Wine Scoring Analysis

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Introduction

Analysis Question:

What type of wines have high Judge Rating Score?

What are the various indicators of Judge Rating Score?

Source(s):

https://osvinhos.blogspot.com/

https://data.world/loliveira1999/portuguese-wine-dataset-from-blogosvinhos

Data Preparation

Used RStudio and Excel

Removed any columns that were difficult to quantify

Created dummy variables

Found the most popular types of a variable to use

Data Cleaning in R

- Cleaned data to remove uninformative points
- Grouped by Producer and kept five most popular
- Grouped by Region and kept nine most popular
- Wanted to use Caste but parsing was out of scope

```
#Load library
library(readr)
library(dplyr)

#Load data file
df <- read_csv('BlogOsVinhos.csv')
#Remove specific year
df <- subset(df, Year != 1000 & Year != 1780)
df$Region <- factor(df$Region)

test2 <- test[order(test$n, decreasing = TRUE),]

# Region narrow down
test <- group_by(df, Region) %>% summarise(n=n())
test2 <- test[order(test$n, decreasing = TRUE),]
region_topn <- top_n(test2, 10)
sum(region_topn$n)

mat <- (levels(df$Region) !="Regional Alentejo"&
          levels(df$Region) !="DOC Douro"&
          levels(df$Region) !="DOC Alentejo"&
          levels(df$Region) !="Regional Península de Setúbal"&
          levels(df$Region) !="Espanha"&
          levels(df$Region) !="DOC Dão"&
          levels(df$Region) !="DOC Vinhos Verdes"&
        levels(df$Region) !="Argentina"&
        levels(df$Region) !="França")
levels(df$Region)[mat] <- "Other"

#Create binary variable for producer

df$`Region:Esporão S.A.` <- as.integer(df$Region=="Regional Alentejo")
df$`Region:DOC Douro.` <- as.integer(df$Region=="DOC Douro")
df$`Region:DOC Alentejo.` <- as.integer(df$Region=="DOC Alentejo")
df$`Region:Regional Península de Setúbal.` <- as.integer(df$Region=="Regional Península de Setúbal")
df$`Region:Espanha` <- as.integer(df$Region=="Espanha")
df$`Region:DOC Dão` <- as.integer(df$Region=="DOC Dão")
df$`Region:DOC Vinhos Verdes` <- as.integer(df$Region=="DOC Vinhos Verdes")
df$`Region:Argentina` <- as.integer(df$Region=="Argentina")
df$`Region:França` <- as.integer(df$Region=="França")
df$`Region:Other` <- as.integer(df$Region=="Other")
```

Data Cleaning in Excel

- Removed columns in Portuguese
- Eliminated nulls
- Created dummy variables for Color, Producer, Region, and Judge

