

# **Exploration of Educational Outcomes in the United States**

Presented by Diana Fujimura and Hilary  
Draper

# Team Members

## Diana Fujimura

- Background:
  - From Chicago
  - Undergrad in Sports Medicine & graduated with BS from University of Louisville (Go Cards!)
  - Sales & Marketing Exec with +20 years in the Spirits & Alc Bev Industry
  - Currently a GM at Bacardi USA

## Hilary Draper

- Background:
  - From Ohio
  - Undergraduate in Cultural Anthropology and a minor in Theater from OSU
  - Graduate degree in Educational Anthropology from FAU
  - More than a decade teaching in special needs education

# Background and Data Source

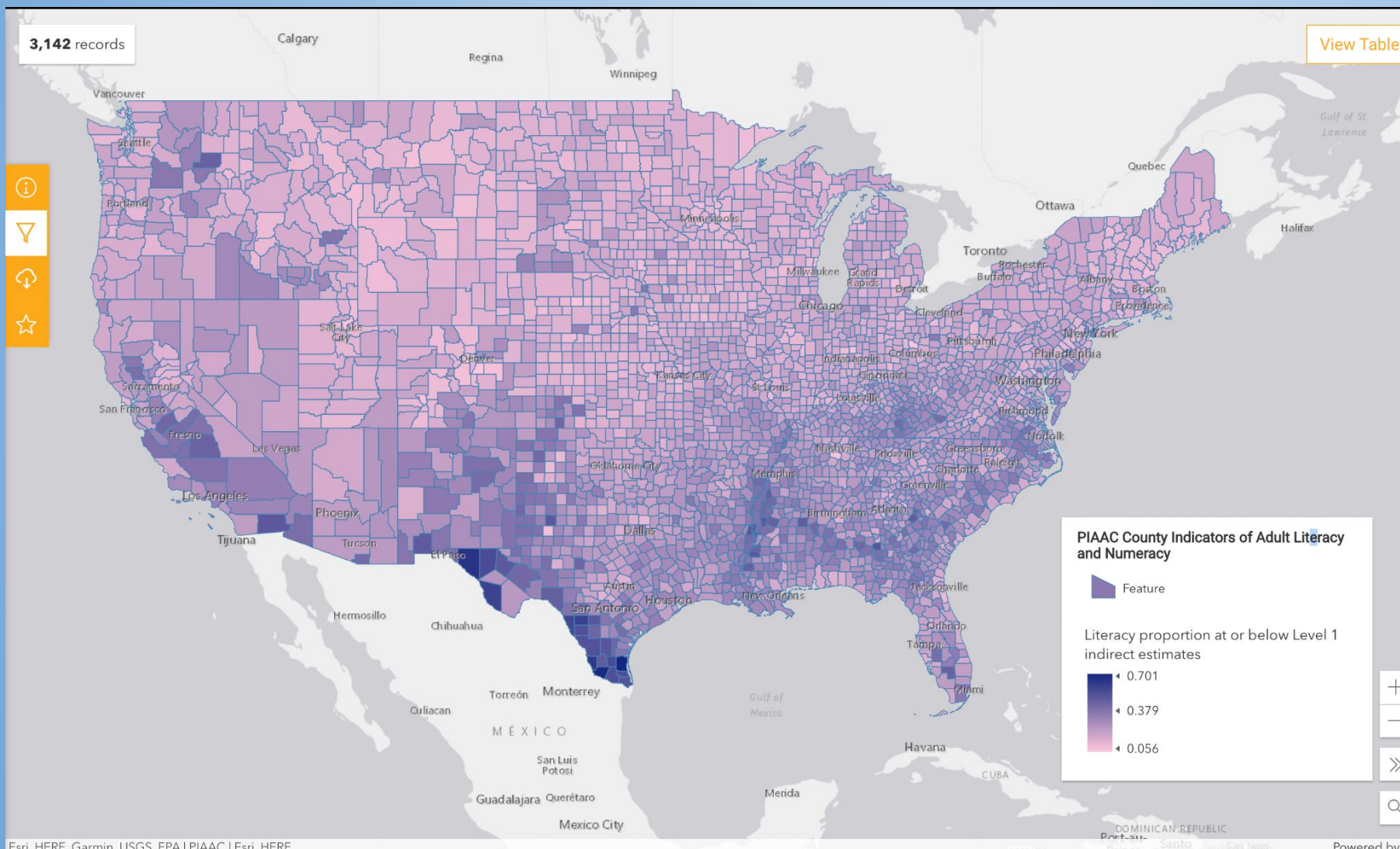
## Data source- Gov entities

- Program for the International Assessment of Adult Competencies (PIAAC)
- National Center for Education Statistics
- Organization for Economic Cooperation and Development (OECD)

## Methods of Analysis

- Excel for exploration
- R Studio for stats
- Jupyter Notebook for correlations

# Project Site:



Site:

[Site link for exploration and discussion](#)



