Meta-Forecasting

Metacritic Reviews and How They Relate to Game Sales

The Dataset

Metacritic

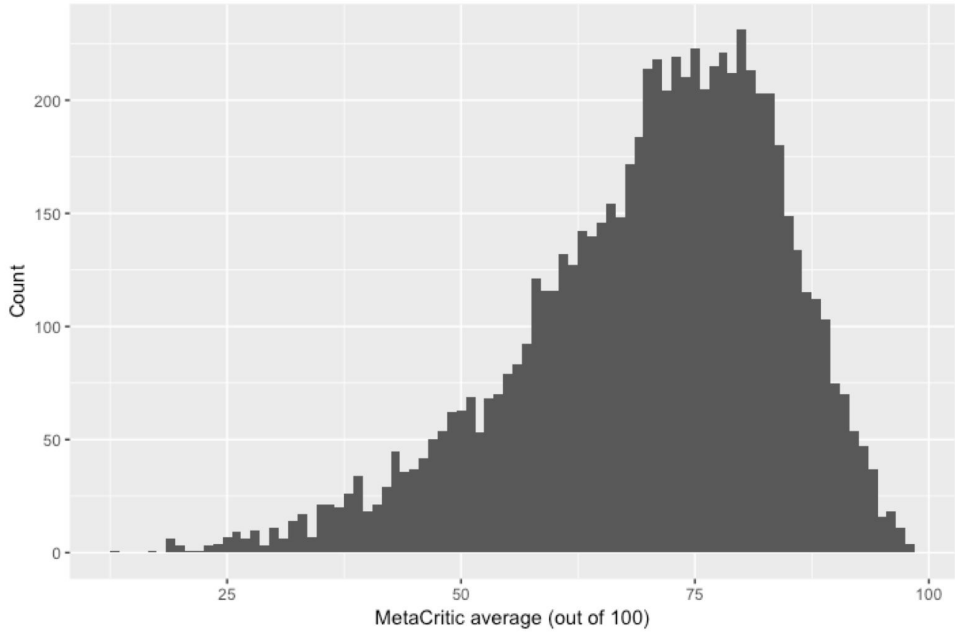
VGChartz

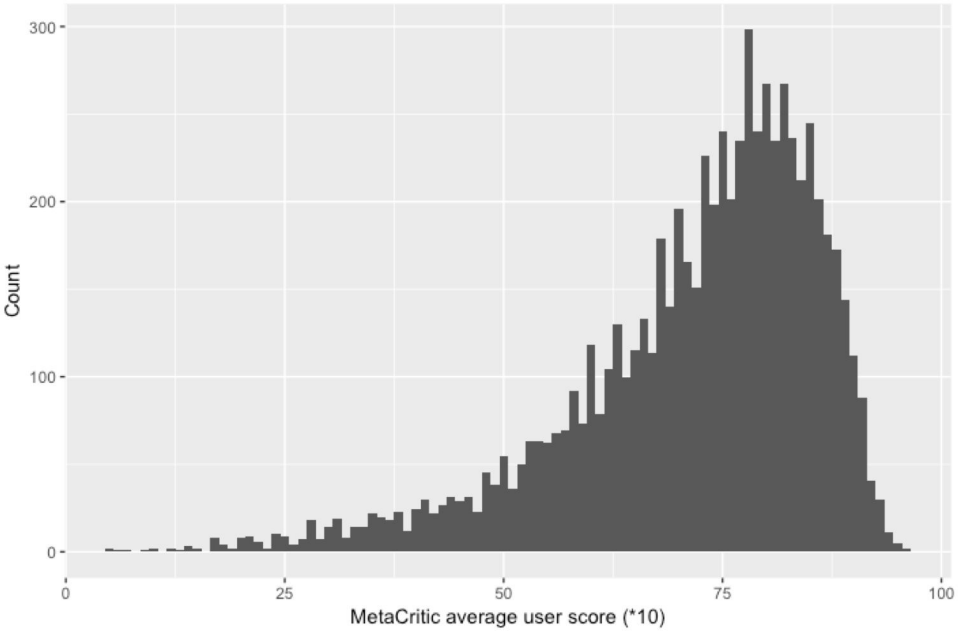
Data-cleaning

- NA values don't work well mathematically
- Deleting data vs. replacing it
- Most important: Sales data AND Scores
- From 16,719 rows to 7,016 rows

