

Veritas Valuation |

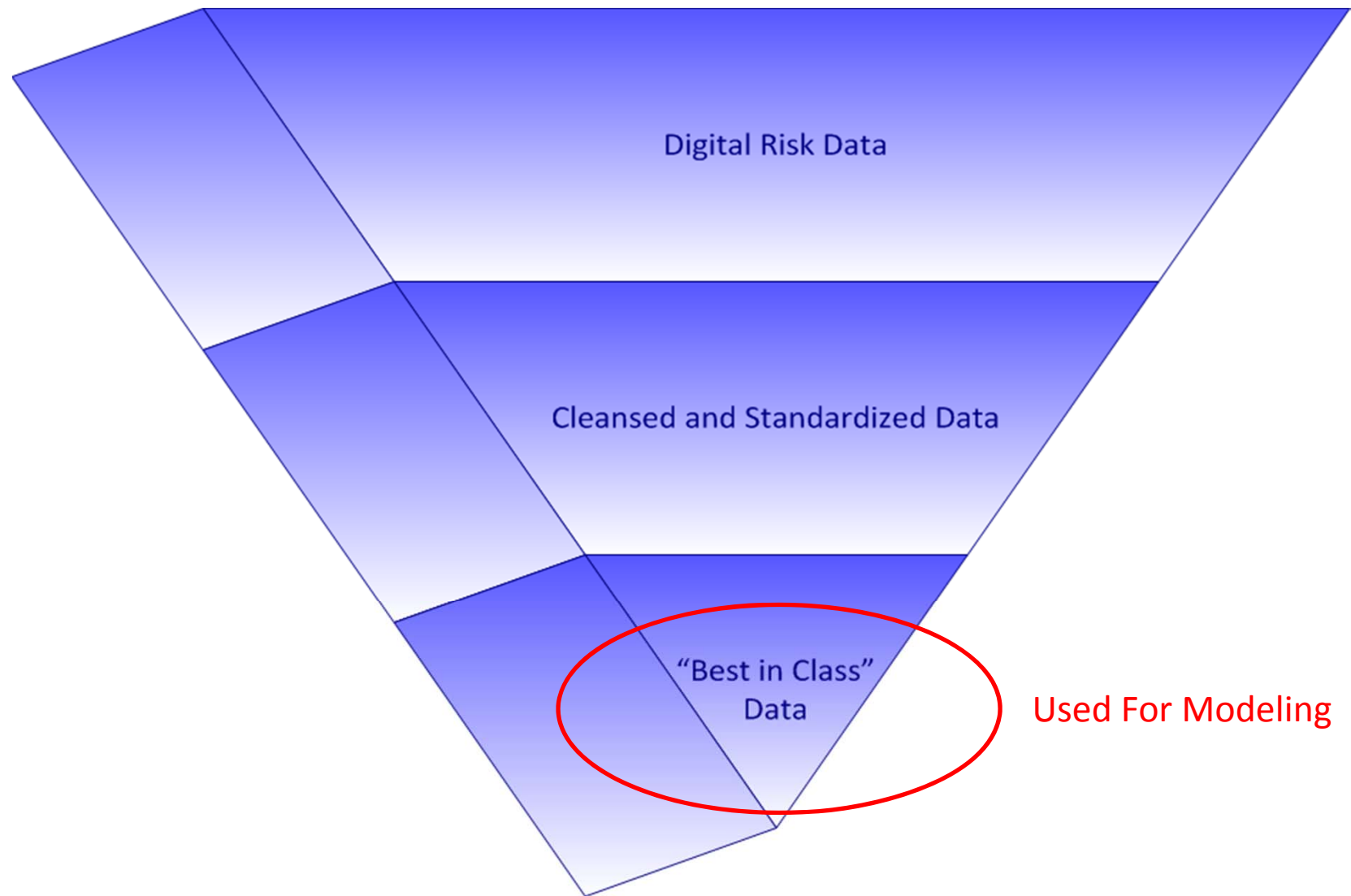


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Making Mortgages Safe

