ANALYZING RECENT HISTORICAL MIGRATION PATTERNS TO HELP STATES AND BUSINESS PREDICT POST-COVID MIGRATION AND ECONOMIC RECOVERY

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Highlights: *The data suggests that taxes and rent have a high impact on whether people move from their home state, while factors like educational support have a weak or negative effect. The model supports these findings, but only explains about 66.8% of total outward migration. Additional study is needed, especially for years with similar global conditions as seen during the pandemic. For more insights, head over to the **Dashboard***

One of the outcomes of COVID-19 is the realization that many jobs can be done remotely. A direct consequence of this is that people are reconsidering their home state and moving where the Wifi is strong and rent and cost of living is lower. Historically, there are four states that consistently show the largest net migration patterns in the U.S.: CA, FL, TX, and NY. Our analysis focuses on these four states and key economic indicators (or their proxies) to understand what factors influenced past migratory patterns, then allowing us to build a model that may be used to predict future movement in a post-COVID world.

Data

U.S. Government: Bureau of Labor Statistics, Bureau of Economic Analysis, US Census Bureau, IRS

Non-profits: Tax Policy Center, National Science Board

EDA was performed to identify correlations between the datasets & to understand observed behavior. The results that were verified were then fed into the model.


Validating the Model

OLS Regression Results

Dep. Variable:	Outmigration	R-squared (uncentered):	0.668
Model:	OLS	Adj. R-squared (uncentered):	0.665
Method:	Least Squares	F-statistic:	212.7
Date:	Sat, 06 Feb 2021	Prob (F-statistic):	1.40e-75
Time:	21:43:47	Log-Likelihood:	-4391.7
No. Observations:	320	AIC:	8789.
Df Residuals:	317	BIC:	8801.
Df Model:	3		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
RPP Rents	3093.8540	420.725	7.354	0.000	2266.089	3921.620
Sales Tax	2.361e+04	5051.633	4.673	0.000	1.37e+04	3.35e+04
HigherEdSupport	-17.4913	5.313	-3.292	0.001	-27.944	-7.038

Omnibus:	75.909	Durbin-Watson:	2.003
Prob(Omnibus):	0.000	Jarque-Bera (JB):	132.756
Skew:	1.330	Prob(JB):	1.49e-29
Kurtosis:	4.697	Cond. No.:	2.65e+03

Economic policies have a significant effect on migration. Higher regional price parities for rents and sales tax positively correlate to people leaving a state; Increased education support and high unemployment will negatively impact outward migration.
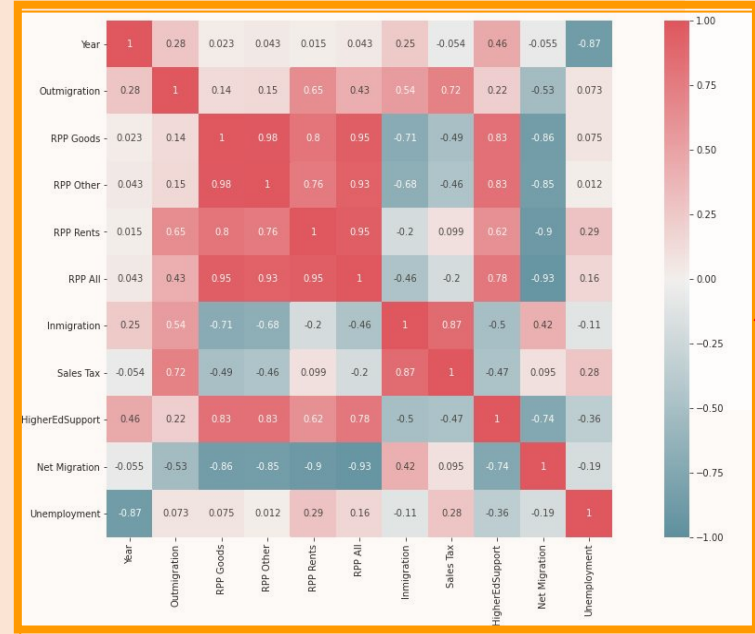
Best indicators of migration

Largest Net Migratory Pattern:
CA ☐ TX (Factor: Rents)
NY ☐ FL (Factor: Tax)

Additional Context

- The model only explains 66.8% of why out migration happen. More significant variables are needed to fully understand migratory behavior

- Migratory behavior increased significantly during a crisis, so deeper analysis of past economic recessions may supplement guidance for post-COVID recovery.