# Literacy Competency Rates

Sorted by the highest  
percentage of low  
scores

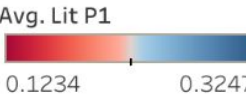
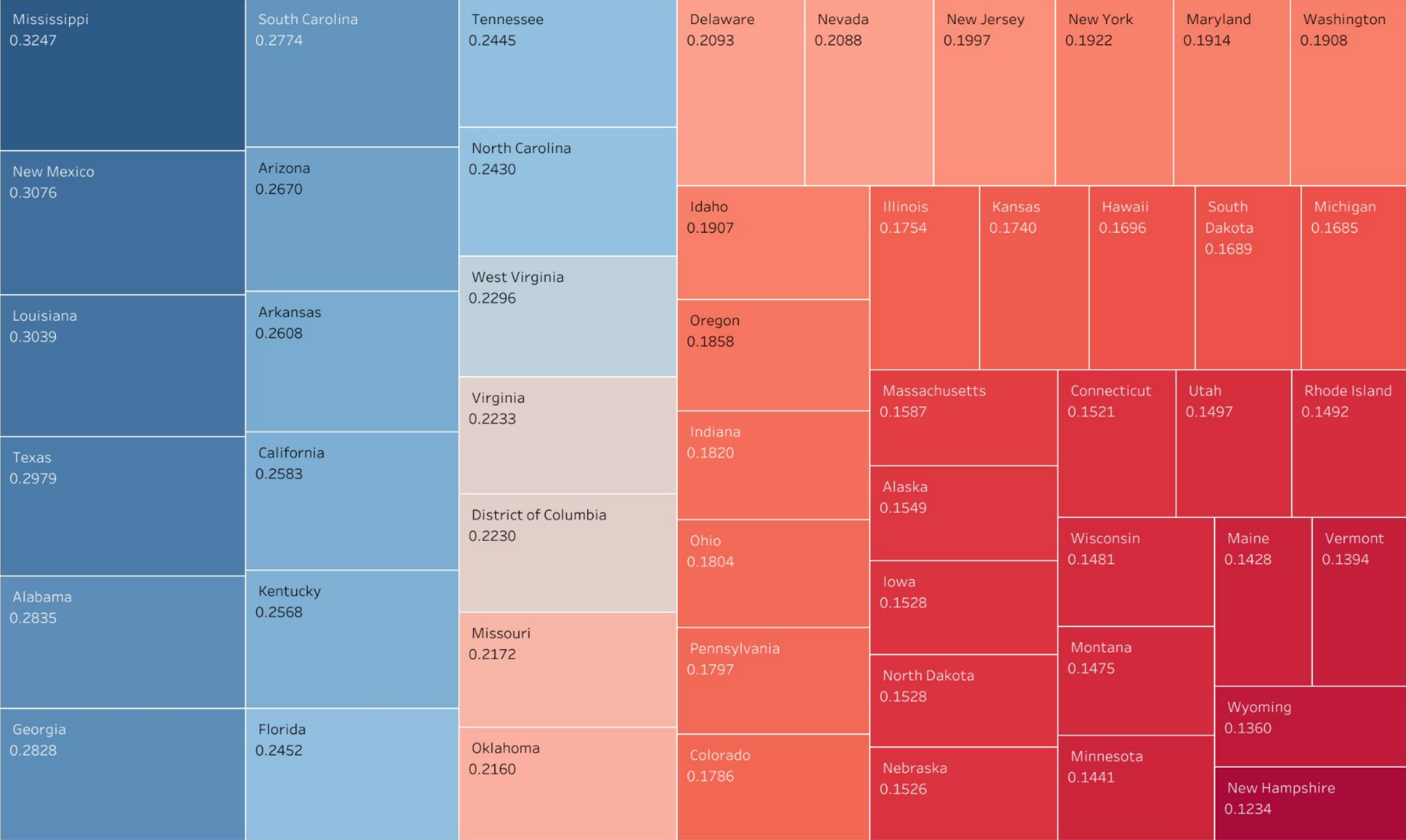
State	Average of Lit_P1	Average of Lit_P2	Average of Lit_P3
Mississippi	0.325	0.391	0.284
New Mexico	0.308	0.344	0.348
Louisiana	0.304	0.417	0.279
Texas	0.298	0.368	0.334
Alabama	0.283	0.402	0.315

Sorted by the highest  
percentage of high  
scores

State	Average of Lit_P1	Average of Lit_P2	Average of Lit_P3
Rhode Island	0.149	0.304	0.548
Massachusetts	0.159	0.300	0.542
District of Columbia	0.223	0.250	0.527
New Hampshire	0.123	0.351	0.526
Connecticut	0.152	0.326	0.522



# Average Portion of the Population at or Below the Lowest Literacy Levels



# Numeracy Competency Rates

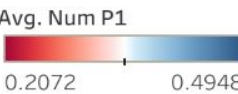
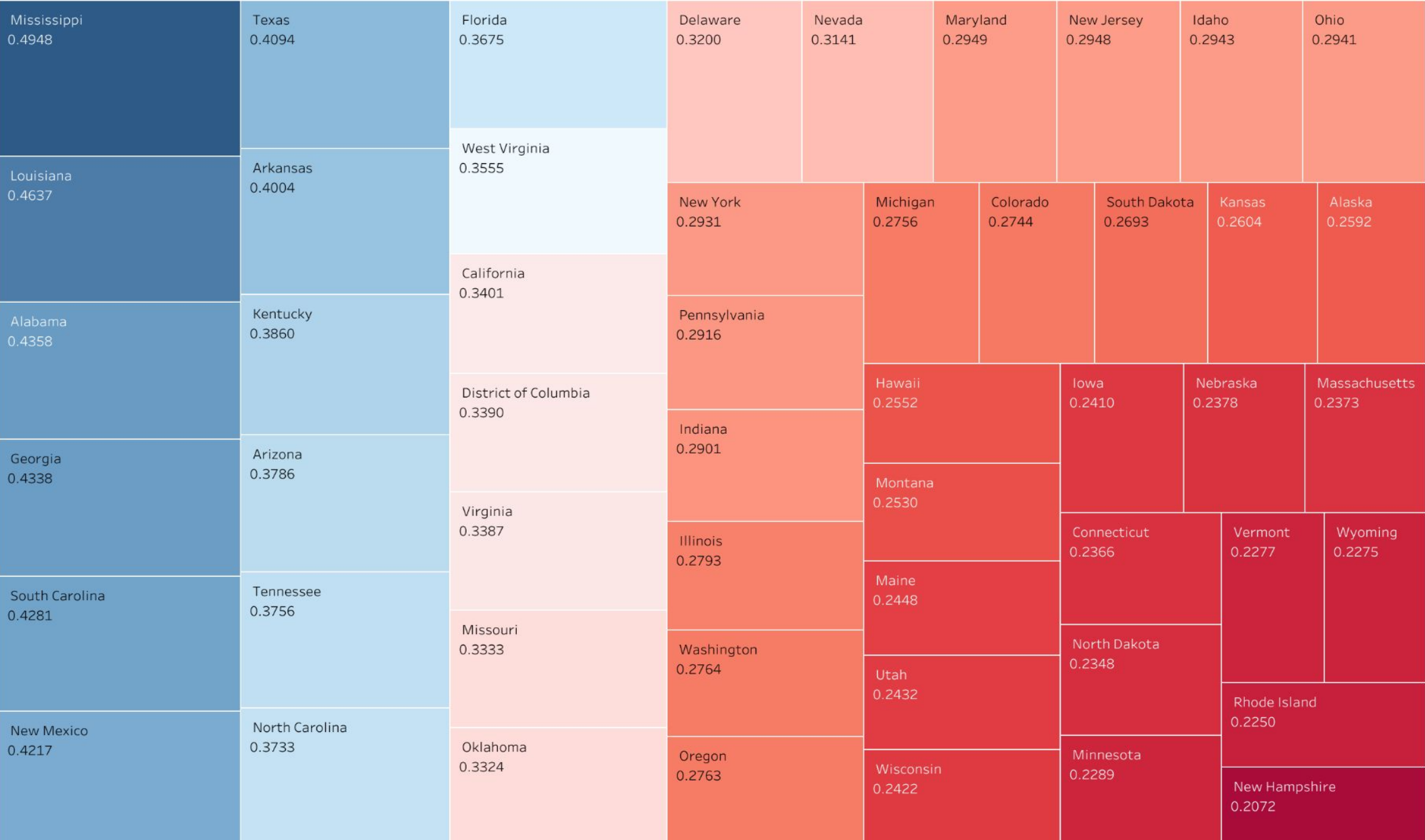
Sorted by the highest  
percentage of low  
scores