es	EU_Sales	JP_Sales	Other_Sales	Global_Sales	Critic_Score	Critic_Count	User_Score	User_Count	Dev
36	28.96	3.77	8.45	82.53	76	51	8	322	Nin
08	3.58	6.81	0.77	40.24	NA	NA	NA	NA	NA
68	12.76	3.79	3.29	35.52	82	73	8.3	709	Nin
61	10.93	3.28	2.95	32.77	80	73	8	192	Nin
27	8.89	10.22	1.00	31.37	NA	NA	NA	NA	NA
20	2.26	4.22	0.58	30.26	NA	NA	NA	NA	NA
28	9.14	6.50	2.88	29.80	89	65	8.5	431	Nin
96	9.18	2.93	2.84	28.92	58	41	6.6	129	Nin
44	6.94	4.70	2.24	28.32	87	80	8.4	594	Nin
93	0.63	0.28	0.47	28.31	NA	NA	NA	NA	NA
05	10.95	1.93	2.74	24.67	NA	NA	NA	NA	NA
71	7.47	4.13	1.90	23.21	91	64	8.6	464	Nin
00	6.18	7.20	0.71	23.10	NA	NA	NA	NA	NA
92	8.03	3.60	2.15	22.70	80	63	7.7	146	Nin
00	4.89	0.24	1.69	21.81	61	45	6.3	106	Goo
01	8.49	2.53	1.77	21.79	80	33	7.4	52	Nin

Reviews



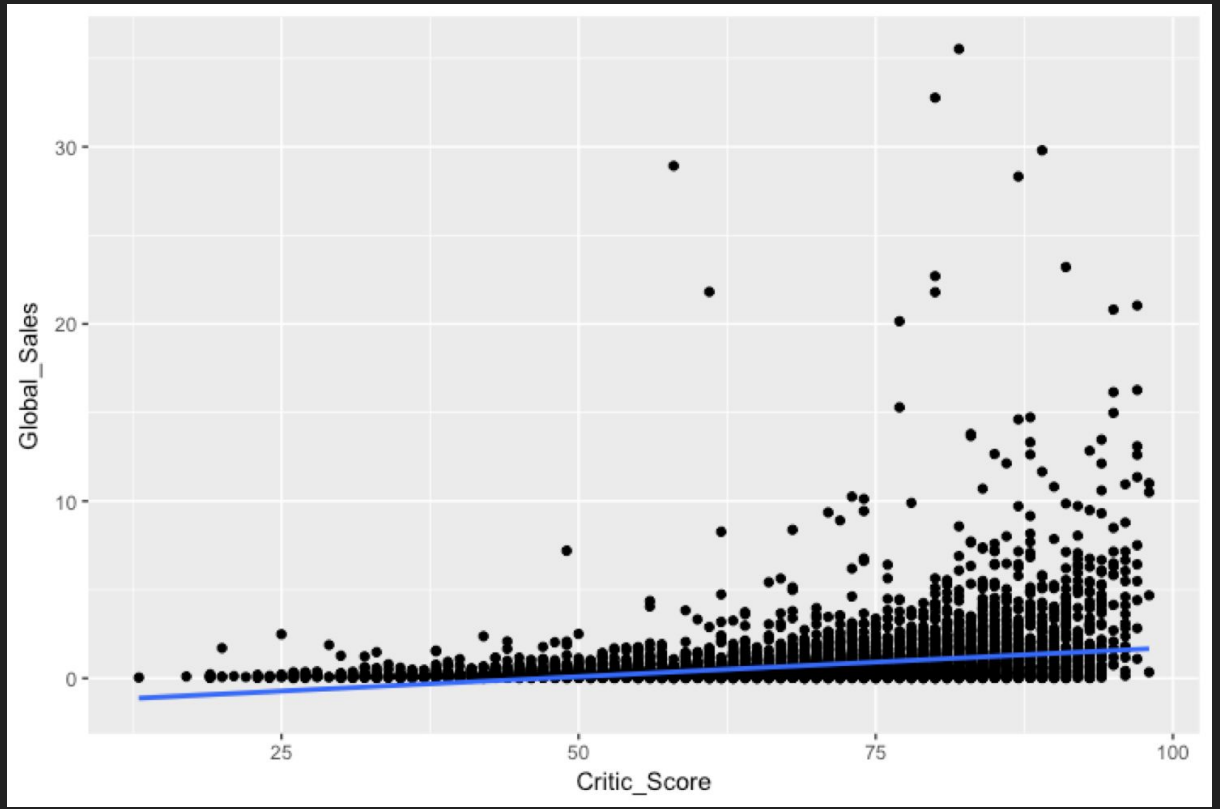


- Average MetaCritic Review Score: 70.249
- Average Review Count (review # per game): 28.78
- P-test for 70 as average? Yes!

- Average MetaCritic User Score (*10): 71.8
- Average Review Count: 173.41
- P-test for 70 as average? No.
- Users want to “shake the boat”

Correlation

- Average game sales (worldwide): $755,000
- Correlation between Metascore and worldwide sales: 0.2713066
- Games with higher review scores sell a bit better than those without!