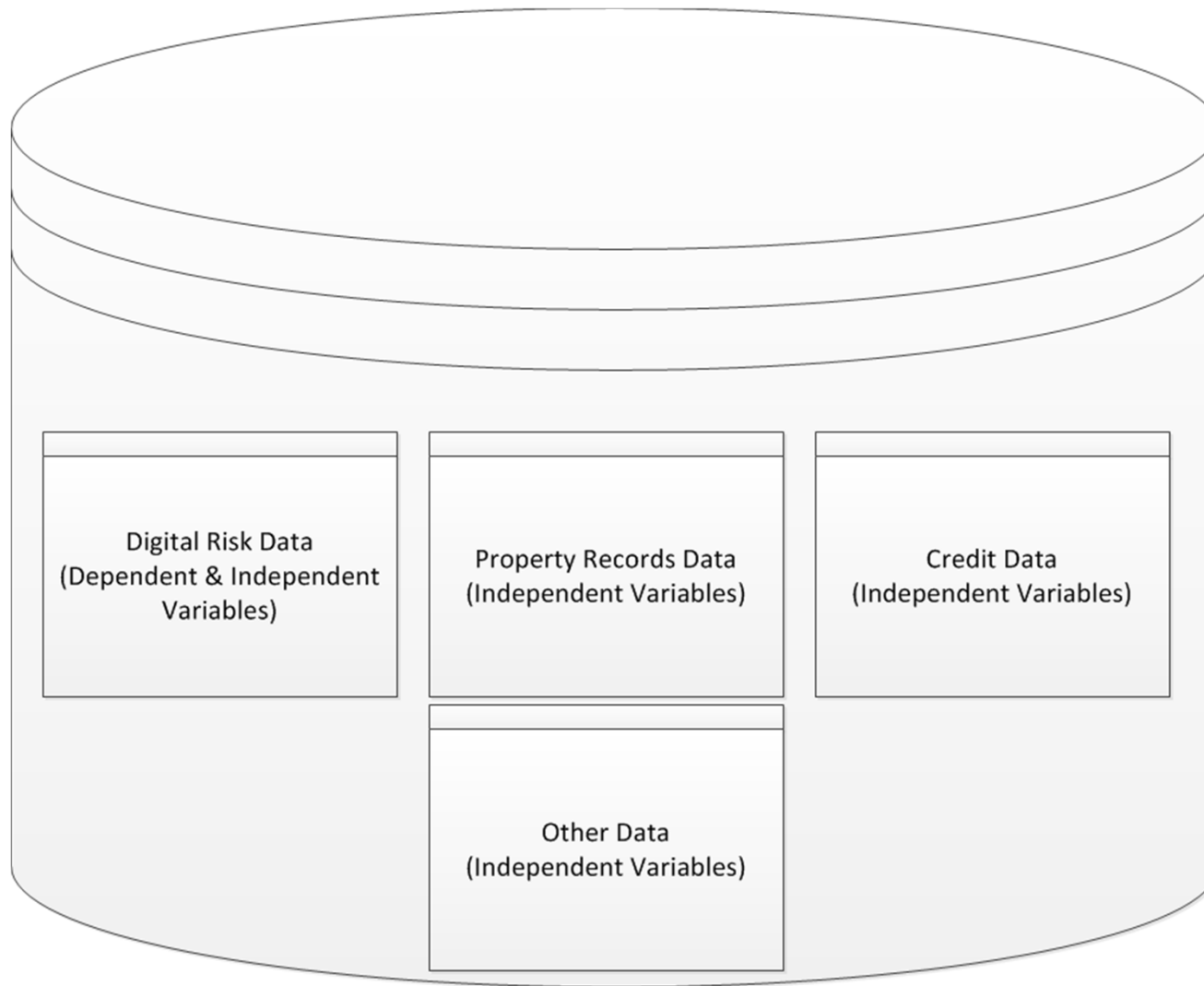
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# DIGITAL RISK DATA PYRAMID

