

# Thematic Mapping of Rio Grande Valley

Integration of a large company to small  
economies and native communities.

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## Summary:

The Rio Grande Valley is known for being the neighbor of northern Mexico along the southern border. However, this area is also known for its small economies and tight-knit communities. When establishing a new large company in the small economies, one would expect to wages increase for the native population. However, there was only an estimated increase of \$12,500 in household income and majority of the population still reporting below the median income for the area. These findings also raised more questions than answers.

## Introduction:



Taqueria El 956 in McAllen, TX.

Photographed and Sourced: Jomando Cruz & Texas Highways.com "The Magic of the Rio Grande Valley".

SpaceX initially signed to move Starbase to Brownsville, Texas in 2014 (NASA, 2022).

In doing so, this meant that there were to be an influx of jobs and infrastructure to Brownsville and the surrounding areas.

Furthermore, SpaceX is a high-skilled and a highly educated workforce coming into a population that is still reliant on small businesses.

In trying to integrate state-of-the-art infrastructure and establish a new business requires a lot of care to be mindful of the following:

- Native Populations
- Environments and Ecosystems of the Areas
- Health of the Population
- Routes for Education and Training
- Socioeconomic mobility and etc.



Mural on East 13th Street in downtown Brownsville, TX. Photographed and Sourced: Jomando Cruz & Texas Highways.com "The Magic of the Rio Grande Valley".

With all of this in mind, this project is meant to follow the median household income over a 5-year-period (2018 - 2022) to see if SpaceX properly integrated with the economies.



Texas Rose Bar in La Feria, TX.

Photographed and Sourced: Jomando

## Data:

The data gathered for the project has been collected through the American Census Survey and TIGER/LINE shapefiles.

Block Groups for each of the counties in the 5 year time span of 2018 and 2022 were chosen for their higher degree of precision.

Cruz & Texas Highways.com "The Magic of the Rio Grande Valley".

Specifically, B19013 "Median Household Income (Adjusted for Year of Respective Inflation)." There are three main

limitations found going through this project, and those are listed below:

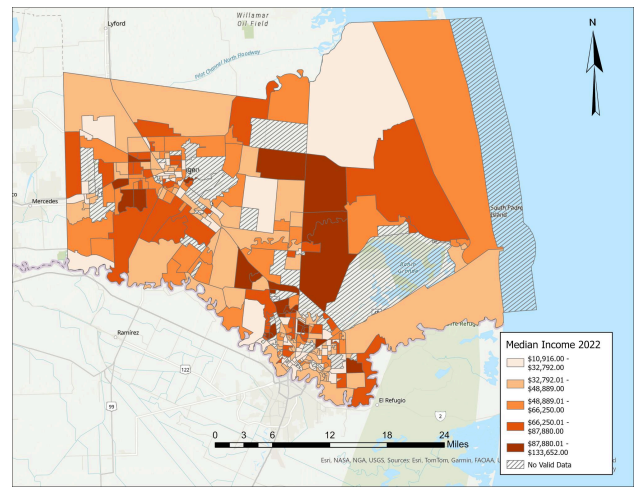
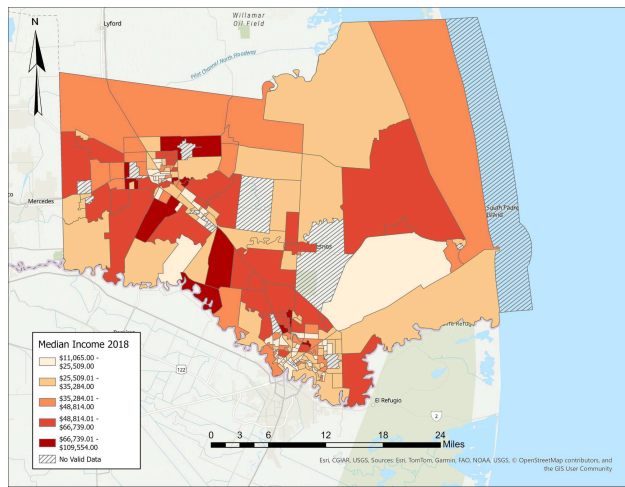
- Being unable to account for the affects of COVID-19
- Finding holes within data that could not be properly supplemented through other reliable resources
- Trimming the analysis from looking at two factors to one for sake of time and accuracy of both

