

An aerial photograph of Ames, Iowa, showing a dense residential and commercial area with numerous houses, streets, and green spaces. The image is used as a background for the presentation.

*Greetings from* **AMES, IOWA**

Can we predict home sale prices?

A case study from Ames, IA

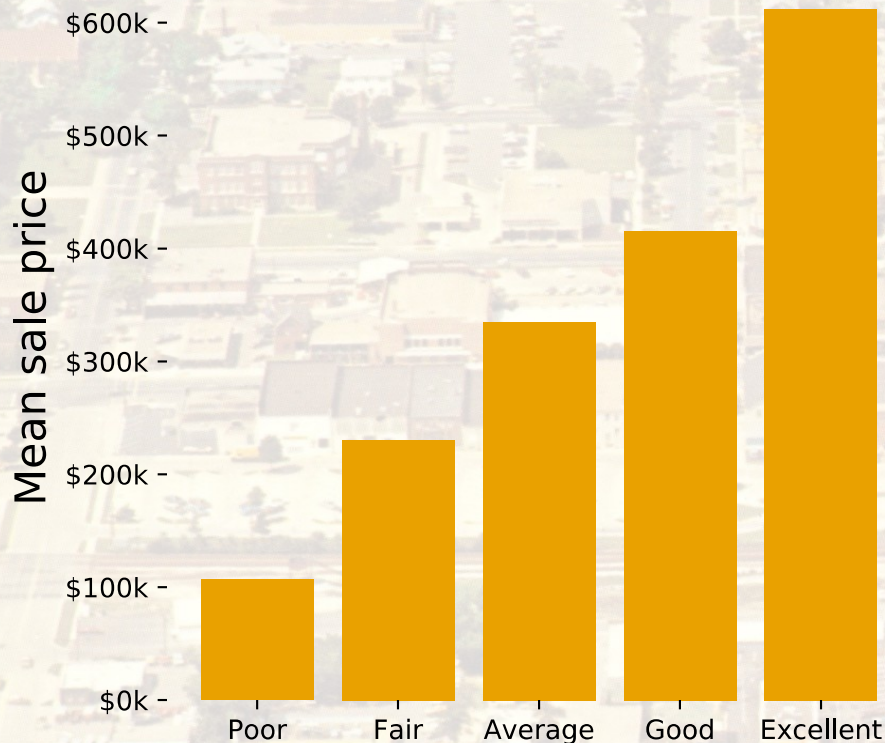
Alexander Klapheke • DSI Project 2 • April 10, 2020