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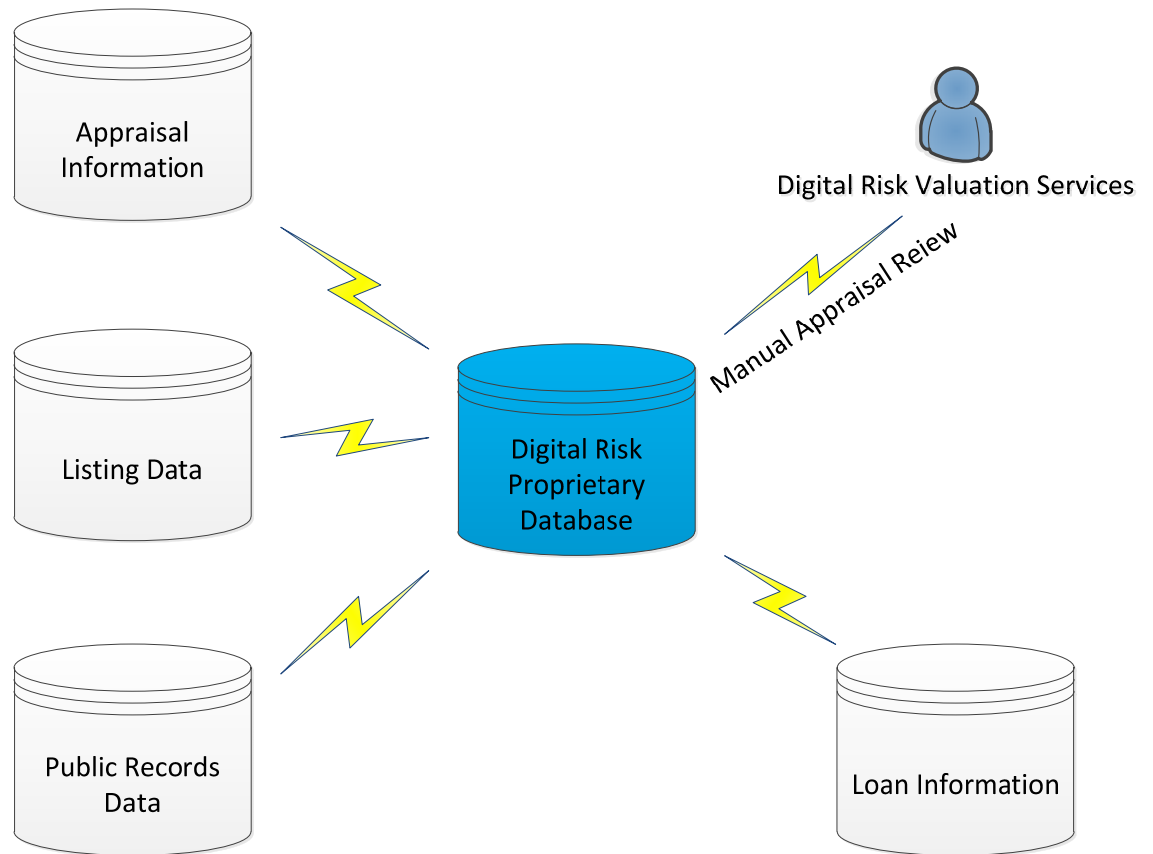