	Region	Year	Color	Castes	AlcoholPercentage	Producer
	Regional Alentejo	2007	Rosé	Cabernet Sauvignon, Syrah e Touriga Nacional	13.5	Tiago Mateus
	Regional Alentejo	2009	Red	Cabernet Sauvignon, Syrah, Alicante Bouschet e Touriga Nacional	14.0	Tiago Mateus
	Regional Alentejo	2010	Red	Cabernet Sauvignon, Syrah, Alicante Bouschet e Touriga Nacional	14.0	Tiago Mateus
	Regional Alentejo	2011	White	Arinto, Roupeiro e Viognier	13.5	Tiago Mateus
	Regional Alentejo	2012	White	Encruzado, Verdelho e Viognier	13.5	Tiago Mateus
	Regional Alentejo	2013	Rosé	Touriga Nacional e Syrah	13.0	Tiago Mateus
	Regional Alentejo	2012	Red	Touriga Nacional, Alicante Bouschet e Syrah	14.5	Tiago Mateus
	Regional Alentejo	2014	White	Encruzado, Verdelho e Viognier	13.5	Tiago Mateus
	Regional Alentejo	2007	Red	Aragonez, Cabernet Sauvignon, Trincadeira e Alicante Bouschet	13.5	Tiago Mateus
	Regional Alentejo	2009	Red	Aragonez, Cabernet Sauvignon, Trincadeira e Touriga Nacional	14.0	Tiago Mateus
	Regional Alentejo	2010	Red	Touriga Nacional, Cabernet Sauvignon, Trincadeira e Aragonês	14.0	Tiago Mateus
	Regional Alentejo	2011	Red	Touriga Nacional, Trincadeira, Aragonez e outras	14.0	Tiago Mateus
	Regional Alentejo	2014	Red	Aragonez, Trincadeira e Touriga Nacional	14.0	Tiago Mateus
	Regional Alentejo	2015	White	Antão Vaz, Verdelho e Viognier	13.0	Tiago Mateus
	Regional Tejo	2009	Red	Cabernet Sauvignon	14.5	Pitada Verde
	DOC Douro	2014	White	Viosinho, Rabigato e Gouveio	13.5	100 Hectares
	DOC Douro	2012	Red	Touriga Nacional	14.0	100 Hectares
	Regional Vinhos Verdes	1000	White	Chardonnay e Alvarinho	12.5	Castanheira
16	Regional Vinhos Verdes	1000	White	Chardonnay e Alvarinho	12.5	Castanheira
	Argentina	1100	Red	Tempranillo	13.0	-
	Espanha	2007	Red	Cabernet Sauvignon, Callet, Fogoneu, Syrah e Merlot	14.0	4 Kilos Viníc
	DOC Douro	2005	Red	Tinto Cão, Tinta Barroca, Tinta Roriz, Touriga Nacional e Touriga F	14.0	Lemos & Van
	Espanha	1999	Red	Tempranillo, Graciano e Mazuelo	15.0	Bodegas Viní
	DOC Douro	2005	Red	Touriga Nacional, Tinto Cão e Rufete	15.0	Duplo Pr - Se
	Espanha	2012	Red	Callet e Manto Negro	13.0	4 Kilos Viníc
	Regional Tejo	2013	Red	Syrah	15.0	Manuel Rosa
	DOC Tejo	2014	White	Fernão Pires	10.0	Adega Coope
	Espanha	2001	Red	Tempranillo	14.0	Bodegas Aalt
	Espanha	2011	Red	Tinto Fino	15.0	Bodegas Aalt
	Espanha	2015	Red	Tinto Fino	14.5	Bodegas Aalt
	Espanha	2007	Red	Mencía	13.5	Bodega del A
	DOC Douro	2008	White	Rabigato	14.0	Gesprove - G
	Regional Estremadura	2005	Red	Aragonez, Touriga Nacional e Cabernet Sauvignon	14.0	Quinta de Ab
	Espanha	2003	Red	Syrah, Cabernet Sauvignon, Merlot e Tempranillo	14.0	Caves Parès B
	Argentina	2001	Red	Cabernet Sauvignon e Malbec	14.0	Olivier Fourn
rio 2009	DOC Tejo	2009	White	Fernão Pires	13.0	Adega Coope
non & Syrah 2004	Regional Alentejo	2004	Red	Cabernet Sauvignon e Syrah	14.0	Adega Coope
	DOC Alentejo	2003	Red	Aragonez, Trincadeira e Alicate Bouschet	13.5	Adega Coope
	DOC Alentejo	2001	Red	Aragonez, Trincadeira, Castelão e Alicante Bouschet	13.0	Adega Coope
	DOC Alentejo	2003	Red	Aragonez, Trincadeira, Castelão e Alicante Bouschet	13.5	Adega Coope
inot Noir 2004	Regional Alentejo	2004	Red	Tinta Caiada e Pinot Noir	14.0	Adega Coope
l & Syrah 2005	Regional Alentejo	2005	Red	Touriga Nacional e Syrah	13.0	Adega Coope
cante Bouschet 2004	Regional Alentejo	2004	Red	Trincadeira e Alicante Bouschet	14.0	Adega Coope
2011	DOC Vinhos Verdes	2011	White	Loureiro	11.0	Adega Coope
2015	DOC Vinhos Verdes	2015	White	Loureiro	11.0	Adega Coope

