

FOUNDATIONS OF INFERENTIAL STATISTICS – DEMO NOTES

Descriptive statistics for two categories

1. Create a PivotTable from the raw data.
2. Create two PivotTables, each displaying the variable you want to measure in the Values, the ID variable in the Rows, and the category in the Filter:

The screenshot shows an Excel spreadsheet with a PivotTable and the PivotTable Fields task pane. The PivotTable has two columns: 'airco' (no, yes) and 'price' (Sum of price). The task pane shows the following fields:

- Filters:** airco
- Columns:** (empty)
- Rows:** id
- Values:** Sum of price

The PivotTable data is as follows:

id	airco	price
1	no	42000
2	no	38500
3	no	49500
4	no	60500
5	no	61000
6	no	66000
7	no	69000
8	no	83800
9	no	30500
10	no	27000
11	no	36000
12	no	37000
13	no	40500
14	no	40750
15	no	45000
16	no	45000
17	no	65900
18	no	38000
19	no	42000
20	no	42300
21	no	43500
22	no	45000
23	no	49000
24	no	51500
25	no	61000
26	no	61700
27	no	54500
28	no	66500
29	no	82000
30	no	92000
31	no	38000
32	no	44000
33	no	41000
34	no	43000
35	no	48000
36	no	54800
37	no	55000
38	no	57000
39	no	95000
40	no	38000
41	no	25000
42	no	25245
43	yes	66000
44	yes	88500
45	yes	90000
46	yes	37900
47	yes	48500
48	yes	37900
49	yes	44000
50	yes	44500
51	yes	44900
52	yes	48000
53	yes	61000
54	yes	67000
55	yes	82000
56	yes	70000
57	yes	68000
58	yes	52000
59	yes	60000
60	yes	60000
61	yes	67000
62	yes	47000
63	yes	70000
64	yes	47000
65	yes	55000
66	yes	65000
67	yes	75000
68	yes	78000
69	yes	85000
70	yes	95000
71	yes	105000
72	yes	115000
73	yes	125000
74	yes	135000
75	yes	145000
76	yes	155000
77	yes	165000
78	yes	175000
79	yes	185000
80	yes	116000
81	yes	122500
82	yes	123500
83	yes	127000
84	yes	57250
85	yes	61000

3. Remove the Grand Totals for the PivotTables by clicking inside the PivotTable, selecting Design from the home ribbon, then in the Layout group, under Grand Totals, select Off for Rows and Columns.



AutoSave Off housing-foundations.xlsx - Excel

File Home Insert Page Layout Formulas Data Review View Developer Help ACROBAT PivotTable Analyze **Design**

Subtotals Grand Totals Report Layout Blank Rows

☒ Row Headers ☐ Banded Rows

☒ Column Headers ☐ Banded Columns

PivotTable Style Options

PivotTable Styles

Off for Rows and Columns

On for Rows and Columns

On for Rows Only

On for Columns Only

	E	F	G	H	I	J	K	L	M	N	O
	bathrms	stories	driveway	recroom	fullbase	gashw	airco	garagepl	prefarea		airco
3	1	2	yes	no	yes	no	no		1 no		
2	1	1	yes	no	no	no	no		0 no		Row Labels
3	1	1	yes	no	no	no	no		0 no		1
3	1	2	yes	yes	no	no	no		0 no		2
2	1	1	yes	no	no	no	no		0 no		3
3	1	1	yes	yes	yes	no	yes		0 no		4
3	2	2	yes	no	yes	no	no		2 no		5
3	1	3	yes	no	no	no	no		0 no		7
3	1	1	yes	yes	yes	no	no		0 no		8
3	2	4	yes	yes	no	no	yes		1 no		9
3	2	1	yes	no	yes	no	yes		3 no		12

4. Run the descriptives for each category using the Analysis ToolPak. See demo notes from Section 1 for a refresher.

Plot a histogram for two categories

1. Create another PivotTable.
2. Place the two categories along the Columns, the continuous variable of interest down the Rows, and the Count of the ID variable in the Values.
3. Right-click the Rows area and select Group.