A Prediction Model

- A linear model to predict how future games will sell based on their Metascore
- Metascore and User Scores are most valuable
- More data including weights don’t help

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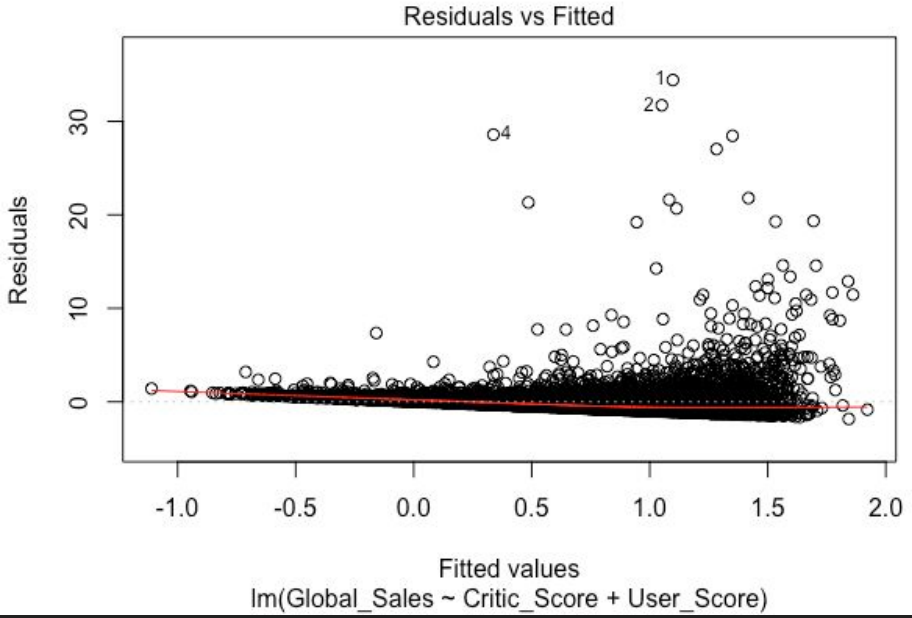
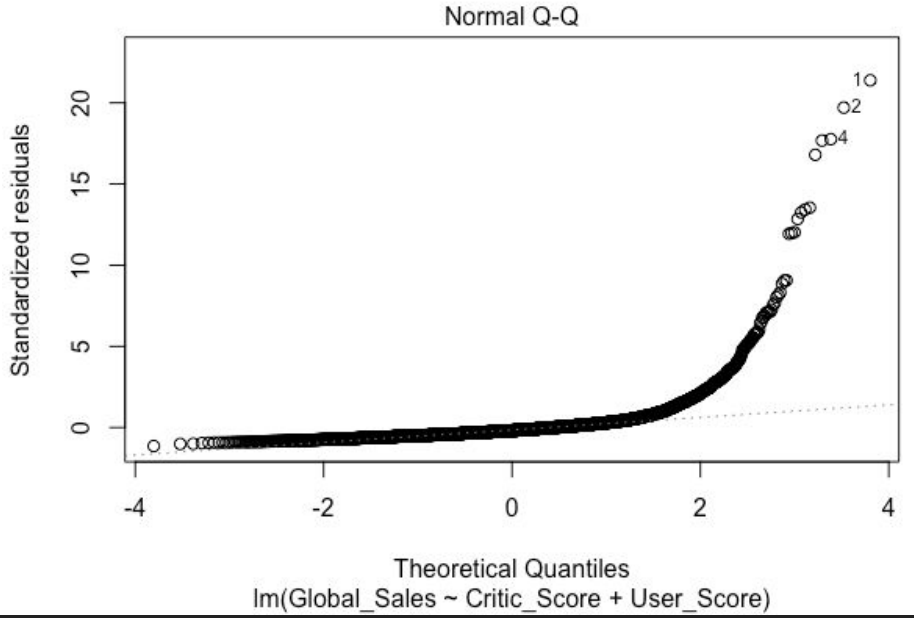
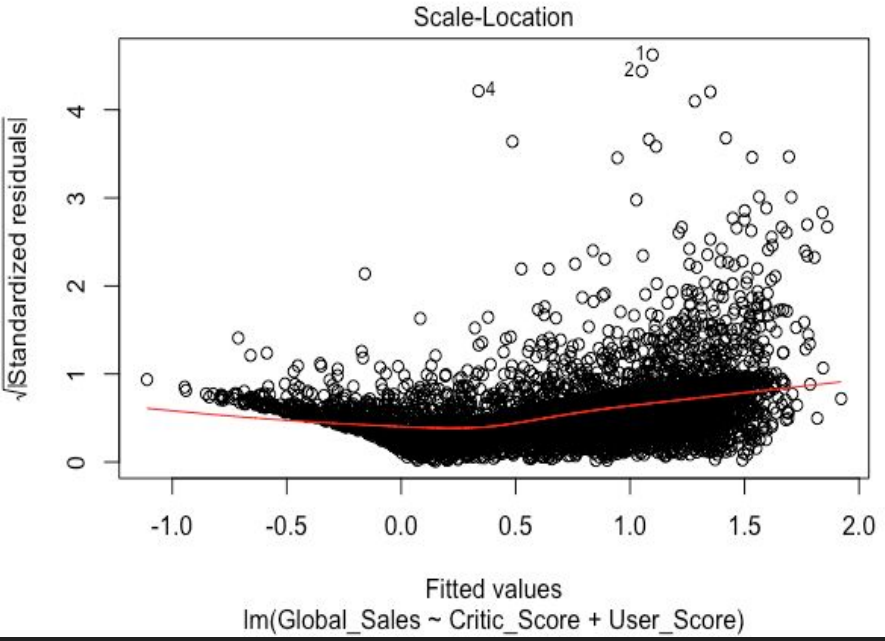
Model 1: Global_Sales ~ Critic_Score
Model 2: Global_Sales ~ Critic_Score + User_Score
Model 3: Global_Sales ~ Critic_Score + User_Score + Critic_Count
+ User_Count
Model 4: Global_Sales ~ Critic_Score + User_Score + Critic_Count
+ User_Count +
      Platform + Year_of_Release + Genre + Publisher
Model 5: Global_Sales ~ Critic_Score