State	Average of Num_P1	Average of Num_P2	Average of Num_P3
Mississippi	0.495	0.296	0.209
Louisiana	0.464	0.342	0.194
Alabama	0.436	0.336	0.228
Georgia	0.434	0.364	0.203
South Carolina	0.428	0.329	0.243

Sorted by the highest  
percentage of high  
scores

State	Average of Num_P1	Average of Num_P2	Average of Num_P3
Rhode Island	0.225	0.321	0.454
District of Columbia	0.339	0.211	0.450
Massachusetts	0.237	0.313	0.450
Connecticut	0.237	0.346	0.418
New Hampshire	0.207	0.379	0.414

Average Portion of the Population at or Below the Lowest Numeracy Levels





# Low Literacy Correlation Matrix

Correlation Matrix - National →

	Lit_P1	Lit_P2	Lit_P3	Male	Female	Less_HS	HS	More_HS	SNAP	Employed	Unemployed
Lit_P1	1.0	0.27	-0.88	0.095	-0.095	0.95	0.18	-0.7	0.68	-0.65	0.4
Lit_P2	0.27	1.0	-0.69	0.13	-0.13	0.32	0.96	-0.84	0.38	-0.38	0.13
Lit_P3	-0.88	-0.69	1.0	-0.14	0.14	-0.87	-0.61	0.93	-0.7	0.68	-0.37
Male	0.095	0.13	-0.14	1.0	-1.0	0.12	0.14	-0.16	-0.076	-0.29	-0.17
Female	-0.095	-0.13	0.14	-1.0	1.0	-0.12	-0.14	0.16	0.076	0.29	0.17
Less_HS	0.95	0.32	-0.87	0.12	-0.12	1.0	0.23	-0.76	0.63	-0.61	0.33
HS	0.18	0.96	-0.61	0.14	-0.14	0.23	1.0	-0.81	0.3	-0.28	0.06
More_HS	-0.7	-0.84	0.93	-0.16	0.16	-0.76	-0.81	1.0	-0.59	0.56	-0.24
SNAP	0.68	0.38	-0.7	-0.076	0.076	0.63	0.3	-0.59	1.0	-0.69	0.6
Employed	-0.65	-0.38	0.68	-0.29	0.29	-0.61	-0.28	0.56	-0.69	1.0	-0.47
Unemployed	0.4	0.13	-0.37	-0.17	0.17	0.33	0.06	-0.24	0.6	-0.47	1.0

	Lit_P1	Lit_P2	Lit_P3	Male	Female	Less_HS	HS	More_HS	SNAP	Employed	Unemployed
Lit_P1	1.0	0.39	-0.94	0.19	-0.19	0.87	0.27	-0.69	0.85	-0.78	0.51
Lit_P2	0.39	1.0	-0.68	0.24	-0.24	0.47	0.98	-0.87	0.2	-0.35	-0.045
Lit_P3	-0.94	-0.68	1.0	-0.23	0.23	-0.87	-0.57	0.87	-0.75	0.76	-0.39
Male	0.19	0.24	-0.23	1.0	-1.0	0.34	0.25	-0.35	0.049	-0.51	-0.2
Female	-0.19	-0.24	0.23	-1.0	1.0	-0.34	-0.25	0.35	-0.049	0.51	0.2
Less_HS	0.87	0.47	-0.87	0.34	-0.34	1.0	0.39	-0.84	0.67	-0.68	0.42
HS	0.27	0.98	-0.57	0.25	-0.25	0.39	1.0	-0.83	0.061	-0.27	-0.17
More_HS	-0.69	-0.87	0.87	-0.35	0.35	-0.84	-0.83	1.0	-0.44	0.57	-0.15
SNAP	0.85	0.2	-0.75	0.049	-0.049	0.67	0.061	-0.44	1.0	-0.67	0.67
Employed	-0.78	-0.35	0.76	-0.51	0.51	-0.68	-0.27	0.57	-0.67	1.0	-0.34
Unemployed	0.51	-0.045	-0.39	-0.2	0.2	0.42	-0.17	-0.15	0.67	-0.34	1.0

