

categorical_evaluation

August 23, 2019

1 Categorical Assessment

Every year, real estate properties are assessed for their value. There are key attributes that are considered when evaluating a property, and these include the condition, total number of rooms, number of bedrooms, bathrooms, etc. Use a parallel categories plot to plot these attributes as dimensions. Use the interactive features of parallel category plots to review how each dimension can affect the other.

```
[1]: import pandas as pd
import plotly.express as px
from pathlib import Path
```

1.1 Prep Data

```
[2]: # Read in data
prop_assessments = pd.read_csv(
    Path("../Resources/alleglhany_property_assessments.csv"),
    index_col="LEGAL2",
    low_memory=False
).sample(50, replace=True)
prop_assessments.head()
```

```
[2]:      LEGAL1  \
LEGAL2
.91X92.31 DASHWOOD DR      DASHWOOD ESTATES 1ST PLAN #107
IRREG LOT 64X132
1 1/2 & 2 STY BRK V HSE # 3608      LOT 100X436.4 NEW TEXAS RD (1
A)
1 STY FRA & ALUM SDG HSE 249      BAIRDFORD PLAN #53 LOT
49X75.02X51 ASH LANE      HARPER LOGAN PLAN-4 LOT
1 1/2 STY BRK & FRA HSE & GAR #408      ROYAL OAK MANOR PLAN #46 TRI
70X141.77 HARPER DR
X122.95 HOLLAND DR
LOT 177.15X143.885

      LEGAL3  \
LEGAL2
```

.91X92.31 DASHWOOD DR	1 STY BRK & ASB SDG HSE-GAR
5994	
1 1/2 & 2 STY BRK V HSE # 3608	
NaN	
1 STY FRA & ALUM SDG HSE 249	
NaN	
1 1/2 STY BRK & FRA HSE & GAR #408	
NaN	
X122.95 HOLLAND DR	2&1 STY BRK V & STUCCO
HSE INT GARS 56	

LEGAL2	NEIGHCODE TAXCODE \
.91X92.31 DASHWOOD DR	87603 T
1 1/2 & 2 STY BRK V HSE # 3608	88007 T
1 STY FRA & ALUM SDG HSE 249	95202 T
1 1/2 STY BRK & FRA HSE & GAR #408	87903 T
X122.95 HOLLAND DR	81602 T

LEGAL2	TAXDESC \
.91X92.31 DASHWOOD DR	20 - Taxable
1 1/2 & 2 STY BRK V HSE # 3608	20 - Taxable
1 STY FRA & ALUM SDG HSE 249	20 - Taxable
1 1/2 STY BRK & FRA HSE & GAR #408	20 - Taxable
X122.95 HOLLAND DR	20 - Taxable

LEGAL2	OWNERDESC CLASS \
.91X92.31 DASHWOOD DR	REGULAR R
1 1/2 & 2 STY BRK V HSE # 3608	REGULAR-ETUX OR ET VIR R
1 STY FRA & ALUM SDG HSE 249	REGULAR-ETUX OR ET VIR R
1 1/2 STY BRK & FRA HSE & GAR #408	REGULAR R
X122.95 HOLLAND DR	REGULAR-ETAL R

LEGAL2	CLASSDESC USECODE \
.91X92.31 DASHWOOD DR	RESIDENTIAL 10
1 1/2 & 2 STY BRK V HSE # 3608	RESIDENTIAL 10
1 STY FRA & ALUM SDG HSE 249	RESIDENTIAL 10
1 1/2 STY BRK & FRA HSE & GAR #408	RESIDENTIAL 10
X122.95 HOLLAND DR	RESIDENTIAL 10

LEGAL2	USEDESC ... \
.91X92.31 DASHWOOD DR	...
1 1/2 & 2 STY BRK V HSE # 3608	SINGLE FAMILY ...
	SINGLE FAMILY ...

1 STY FRA & ALUM SDG HSE 249
 1 1/2 STY BRK & FRA HSE & GAR #408
 X122.95 HOLLAND DR

SINGLE FAMILY ...
 SINGLE FAMILY ...
 SINGLE FAMILY ...