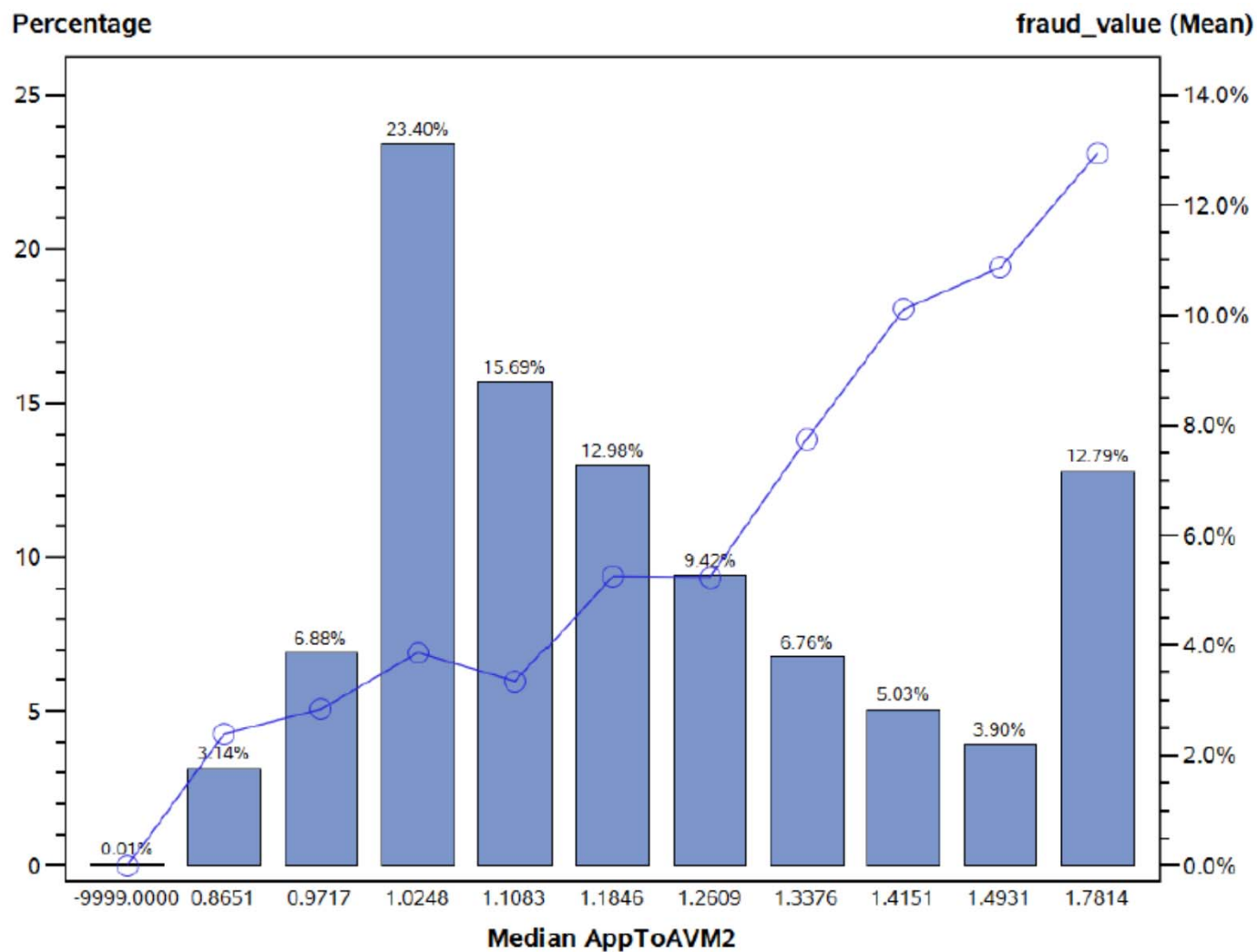
# INCORPORATING EXTERNAL DATA INTO THE ANALYTICS DATAMART



# CREATION OF THE VALUATION DATABASE

- Digital Risk's unique market position enables it to create a valuation modeling database unlike no other available. It is comprised of the following:
  - Appraisal Information
  - Listing Information
  - Loan Information
  - Public Record Information
  - DRVS review Information
  - Automated Valuation Model Information (AVM)
- Unlike other approaches such as AVM analysis or simple rule checks across the whole of the appraisal, this database enables Digital Risk to model the review process appraisers use to evaluate the valuation quality of an appraisal.





	Mean										
	fraud_value										
	mort_loanamount_dec										All
	1	2	3	4	5	6	7	8	9	10	
DQ_AVM2_dec											
0	.	.	.	.	0.0%	.	.	.	.	.	0.0%
1	6.1%	9.1%	18.2%	27.3%	50.0%	0.0%	.	.	.	.	10.5%
2	7.2%	7.0%	7.6%	7.8%	16.1%	15.0%	0.0%	0.0%	.	.	7.6%
3	9.5%	3.8%	4.3%	7.5%	12.3%	22.0%	29.4%	40.0%	0.0%	.	6.4%
4	33.3%	2.9%	3.2%	3.0%	7.0%	11.1%	16.0%	17.1%	0.0%	16.7%	5.1%
5	.	25.0%	1.6%	3.8%	4.0%	5.4%	9.2%	15.6%	20.0%	33.3%	5.4%
6	.	.	0.0%	2.2%	3.4%	3.7%	7.3%	15.4%	15.8%	27.9%	6.5%
7	.	.	0.0%	0.0%	3.4%	1.8%	3.2%	7.8%	10.7%	14.9%	5.1%
8	.	.	.	0.0%	0.0%	0.9%	2.3%	5.2%	5.6%	16.0%	5.8%
9	.	0.0%	.	.	0.0%	0.0%	3.6%	4.6%	2.6%	8.7%	5.1%
10	.	.	.	.	0.0%	0.0%	0.0%	2.2%	4.5%	6.9%	6.3%
All	7.1%	5.7%	4.6%	4.5%	5.6%	4.8%	5.4%	7.8%	6.2%	8.8%	6.0%