Correlation Matrix

	Year	Color:Red	Color:White	Color:Rose	AlcoholPercentage	Average Price in Dollars	Region:Esporão S.A.	Region:DOC Douro.	Region:DOC Alentejo.	Region:Regional Península de Setúbal.	Region:Espanha	Region:DOC Dão	Region:DOC Vinhos Verdes	Region:Argentina	Region:França	Region:Other	JudgeRating
Year	1																
Color:Red	-0.45969	1															
Color:White	0.418888	-0.90469	1														
Color:Rose	0.113724	-0.26222	-0.17394	1													
AlcoholPercentage	-0.12039	0.497733	-0.41184	-0.21761	1												
Average Price in Dollars	-0.04088	0.083551	-0.05479	-0.06901	0.131684	1											
Region:Esporão S.A.	-0.02714	0.111049	-0.11058	-0.00621	0.174073	-0.0094	1										
Region:DOC Douro.	-0.04164	0.07346	-0.05359	-0.04841	0.033093	0.006075	-0.28351	1									
Region:DOC Alentejo.	0.018867	0.030218	-0.00946	-0.04842	0.102086	0.011302	-0.14999	-0.13989	1								
Region:Regional Península de Setúbal.	0.015335	0.003483	-0.01164	0.018312	0.014719	-0.03207	-0.13844	-0.12911	-0.06831	1							
Region:Espanha	-0.00837	0.069443	-0.05751	-0.03024	0.093406	0.069485	-0.12792	-0.1193	-0.06312	-0.05826	1						
Region:DOC Dão	-0.04112	0.00501	-0.00528	0.000387	-0.06463	-0.03274	-0.11617	-0.10835	-0.05732	-0.05291	-0.04889	1					
Region:DOC Vinhos Verdes	0.175246	-0.20498	0.215716	-0.01481	-0.22674	-0.03668	-0.10225	-0.09537	-0.05045	-0.04657	-0.04303	-0.03908	1				
Region:Argentina	-0.03526	0.089453	-0.08121	-0.02281	0.084913	0.040419	-0.10061	-0.09383	-0.04964	-0.04582	-0.04234	-0.03845	-0.03384	1			
Region:França	-0.03023	-0.05997	0.06173	-0.00121	-0.06929	0.035532	-0.09609	-0.08962	-0.04741	-0.04376	-0.04044	-0.03672	-0.03233	-0.0318	1		
Region:Other	0.023541	-0.16485	0.123089	0.102221	-0.20234	-0.02116	-0.31068	-0.28975	-0.15329	-0.14149	-0.13074	-0.11873	-0.10451	-0.10282	-0.09821	1	
JudgeRating	0.119861	0.147286	-0.06306	-0.19758	0.418566	0.298613	0.003314	0.072364	0.059005	-0.01519	0.117588	-0.05865	-0.04229	0.091804	0.006485	-0.15425	1

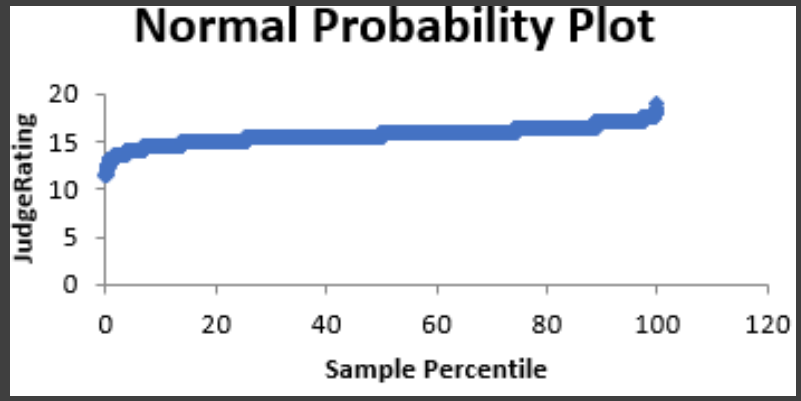
Modeling Stage 1

Regression Statistics	
Multiple R	0.545524
R Square	0.297597
Adjusted R Square	0.293519
Standard Error	0.781529
Observations	2917

