

Corporate Governance and Company Performance

Missing Values & Variable Importance from adaboost

SPX

```
dim(spx)
```

```
## [1] 500 61
```

```
dim(spx[complete.cases(spx), ])
```

```
## [1] 56 61
```

Which columns have the most nulls

```
spx.imp.missing <- merge(spx.missing.df, spx.imp.df, by=c("Var"))  
tail(spx.imp.missing[order(spx.imp.missing$Null.Count), ], 24)
```

##		Var	Null.Count	Importance
## 49	X..Indep.Dir.on.Comp.Cmte.1		5	0.0000000
## 33		P.E	8	1.4888593
## 8		Board.Mtgs..	10	1.4345489
## 32		P.B	10	12.9240598
## 50	X..Indep.Dir.on.Nom.Cmte		10	0.0000000
## 6		Board.Duration	12	0.0000000
## 19		Exec.Dir.Bd.Dur	12	0.0000000
## 21		Fincl..l	12	9.2220377
## 30		Oper.ROE	12	1.2682868
## 37		ROE	12	3.8983663
## 7		Board.Mtg.Att..	14	0.4559916
## 29	Norm.NI.to.NI.for.Cmn..		19	2.9726060
## 14		Dvd.P.O	22	1.1765198
## 38		Sust.Gr.Rt	35	0.9046770
## 16		EBITDA.Sh	40	2.3019146
## 34		P.EBITDA	43	5.1652515
## 18		EV.EBITDA.T12M	44	4.9540249
## 28		Net.Debt.to.EBITDA	44	2.0634993
## 56		X5Yr.Avg.Adj.ROE	44	2.5836829
## 24	Indep.Dir.Bd.Mtg.Att..		54	0.2153709
## 11		Cash.Gen.Cash.Reqd	73	2.7137001
## 27		Interest	73	1.7580118
## 36		ROC	167	4.6401709
## 4		Bd.Age.Limit	374	0.0000000

```
summary(spx.imp.missing$Importance)
```

##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	0.000	0.181	1.002	1.786	2.440	12.920

```
summary(spx.imp.missing$Null.Count)
```

##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	2.00	3.00	4.00	22.45	12.50	374.00

SXXP

```
dim(sxxp)
```

```
## [1] 600 61
```

```
dim(sxxp[complete.cases(spx), ])
```

```
## [1] 62 61
```

Which columns have the most nulls

```
sxxp.imp.missing <- merge(sxxp.missing.df, sxxp.imp.df, by=c("Var"))  
tail(sxxp.imp.missing[order(sxxp.imp.missing$Null.Count), ], 25)
```

##		Var	Null.Count	Importance
## 25		Indep.Directors	100	0.57264820
## 51		X..Indep.Directors	100	1.72402523
## 13		Clssfd.Bd.Sys	106	0.03395425
## 11		Cash.Gen.Cash.Reqd	117	2.32434554
## 16		EBITDA.Sh	118	2.05531323
## 27		Interest	120	2.93511962
## 6		Board.Duration	122	0.21678201
## 7		Board.Mtg.Att..	124	1.35622481
## 46		X..Indep.Dir.on.Aud.Cmte	124	0.25692219
## 47		X..Indep.Dir.on.Aud.Cmte.1	125	0.42723663
## 48		X..Indep.Dir.on.Comp.Cmte	125	0.86126662
## 49		X..Indep.Dir.on.Comp.Cmte.1	125	0.18823689
## 28		Net.Debt.to.EBITDA	126	2.46808701
## 18		EV.EBITDA	127	4.10429366
## 34		P.EBITDA.T12M	129	1.91268010
## 50		X..Indep.Dir.on.Nom.Cmte	159	1.03734522
## 19		Exec.Dir.Bd.Dur	191	0.15233767
## 5		Bd.Avg.Age	207	2.01651507
## 1		Age.Old.Dir	209	1.26725338
## 2		Age.Young.Dir	209	2.07915253
## 10		BOD.Age.Rng	209	0.74630609
## 36		ROC	219	3.26257467
## 24		Indep.Dir.Bd.Mtg.Att..	265	1.14993882
## 15		Dvd.Yld	379	0.25427875
## 4		Bd.Age.Limit	492	0.00000000

```
summary(sxxp.imp.missing$Importance)
```

##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	0.0000	0.2844	1.3120	1.7860	2.3600	9.1550

```
summary(sxxp.imp.missing$Null.Count)
```

##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	6.00	13.75	59.00	90.88	125.00	492.00

EEBP

```
dim(eebp)
```

```
## [1] 300 61
```

```
dim(eebp[complete.cases(eebp), ])
```

```
## [1] 0 61
```

Which columns have the most nulls

```
eebp.imp.missing <- merge(eebp.missing.df,eebp.imp.df,by=c("Var"))
```

```
tail(eebp.imp.missing[order(eebp.imp.missing$Null.Count),],25)
```

##		Var	Null.Count	Importance
## 22	Frmr.CEO.or.its.Equiv.on.Bd		170	0.0000000
## 52	X..Non.Exec.Dir.on.Bd		180	0.3512522
## 53	X..NonExec.Dir.on.Bd		180	1.1128363
## 51	X..Indep.Directors		185	0.5352372
## 14	Dvd.P.O		186	0.0718965
## 38	Sust.Gr.Rt		187	0.2131327
## 25	Indep.Directors		188	0.1314925
## 46	X..Indep.Dir.on.Aud.Cmte		189	0.1570557
## 47	X..Indep.Dir.on.Aud.Cmte.1		189	0.4575845
## 23	Indep.Chrprsn		190	0.0000000
## 6	Board.Duration		206	0.1663432
## 8	Board.Mtgs..		209	1.5520810
## 48	X..Indep.Dir.on.Comp.Cmte		216	0.0000000
## 49	X..Indep.Dir.on.Comp.Cmte.1		216	0.0000000
## 13	Clssfd.Bd.Sys		219	0.0000000
## 19	Exec.Dir.Bd.Dur		219	0.0361077
## 5	Bd.Avg.Age		242	0.2995038
## 1	Age.Old.Dir		243	3.0286462
## 2	Age.Young.Dir		243	0.7825815
## 10	BOD.Age.Rng		243	1.6889584
## 50	X..Indep.Dir.on.Nom.Cmte		245	0.1832808
## 7	Board.Mtg.Att..		258	0.1189216
## 24	Indep.Dir.Bd.Mtg.Att..		264	0.2277363
## 15	Dvd.Yld		282	0.0000000
## 4	Bd.Age.Limit		300	0.0000000

```
summary(eebp.imp.missing$Importance)
```

##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	0.00000	0.09301	0.60390	1.78600	1.72800	15.13000

```
summary(eebp.imp.missing$Null.Count)
```

##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	14.0	142.8	162.0	165.0	206.8	300.0