverse Layup Sho	vs Turnaround Jump S	0.848	0.591	1.215
action_type	Reverse Slam Dunk	vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Running Bank shot	vs Turnaround Jump S	0.234	0.102	0.535
action_type	Running Dunk Shot	vs Turnaround Jump S	0.178	0.040	0.801
action_type	Running Finger Ro	vs Turnaround Jump S	1.746	0.456	6.676
action_type	Running Hook Shot	vs Turnaround Jump S	0.183	0.063	0.527
action_type	Running Jump Shot	vs Turnaround Jump S	0.482	0.388	0.599
action_type	Running Layup Sho	vs Turnaround Jump S	0.589	0.304	1.142
action_type	Running Pull-Up J	vs Turnaround Jump S	0.689	0.062	7.688
action_type	Running Reverse L	vs Turnaround Jump S	1.027	0.221	4.769
action_type	Running Slam Dunk	vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Running Tip Shot	vs Turnaround Jump S	>999.999	<0.001	>999.999
action_type	Slam Dunk Shot	vs Turnaround Jump S	0.028	0.012	0.067
action_type	Step Back Jump sh	vs Turnaround Jump S	0.882	0.578	1.346
action_type	Tip Layup Shot	vs Turnaround Jump S	1.469	0.089	24.360
action_type	Tip Shot	vs Turnaround Jump S	2.852	1.836	4.432
action_type	Turnaround Bank s	vs Turnaround Jump S	0.314	0.163	0.605
action_type	Turnaround Fadeaw	vs Turnaround Jump S	0.969	0.754	1.246
action_type	Turnaround Finger	vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Turnaround Hook S	vs Turnaround Jump S	1.394	0.342	5.690
period	1 vs 7		0.928	0.187	4.602
period	2 vs 7		0.973	0.196	4.830
period	3 vs 7		0.992	0.200	4.919
period	4 vs 7		1.114	0.225	5.528
period	5 vs 7		1.010	0.200	5.108
period	6 vs 7		1.221	0.204	7.319
minutes_remaining			0.985	0.977	0.993

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
seconds_remaining	0.997	0.995	0.998
shot_distance	0.997	0.981	1.013
shot_type 2PT Field Goal vs 3PT Field Goal	1.150	0.694	1.907
shot_zone_area Back Court(BC) vs Right Side(R)	>999.999	<0.001	>999.999
shot_zone_area Center(C) vs Right Side(R)	0.817	0.728	0.916
shot_zone_area Left Side Center(LC) vs Right Side(R)	0.866	0.765	0.980
shot_zone_area Left Side(L) vs Right Side(R)	1.100	0.988	1.225
shot_zone_area Right Side Center(RC) vs Right Side(R)	0.784	0.696	0.883
shot_zone_basic Above the Break 3 vs Right Corner 3	1.283	0.988	1.665
shot_zone_basic Backcourt vs Right Corner 3	<0.001	<0.001	>999.999
shot_zone_basic In The Paint (Non-RA) vs Right Corner 3	0.695	0.372	1.298
shot_zone_basic Left Corner 3 vs Right Corner 3	0.746	0.517	1.076
shot_zone_basic Mid-Range vs Right Corner 3	0.766	0.417	1.407
shot_zone_basic Restricted Area vs Right Corner 3	0.566	0.281	1.139
shot_zone_range 16-24 ft. vs Less Than 8 ft.	0.586	0.461	0.745
shot_zone_range 24+ ft. vs Less Than 8 ft.	0.489	0.352	0.680
game_date	1.000	1.000	1.000
attendance	1.000	1.000	1.000
arena_temp	0.966	0.953	0.979

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	71.2	Somers' D	0.423
Percent Discordant	28.8	Gamma	0.423
Percent Tied	0.0	Tau-a	0.209
Pairs	163169880	c	0.712

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
0.1535	2	0.9261

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Effects Eligible for Removal			
Effect	DF	Wald Chi-Square	Pr > ChiSq
action_type	51	2190.5022	<.0001
period	6	23.2973	0.0007
minutes_remaining	1	13.8775	0.0002
seconds_remaining	1	18.9978	<.0001
shot_distance	1	0.1419	0.7064
shot_type	1	0.2954	0.5868
shot_zone_area	5	34.9374	<.0001
shot_zone_basic	6	20.4375	0.0023
shot_zone_range	2	23.7794	<.0001
game_date	1	19.3021	<.0001
attendance	1	188.5737	<.0001
arena_temp	1	26.1925	<.0001

Step 3. Effect shot_distance is removed:

Model Convergence Status
Quasi-complete separation of data points detected.

Warning: The maximum likelihood estimate may not exist.