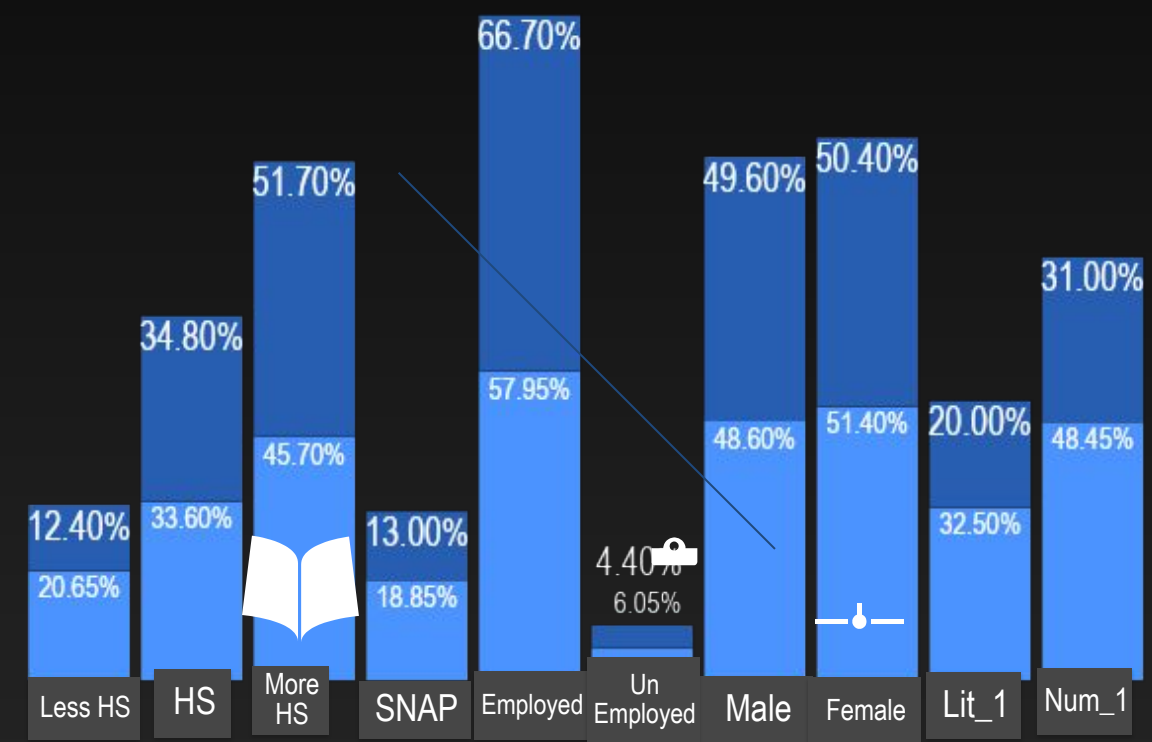
← Correlation Matrix - Mississippi



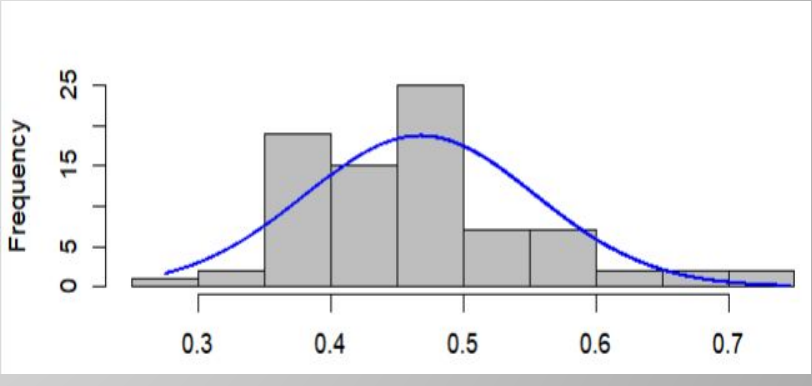
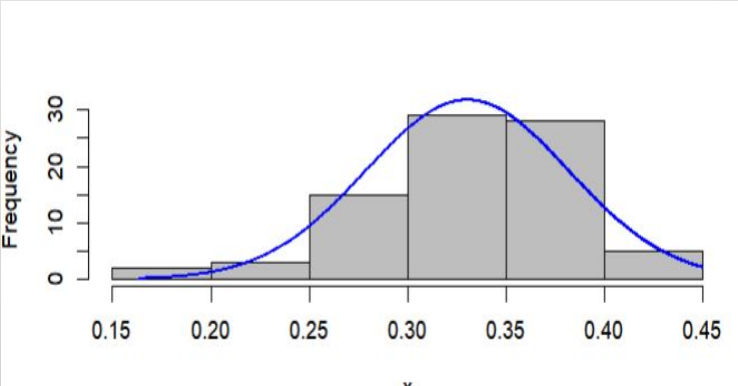
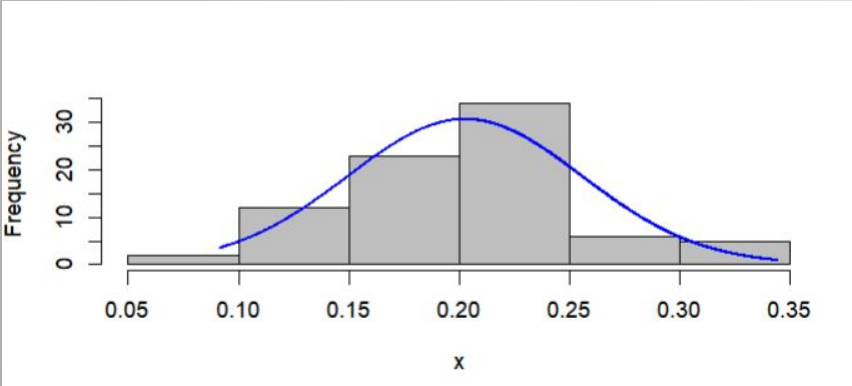
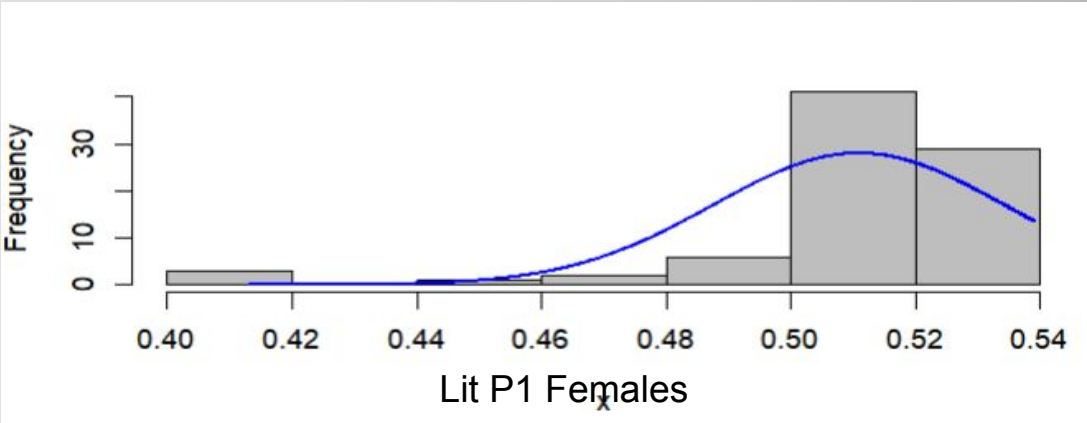
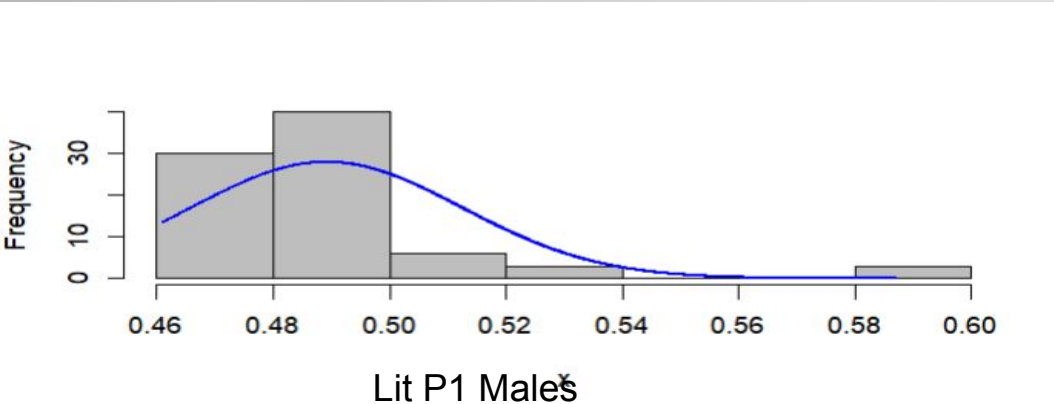