## Methodology:

The bulk of the analysis came from cleaning, joining, and merging the TIGER/LINE shapefiles of each of the counties to the data taken from the American Census Survey. To obtain a greater sense of numbers, producing a couple histograms, and some light statistical analysis to illustrate how the income changed over time to highlight impact of SpaceX to the counties and the Rio Grande Valley. Lastly, the assumption made is SpaceX being the sole company to highly influence the Rio Grande Valley. This is due to the company requiring highly-skilled, highly educated, and experienced workers to operate within the business.

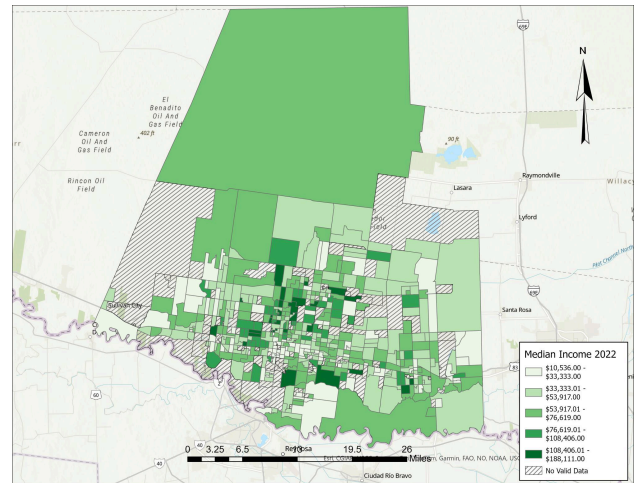
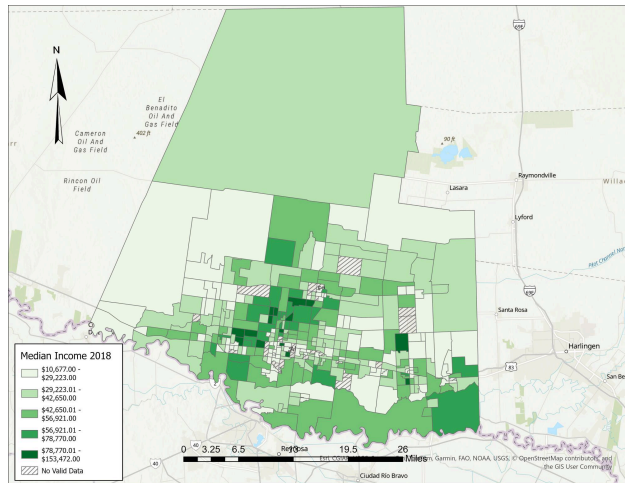
## Results:

**Block Groups of Cameron County, TX (2018 & 2022):**



Median Income shown has been adjusted for inflation in each of their respective years.