# APPRAISALS ARE A TREASURE TROVE FOR TEXT MINING

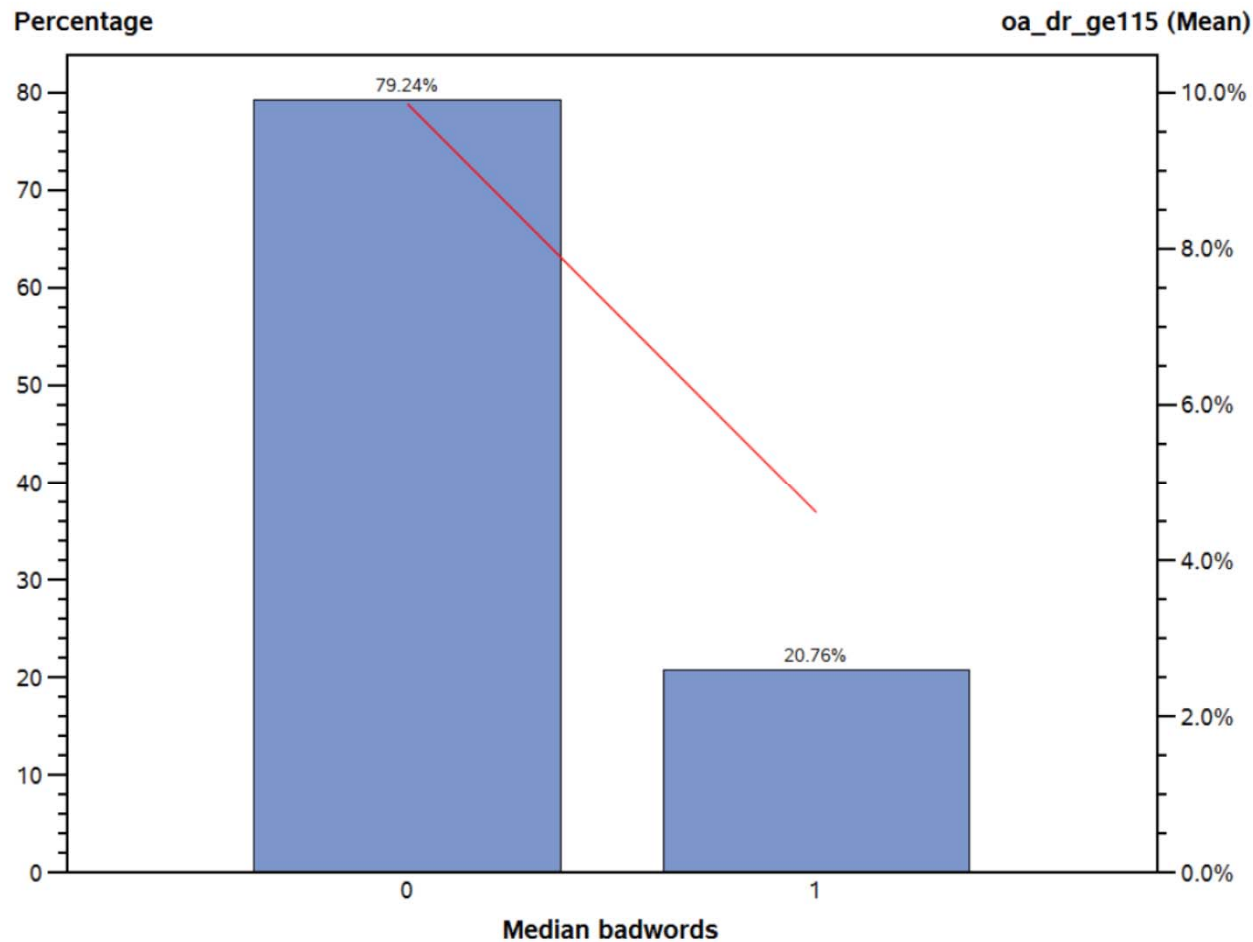
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There are many sections in an appraisal that allows an appraiser to use free writing