# Literacy & Numeracy Averages

50%

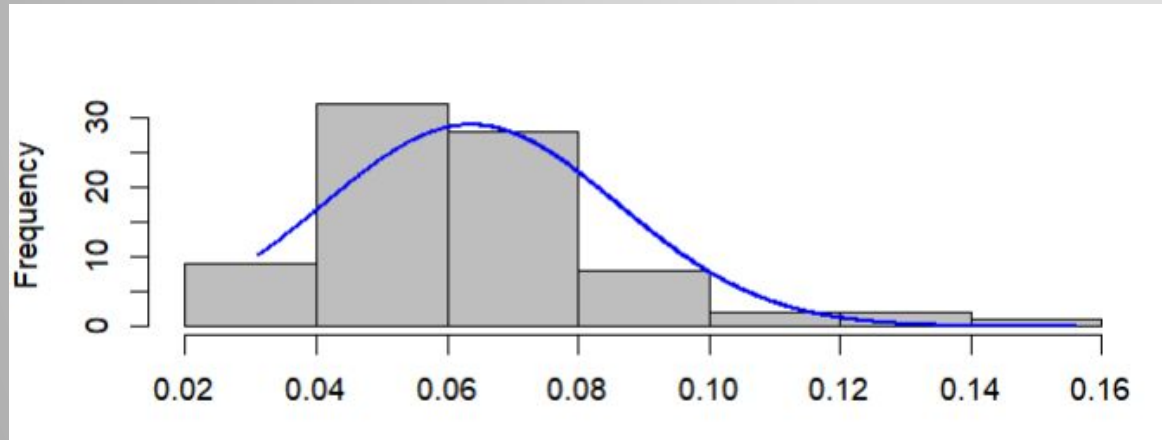
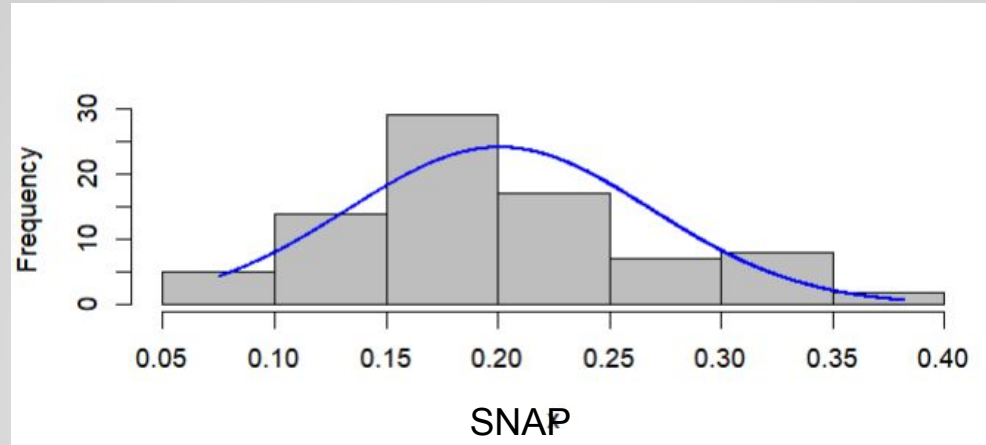
Average of Males & Females at the lowest Literacy & Numeracy levels also show correlation with Less HS, SNAP benefits & being unemployed.