Warning: The LOGISTIC procedure continues in spite of the above warning. Results shown are based on the last maximum likelihood iteration. Validity of the model fit is questionable.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	35327.083	31105.453
SC	35335.237	31733.321
-2 Log L	35325.083	30951.453

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	4373.6298	76	<.0001
Score	4033.3220	76	<.0001
Wald	2999.0357	76	<.0001

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
action_type	51	2206.9779	<.0001
period	6	23.2723	0.0007
minutes_remaining	1	13.8009	0.0002
seconds_remaining	1	18.9059	<.0001
shot_type	1	0.3515	0.5532
shot_zone_area	5	36.4288	<.0001
shot_zone_basic	6	21.8154	0.0013
shot_zone_range	2	41.9549	<.0001
game_date	1	19.1912	<.0001
attendance	1	188.6653	<.0001
arena_temp	1	26.1656	<.0001

Note: The following parameters have been set to 0, since the variables are a linear combination of other variables as shown.

shot_zone_range8-16 ft. =	-0.78571 * Intercept + 2.5 * shot_zone_aBack Court(BC) - 0.5 * shot_zone_aCenter(C) - 0.5 * shot_zone_aLeft Side Center(LC) - 0.5 * shot_zone_aLeft Side(L) - 0.5 * shot_zone_aRight Side Center(RC) - 1.71429 * shot_zone_bAbove the Break 3 - 1.71429 * shot_zone_bBackcourt + 2.28571 * shot_zone_bIn The Paint (Non-RA) - 1.71429 * shot_zone_bLeft Corner 3 + 2.28571 * shot_zone_bMid-Range + 2.28571 * shot_zone_bRestricted Area - shot_zone_range16-24 ft. + 3 * shot_zone_range24+ ft.
shot_zone_rangeBack Court Shot =	- 0.2381 * Intercept + 1.66667 * shot_zone_aBack Court(BC) - 0.33333 * shot_zone_aCenter(C) - 0.33333 * shot_zone_aLeft Side Center(LC) - 0.33333 * shot_zone_aLeft Side(L) - 0.33333 * shot_zone_aRight Side Center(RC) - 0.42857 * shot_zone_bAbove the Break 3 - 0.42857 * shot_zone_bBackcourt + 0.57143 * shot_zone_bIn The Paint (Non-RA) - 0.42857 * shot_zone_bLeft Corner 3 + 0.57143 * shot_zone_bMid-Range + 0.57143 * shot_zone_bRestricted Area + shot_zone_range24+ ft.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	3.7380	14.7330	0.0644	0.7997
action_type	Alley Oop Dunk Sh	1	-1.2677	14.4140	0.0077	0.9299
action_type	Alley Oop Layup s	1	0.7514	14.4094	0.0027	0.9584
action_type	Cutting Layup Sho	1	0.6514	14.4322	0.0020	0.9640
action_type	Driving Bank shot	1	0.7341	14.4586	0.0026	0.9595
action_type	Driving Dunk Shot	1	-2.0878	14.4126	0.0210	0.8848
action_type	Driving Finger Ro	1	-0.2509	14.4092	0.0003	0.9861
action_type	Driving Floating	1	1.2588	14.4417	0.0076	0.9305
action_type	Driving Hook Shot	1	0.9862	14.4179	0.0047	0.9455
action_type	Driving Jump shot	1	1.7937	14.4129	0.0155	0.9010
action_type	Driving Layup Sho	1	0.5846	14.4070	0.0016	0.9676
action_type	Driving Reverse L	1	0.4388	14.4091	0.0009	0.9757

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
action_type	Driving Slam Dunk	1	-2.2045	14.4411	0.0233	0.8787
action_type	Dunk Shot	1	0.4047	14.4078	0.0008	0.9776
action_type	Fadeaway Bank sho	1	-0.6357	14.4196	0.0019	0.9648
action_type	Fadeaway Jump Sho	1	1.3175	14.4072	0.0084	0.9271
action_type	Finger Roll Layup	1	0.0428	14.4151	0.0000	0.9976
action_type	Finger Roll Shot	1	1.7207	14.4121	0.0143	0.9050
action_type	Floating Jump sho	1	0.5432	14.4088	0.0014	0.9699
action_type	Follow Up Dunk Sh	1	-0.5980	14.4440	0.0017	0.9670
action_type	Hook Bank Shot	1	-10.7029	197.0	0.0030	0.9567
action_type	Hook Shot	1	2.0950	14.4089	0.0211	0.8844
action_type	Jump Bank Shot	1	0.2743	14.4077	0.0004	0.9848
action_type	Jump Hook Shot	1	0.4700	14.4160	0.0011	0.9740
action_type	Jump Shot	1	2.4465	14.4070	0.0288	0.8652
action_type	Layup Shot	1	2.0949	14.4070	0.0211	0.8844
action_type	Pullup Bank shot	1	1.2923	14.4195	0.0080	0.9286
action_type	Pullup Jump shot	1	0.6722	14.4074	0.0022	0.9628
action_type	Putback Dunk Shot	1	1.0257	14.4578	0.0050	0.9434
action_type	Putback Layup Sho	1	0.7231	14.4237	0.0025	0.9600
action_type	Putback Slam Dunk	1	1.6639	14.4735	0.0132	0.9085
action_type	Reverse Dunk Shot	1	-0.7579	14.4142	0.0028	0.9581
action_type	Reverse Layup Sho	1	1.0836	14.4074	0.0057	0.9400
action_type	Reverse Slam Dunk	1	-10.6332	114.7	0.0086	0.9261
action_type	Running Bank shot	1	-0.2072	14.4127	0.0002	0.9885
action_type	Running Dunk Shot	1	-0.4759	14.4258	0.0011	0.9737
action_type	Running Finger Ro	1	1.8062	14.4220	0.0157	0.9003
action_type	Running Hook Shot	1	-0.4551	14.4165	0.0010	0.9748
action_type	Running Jump Shot	1	0.5133	14.4072	0.0013	0.9716
action_type	Running Layup Sho	1	0.7185	14.4101	0.0025	0.9602
action_type	Running Pull-Up J	1	0.8715	14.4573	0.0036	0.9519
action_type	Running Reverse L	1	1.2741	14.4267	0.0078	0.9296
action_type	Running Slam Dunk	1	-10.4733	442.5	0.0006	0.9811
action_type	Running Tip Shot	1	13.9441	441.9	0.0010	0.9748
action_type	Slam Dunk Shot	1	-2.3156	14.4126	0.0258	0.8724
action_type	Step Back Jump sh	1	1.1145	14.4084	0.0060	0.9383