- Neighborhood Section
- Site Section
- Improvements Section
- Sales Comparison Approach Section
- Additional Comments Section
- Cost Approach Section
- Income Approach Section
- PUD Information Section

# TEXT MINING RESULTS

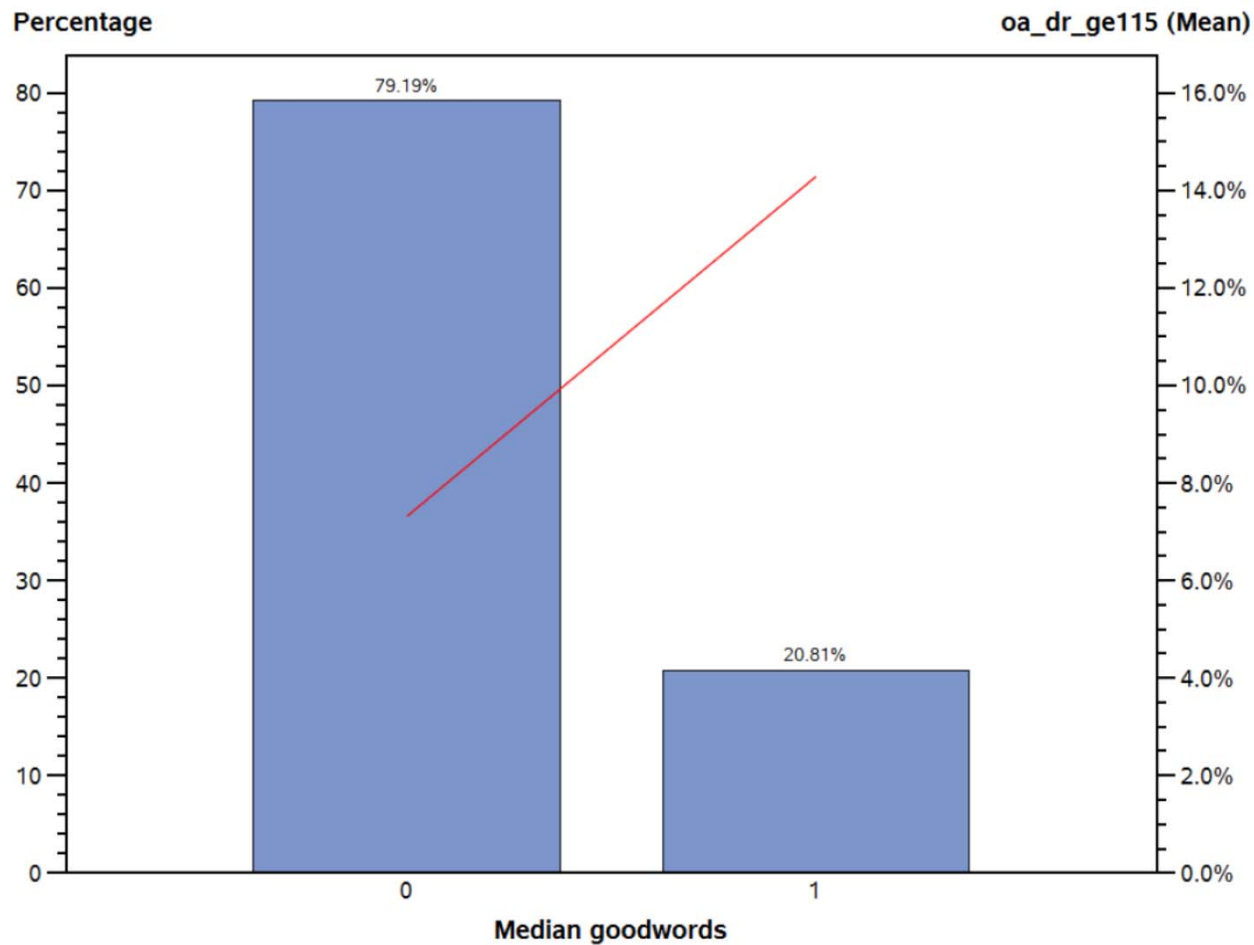
- Generally speaking, derogatory comments on the appraisal tend to reduce the risk of a valuation error while favorable comments tend to increase the risk of a valuation error.