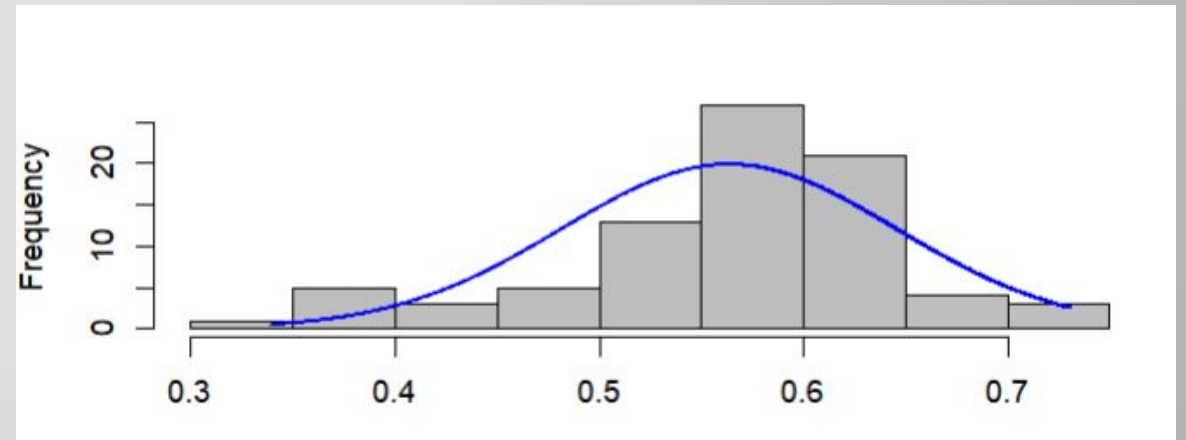
# Literacy Histograms for Mississippi



# Literacy Histograms for Mississippi



Unemployed



Employed



# Low Numeracy Correlation Matrix

Correlation matrix national→

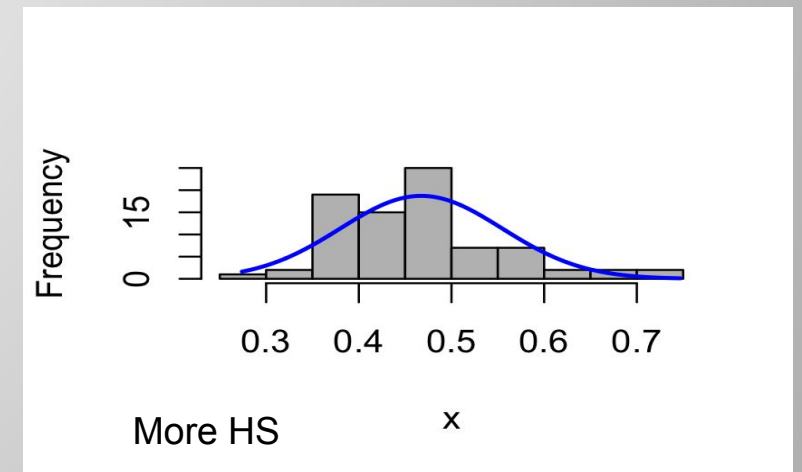
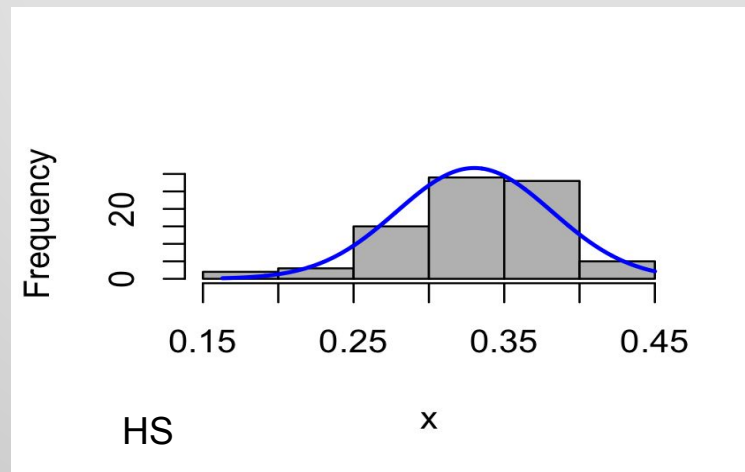
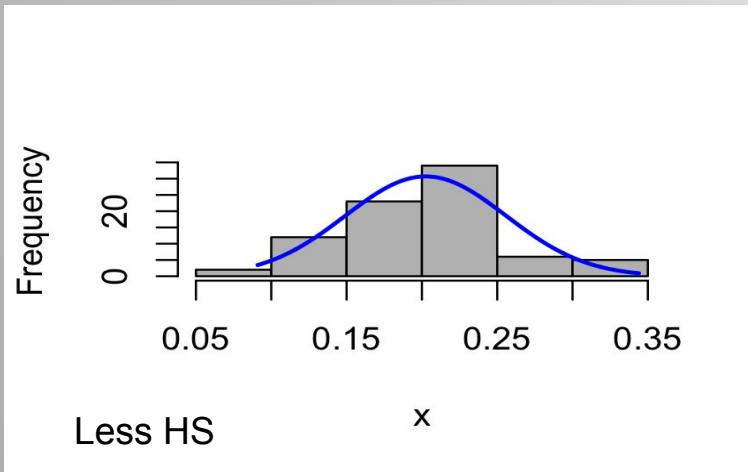
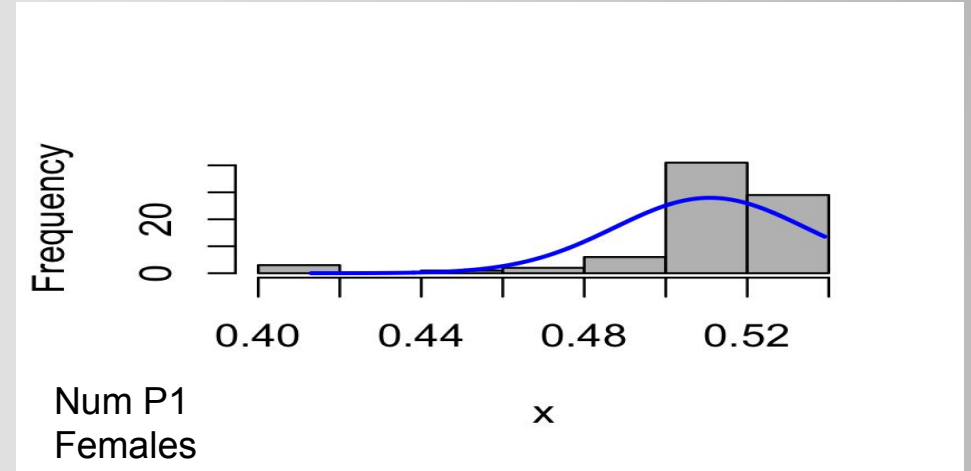
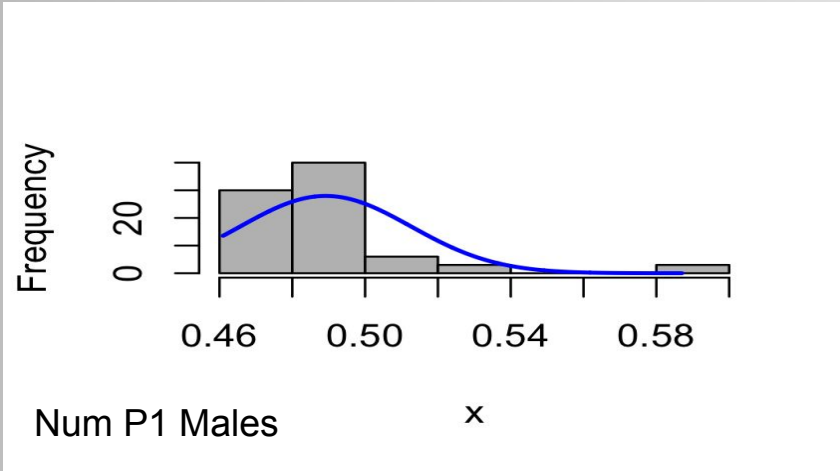
	Num_P1	Num_P2	Num_P3	Male	Female	Less_HS	HS	More_HS	SNAP	Employed	Unemployed
Num_P1	1.0	-0.36	-0.87	0.072	-0.072	0.91	0.29	-0.74	0.75	-0.71	0.45
Num_P2	-0.36	1.0	-0.15	0.12	-0.12	-0.34	0.75	-0.29	-0.24	0.2	-0.23
Num_P3	-0.87	-0.15	1.0	-0.14	0.14	-0.78	-0.69	0.94	-0.67	0.65	-0.35
Male	0.072	0.12	-0.14	1.0	-1.0	0.12	0.14	-0.16	-0.076	-0.29	-0.17
Female	-0.072	-0.12	0.14	-1.0	1.0	-0.12	-0.14	0.16	0.076	0.29	0.17
Less_HS	0.91	-0.34	-0.78	0.12	-0.12	1.0	0.23	-0.76	0.63	-0.61	0.33
HS	0.29	0.75	-0.69	0.14	-0.14	0.23	1.0	-0.81	0.3	-0.28	0.06
More_HS	-0.74	-0.29	0.94	-0.16	0.16	-0.76	-0.81	1.0	-0.59	0.56	-0.24