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
action_type	Tip Layup Shot	1	1.6282	14.4746	0.0127	0.9104
action_type	Tip Shot	1	2.2972	14.4079	0.0254	0.8733
action_type	Turnaround Bank s	1	0.0880	14.4105	0.0000	0.9951
action_type	Turnaround Fadeaw	1	1.2107	14.4074	0.0071	0.9330
action_type	Turnaround Finger	1	-10.2893	312.4	0.0011	0.9737
action_type	Turnaround Hook S	1	1.5768	14.4240	0.0120	0.9129
period	1	1	-0.1047	0.1343	0.6083	0.4354
period	2	1	-0.0564	0.1345	0.1757	0.6751
period	3	1	-0.0380	0.1342	0.0802	0.7770
period	4	1	0.0785	0.1345	0.3408	0.5593
period	5	1	-0.0203	0.1734	0.0137	0.9069
period	6	1	0.1695	0.3708	0.2089	0.6476
minutes_remaining		1	-0.0151	0.00405	13.8009	0.0002
seconds_remaining		1	-0.00341	0.000784	18.9059	<.0001
shot_type	2PT Field Goal	1	0.0759	0.1280	0.3515	0.5532
shot_zone_area	Back Court(BC)	1	9.4227	106.1	0.0079	0.9292
shot_zone_area	Center(C)	1	-1.9895	21.2188	0.0088	0.9253
shot_zone_area	Left Side Center(LC)	1	-1.9305	21.2188	0.0083	0.9275
shot_zone_area	Left Side(L)	1	-1.6888	21.2188	0.0063	0.9366
shot_zone_area	Right Side Center(RC)	1	-2.0302	21.2188	0.0092	0.9238
shot_zone_basic	Above the Break 3	1	1.5669	18.1886	0.0074	0.9313
shot_zone_basic	Backcourt	1	-6.7789	109.1	0.0039	0.9505
shot_zone_basic	In The Paint (Non-RA)	1	0.9885	18.1889	0.0030	0.9567
shot_zone_basic	Left Corner 3	1	1.0301	18.1889	0.0032	0.9548
shot_zone_basic	Mid-Range	1	1.0768	18.1889	0.0035	0.9528
shot_zone_basic	Restricted Area	1	0.7934	18.1893	0.0019	0.9652
shot_zone_range	16-24 ft.	1	-0.1339	0.0534	6.2895	0.0121
shot_zone_range	24+ ft.	1	-0.2982	0.0953	9.7794	0.0018
shot_zone_range	8-16 ft.	0	0	.	.	.
shot_zone_range	Back Court Shot	0	0	.	.	.
game_date		1	0.000037	8.357E-6	19.1912	<.0001
attendance		1	-0.00018	0.000013	188.6653	<.0001
arena_temp		1	-0.0347	0.00678	26.1656	<.0001

