EY Techathon 2021: #iSolve4aBillion Challenge

Prioritize vaccine delivery using AI/ML

BestFit
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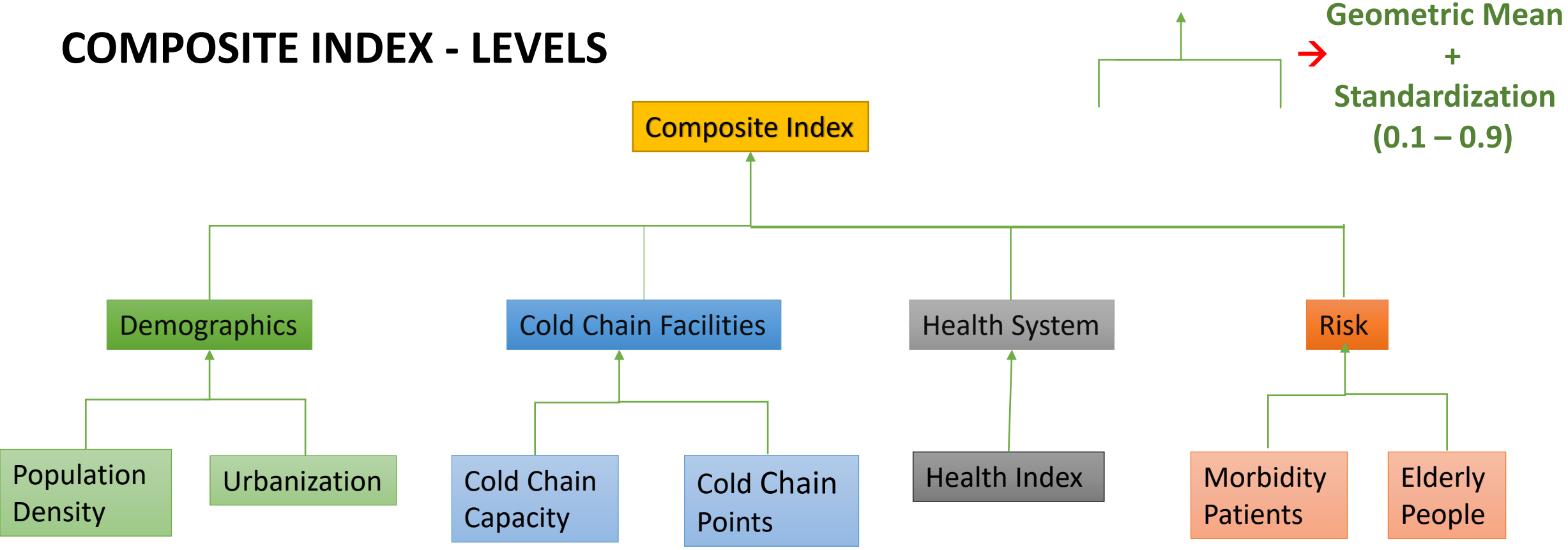
COMPOSITE INDEX - LEVELS



Weightage for Cold Chain

Capacity/population	Points/sq.sm
Districts having General Medical Store Depot (PUBLIC)	Tier of City (PRIVATE)
Tier of City (PRIVATE)	-

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ASSUMPTIONS

1.District/Missing Proportion = State/District Mean Proportion

2.Volume of Universal Immunization Program vaccines are of 10cm3 per dose

3.District Health Index = State Health Index

Extrapolations

Feature	Percent Increase
Population	11.2
Senior citizens Percent	30
Urban Population	9

NEED FOR COMPOSITE INDICATOR

Why Composite Indicator :

1.Easily interpreted than complex data
2.Comparison across places and situations
3.Early warning

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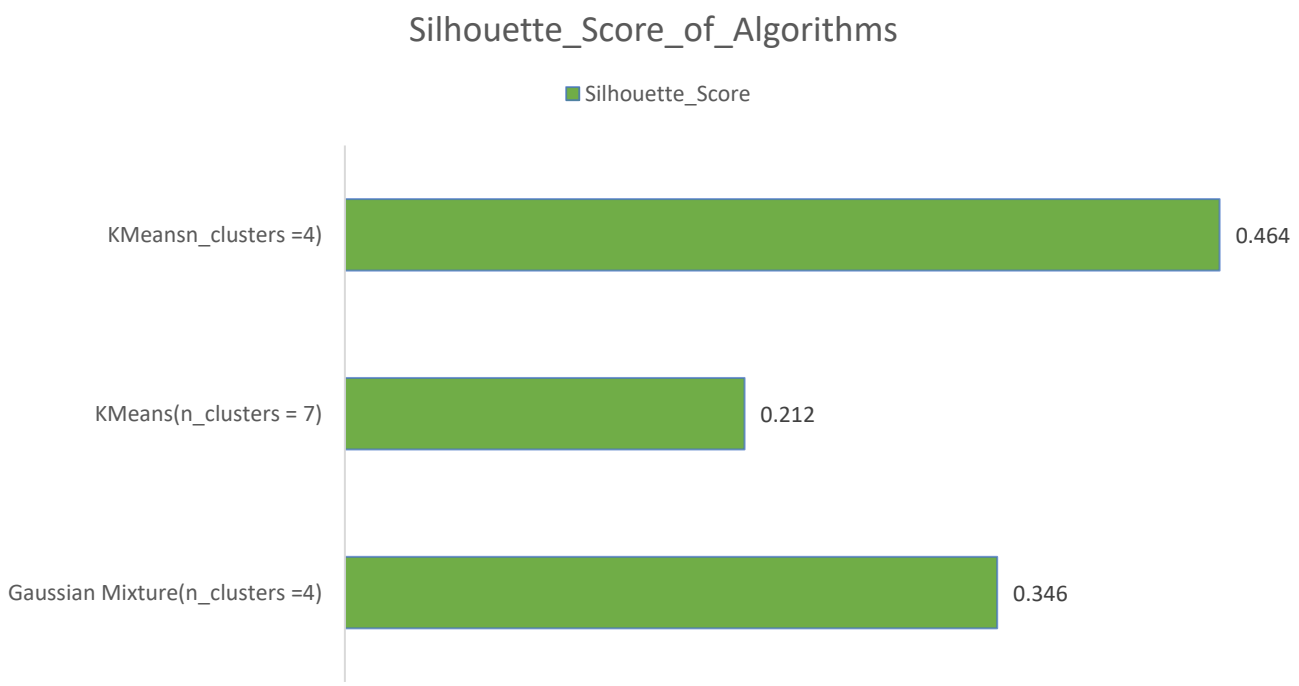
CLUSTERING ALGORITHMS – UNSUPERVISED LEARNING



KMeans of 4 clusters scored more than others

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Learn-to-Rank is Learn-to-Score – SUPERVISED LEARNING

Linear Regression – Scorer

Inputs	
District Index	Mortality_Rate

Outputs
Cluster

district	cluster	dist_index	ortality_ra	score
Jaunpur	4	0.35778	0.01483	4.40691
Bareilly	4	0.35726	0.01151	4.40138
Agra	4	0.35554	0.01685	4.33197
Patna	4	0.35328	0.00768	4.29068
Surat	4	0.35393	0.01992	4.27299
Sitapur	4	0.35340	0.01384	4.26916
Howrah	4	0.35348	0.02861	4.23231
Varanasi	4	0.35151	0.01909	4.20090
Muzaffarnagar	4	0.34969	0.01255	4.16534
Ahmedabad	4	0.34713	0.03982	4.00203
Hardoi	4	0.34396	0.01809	3.97182
East Champaran	4	0.33922	0.00607	3.86303

Higher Score Signifies:

More Composite Effect of (
higher demographic vulnerability
lower vaccine wastage if supplied,
Higher health vulnerability,
Higher number of Risk People)

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VISULAIZATION/GITHUB