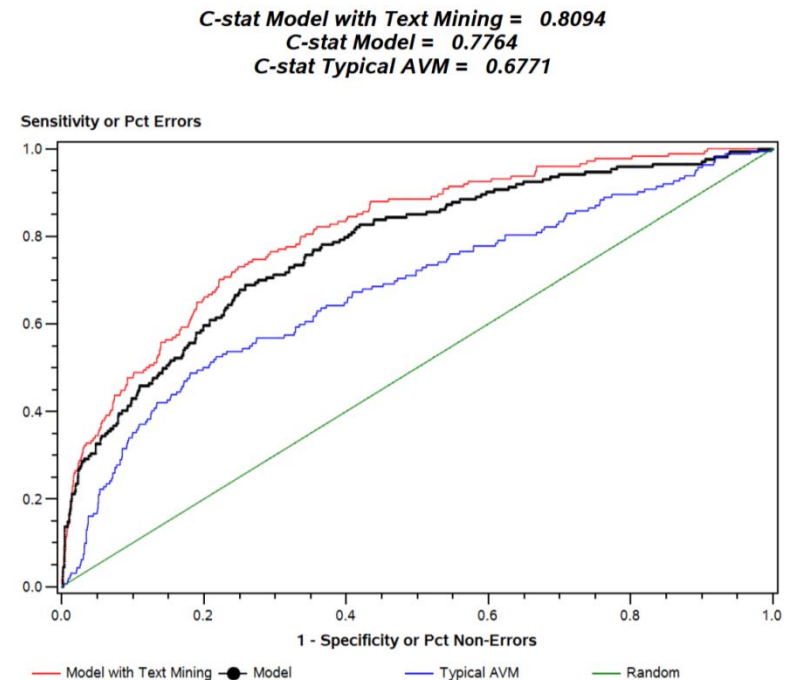
# TEXT MINING RESULTS

- Generally speaking, derogatory comments on the appraisal tend to reduce the risk of a valuation error while favorable comments tend to increase the risk of a valuation error.



- The model substantially outperforms typical approaches using an AVM to detect defective appraisal valuations\*
- Using text mining techniques further improved the performance of the model
- KS-statistics are as follows:

Typical AVM	0.30
Model	0.43
Model with Text Mining	0.48



\* Development dataset was used for analysis.

# REASON CODES

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- Because the model was built by modeling the approach appraisers take to review an appraisal, meaningful reason codes are also generated substantiating the model results.
  - Examples:
    - Comps closer to subject have lower price
    - Comp square footage greater than subject
    - Urban area with comps greater than 1 mile away on average
    - Comp prices don't bracket subject

# REASON CODES

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1. AVM significantly lower than appraisal
2. More similar comps closer to subject are valued significantly lower than comps used
3. Comps are significantly different than subject
4. Square footage of comps are significantly higher than subject
5. The average distance of the comps are greater than 1 mile in an urban area
6. Property valuation is relatively small
7. Many closer available comps are not used in appraisal
8. The furthest comps from the subject were used
9. The square footage in the appraisal significantly varies with the public record
10. LTV Greater than 100 based on AVM
11. LTV Greater than 105 based on AVM
12. LTV Greater than 110 based on AVM
13. Comps don't bracket subject by square footage
14. Comps don't bracket subject by price
15. Selected comparable prices significantly exceed prices of more similar newer sales
16. Many more similar properties with newer sales exist than comps selected
17. The comparables used are greater than 6 months old on average
18. Price per square foot of the comps are very low

Thank you,



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