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Odds Ratio Estimates				
Effect		Point Estimate	95% Wald Confidence Limits	
action_type	Alley Oop Dunk Sh vs Turnaround Jump S	0.081	0.032	0.209
action_type	Alley Oop Layup s vs Turnaround Jump S	0.612	0.335	1.117
action_type	Cutting Layup Sho vs Turnaround Jump S	0.554	0.098	3.119
action_type	Driving Bank shot vs Turnaround Jump S	0.601	0.052	6.957
action_type	Driving Dunk Shot vs Turnaround Jump S	0.036	0.015	0.084
action_type	Driving Finger Ro vs Turnaround Jump S	0.225	0.126	0.401
action_type	Driving Floating vs Turnaround Jump S	1.016	0.137	7.548
action_type	Driving Hook Shot vs Turnaround Jump S	0.774	0.247	2.427
action_type	Driving Jump shot vs Turnaround Jump S	1.735	0.741	4.060
action_type	Driving Layup Sho vs Turnaround Jump S	0.518	0.384	0.698
action_type	Driving Reverse L vs Turnaround Jump S	0.448	0.253	0.792
action_type	Driving Slam Dunk vs Turnaround Jump S	0.032	0.004	0.236
action_type	Dunk Shot vs Turnaround Jump S	0.433	0.282	0.663
action_type	Fadeaway Bank sho vs Turnaround Jump S	0.153	0.045	0.514
action_type	Fadeaway Jump Sho vs Turnaround Jump S	1.078	0.889	1.306
action_type	Finger Roll Layup vs Turnaround Jump S	0.301	0.110	0.822
action_type	Finger Roll Shot vs Turnaround Jump S	1.613	0.720	3.615
action_type	Floating Jump sho vs Turnaround Jump S	0.497	0.307	0.804
action_type	Follow Up Dunk Sh vs Turnaround Jump S	0.159	0.020	1.280
action_type	Hook Bank Shot vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Hook Shot vs Turnaround Jump S	2.345	1.415	3.886
action_type	Jump Bank Shot vs Turnaround Jump S	0.380	0.278	0.518
action_type	Jump Hook Shot vs Turnaround Jump S	0.462	0.164	1.304
action_type	Jump Shot vs Turnaround Jump S	3.333	2.888	3.847
action_type	Layup Shot vs Turnaround Jump S	2.345	1.749	3.144
action_type	Pullup Bank shot vs Turnaround Jump S	1.051	0.315	3.510
action_type	Pullup Jump shot vs Turnaround Jump S	0.565	0.435	0.734
action_type	Putback Dunk Shot vs Turnaround Jump S	0.805	0.070	9.216
action_type	Putback Layup Sho vs Turnaround Jump S	0.595	0.144	2.458
action_type	Putback Slam Dunk vs Turnaround Jump S	1.524	0.094	24.724
action_type	Reverse Dunk Shot vs Turnaround Jump S	0.135	0.052	0.353
action_type	Reverse Layup Sho vs Turnaround Jump S	0.853	0.596	1.221
action_type	Reverse Slam Dunk vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Running Bank shot vs Turnaround Jump S	0.235	0.103	0.536

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Odds Ratio Estimates				
Effect		Point Estimate	95% Wald Confidence Limits	
action_type	Running Dunk Shot vs Turnaround Jump S	0.179	0.040	0.806
action_type	Running Finger Ro vs Turnaround Jump S	1.757	0.460	6.716
action_type	Running Hook Shot vs Turnaround Jump S	0.183	0.063	0.528
action_type	Running Jump Shot vs Turnaround Jump S	0.482	0.388	0.599
action_type	Running Layup Sho vs Turnaround Jump S	0.592	0.305	1.147
action_type	Running Pull-Up J vs Turnaround Jump S	0.690	0.062	7.699
action_type	Running Reverse L vs Turnaround Jump S	1.032	0.222	4.792
action_type	Running Slam Dunk vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Running Tip Shot vs Turnaround Jump S	>999.999	<0.001	>999.999
action_type	Slam Dunk Shot vs Turnaround Jump S	0.028	0.012	0.067
action_type	Step Back Jump sh vs Turnaround Jump S	0.880	0.576	1.342
action_type	Tip Layup Shot vs Turnaround Jump S	1.470	0.089	24.386
action_type	Tip Shot vs Turnaround Jump S	2.871	1.850	4.455
action_type	Turnaround Bank s vs Turnaround Jump S	0.315	0.164	0.606
action_type	Turnaround Fadeaw vs Turnaround Jump S	0.969	0.753	1.245
action_type	Turnaround Finger vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Turnaround Hook S vs Turnaround Jump S	1.397	0.342	5.700
period	1 vs 7	0.927	0.187	4.600
period	2 vs 7	0.973	0.196	4.828
period	3 vs 7	0.991	0.200	4.917
period	4 vs 7	1.113	0.224	5.525
period	5 vs 7	1.008	0.199	5.104
period	6 vs 7	1.219	0.203	7.311
minutes_remaining		0.985	0.977	0.993
seconds_remaining		0.997	0.995	0.998
shot_type	2PT Field Goal vs 3PT Field Goal	1.164	0.705	1.923
shot_zone_area	Back Court(BC) vs Right Side(R)	>999.999	<0.001	>999.999
shot_zone_area	Center(C) vs Right Side(R)	0.814	0.727	0.912
shot_zone_area	Left Side Center(LC) vs Right Side(R)	0.864	0.764	0.977
shot_zone_area	Left Side(L) vs Right Side(R)	1.100	0.988	1.224
shot_zone_area	Right Side Center(RC) vs Right Side(R)	0.782	0.694	0.880
shot_zone_basic	Above the Break 3 vs Right Corner 3	1.276	0.985	1.654
shot_zone_basic	Backcourt vs Right Corner 3	<0.001	<0.001	>999.999
shot_zone_basic	In The Paint (Non-RA) vs Right Corner 3	0.716	0.390	1.312