LEGAL2

.91X92.31 DASHWOOD DR
 1 1/2 & 2 STY BRK V HSE # 3608
 1 STY FRA & ALUM SDG HSE 249
 1 1/2 STY BRK & FRA HSE & GAR #408
 X122.95 HOLLAND DR

CONDITION CONDITIONDESC \

3.0 AVERAGE
 3.0 AVERAGE
 3.0 AVERAGE
 3.0 AVERAGE
 3.0 AVERAGE

LEGAL2

.91X92.31 DASHWOOD DR
 1 1/2 & 2 STY BRK V HSE # 3608
 1 STY FRA & ALUM SDG HSE 249
 1 1/2 STY BRK & FRA HSE & GAR #408
 X122.95 HOLLAND DR

TOTALROOMS BEDROOMS FULLBATHS \

7.0 3.0 2.0
 7.0 3.0 1.0
 5.0 2.0 1.0
 6.0 3.0 2.0
 8.0 4.0 2.0

LEGAL2

.91X92.31 DASHWOOD DR
 1 1/2 & 2 STY BRK V HSE # 3608
 1 STY FRA & ALUM SDG HSE 249
 1 1/2 STY BRK & FRA HSE & GAR #408
 X122.95 HOLLAND DR

HALFBATHS HEATINGCOOLING \

1.0 B
 1.0 B
 0.0 2
 0.0 2
 3.0 B

LEGAL2

.91X92.31 DASHWOOD DR
 1 1/2 & 2 STY BRK V HSE # 3608
 1 STY FRA & ALUM SDG HSE 249
 1 1/2 STY BRK & FRA HSE & GAR #408
 X122.95 HOLLAND DR

HEATINGCOOLINGDESC \

Central Heat with AC
 Central Heat with AC
 Central Heat
 Central Heat
 Central Heat with AC

LEGAL2

.91X92.31 DASHWOOD DR
 1 1/2 & 2 STY BRK V HSE # 3608
 1 STY FRA & ALUM SDG HSE 249
 1 1/2 STY BRK & FRA HSE & GAR #408
 X122.95 HOLLAND DR

FIREPLACES BSMTGARAGE

1.0 2.0
 0.0 2.0
 0.0 0.0
 0.0 0.0
 1.0 2.0

[5 rows x 62 columns]

1.2 Slice Data

```
[3]: # Select list of columns
data = prop_assessments[
    ["LOCALTOTAL", "USEDESC", "CONDITIONDESC", "TOTALROOMS", "BEDROOMS",
     →"FULLBATHS"]
]
data.head()
```

```
[3]:
```

	LOCALTOTAL	USEDESC \
LEGAL2		
.91X92.31 DASHWOOD DR	163500	SINGLE FAMILY
1 1/2 & 2 STY BRK V HSE # 3608	206900	SINGLE FAMILY
1 STY FRA & ALUM SDG HSE 249	25000	SINGLE FAMILY
1 1/2 STY BRK & FRA HSE & GAR #408	97900	SINGLE FAMILY
X122.95 HOLLAND DR	274400	SINGLE FAMILY

	CONDITIONDESC	TOTALROOMS \
LEGAL2		
.91X92.31 DASHWOOD DR	AVERAGE	7.0
1 1/2 & 2 STY BRK V HSE # 3608	AVERAGE	7.0
1 STY FRA & ALUM SDG HSE 249	AVERAGE	5.0
1 1/2 STY BRK & FRA HSE & GAR #408	AVERAGE	6.0
X122.95 HOLLAND DR	AVERAGE	8.0

	BEDROOMS	FULLBATHS
LEGAL2		
.91X92.31 DASHWOOD DR	3.0	2.0
1 1/2 & 2 STY BRK V HSE # 3608	3.0	1.0
1 STY FRA & ALUM SDG HSE 249	2.0	1.0
1 1/2 STY BRK & FRA HSE & GAR #408	3.0	2.0
X122.95 HOLLAND DR	4.0	2.0

1.3 Plot Data

```
[4]: # Plot data
px.parallel_categories(
    data,
    dimensions=["USEDESC", "TOTALROOMS", "BEDROOMS", "FULLBATHS"],
    color="LOCALTOTAL",
)
```