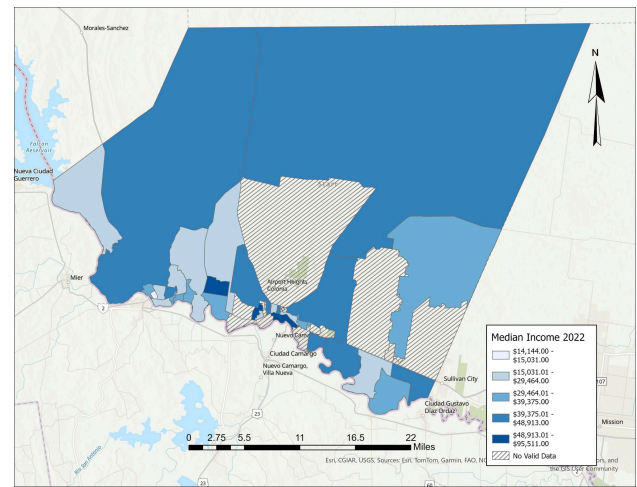
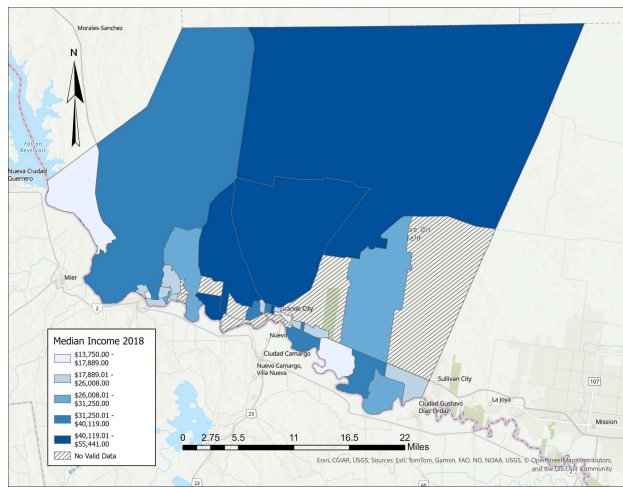
### Block Groups of Hidalgo County, TX (2018 & 2022):



Median Income shown has been adjusted for inflation in each of their respective years.

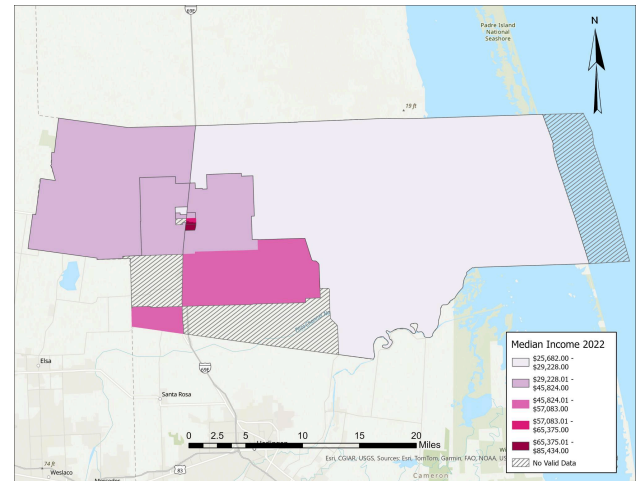
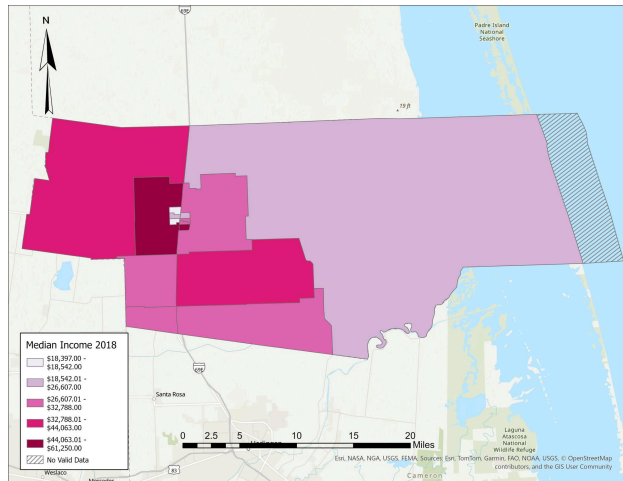
### Block Groups of Starr County, TX (2018 & 2022):