*Background image source: Ames History Museum*

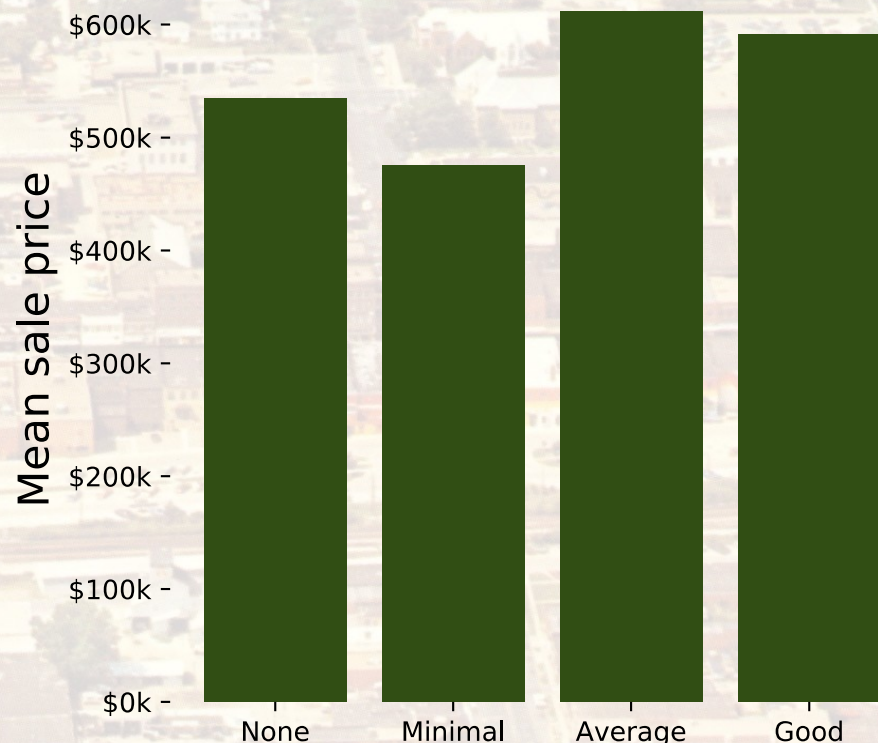


Some data correlate better  
with sale price than others.

Heating system quality



Amount of basement exposure



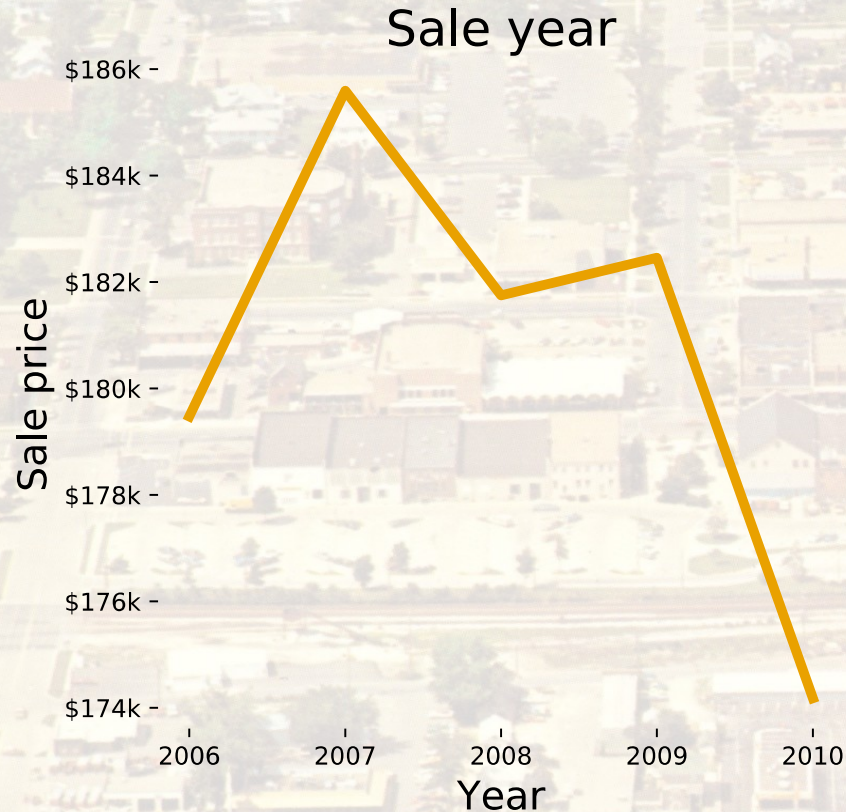


# Among the strongest effects:

<b>Ceteris paribus, raising...</b>	<b>...by...</b>	<b>...raises average sale price by:</b>
<b>Lot area</b>	1 acre (43,560 ft <sup>2</sup> )	28.1%
<b>Above-grade living area</b>	100 ft <sup>2</sup>	74.8%
<b>Finished basement area</b>	100 ft <sup>2</sup>	19.1%
<b>No. full baths in basement</b>	1	18.4%
<b>Overall quality score</b>	1 (out of 10)	9.3%