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Odds Ratio Estimates					
Effect			Point Estimate	95% Wald Confidence Limits	
shot_zone_basic	Left Corner 3	vs Right Corner 3	0.746	0.517	1.076
shot_zone_basic	Mid-Range	vs Right Corner 3	0.782	0.429	1.422
shot_zone_basic	Restricted Area	vs Right Corner 3	0.589	0.302	1.149
shot_zone_range	16-24 ft.	vs Less Than 8 ft.	0.568	0.477	0.676
shot_zone_range	24+ ft.	vs Less Than 8 ft.	0.482	0.350	0.663
game_date			1.000	1.000	1.000
attendance			1.000	1.000	1.000
arena_temp			0.966	0.953	0.979

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	71.2	Somers' D	0.423
Percent Discordant	28.8	Gamma	0.423
Percent Tied	0.0	Tau-a	0.209
Pairs	163169880	c	0.712

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
0.2953	3	0.9609

Analysis of Effects Eligible for Removal			
Effect	DF	Wald Chi-Square	Pr > ChiSq
action_type	51	2206.9779	<.0001
period	6	23.2723	0.0007
minutes_remaining	1	13.8009	0.0002
seconds_remaining	1	18.9059	<.0001
shot_type	1	0.3515	0.5532
shot_zone_area	5	36.4288	<.0001
shot_zone_basic	6	21.8154	0.0013
shot_zone_range	2	41.9549	<.0001
game_date	1	19.1912	<.0001
attendance	1	188.6653	<.0001
arena_temp	1	26.1656	<.0001

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Step 4. Effect shot_type is removed:

Model Convergence Status
Quasi-complete separation of data points detected.

Warning: The maximum likelihood estimate may not exist.

Warning: The LOGISTIC procedure continues in spite of the above warning. Results shown are based on the last maximum likelihood iteration. Validity of the model fit is questionable.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	35327.083	31103.802
SC	35335.237	31723.516
-2 Log L	35325.083	30951.802

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	4373.2810	75	<.0001
Score	4032.9767	75	<.0001
Wald	2998.6343	75	<.0001

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
action_type	51	2206.7239	<.0001
period	6	23.1797	0.0007
minutes_remaining	1	13.7986	0.0002
seconds_remaining	1	18.8664	<.0001
shot_zone_area	5	36.6999	<.0001
shot_zone_basic	6	22.5584	0.0010
shot_zone_range	2	42.0992	<.0001
game_date	1	19.8546	<.0001
attendance	1	188.4634	<.0001
arena_temp	1	26.1973	<.0001

Note: The following parameters have been set to 0, since the variables are a linear combination of other variables as shown.

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

shot_zone_range8-16 ft. =	-0.78571 * Intercept + 2.5 * shot_zone_aBack Court(BC) - 0.5 * shot_zone_aCenter(C) - 0.5 * shot_zone_aLeft Side Center(LC) - 0.5 * shot_zone_aLeft Side(L) - 0.5 * shot_zone_aRight Side Center(RC) - 1.71429 * shot_zone_bAbove the Break 3 - 1.71429 * shot_zone_bBackcourt + 2.28571 * shot_zone_bln The Paint (Non-RA) - 1.71429 * shot_zone_bLeft Corner 3 + 2.28571 * shot_zone_bMid-Range + 2.28571 * shot_zone_bRestricted Area - shot_zone_range16-24 ft. + 3 * shot_zone_range24+ ft.
shot_zone_rangeBack Court Shot =	- 0.2381 * Intercept + 1.66667 * shot_zone_aBack Court(BC) - 0.33333 * shot_zone_aCenter(C) - 0.33333 * shot_zone_aLeft Side Center(LC) - 0.33333 * shot_zone_aLeft Side(L) - 0.33333 * shot_zone_aRight Side Center(RC) - 0.42857 * shot_zone_bAbove the Break 3 - 0.42857 * shot_zone_bBackcourt + 0.57143 * shot_zone_bln The Paint (Non-RA) - 0.42857 * shot_zone_bLeft Corner 3 + 0.57143 * shot_zone_bMid-Range + 0.57143 * shot_zone_bRestricted Area + shot_zone_range24+ ft.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	3.7186	14.7329	0.0637	0.8007
action_type	Alley Oop Dunk Sh	1	-1.2667	14.4140	0.0077	0.9300
action_type	Alley Oop Layup s	1	0.7523	14.4094	0.0027	0.9584
action_type	Cutting Layup Sho	1	0.6506	14.4322	0.0020	0.9640
action_type	Driving Bank shot	1	0.7338	14.4586	0.0026	0.9595
action_type	Driving Dunk Shot	1	-2.0869	14.4126	0.0210	0.8849
action_type	Driving Finger Ro	1	-0.2502	14.4092	0.0003	0.9861
action_type	Driving Floating	1	1.2572	14.4417	0.0076	0.9306
action_type	Driving Hook Shot	1	0.9857	14.4179	0.0047	0.9455
action_type	Driving Jump shot	1	1.7863	14.4129	0.0154	0.9014
action_type	Driving Layup Sho	1	0.5856	14.4070	0.0017	0.9676
action_type	Driving Reverse L	1	0.4387	14.4091	0.0009	0.9757
action_type	Driving Slam Dunk	1	-2.2043	14.4411	0.0233	0.8787
action_type	Dunk Shot	1	0.4057	14.4078	0.0008	0.9775
action_type	Fadeaway Bank sho	1	-0.6363	14.4196	0.0019	0.9648
action_type	Fadeaway Jump Sho	1	1.3176	14.4072	0.0084	0.9271
action_type	Finger Roll Layup	1	0.0427	14.4151	0.0000	0.9976
action_type	Finger Roll Shot	1	1.7217	14.4121	0.0143	0.9049
action_type	Floating Jump sho	1	0.5425	14.4088	0.0014	0.9700
action_type	Follow Up Dunk Sh	1	-0.5965	14.4440	0.0017	0.9671
action_type	Hook Bank Shot	1	-10.7030	197.0	0.0030	0.9567
action_type	Hook Shot	1	2.0952	14.4089	0.0211	0.8844
action_type	Jump Bank Shot	1	0.2741	14.4077	0.0004	0.9848
action_type	Jump Hook Shot	1	0.4696	14.4160	0.0011	0.9740
action_type	Jump Shot	1	2.4466	14.4070	0.0288	0.8652
action_type	Layup Shot	1	2.0958	14.4070	0.0212	0.8843
action_type	Pullup Bank shot	1	1.2913	14.4195	0.0080	0.9286
action_type	Pullup Jump shot	1	0.6719	14.4074	0.0022	0.9628