ANOVA

	df	*SS*	*MS*	*F*	*gnificance F*
Regression	16	750.9804	46.93627	87.82351	1.7E-234
Residual	2902	1772.504	0.610787		
Total	2918	2523.484			

	Coefficients	*tandard Err*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	-65.3666	7.435458	-8.7912	2.49E-18	-79.9459	-50.7873	-79.9459	-50.7873
Year	0.03749	0.003712	10.09991	1.35E-23	0.030211	0.044768	0.030211	0.044768
Color:Red	0.447798	0.075377	5.940777	3.17E-09	0.3	0.595596	0.3	0.595596
Color:White	0.489469	0.071056	6.888498	6.89E-12	0.350143	0.628794	0.350143	0.628794
Color:Rosé	0	0	65535	#NUM!	0	0	0	0
AlcoholPercentage	0.405779	0.020174	20.11428	#NUM!	0.366223	0.445335	0.366223	0.445335
Average Price in Dollars	0.008623	0.000567	15.19962	2.91E-50	0.00751	0.009735	0.00751	0.009735
Region:Esporão S.A.	-0.37396	0.086171	-4.33973	1.48E-05	-0.54292	-0.205	-0.54292	-0.205
Region:DOC Douro.	-0.16992	0.08691	-1.9551	0.050667	-0.34033	0.000494	-0.34033	0.000494
Region:DOC Alentejo.	-0.25134	0.097896	-2.56743	0.010295	-0.44329	-0.05939	-0.44329	-0.05939
Region:Regional Península de Setúbal.	-0.33293	0.10056	-3.31072	0.000942	-0.5301	-0.13575	-0.5301	-0.13575
Region:Espanha	-0.02242	0.103001	-0.21763	0.827733	-0.22438	0.179546	-0.22438	0.179546
Region:DOC Dão	-0.3632	0.107679	-3.37297	0.000753	-0.57433	-0.15206	-0.57433	-0.15206
Region:DOC Vinhos Verdes	-0.20322	0.117645	-1.72743	0.084198	-0.4339	0.027453	-0.4339	0.027453
Region:Argentina	0	0	65535	#NUM!	0	0	0	0
Region:França	-0.12954	0.117763	-1.09997	#NUM!	-0.36044	0.101372	-0.36044	0.101372
Region:Other	-0.39399	0.087092	-4.52389	6.32E-06	-0.56476	-0.22323	-0.56476	-0.22323



- Regression Model without transformation
- Low Adjusted R Square (0.2935)
- Normal probability plot suggests need of transformation on variable

Modeling Stage 2

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.774221
R Square	0.599418
Adjusted R Square	0.596797
Standard Error	0.590197
Observations	2917

ANOVA

	df	*SS*	*MS*	*F*	*gnificance F*
Regression	16	1512.623	94.53892	310.1761	0
Residual	2902	1010.862	0.348333		
Total	2918	2523.484			