SNAP	0.75	-0.24	-0.67	-0.076	0.076	0.63	0.3	-0.59	1.0	-0.69	0.6
Employed	-0.71	0.2	0.65	-0.29	0.29	-0.61	-0.28	0.56	-0.69	1.0	-0.47
Unemployed	0.45	-0.23	-0.35	-0.17	0.17	0.33	0.06	-0.24	0.6	-0.47	1.0

	Num_P1	Num_P2	Num_P3	Male	Female	Less_HS	HS	More_HS	SNAP	Employed	Unemployed
Num_P1	1.0	-0.68	-0.9	0.13	-0.13	0.8	0.27	-0.65	0.86	-0.78	0.51
Num_P2	-0.68	1.0	0.29	0.052	-0.052	-0.43	0.51	-0.033	-0.7	0.5	-0.54
Num_P3	-0.9	0.29	1.0	-0.21	0.21	-0.79	-0.66	0.87	-0.7	0.72	-0.35
Male	0.13	0.052	-0.21	1.0	-1.0	0.34	0.25	-0.35	0.049	-0.51	-0.2
Female	-0.13	-0.052	0.21	-1.0	1.0	-0.34	-0.25	0.35	-0.049	0.51	0.2
Less_HS	0.8	-0.43	-0.79	0.34	-0.34	1.0	0.39	-0.84	0.67	-0.68	0.42
HS	0.27	0.51	-0.66	0.25	-0.25	0.39	1.0	-0.83	0.061	-0.27	-0.17
More_HS	-0.65	-0.033	0.87	-0.35	0.35	-0.84	-0.83	1.0	-0.44	0.57	-0.15
SNAP	0.86	-0.7	-0.7	0.049	-0.049	0.67	0.061	-0.44	1.0	-0.67	0.67
Employed	-0.78	0.5	0.72	-0.51	0.51	-0.68	-0.27	0.57	-0.67	1.0	-0.34
Unemployed	0.51	-0.54	-0.35	-0.2	0.2	0.42	-0.17	-0.15	0.67	-0.34	1.0