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
action_type	Putback Dunk Shot	1	1.0260	14.4578	0.0050	0.9434
action_type	Putback Layup Sho	1	0.7234	14.4237	0.0025	0.9600
action_type	Putback Slam Dunk	1	1.6647	14.4735	0.0132	0.9084
action_type	Reverse Dunk Shot	1	-0.7569	14.4142	0.0028	0.9581
action_type	Reverse Layup Sho	1	1.0844	14.4073	0.0057	0.9400
action_type	Reverse Slam Dunk	1	-10.6332	114.7	0.0086	0.9261
action_type	Running Bank shot	1	-0.2078	14.4127	0.0002	0.9885
action_type	Running Dunk Shot	1	-0.4751	14.4258	0.0011	0.9737
action_type	Running Finger Ro	1	1.8065	14.4220	0.0157	0.9003
action_type	Running Hook Shot	1	-0.4551	14.4165	0.0010	0.9748
action_type	Running Jump Shot	1	0.5140	14.4072	0.0013	0.9715
action_type	Running Layup Sho	1	0.7189	14.4101	0.0025	0.9602
action_type	Running Pull-Up J	1	0.8701	14.4573	0.0036	0.9520
action_type	Running Reverse L	1	1.2741	14.4267	0.0078	0.9296
action_type	Running Slam Dunk	1	-10.4737	442.5	0.0006	0.9811
action_type	Running Tip Shot	1	13.9449	441.9	0.0010	0.9748
action_type	Slam Dunk Shot	1	-2.3141	14.4126	0.0258	0.8724
action_type	Step Back Jump sh	1	1.1143	14.4084	0.0060	0.9384
action_type	Tip Layup Shot	1	1.6274	14.4746	0.0126	0.9105
action_type	Tip Shot	1	2.2985	14.4079	0.0255	0.8733
action_type	Turnaround Bank s	1	0.0874	14.4105	0.0000	0.9952
action_type	Turnaround Fadeaw	1	1.2102	14.4074	0.0071	0.9331
action_type	Turnaround Finger	1	-10.2887	312.4	0.0011	0.9737
action_type	Turnaround Hook S	1	1.5760	14.4240	0.0119	0.9130
period	1	1	-0.1045	0.1343	0.6057	0.4364
period	2	1	-0.0567	0.1345	0.1777	0.6734
period	3	1	-0.0379	0.1343	0.0799	0.7775
period	4	1	0.0782	0.1345	0.3385	0.5607
period	5	1	-0.0204	0.1734	0.0138	0.9064
period	6	1	0.1700	0.3708	0.2101	0.6467
minutes_remaining		1	-0.0150	0.00405	13.7986	0.0002
seconds_remaining		1	-0.00341	0.000784	18.8664	<.0001
shot_zone_area	Back Court(BC)	1	9.4226	106.1	0.0079	0.9292
shot_zone_area	Center(C)	1	-1.9895	21.2194	0.0088	0.9253