P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
no	..T	airco	yes	..T		no	yes						
Sum of price		Row Labels		Sum of price		Mean	59884.85255	Mea	58580.59				
4	42000	6	66000		Standard Error	1104.878047	Stan	2164.035					
5	38500	10	85000		Median	55500	Mea	82000					
6	49500	11	90000		Mode	50000	Mod	82000					
7	60500	16	37900		Stanc	28463.44							
8	61000	21	48500		Samp	8.1E+08	Sam						
9	66000	23	37900		Kurt	1.024796	Kurt						
10	69000	28	44000		Skew	0.863356	Ske						
11	83800	29	44500		Rang	158100	Ran						
12	31000	30	44900		Mini	31900	Min						
13	27000	32	48000		Maxi	190000	Max						
14	36000	36	61000		Sum	14857342	Sum						
15	37000	38	67000		Count	173	Cou						
16	40500	39	82000					0					
17	40750	42	70000										
18	45000	53	68000										
19	45000	63	52000										
20	65900	66	60000										
21	38000	67	60000		Count								
22	42000	68	67000		Row			yes					
23	42300	69	47000		25000			1					
24	43500	70	70000		35000			5					
25	45000	78	47000		45000			13					
26	49000	80	63000		55000			23					
27	51500	81	50000		65000			25					
28	61000	86	57000		75000	54500		27					
29	61700	88	78000		85000			36					
30	54500	93	163000		95000			4					
31	66500	94	128000		105000	114999		4					

Context menu options for the selected cell:

- Copy
- Format Cells...
- Refresh
- Sort >
- Filter >
- Subtotal "price" >
- Expand/Collapse >
- Group...
- Ungroup...
- Move >
- Remove "price" >
- Field Settings...
- PivotTable Options...
- Hide Field List

PivotTable Fields task pane:

Choose fields to add to report:

Search

- ☒ Id
- ☒ price
- ☐ lotsize
- ☐ bedrooms
- ☐ bathrooms
- ☐ stories
- ☐ driveway
- ☐ recreom
- ☐ fullbase
- ☐ oashw

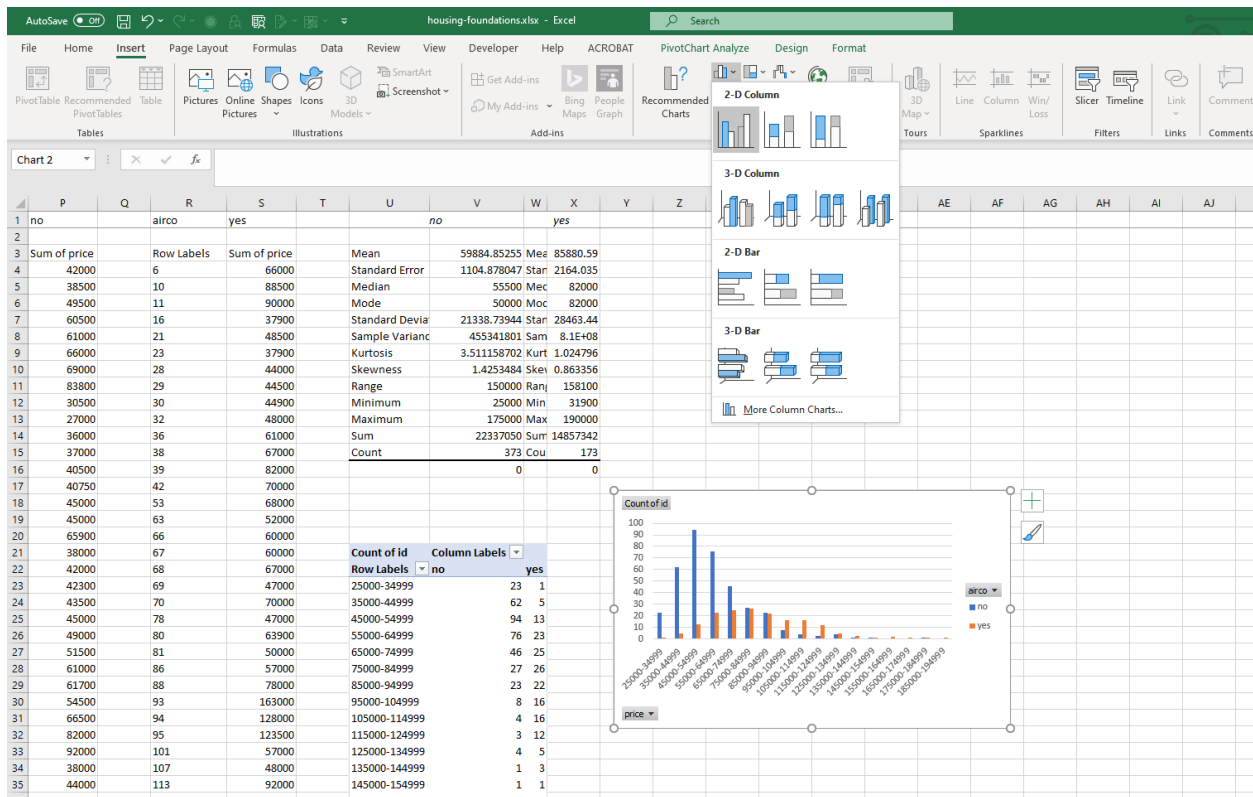
Drag fields between areas below:

Filters: airco

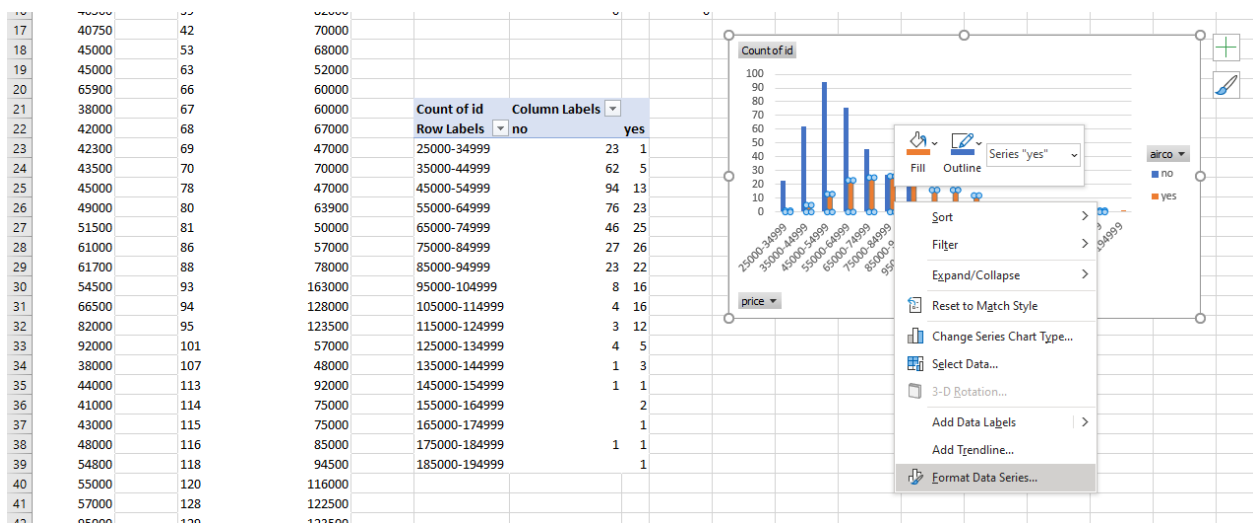
Columns: airco



4. Go to Insert on the home ribbon and select a 2-D Column chart.



5. Right-click on any of the bars in the resulting bar chart. Select Format Data Series.



6. Adjust the Series Overlap to 100% and the Gap Width to 0%.