	Coefficients	*ndard Err*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	-481.416	42.74588	-11.2623	7.92E-29	-565.231	-397.6	-565.231	-397.6
ln(Year)	64.2074	5.626978	11.41064	1.56E-29	53.17413	75.24068	53.17413	75.24068
Color:Red	0.064022	0.057384	1.115679	0.264652	-0.0485	0.17654	-0.0485	0.17654
Color:White	0.140993	0.05417	2.60278	0.009294	0.034777	0.247209	0.034777	0.247209
Color:Rosé	0	0	65535	#NUM!	0	0	0	0
ln(AlcoholPercentage)	2.49988	0.195557	12.78337	#NUM!	2.116435	2.883325	2.116435	2.883325
ln(Average Price in Dollars)	0.952557	0.01837	51.85363	0	0.916537	0.988577	0.916537	0.988577
Region:Esporão S.A.	-0.13764	0.065264	-2.10893	0.035036	-0.26561	-0.00967	-0.26561	-0.00967
Region:DOC Douro.	-0.01133	0.065719	-0.17245	0.863095	-0.14019	0.117527	-0.14019	0.117527
Region:DOC Alentejo.	-0.0457	0.074049	-0.6172	0.537153	-0.1909	0.099492	-0.1909	0.099492
Region:Regional Península de Setúbal.	0.044243	0.076363	0.579371	0.562384	-0.10549	0.193975	-0.10549	0.193975
Region:Espanha	-0.09913	0.077802	-1.27408	0.202737	-0.25168	0.053427	-0.25168	0.053427
Region:DOC Dão	-0.03498	0.081609	-0.42863	0.668223	-0.195	0.125038	-0.195	0.125038
Region:DOC Vinhos Verdes	0.028264	0.088958	0.317727	0.750715	-0.14616	0.202692	-0.14616	0.202692
Region:Argentina	0	0	65535	#NUM!	0	0	0	0
Region:França	-0.32931	0.088986	-3.70069	#NUM!	-0.50379	-0.15483	-0.50379	-0.15483
Region:Other	-0.15155	0.065981	-2.2969	0.021696	-0.28092	-0.02218	-0.28092	-0.02218

- Regression with log transformation on x variable
- Increase in Adjusted R Square (0.5967)
- Most of Regions variables have high p-value

Modeling Stage 3

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.764087							
R Square	0.583829							
Adjusted R Square	0.581132							
Standard Error	0.03934							
Observations	2917							
ANOVA								
	df	*SS*	*MS*	*F*	*gnificance F*			
Regression	16	6.300538	0.393784	290.7924	0			
Residual	2902	4.491217	0.001548					
Total	2918	10.79175						
	Coefficients	*tandard Err*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*pper 95.0%*
Intercept	-31.7018	2.849249	-11.1264	3.44E-28	-37.2886	-26.1151	-37.2886	-26.1151
ln(Year)	4.45326	0.375069	11.87317	8.77E-32	3.717831	5.188689	3.717831	5.188689
Color:Red	0.004418	0.003825	1.155004	0.248184	-0.00308	0.011918	-0.00308	0.011918
Color:White	0.01029	0.003611	2.849802	0.004405	0.00321	0.01737	0.00321	0.01737
Color:Rosé	0	0	65535	#NUM!	0	0	0	0
ln(AlcoholPercentage)	0.168223	0.013035	12.90556	#NUM!	0.142665	0.193782	0.142665	0.193782
ln(Average Price in Dollars)	0.060946	0.001224	49.7731	0	0.058545	0.063347	0.058545	0.063347
Region:Esporão S.A.	-0.00858	0.00435	-1.97309	0.04858	-0.01711	-5.4E-05	-0.01711	-5.4E-05
Region:DOC Douro.	-0.00057	0.004381	-0.12899	0.897375	-0.00915	0.008024	-0.00915	0.008024
Region:DOC Alentejo.	-0.00297	0.004936	-0.60084	0.547997	-0.01264	0.006712	-0.01264	0.006712
Region:Regional Península de Setúbal.	0.003342	0.00509	0.656612	0.511483	-0.00664	0.013323	-0.00664	0.013323
Region:Espanha	-0.00668	0.005186	-1.2883	0.197745	-0.01685	0.003487	-0.01685	0.003487
Region:DOC Dão	-0.00235	0.00544	-0.43142	0.666193	-0.01301	0.008319	-0.01301	0.008319
Region:DOC Vinhos Verdes	0.001648	0.00593	0.277935	0.781082	-0.00998	0.013275	-0.00998	0.013275
Region:Argentina	0	0	65535	#NUM!	0	0	0	0
Region:França	-0.02023	0.005931	-3.41074	#NUM!	-0.03186	-0.0086	-0.03186	-0.0086
Region:Other	-0.00965	0.004398	-2.19503	0.02824	-0.01828	-0.00103	-0.01828	-0.00103