Model 6: Global_Sales ~ Critic_Score + User_Score
  Res.Df      RSS   Df Sum of Sq          F    Pr(>F)
1   7014    18276
2   7013    18172     1     104   49.9537 1.734e-12 ***
3   7011    16504     2    1668  401.4277 < 2.2e-16 ***
4   6690    13895  321     2609    3.9134 < 2.2e-16 ***
5   7014   969029 -324   -955134 1419.3093 < 2.2e-16 ***
6   7013 14145434     1 -13176405
```

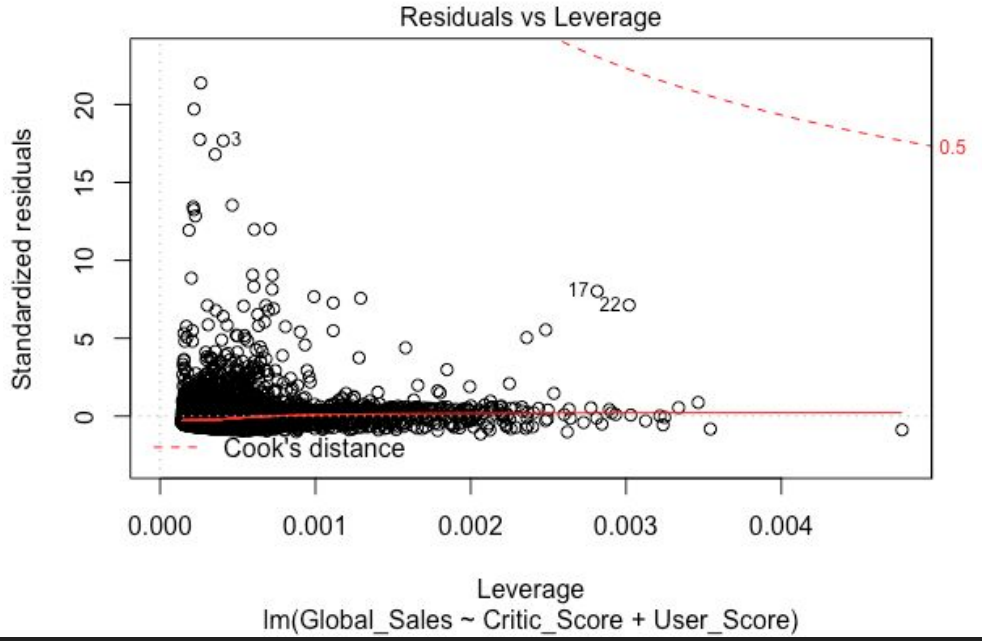
Statistical Charts for Final Model





More charts


Scale-Location
√|Standardized residuals|
Fitted values
lm(Global_Sales ~ Critic_Score + User_Score)


Residuals vs Leverage
Standardized residuals
Cook's distance
0.5
Leverage
lm(Global_Sales ~ Critic_Score + User_Score)

Thank you and keep on playing!