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
shot_zone_area	Left Side Center(LC)	1	-1.9311	21.2194	0.0083	0.9275
shot_zone_area	Left Side(L)	1	-1.6881	21.2195	0.0063	0.9366
shot_zone_area	Right Side Center(RC)	1	-2.0308	21.2194	0.0092	0.9238
shot_zone_basic	Above the Break 3	1	1.5021	18.1888	0.0068	0.9342
shot_zone_basic	Backcourt	1	-6.8411	109.1	0.0039	0.9500
shot_zone_basic	In The Paint (Non-RA)	1	1.0751	18.1888	0.0035	0.9529
shot_zone_basic	Left Corner 3	1	0.9640	18.1891	0.0028	0.9577
shot_zone_basic	Mid-Range	1	1.1631	18.1888	0.0041	0.9490
shot_zone_basic	Restricted Area	1	0.8793	18.1892	0.0023	0.9614
shot_zone_range	16-24 ft.	1	-0.1346	0.0534	6.3592	0.0117
shot_zone_range	24+ ft.	1	-0.2978	0.0953	9.7558	0.0018
shot_zone_range	8-16 ft.	0	0	.	.	.
shot_zone_range	Back Court Shot	0	0	.	.	.
game_date		1	0.000037	8.32E-6	19.8546	<.0001
attendance		1	-0.00018	0.000013	188.4634	<.0001
arena_temp		1	-0.0347	0.00678	26.1973	<.0001

Odds Ratio Estimates				
Effect		Point Estimate	95% Wald Confidence Limits	
action_type	Alley Oop Dunk Sh vs Turnaround Jump S	0.081	0.032	0.209
action_type	Alley Oop Layup s vs Turnaround Jump S	0.612	0.335	1.118
action_type	Cutting Layup Sho vs Turnaround Jump S	0.553	0.098	3.115
action_type	Driving Bank shot vs Turnaround Jump S	0.601	0.052	6.953
action_type	Driving Dunk Shot vs Turnaround Jump S	0.036	0.015	0.084
action_type	Driving Finger Ro vs Turnaround Jump S	0.225	0.126	0.401
action_type	Driving Floating vs Turnaround Jump S	1.014	0.137	7.533
action_type	Driving Hook Shot vs Turnaround Jump S	0.773	0.246	2.425
action_type	Driving Jump shot vs Turnaround Jump S	1.722	0.736	4.026
action_type	Driving Layup Sho vs Turnaround Jump S	0.518	0.384	0.699
action_type	Driving Reverse L vs Turnaround Jump S	0.447	0.253	0.792
action_type	Driving Slam Dunk vs Turnaround Jump S	0.032	0.004	0.236
action_type	Dunk Shot vs Turnaround Jump S	0.433	0.282	0.664
action_type	Fadeaway Bank sho vs Turnaround Jump S	0.153	0.045	0.514
action_type	Fadeaway Jump Sho vs Turnaround Jump S	1.078	0.889	1.306

The LOGISTIC Procedure

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Odds Ratio Estimates				
Effect		Point Estimate	95% Wald Confidence Limits	
action_type	Finger Roll Layup vs Turnaround Jump S	0.301	0.110	0.822
action_type	Finger Roll Shot vs Turnaround Jump S	1.614	0.720	3.617
action_type	Floating Jump sho vs Turnaround Jump S	0.496	0.307	0.803
action_type	Follow Up Dunk Sh vs Turnaround Jump S	0.159	0.020	1.281
action_type	Hook Bank Shot vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Hook Shot vs Turnaround Jump S	2.345	1.415	3.886
action_type	Jump Bank Shot vs Turnaround Jump S	0.380	0.278	0.518
action_type	Jump Hook Shot vs Turnaround Jump S	0.461	0.163	1.303
action_type	Jump Shot vs Turnaround Jump S	3.332	2.887	3.846
action_type	Layup Shot vs Turnaround Jump S	2.346	1.750	3.146
action_type	Pullup Bank shot vs Turnaround Jump S	1.050	0.314	3.505
action_type	Pullup Jump shot vs Turnaround Jump S	0.565	0.435	0.734
action_type	Putback Dunk Shot vs Turnaround Jump S	0.805	0.070	9.217
action_type	Putback Layup Sho vs Turnaround Jump S	0.595	0.144	2.458
action_type	Putback Slam Dunk vs Turnaround Jump S	1.525	0.094	24.738
action_type	Reverse Dunk Shot vs Turnaround Jump S	0.135	0.052	0.353
action_type	Reverse Layup Sho vs Turnaround Jump S	0.853	0.596	1.222
action_type	Reverse Slam Dunk vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Running Bank shot vs Turnaround Jump S	0.234	0.103	0.536
action_type	Running Dunk Shot vs Turnaround Jump S	0.179	0.040	0.806
action_type	Running Finger Ro vs Turnaround Jump S	1.757	0.460	6.716
action_type	Running Hook Shot vs Turnaround Jump S	0.183	0.063	0.528
action_type	Running Jump Shot vs Turnaround Jump S	0.482	0.388	0.599
action_type	Running Layup Sho vs Turnaround Jump S	0.592	0.306	1.148
action_type	Running Pull-Up J vs Turnaround Jump S	0.689	0.062	7.686
action_type	Running Reverse L vs Turnaround Jump S	1.032	0.222	4.791
action_type	Running Slam Dunk vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Running Tip Shot vs Turnaround Jump S	>999.999	<0.001	>999.999
action_type	Slam Dunk Shot vs Turnaround Jump S	0.029	0.012	0.067
action_type	Step Back Jump sh vs Turnaround Jump S	0.879	0.576	1.342
action_type	Tip Layup Shot vs Turnaround Jump S	1.469	0.089	24.360
action_type	Tip Shot vs Turnaround Jump S	2.874	1.852	4.459
action_type	Turnaround Bank s vs Turnaround Jump S	0.315	0.164	0.606
action_type	Turnaround Fadeaw vs Turnaround Jump S	0.968	0.753	1.244