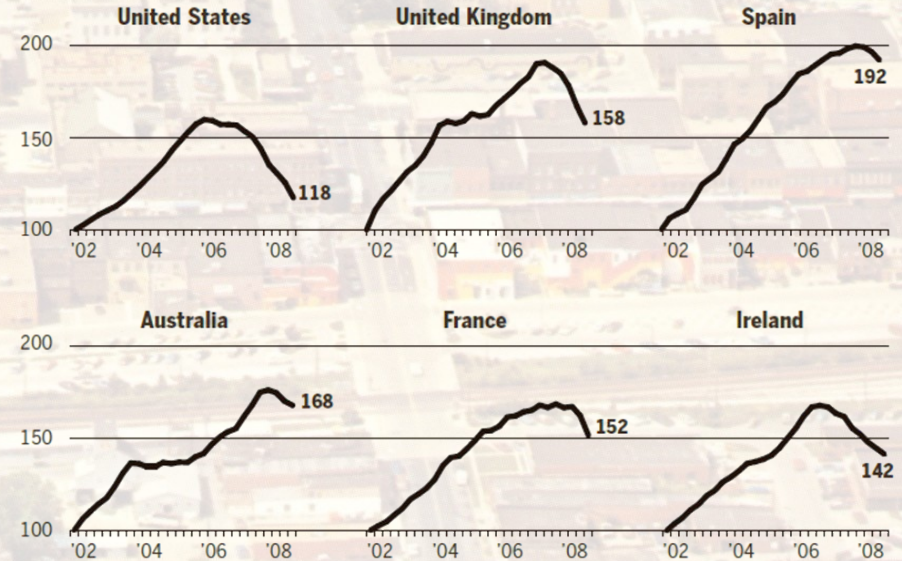
# Due to the '08 crisis, sales in successive years decrease by an average of 3.5%.



## House Price Appreciation in Selected Countries, 2002-2008

*The United States was one of many countries to experience rapid house price growth*

2002 INDEX = 100



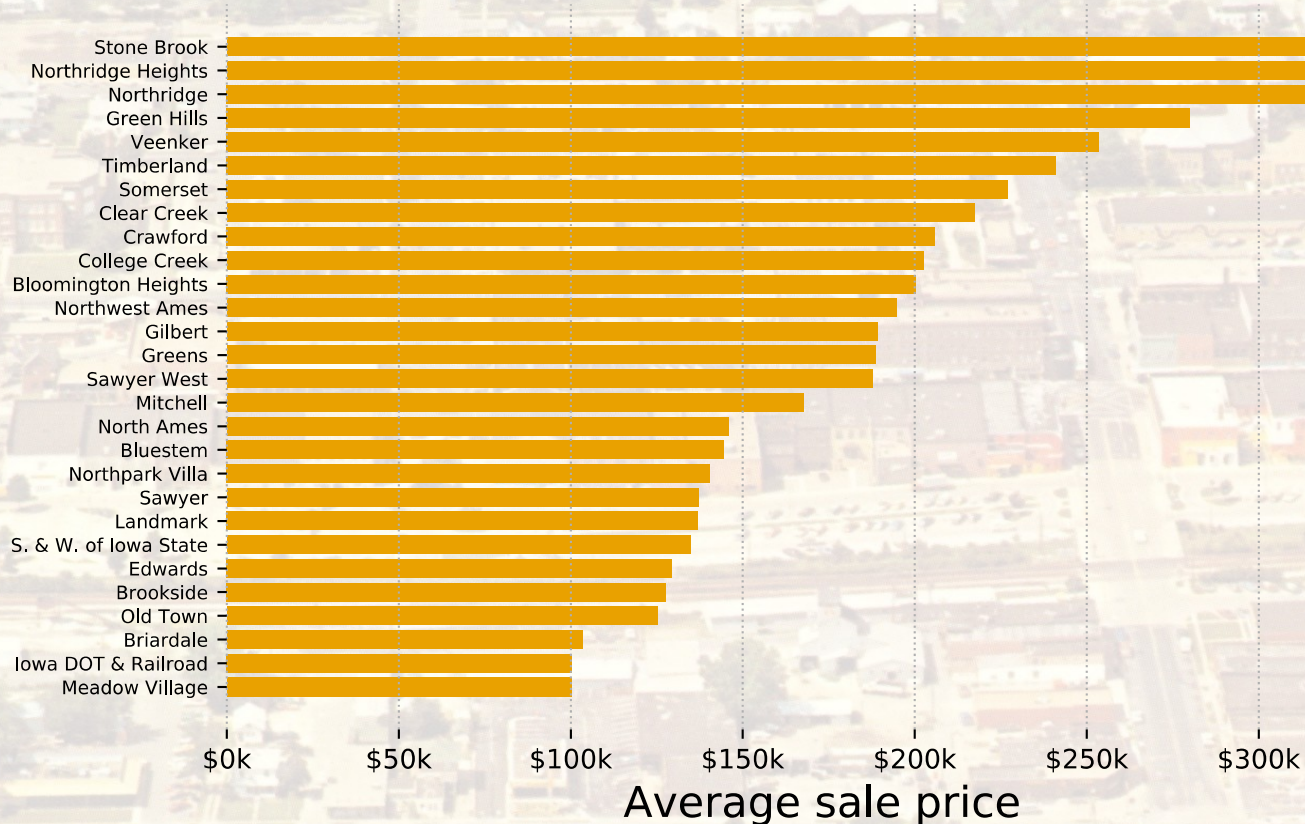
SOURCES: Standard and Poors, Nationwide, Banco de España, AusStats, FNAIM, Permanent TSB