- Log transformation on x and y variable
- Adjusted R Square has decreased compared to previous model (0.5967->0.5811)
- Most of Region variables have high p-value

Modeling Stage 4

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.77770797
R Square	0.60482969
Adjusted R Square	0.60195641
Standard Error	0.58589445
Observations	2917

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	15	1526.27819	101.751879	404.205527	0
Residual	2905	997.206043	0.3432723		
Total	2920	2523.48423			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-667.91706	189.80645	-3.5189376	0.00043993	-1040.0859	-295.74819	-10898.115	9562.28082
ln(Year)	89.3294634	24.9387488	3.5819545	0.00034663	40.4300402	138.228887	-1254.8205	1433.47944
Color:Red	236.578987	197.027984	1.200738	0.22995075	-149.74973	622.907701	-10382.846	10856.0035
Color:White	285.052811	206.195475	1.3824397	0.166943	-119.25135	689.356968	-10828.482	11398.5872
Color:Rose	0	0	65535	#NUM!	0	0	0	0
ln(AlcPerc)	0.84721609	0.69253766	1.22335021	#NUM!	-0.5106985	2.20513073	-36.479215	38.1736468
ln(avgPrice)	0.6570177	0.1232547	5.33056904	0.0000001	0.41534223	0.89869317	-5.9861706	7.30020602
red*ln(AlcPerc)	3.5314427	0.76960531	4.58864126	0.0000047	2.02241527	5.04047013	-37.948784	45.0116699
red*ln(avgPrice)	0.30297343	0.12533658	2.41727867	0.01569824	0.05721586	0.548731	-6.4524239	7.05837076
red*ln(year)	-32.360517	25.8979575	-1.2495393	0.21156854	-83.140738	18.4197046	-1428.21	1363.48894
white*ln(AlcPerc)	0.80276457	0.73462765	1.09275028	0.27459407	-0.6376793	2.24320847	-38.792235	40.3977639
white*ln(avgPrice)	0.15832002	0.12733442	1.2433403	0.21384279	-0.0913549	0.40799492	-6.7047572	7.02139727
white*ln(year)	-37.74415	27.0921799	-1.3931751	0.16367344	-90.86598	15.37768	-1497.9599	1422.47157
rose*ln(AlcPerc)	0	0	65535	#NUM!	0	0	0	0
rose*ln(avgPrice)	0	0	65535	#NUM!	0	0	0	0
rose*ln(year)	0	0	65535	#NUM!	0	0	0	0

- Regression with log transformation on x variables
- Interaction between variables
- Adjusted R Square: 0.60196
- Red highlight: p-value > 0.05

Note: #NUM! for Color: Rose and related x-variables indicate existence of dummy variable.

Modeling Stage 5

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.7846917
R Square	0.6157411
Adjusted R Square	0.6138873
Standard Error	0.5780476
Observations	2917