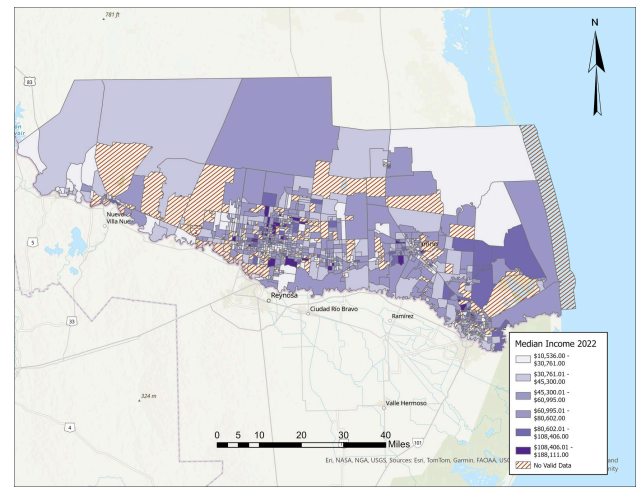
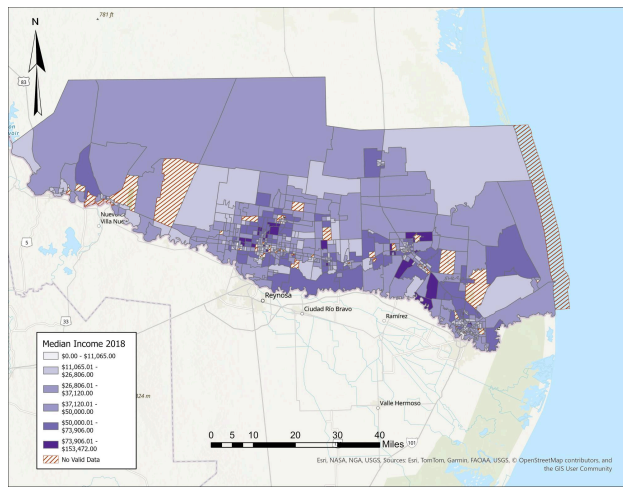
Median Income shown has been adjusted for inflation in each of their respective years.

### Block Groups of Willacy County, TX (2018 & 2022):



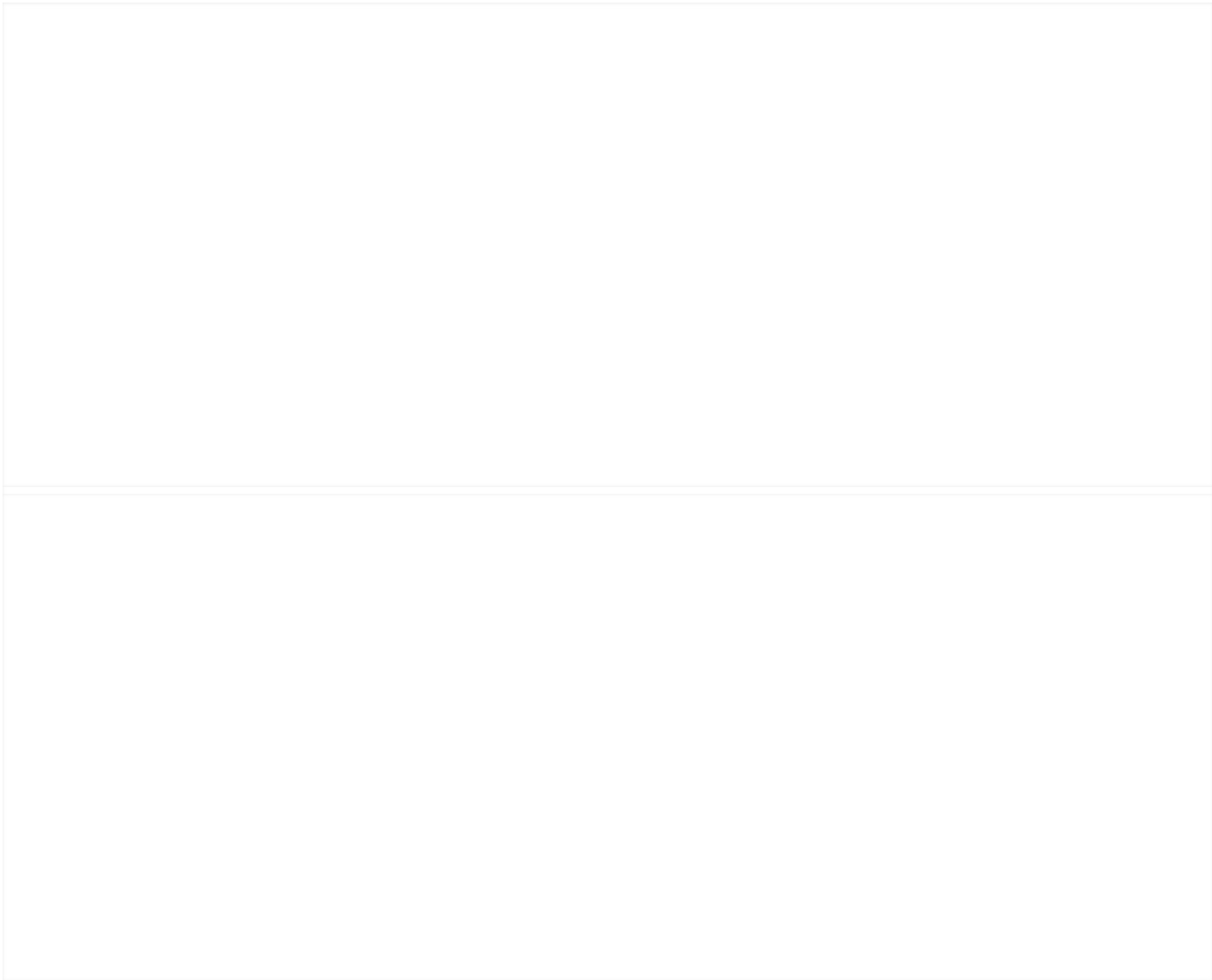
Median Income shown has been adjusted for inflation in each of their respective years.