The LOGISTIC Procedure

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Odds Ratio Estimates				
Effect		Point Estimate	95% Wald Confidence Limits	
action_type	Turnaround Finger vs Turnaround Jump S	<0.001	<0.001	>999.999
action_type	Turnaround Hook S vs Turnaround Jump S	1.395	0.342	5.694
period	1 vs 7	0.927	0.187	4.602
period	2 vs 7	0.972	0.196	4.828
period	3 vs 7	0.991	0.200	4.918
period	4 vs 7	1.113	0.224	5.525
period	5 vs 7	1.008	0.199	5.104
period	6 vs 7	1.220	0.203	7.315
minutes_remaining		0.985	0.977	0.993
seconds_remaining		0.997	0.995	0.998
shot_zone_area	Back Court(BC) vs Right Side(R)	>999.999	<0.001	>999.999
shot_zone_area	Center(C) vs Right Side(R)	0.814	0.727	0.911
shot_zone_area	Left Side Center(LC) vs Right Side(R)	0.862	0.763	0.975
shot_zone_area	Left Side(L) vs Right Side(R)	1.100	0.988	1.224
shot_zone_area	Right Side Center(RC) vs Right Side(R)	0.781	0.694	0.879
shot_zone_basic	Above the Break 3 vs Right Corner 3	1.277	0.986	1.655
shot_zone_basic	Backcourt vs Right Corner 3	<0.001	<0.001	>999.999
shot_zone_basic	In The Paint (Non-RA) vs Right Corner 3	0.833	0.595	1.168
shot_zone_basic	Left Corner 3 vs Right Corner 3	0.746	0.517	1.076
shot_zone_basic	Mid-Range vs Right Corner 3	0.910	0.657	1.260
shot_zone_basic	Restricted Area vs Right Corner 3	0.685	0.440	1.066
shot_zone_range	16-24 ft. vs Less Than 8 ft.	0.567	0.477	0.675
shot_zone_range	24+ ft. vs Less Than 8 ft.	0.482	0.350	0.663
game_date		1.000	1.000	1.000
attendance		1.000	1.000	1.000
arena_temp		0.966	0.953	0.979

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	71.2	Somers' D	0.423
Percent Discordant	28.8	Gamma	0.423
Percent Tied	0.0	Tau-a	0.209
Pairs	163169880	c	0.712

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
0.6475	4	0.9576

Analysis of Effects Eligible for Removal			
Effect	DF	Wald Chi-Square	Pr > ChiSq
action_type	51	2206.7239	<.0001
period	6	23.1797	0.0007
minutes_remaining	1	13.7986	0.0002
seconds_remaining	1	18.8664	<.0001
shot_zone_area	5	36.6999	<.0001
shot_zone_basic	6	22.5584	0.0010
shot_zone_range	2	42.0992	<.0001
game_date	1	19.8546	<.0001
attendance	1	188.4634	<.0001
arena_temp	1	26.1973	<.0001

Note: No (additional) effects met the 0.3 significance level for removal from the model.

Summary of Backward Elimination					
Step	Effect Removed	DF	Number In	Wald Chi-Square	Pr > ChiSq
1	playoffs	1	13	0.0216	0.8832
2	avgnoisedb	1	12	0.1317	0.7167
3	shot_distance	1	11	0.1419	0.7064
4	shot_type	1	10	0.3515	0.5532

Partition for the Hosmer and Lemeshow Test					
Group	Total	shot_made_flag = 0		shot_made_flag = 1	
		Observed	Expected	Observed	Expected
1	2570	355	362.26	2215	2207.74
2	2570	744	736.22	1826	1833.78
3	2570	1098	1107.24	1472	1462.76
4	2570	1492	1465.61	1078	1104.39
5	2570	1568	1581.89	1002	988.11
6	2570	1633	1655.53	937	914.47
7	2570	1720	1719.50	850	850.50
8	2570	1805	1780.84	765	789.16

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Partition for the Hosmer and Lemeshow Test					
Group	Total	shot_made_flag = 0		shot_made_flag = 1	
		Observed	Expected	Observed	Expected
9	2570	1868	1849.30	702	720.70
10	2567	1949	1973.60	618	593.40

Hosmer and Lemeshow Goodness-of-Fit Test		
Chi-Square	DF	Pr > ChiSq
5.7739	8	0.6725