*Graph from the Financial Crisis Inquiry Commission*



Although location (location location)  
has a big impact on sale price...

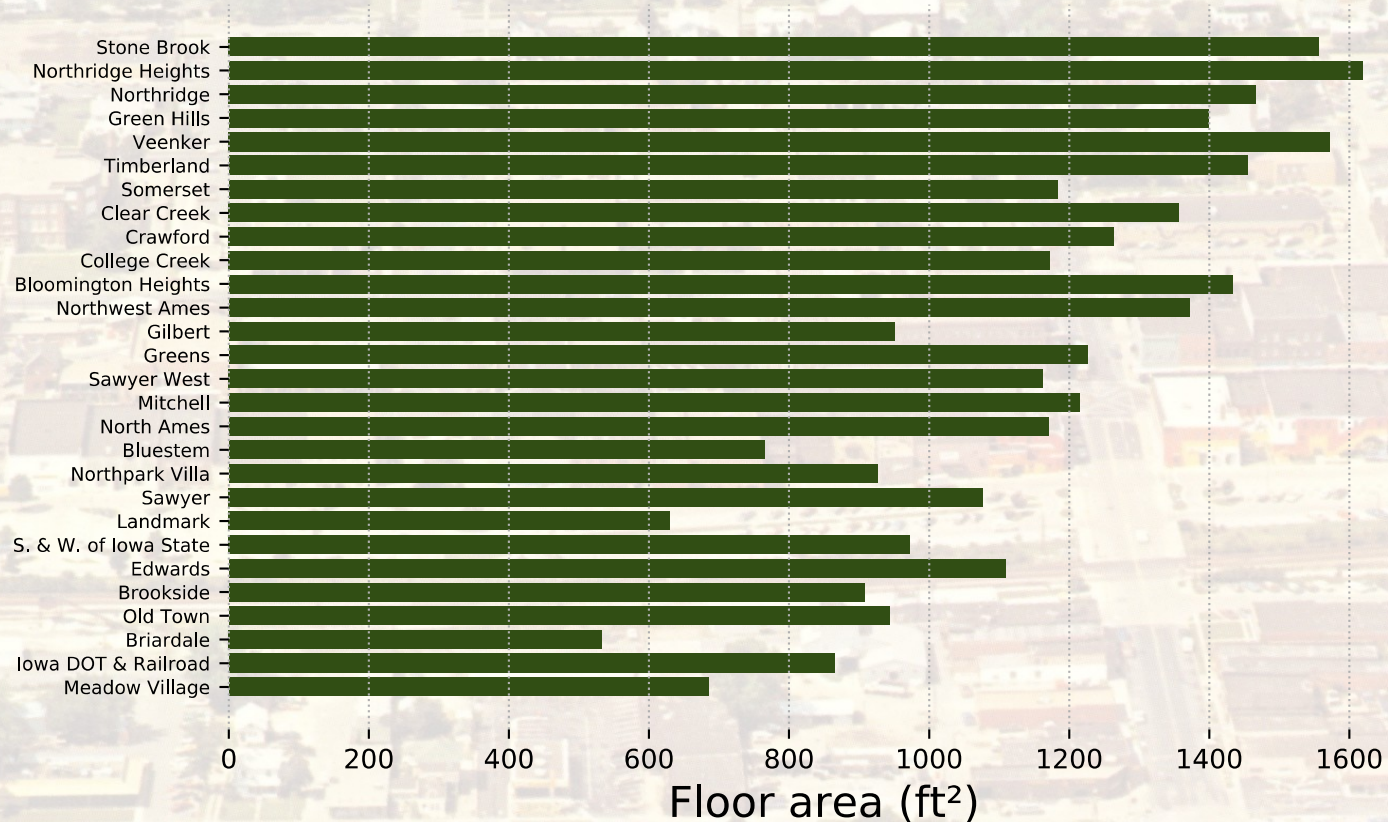
Sale price by neighborhood





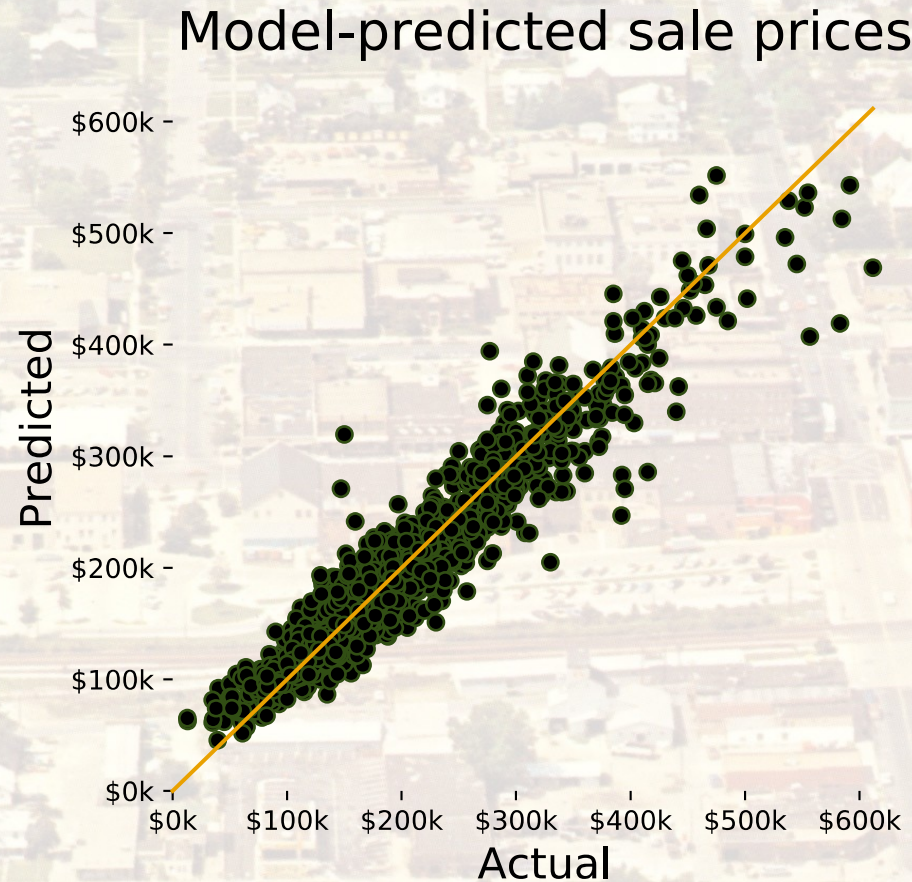
...it correlates with other features,  
so the model doesn't consider it.

First-floor area by neighborhood





# The final model accounts for 86% of the variation in sale prices.







# If we want to generalize this model...

...to other cities:

- Neighborhood is not considered, but;
- “Quality” factors like “overall quality” (1–10) must be calibrated to other assessors’ judgments.

...to other periods:

- The “sale year” factor must be adjusted so as not to consider the '08 subprime crisis.