### Block Groups of The Rio Grande Valley, TX (2018 & 2022):

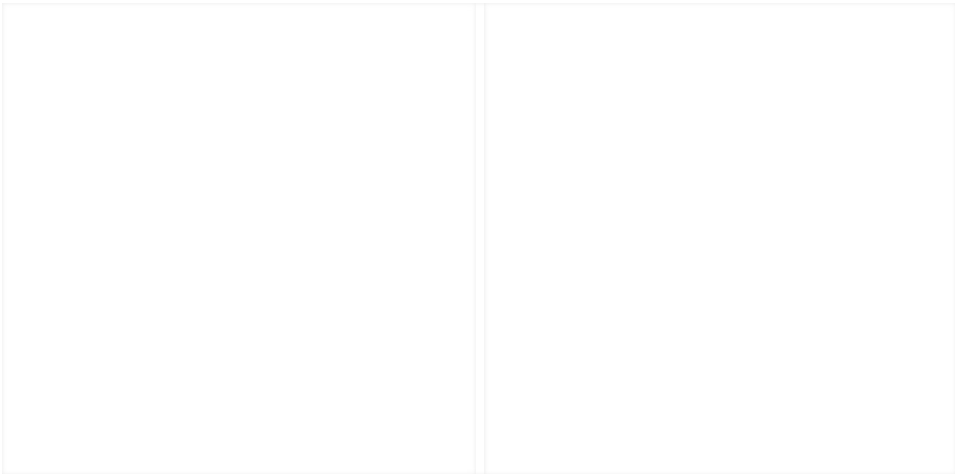


Median Income shown has been adjusted for inflation in each of their respective years.

## Histograms and Statistical Charts of The Rio Grande Valley (2018 & 2022):



Median Income shown has been adjusted for inflation in each of their respective years.



**Discussion:**

Through mapping and some statistical analysis there are a few things to be highlighted. The maps show a wider salary range among the block groups as you compare the two years. This means the lack of the uniformity in the maps show there is a discrepancy in socioeconomic mobility. When comparing the histograms, the salaries remained on the lower end of the distribution. Although the mean and median salaries went up, there is still discrepancy in how much this aids in the socioeconomic mobility of the native population. