




**DISAGGREGATION OF FREIGHT ANALYSIS  
FRAMEWORK (FAF) DATA FOR LOCAL FREIGHT  
PLANNING STUDIES: A CASE STUDY OF FLORIDA.**

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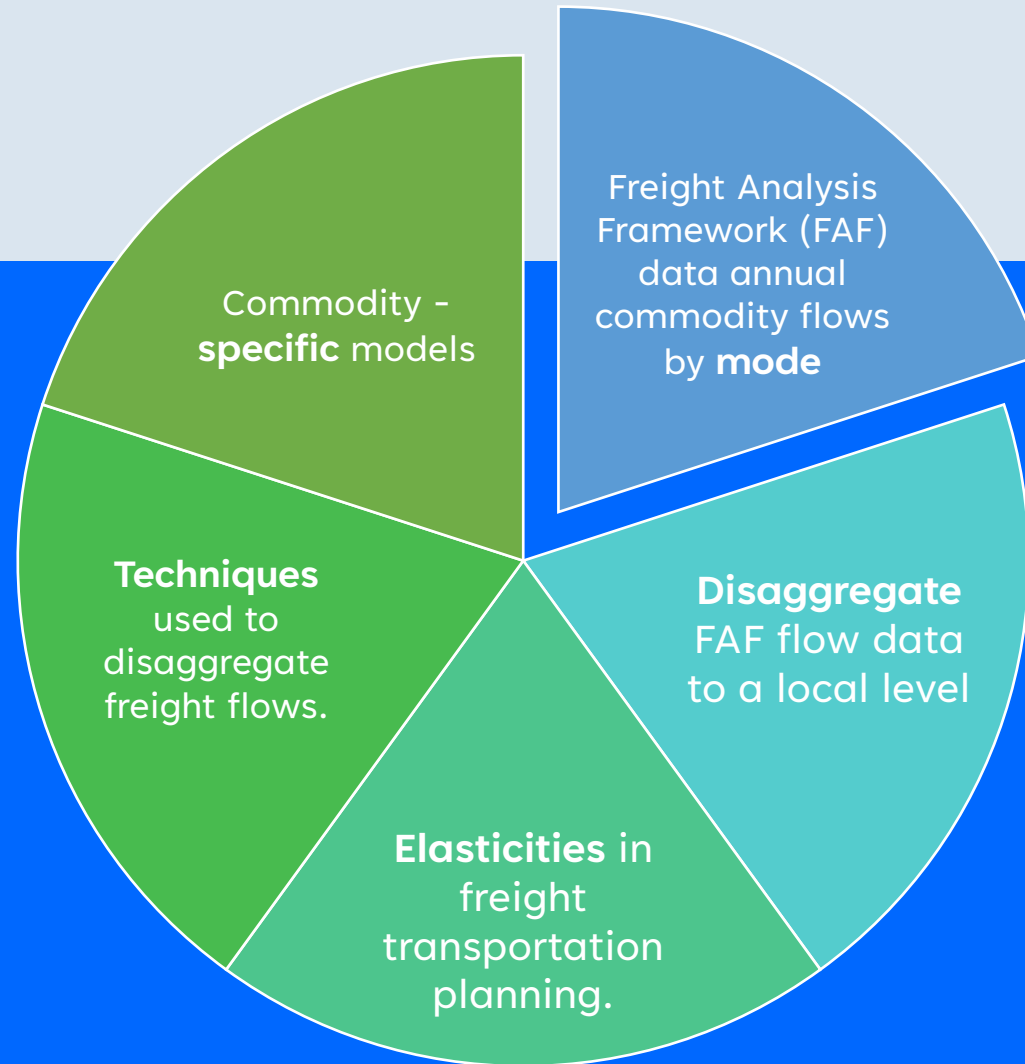
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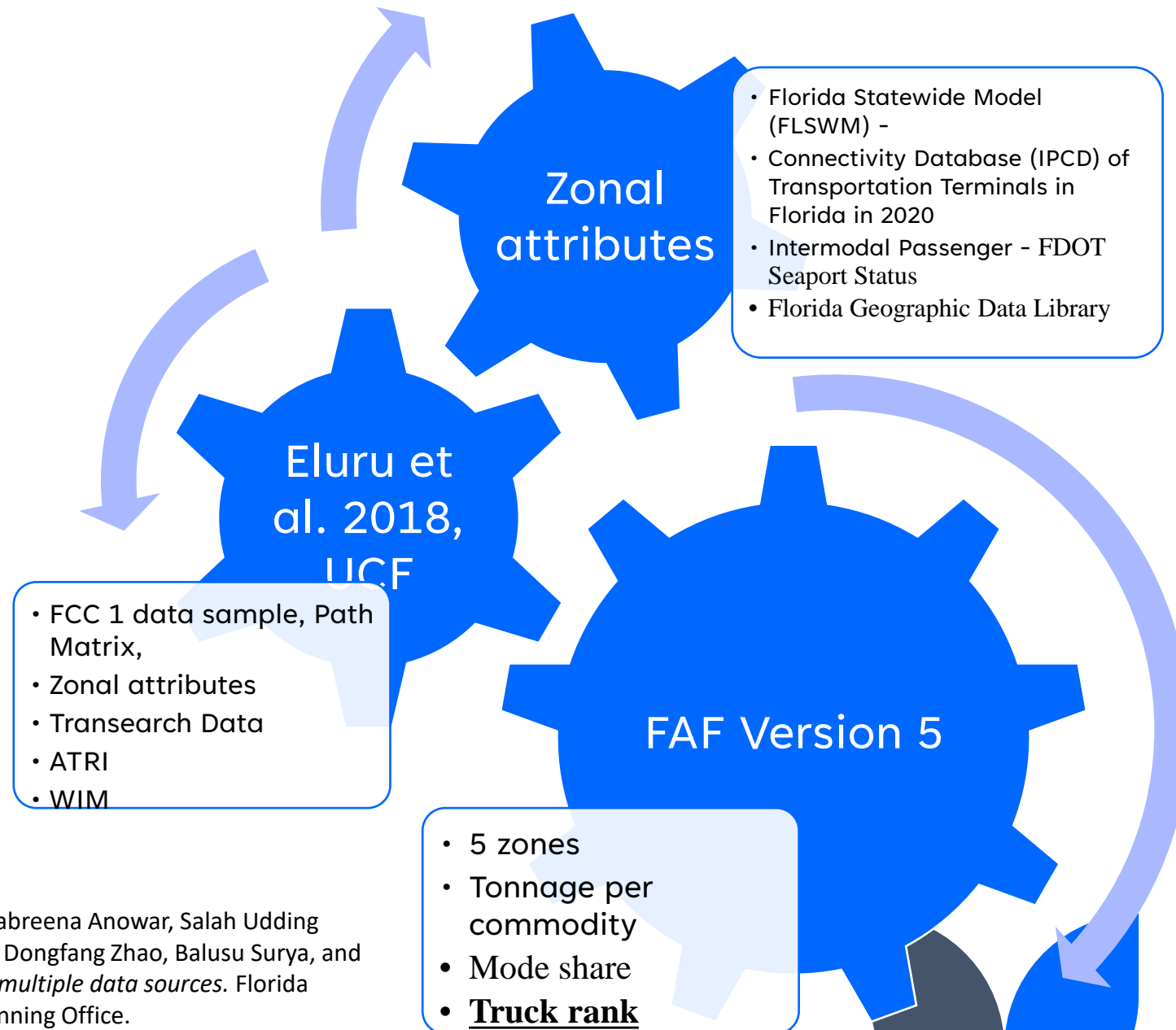
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# Introduction & Objectives:

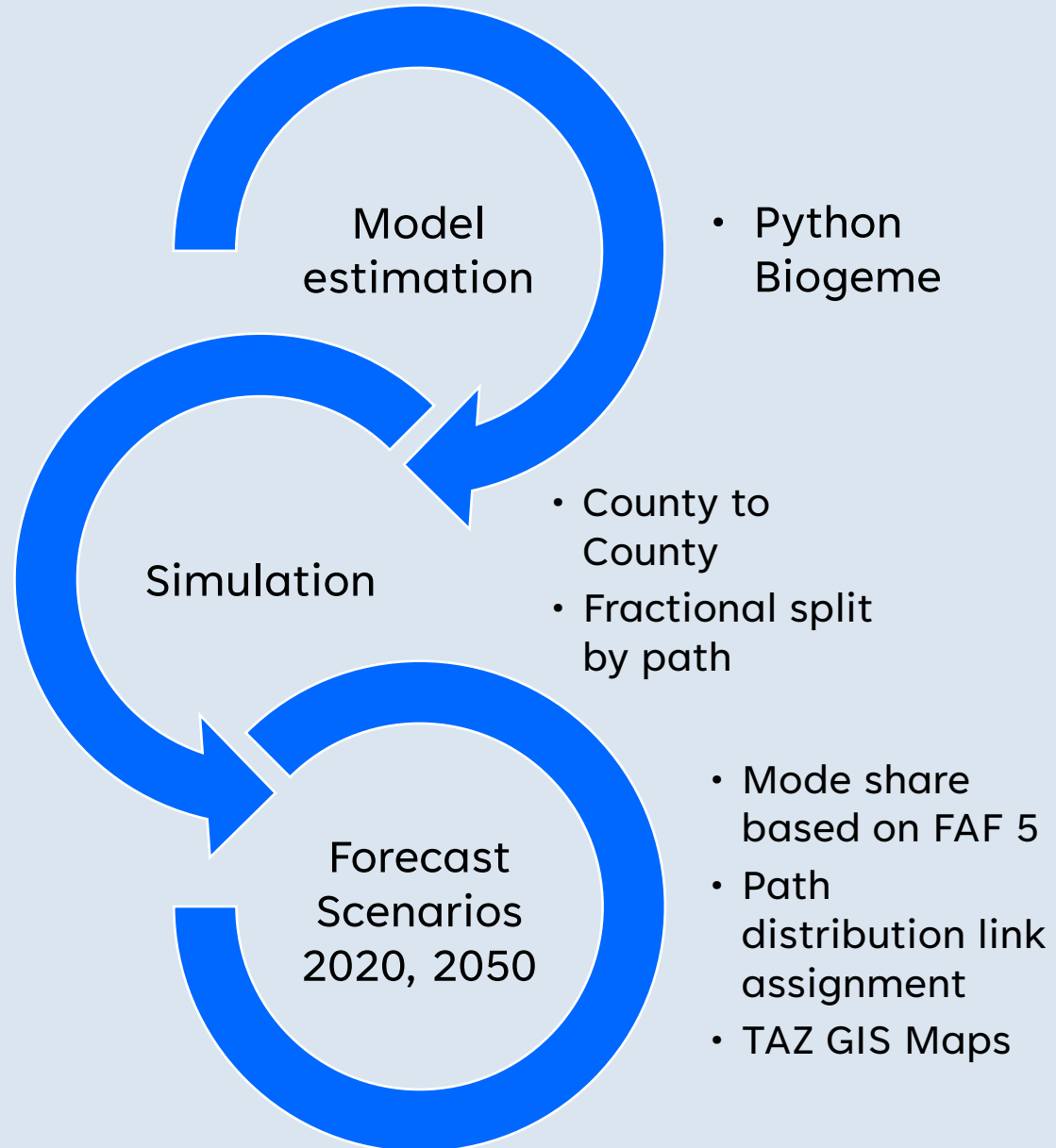


# Data

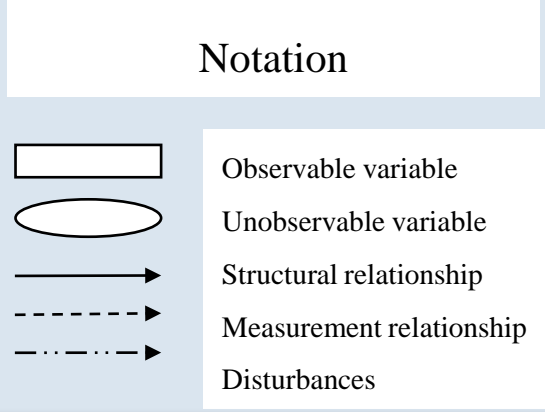
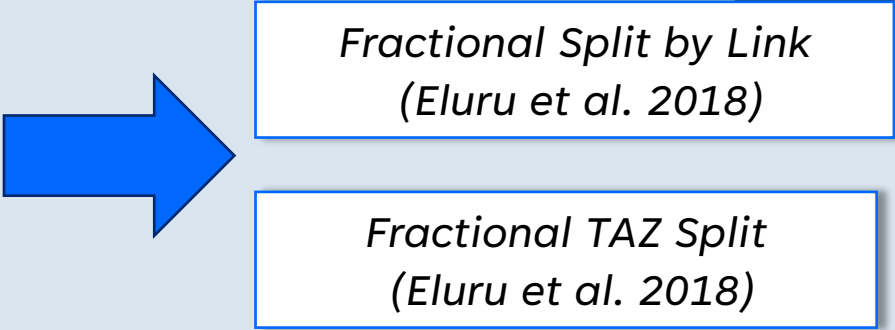
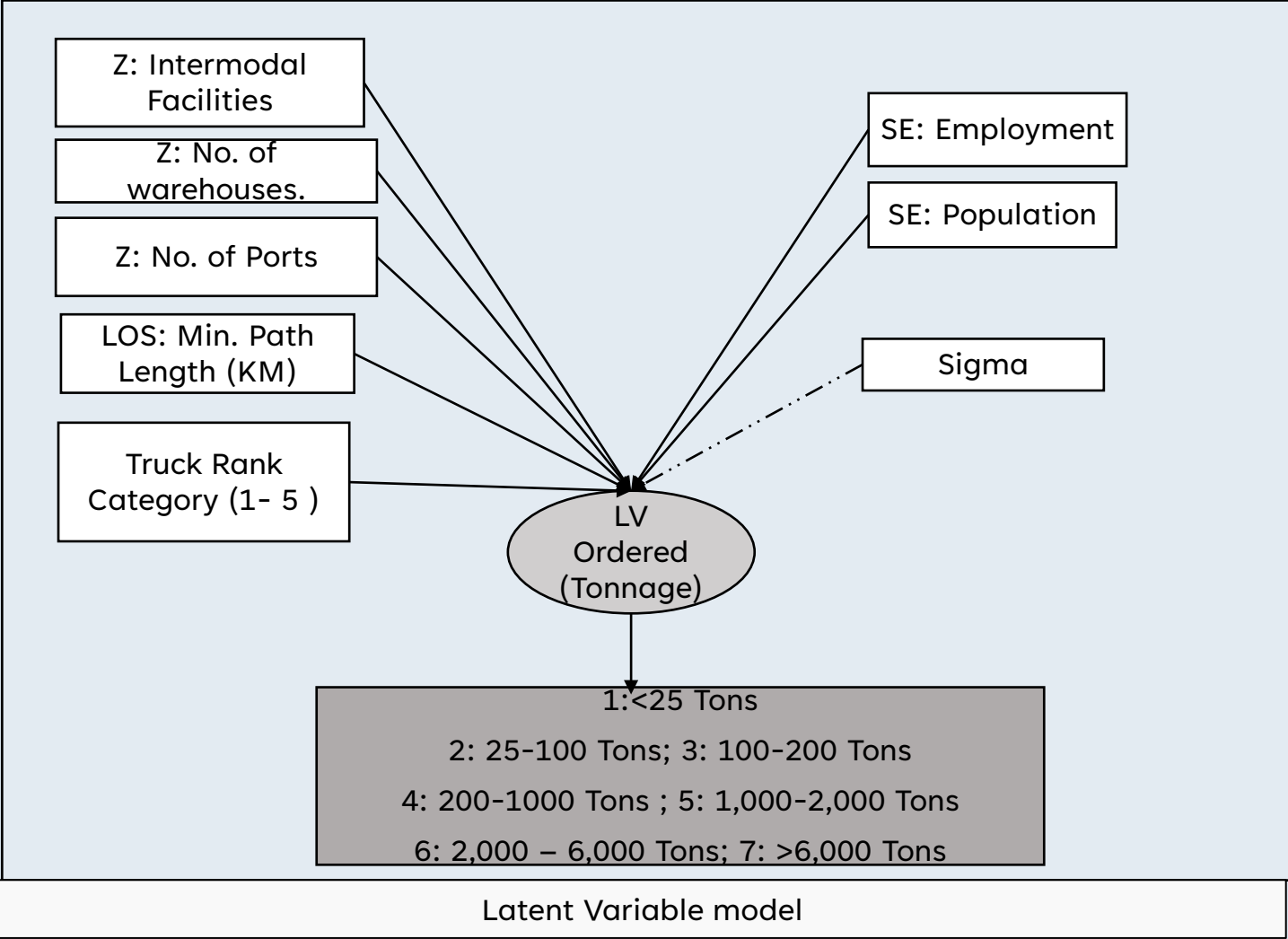


Eluru, Naveen, Xiaopeng Li, Abdul Pinjari, Sabreena Anowar, Salah Udding Momtaz, Nowreen Keya, Bibhaskumar Dey, Dongfang Zhao, Balusu Surya, and Parvathy S., 2018. *Freight data fusion from multiple data sources*. Florida Department of Transportation, Systems Planning Office.