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	14	1553.8128	110.98663	332.15707	0
Residual	2902	969.67139	0.334139		
Total	2916	2523.4842			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*.ower 95.0%*	*Jpper 95.0%*
Intercept	-7299.797	1762.2142	-4.1424	3.535E-05	-10755.11	-3844.48	-10755.11	-3844.48
ln(Year)	960.50997	231.69611	4.1455594	3.487E-05	506.20446	1414.8155	506.20446	1414.8155
Color:Red	-247.8867	207.23057	-1.196188	0.231721	-654.2206	158.44725	-654.2206	158.44725
Color:White	-38.23525	207.62823	-0.184152	0.8539067	-445.3489	368.8784	-445.3489	368.8784
ln(AlcPerc)	2456.6634	704.93388	3.4849557	0.0004995	1074.4418	3838.8849	1074.4418	3838.8849
ln(avgPrice)	288.15169	64.34265	4.4783934	7.811E-06	161.9898	414.31359	161.9898	414.31359
red*ln(AlcPerc)	4.6298936	0.8331697	5.5569633	2.994E-08	2.9962296	6.2635576	2.9962296	6.2635576
red*ln(avgPrice)	0.3340312	0.1277717	2.6142824	0.0089877	0.0834989	0.5845636	0.0834989	0.5845636
red*ln(year)	30.962078	27.256107	1.1359685	0.2560636	-22.4812	84.405357	-22.4812	84.405357
white*ln(AlcPerc)	2.4921854	0.7706958	3.2336822	0.0012358	0.9810191	4.0033518	0.9810191	4.0033518
white*ln(avgPrice)	0.164297	0.1256682	1.3073879	0.1911846	-0.082111	0.4107048	-0.082111	0.4107048
white*ln(year)	4.187921	27.276863	0.1535338	0.877988	-49.29606	57.671897	-49.29606	57.671897
ln(AlcPerc)*ln(avgPrice)	-1.564119	0.2877592	-5.435514	5.917E-08	-2.128352	-0.999886	-2.128352	-0.999886
ln(AlcPerc)*ln(year)	-322.5864	92.68438	-3.480483	0.0005079	-504.3203	-140.8526	-504.3203	-140.8526
ln(avgPrice)*ln(year)	-37.27177	8.4709381	-4.399958	1.122E-05	-53.88143	-20.66211	-53.88143	-20.66211

- Regression with log transformation on x variables
- Excluded Dummy Variable: Color(Rose)
- Interaction between variables
- Adjusted R Square: 0.61389
- Red highlight: p-value > 0.05

Note: Increase in adjusted R Square, Decrease in # of variables with high p-value compared to Model 4.

Conclusion

We have concluded that the regression model from **Model 5** is the most fit model for predicting Judge Rating Score on given data:

JudgeRating =

- 7299.8 + 960.51 **ln(Year)** - 247.88 **color(red)** - 38.235 **color(white)** + 2456.7 **ln(AlcoholPercentage)** + 288.15 **ln(AvgPriceUSD)**
+ 4.6299 **C(Red)*ln(AlcPerc)** + 0.33403 **C(Red)*ln(AvgPriceUSD)** + 30.962 **C(Red)*ln(Year)**
+ 2.4922 **C(White)*ln(AlcPerc)** + 0.16429 **C(White)*ln(AvgPriceUSD)** + 4.1879 **C(White)*ln(Year)**
- 1.5641 **ln(AlcPerc)*ln(avgPrice)** - 322.59 **ln(AlcPerc)*ln(year)** - 37.272 **ln(avgPrice)*ln(year)** + 2902

Order of Importance:
Average Price > Year > Alcohol Percentage > Color

- Some Limitations and Improvements:

JudgeNotes
Cor vermelha brilhante e aromas iniciais dominados por um apimentado que aliado às notas
Cor avermelhada e nariz muito aromático, onde as notas de fruta vermelha combinadas com
Apresenta uma cor rubi agradavelmente concentrada no centro e uma auréola de tonalidade
Cor amarela brilhante e nariz delicadamente marcado por notas de fruta tropical madura mi
Apresenta uma cor amarela ligeiramente pálida e um nariz rico em aromas de fruta tropical
Cor vermelha intensa e nariz rico em aromas de frutos vermelhos, especialmente morangos
Cor rubi de intensidade média/alta e nariz expressivo, onde os aromas de fruta vermelha m
Cor amarela brilhante e nariz elegante e muito fresco, onde os aromas minerais se misturan
Cor rubi de centro bem escuro e de laivos violetas brilhantes, no nariz sobressaiem os frutos
Cor rubi concentrada e leve tonalidade violeta, o nariz revela-se perfumado e rico em aroma
Cor rubi intensa e nariz muito aromático, onde se destacam os frutos silvestres, um delicado
Cor rubi de média concentração, o nariz evidencia agradáveis aromas de fruta vermelha e no
Apresenta uma cor rubi de tonalidade violácea, o nariz evidencia aromas florais e de frutos