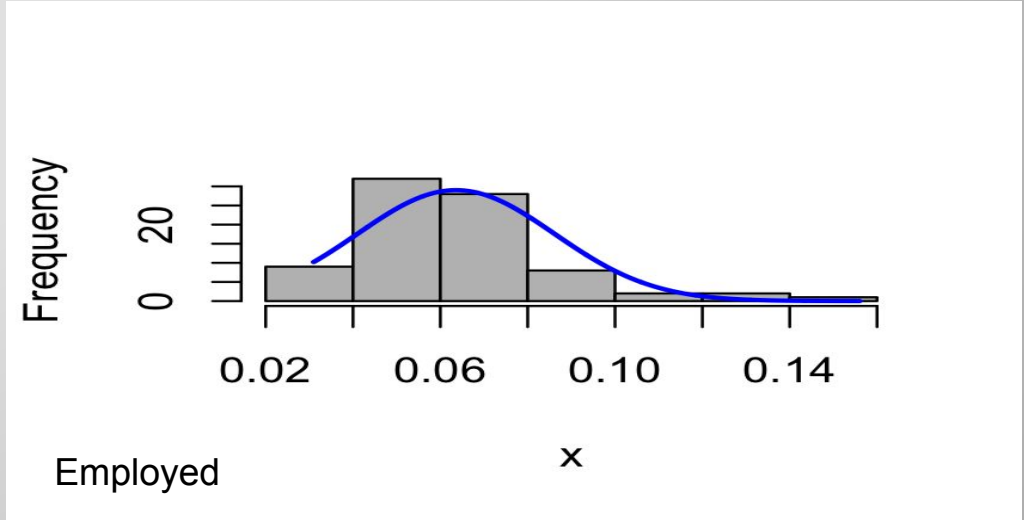
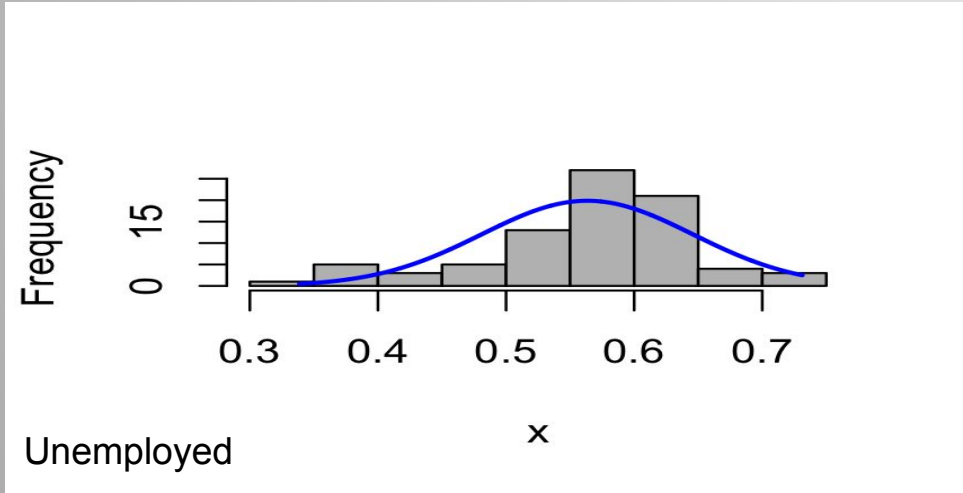
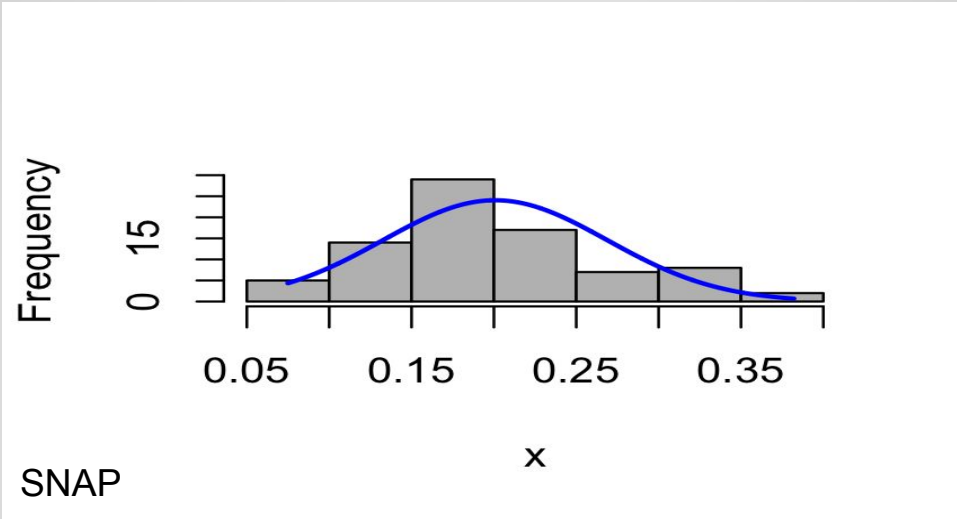
← Correlation matrix Mississippi



# Numeracy Histograms for Mississippi:



# Numeracy Histograms for Mississippi:



# Next Steps for Data Exploration:

- Given the correlations between less HS education, SNAP & higher incidence with females, further exploration of the variables specifically with HHI & employment data for male vs female in MS and other key states is worth exploring
- Also exploring further if incidence of females as single parents and college education and understanding if the distribution of state education funds from 2019-2021 & how that was distributed to MS and other low Lit\_P1 & Num\_P1 states was also highly correlated
- If applicable, looking at early childhood funding in MS to see if there is a trend from the adult population to early childhood in these states is worth exploring

Data Source: <https://data-nces.opendata.arcgis.com/datasets/nces::piaac-county-indicators-of-adult-literacy-and-numeracy/about>