# Methods



# Data and Methods

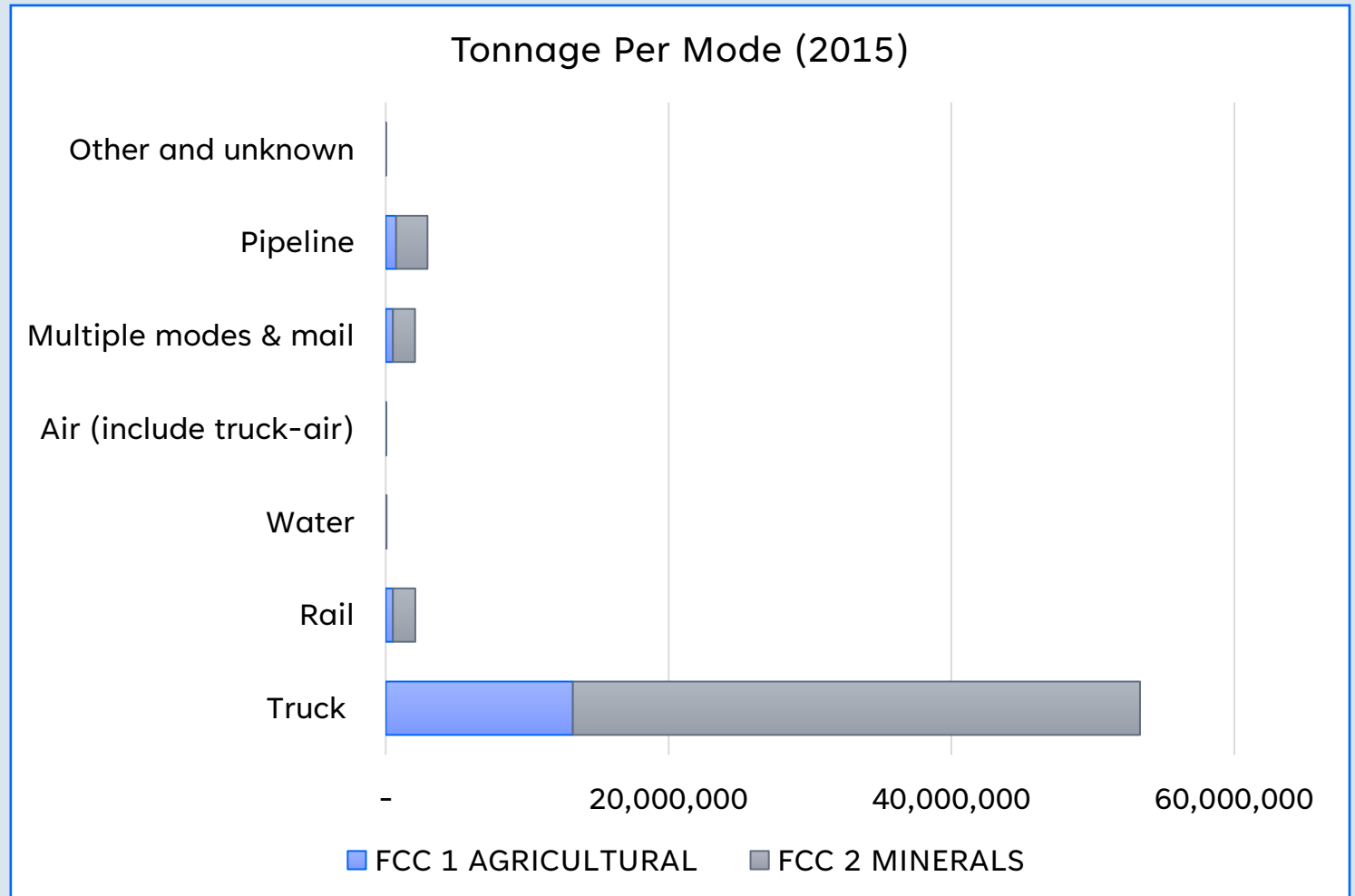


*Combine methods and results from a previous project*

La Paix, L., Wu, Y., Zang, Y. and Hill, T., 2023. A disaggregated approach of freight mobility per commodity based on public data: case study of Florida. Paper accepted for presentation at the 103<sup>rd</sup> Annual Meeting Transportation Research Board, January 7-11, Washington D.C.

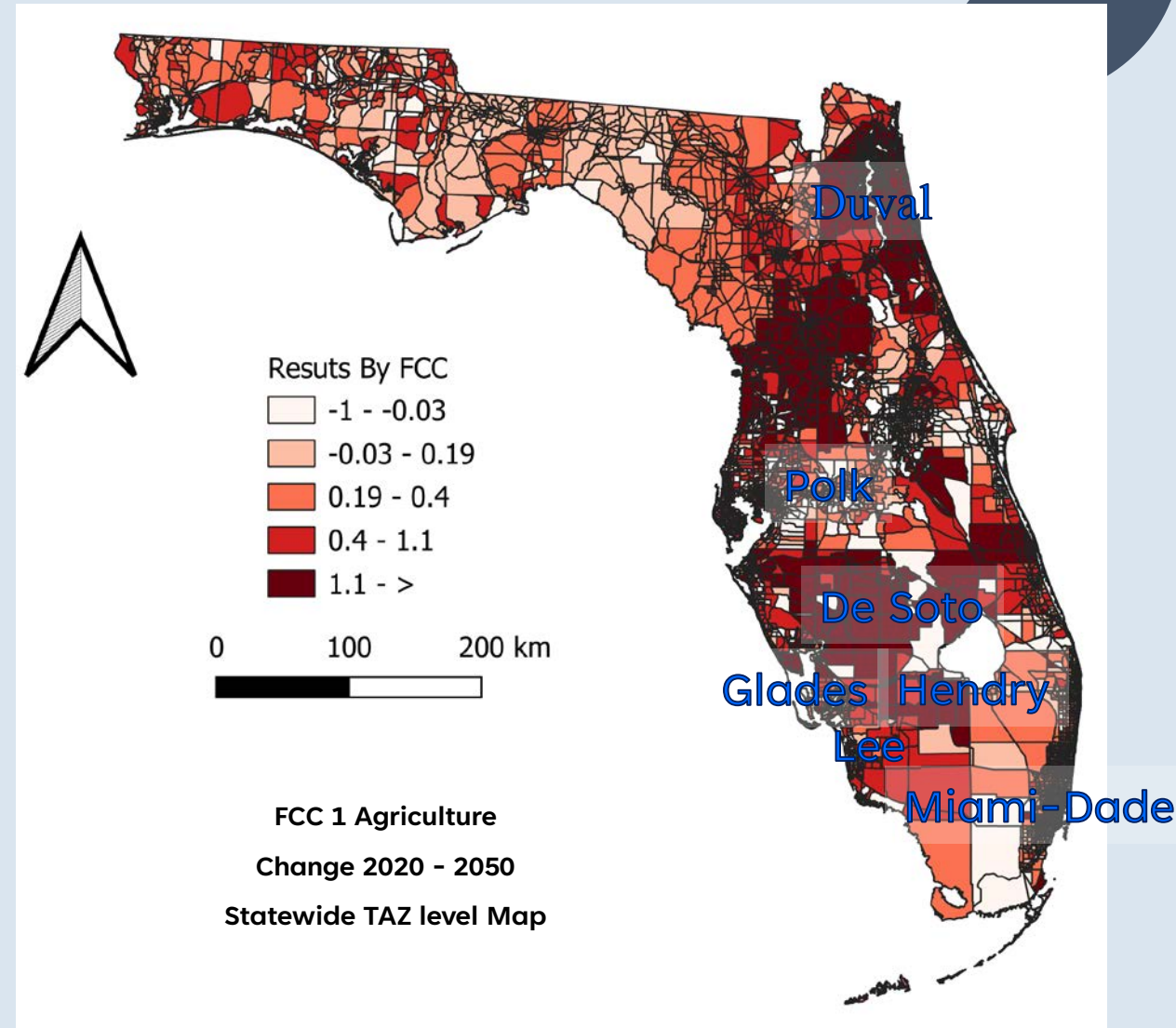
# Why is this different?

- Use of ordered structure.
- Estimation **tonnage** coefficient separately.
- Use **mode share** from public data source (FAF5).
- **Forecast** based on **simulation** with estimated coefficients.



# Why is this useful?

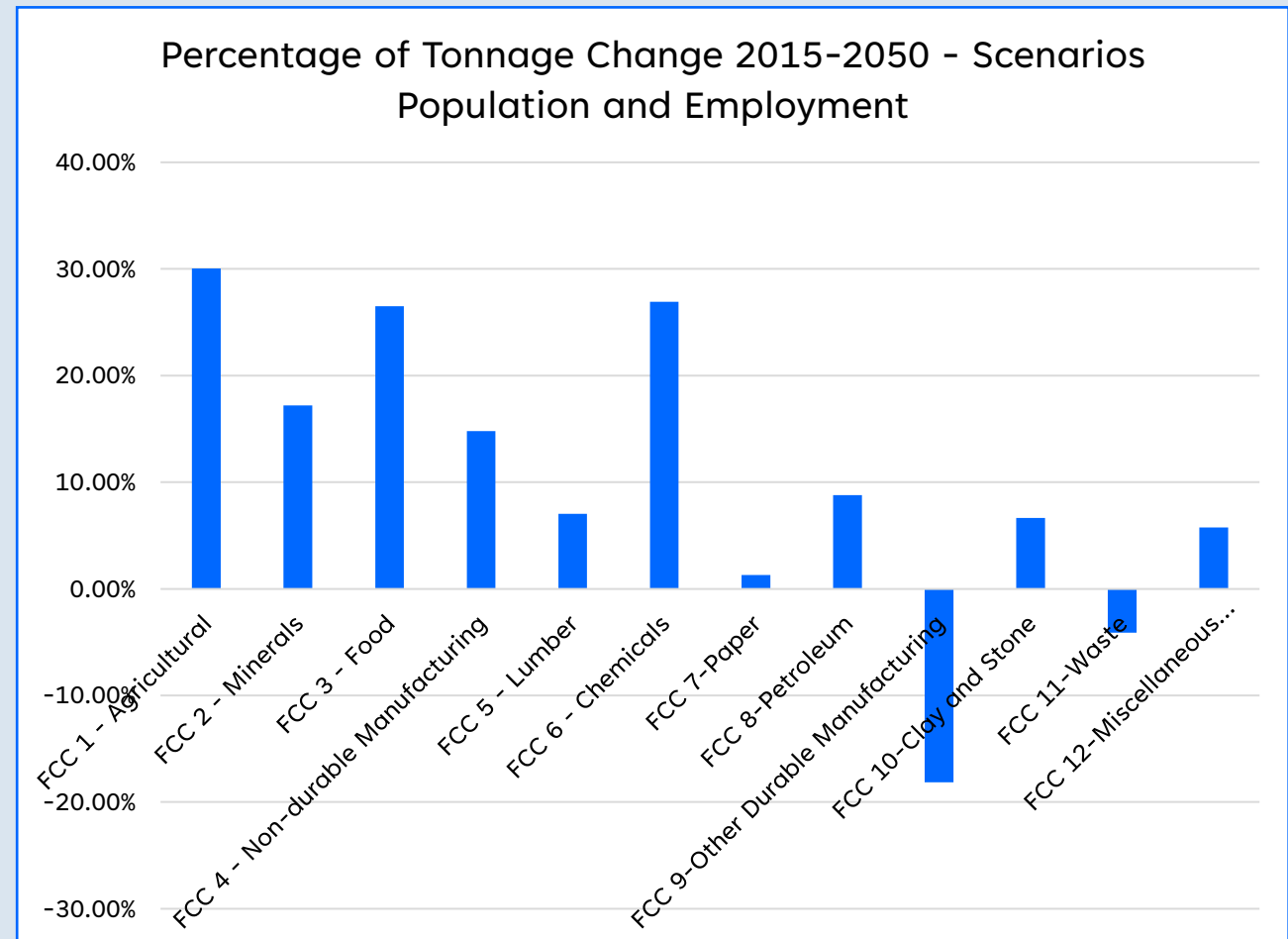
- Estimation and forecast at **disaggregated** level.
- Generate **scenario** maps (what if) statewide TAZ level.
- Prepare integrated local transport plans **per zone**.
- Provide the corresponding **supply per zone**.
- Analyze impacts **per commodity**.
- **Visualization**





# What did we improve?

- Use of public data to estimate county and TAZ level flows **per commodity**.
- Model structure:
  - Introduce **flexibility** to the model estimation.
  - Improve model **robustness**
- Forecast based on **simulation** vs linear projection
- Estimation of **elasticities**



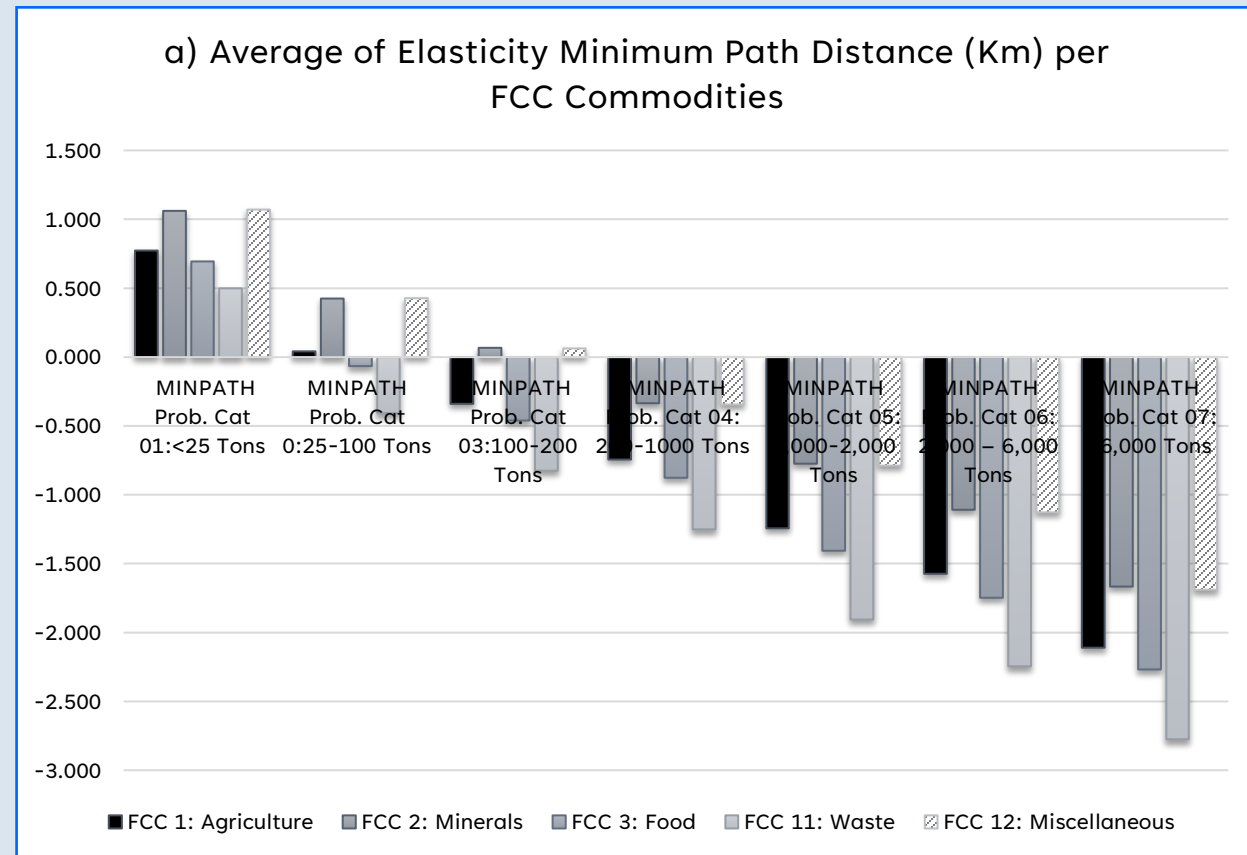
# Elasticities: Why is this useful?

- What does an elasticity mean?

- Why distance?
  - Affects modal shift

- Observe the impact of **route distance** over specific categories/commodities tonnage.
- Impacts **are not** linear.

Calculation details available upon request



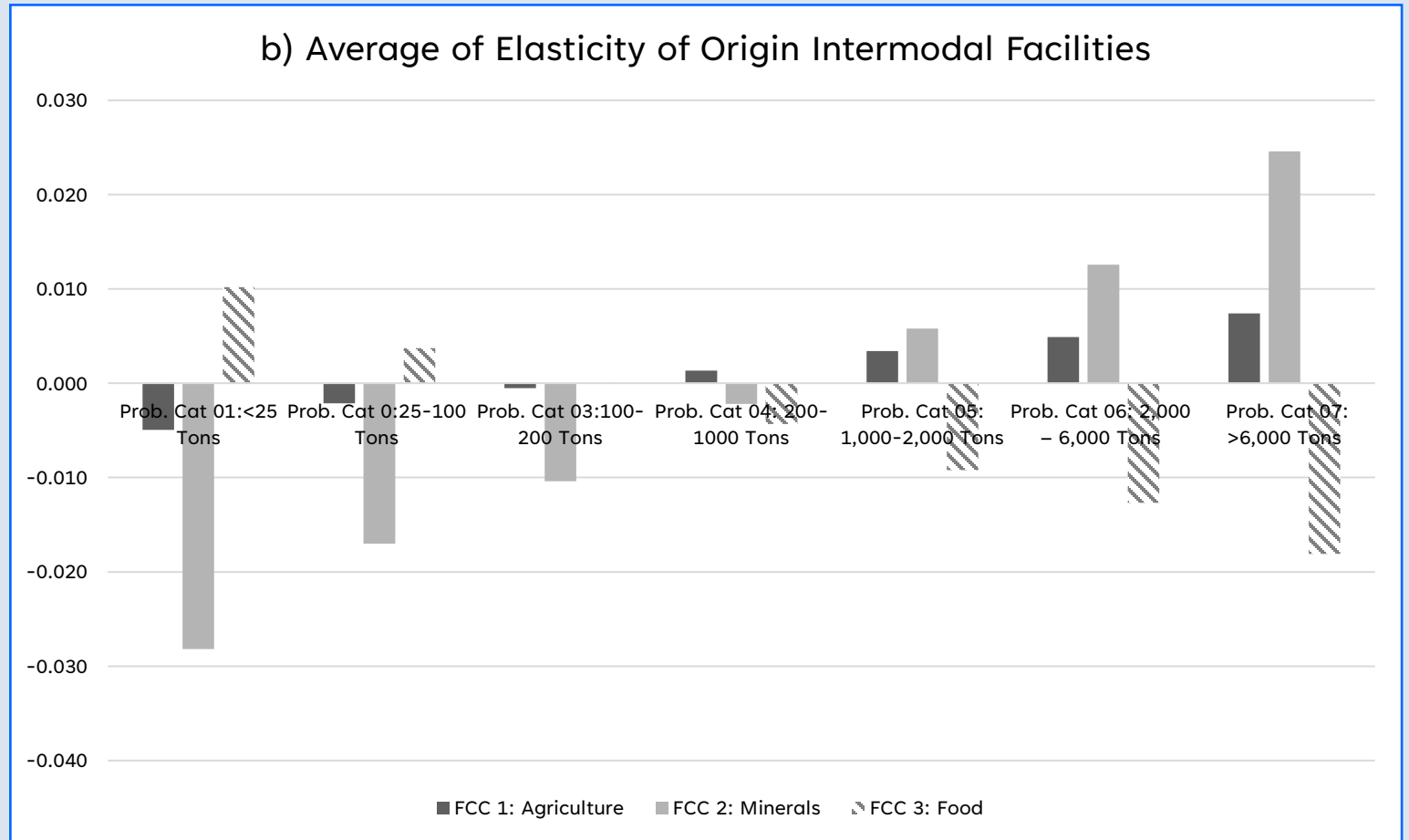
# Elasticities: Why is this useful?

- Impacts of the availability of **intermodal** facilities per commodity and **category**.
- Substantial differences among **commodities**.

- How can we implement this to passenger, e.g.?
  - Ordinal
  - Ridership

A further step?

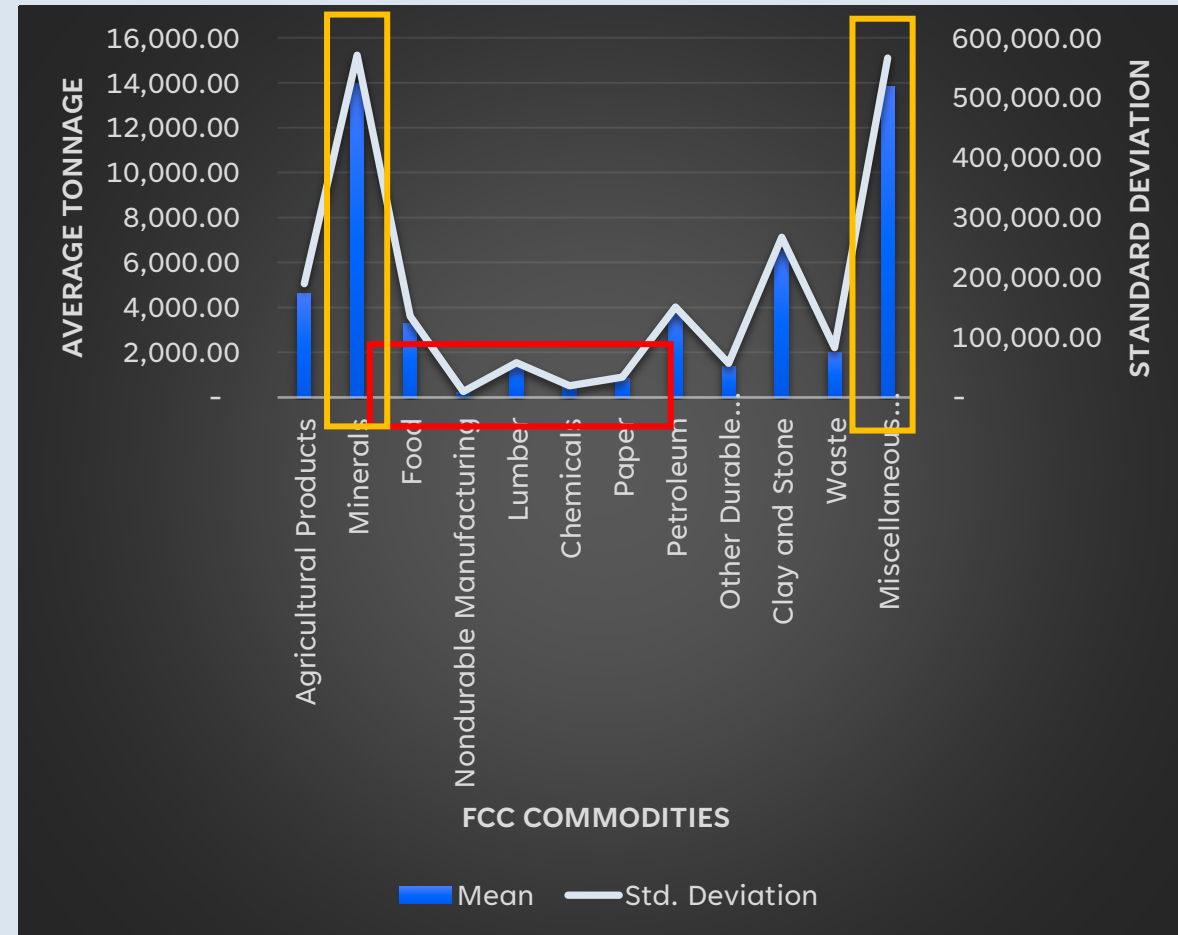
Elasticities map at TAZ level



# What can be improved?

- **Simultaneous** estimation of mode-flows choice.
- **Path/route choice** estimation based on observations.
- **Thresholds** per commodity – **different** nature.

Probabilities Categories	Group 1	Group 2	Group 3
Assigned to	FCC 4	FCC 3	FCC 1
	FCC 5	FCC 8	FCC 2
	FCC 6		FCC 9
	FCC 7		FCC 12
	FCC 8		
	FCC 11		



# Summary & Challenges



**Disaggregate** flows and mode share based on public data.



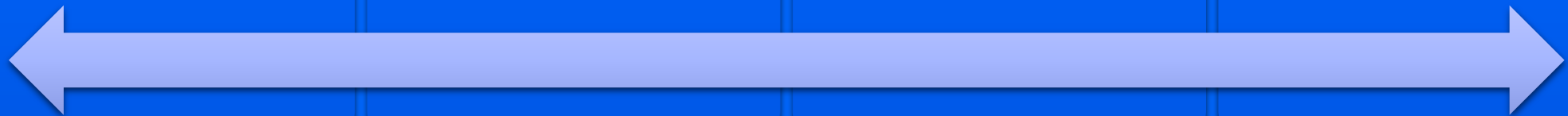
Fusing data and methods across research projects.



**Challenge:** accurate data publicly available (e.g. GPS) to develop a simultaneous estimation framework.



**Need:** gather observed route choices.

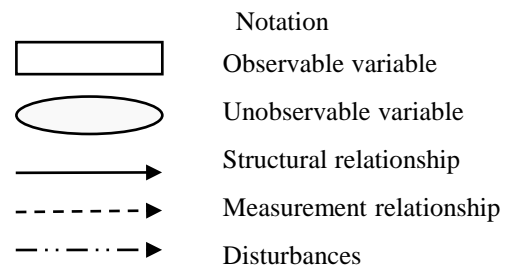
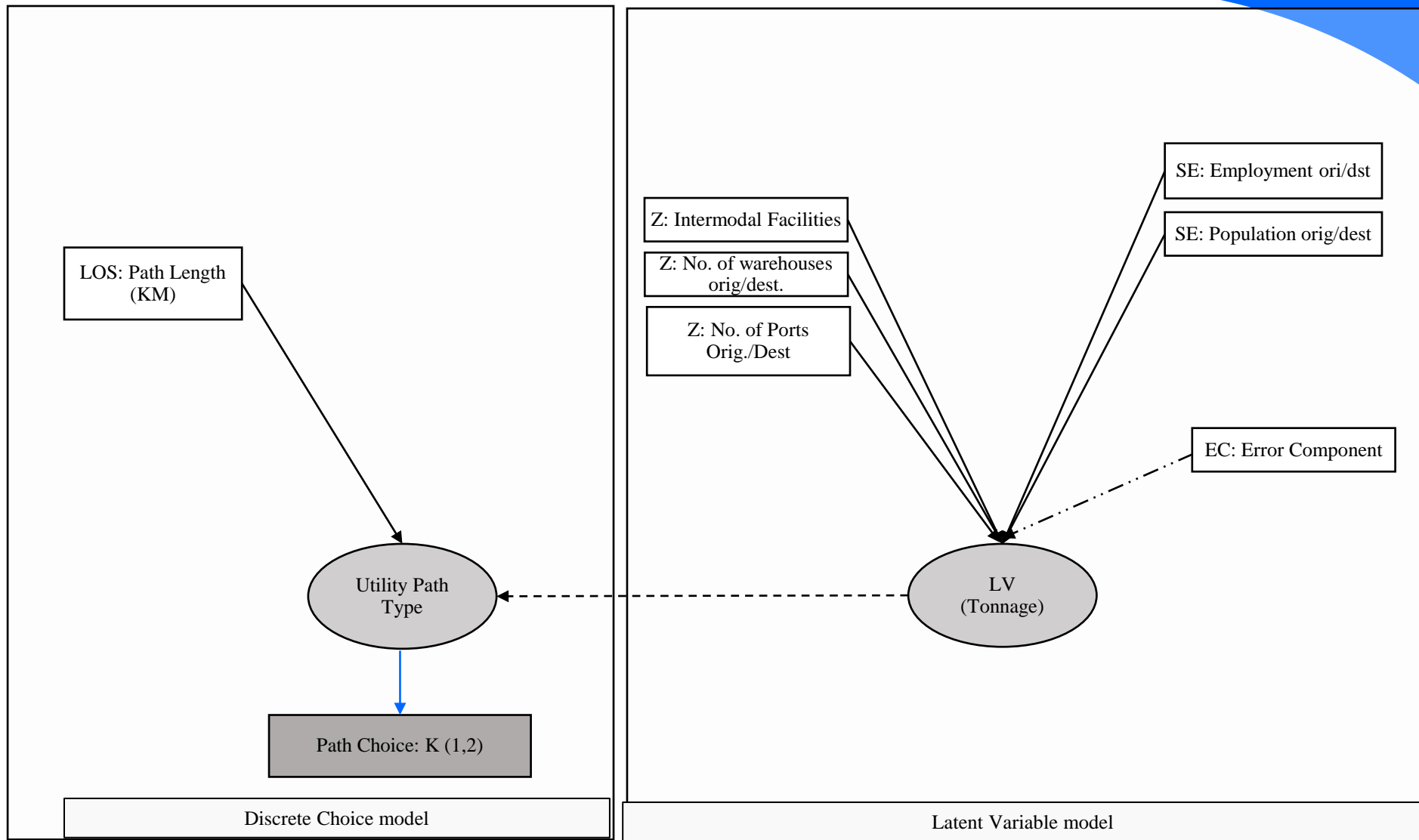




# Thank you

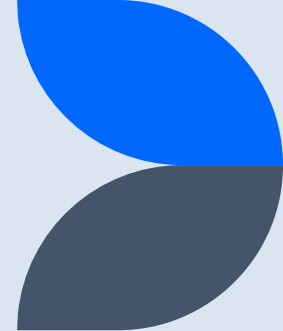
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# What can be improved?

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	Continuous Value			
Probabilities Categories	Type A	Type B	Type C	Type D
P_tonCat01 - 1:<25 Tons	25	25	25	25
P_tonCat02 25-100 Tons	100	100	100	100
P_tonCat03 100-200 Tons	200	200	200	200
P_tonCat04 200-1000 Tons	1,000	1,000	1,000	1,000
P_tonCat05 1,000-2,000 Tons	2,000	2,000	2,000	2,000
P_tonCat06 2.000 – 6.000 Tons	6.000	6.000	6.000	6.000
P_tonCat07 >6.000 Tons	100,000	300,000	190,000	120,000
Assigned to		FCC 4	FCC 3	FCC 1
		FCC 5	FCC 8	FCC 2
		FCC 6		FCC 9
		FCC 7		FCC 12
		FCC 8		
	FCC 11			

