COUNTRY EXPOSURE MODEL

Review main statistic of a exposure model and create summaries for a given Country.

```
# Parameters
country = "Pakistan"
```

```
Exposure files:
  Exposure_Com_Pakistan.csv
  Exposure_Ind_Pakistan.csv
  Exposure_Res_Pakistan.csv
```

Sanity checks and formats

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	221.7M	32,057.8K	$546.5B	92.20%	72.09%
Ind	0.0M	738.1K	$77.2B	2.12%	10.18%
Com	0.0M	1,972.1K	$134.4B	5.67%	17.73%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	3,407.2M	$582.7B	98	$223
Res	2,757.8M	$449.9B	86	$198
Ind	221.4M	$41.1B	300	$349
Com	427.9M	$91.6B	217	$314

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Punjab	$399,055.5M	17,884.1K	114,965.5K	52.64%	51.44%	51.86%
Sindh	$188,867.1M	8,961.9K	49,876.4K	24.91%	25.78%	22.50%
Khyber Pakhtunkhwa	$92,549.9M	4,119.1K	31,547.9K	12.21%	11.85%	14.23%
Balochistan	$37,885.3M	1,947.3K	12,714.7K	5.00%	5.60%	5.74%
Azad Kashmir	$14,866.8M	696.7K	4,289.8K	1.96%	2.00%	1.93%
Federally Administered Tribal Areas	$13,135.0M	630.8K	5,095.5K	1.73%	1.81%	2.30%
Islamabad Capital Territory	$7,797.1M	341.9K	2,063.2K	1.03%	0.98%	0.93%
Gilgit-Baltistan	$3,973.8M	186.3K	1,147.0K	0.52%	0.54%	0.52%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MUR	$313,764.4M	16,325.8K	102,720.7K	41.39%	46.96%	46.33%
RC	$190,808.8M	3,153.9K	23,556.1K	25.17%	9.07%	10.63%
ADO/E	$146,621.5M	11,688.6K	75,047.7K	19.34%	33.62%	33.85%
MCF	$49,303.4M	1,105.5K	6,730.3K	6.50%	3.18%	3.04%
S	$22,826.9M	221.4K	0.0K	3.01%	0.64%	0.00%
W	$15,822.8M	1,093.2K	6,448.6K	2.09%	3.14%	2.91%
MIX	$13,739.9M	835.1K	5,197.0K	1.81%	2.40%	2.34%
MR	$3,138.5M	36.9K	0.0K	0.41%	0.11%	0.00%
OT	$2,104.3M	307.6K	1,999.6K	0.28%	0.88%	0.90%

Exposure by taxonomy

Showing only taxonomies that represent 90% of the total `COST_USD`

MACRO_TAXO	TAXONOMY	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
ADO/E	MUR+ADO/LWAL+CDN/H:1/RES	$123,711.9M	10,519.7K	18.18%	32.63%
MUR	MUR+CL/LWAL+CDN/H:2/RES	$49,853.4M	2,848.8K	7.33%	8.84%
	MUR+CL/LWAL+CDN/H:3/RES	$43,750.9M	1,424.4K	6.43%	4.42%
	MUR+CB/LWAL+CDN/H:2/RES	$35,527.4M	2,030.1K	5.22%	6.30%
	MUR+CB/LWAL+CDN/H:3/RES	$31,178.5M	1,015.1K	4.58%	3.15%
RC	CR/LFINF+CDL/H:3/RES	$24,120.8M	523.5K	3.55%	1.62%
ADO/E	MUR+ADO/LWAL+CDN/H:2/RES	$22,909.6M	1,168.9K	3.37%	3.63%
MUR	MUR+STRUB/LWAL+CDN/H:2/RES	$22,461.1M	1,604.4K	3.30%	4.98%
	MUR+CL/LWAL+CDN/H:1/RES	$22,434.0M	2,136.6K	3.30%	6.63%
RC	CR/LFINF+CDM/H:3/RES	$21,649.3M	469.9K	3.18%	1.46%
MUR	MUR+CB/LWAL+CDN/HBET:3-6/COM	$20,804.7M	81.2K	3.06%	0.25%
	MUR+CB/LWAL+CDN/H:1/RES	$15,987.3M	1,522.6K	2.35%	4.72%
RC	CR/LFINF+CDL/H:2/RES	$15,460.5M	589.0K	2.27%	1.83%
MUR	MUR+CB/LWAL+CDN/H:2/COM	$15,181.0M	270.8K	2.23%	0.84%
RC	CR/LFINF+CDM/H:2/RES	$13,876.3M	528.6K	2.04%	1.64%
MUR	MUR+STRUB/LWAL+CDN/H:1/RES	$13,476.6M	1,604.4K	1.98%	4.98%
	MUR+ST/LWAL+CDN/H:1/COM	$13,115.3M	609.2K	1.93%	1.89%
RC	CR/LFINF+CDL/HBET:4-7/COM	$11,664.8M	24.1K	1.71%	0.07%
MUR	MUR+ST/LWAL+CDN/H:2/COM	$11,385.8M	203.1K	1.67%	0.63%
RC	CR/LFINF+CDM/HBET:4-7/COM	$10,469.5M	21.6K	1.54%	0.07%
	CR/LFINF+CDL/HBET:4-7/RES	$10,052.4M	32.7K	1.48%	0.10%
	CR/LFINF+CDM/HBET:4-7/RES	$9,022.4M	29.4K	1.33%	0.09%
MUR	MUR+CB/LWAL+CDN/H:1/COM	$8,743.5M	406.2K	1.29%	1.26%
MCF	MCF/LWAL+CDL/H:2/RES	$7,852.9M	280.5K	1.15%	0.87%
S	S/LFM+CDL/H:1/IND	$7,217.9M	87.5K	1.06%	0.27%
MCF	MCF/LWAL+CDM/H:2/RES	$7,048.3M	251.7K	1.04%	0.78%
S	S/LFM+CDM/H:1/IND	$6,478.3M	78.6K	0.95%	0.24%
RC	CR+PC/LWAL+CDL/H:1/IND	$5,293.1M	58.3K	0.78%	0.18%
	CR/LFINF+CDL/H:1/IND	$5,293.1M	58.3K	0.78%	0.18%
MCF	MCF/LWAL+CDL/HBET:3-6/COM	$4,872.9M	14.3K	0.72%	0.04%
S	S/LFM+CDL/H:2/IND	$4,811.9M	29.2K	0.71%	0.09%
RC	CR+PC/LWAL+CDM/H:1/IND	$4,750.8M	52.4K	0.70%	0.16%
	CR/LFINF+CDM/H:1/IND	$4,750.8M	52.4K	0.70%	0.16%
MUR	MUR+STDRE/LWAL+CDN/H:2/RES	$4,656.6M	266.1K	0.68%	0.83%
MCF	MCF/LWAL+CDM/HBET:3-6/COM	$4,373.6M	12.8K	0.64%	0.04%
S	S/LFM+CDM/H:2/IND	$4,318.8M	26.2K	0.63%	0.08%
MIX	MIX(W+EU)/LWAL+CDL/H:2/RES	$3,961.0M	235.8K	0.58%	0.73%
RC	CR/LWAL+CDL/HBET:4-7/COM	$3,888.3M	8.0K	0.57%	0.02%
MIX	MIX(W+EU)/LWAL+CDM/H:2/RES	$3,555.1M	211.6K	0.52%	0.66%
RC	CR+PC/LWAL+CDL/H:2/IND	$3,528.6M	19.4K	0.52%	0.06%
	CR/LFINF+CDL/H:2/IND	$3,528.6M	19.4K	0.52%	0.06%
W	W+WLI/LPB+CDL/H:1/RES	$3,517.8M	259.3K	0.52%	0.80%
	W/LFM+CDL/H:1/RES	$3,517.8M	259.3K	0.52%	0.80%
RC	CR/LWAL+CDL/HBET:4-7/COM	$3,489.8M	7.2K	0.51%	0.02%
	CR/LFINF+CDL/H:3/COM	$3,371.2M	22.3K	0.50%	0.07%
	CR+PC/LWAL+CDM/H:2/IND	$3,167.1M	17.5K	0.47%	0.05%
	CR/LFINF+CDM/H:2/IND	$3,167.1M	17.5K	0.47%	0.05%
W	W+WLI/LPB+CDM/H:1/RES	$3,157.4M	232.7K	0.46%	0.72%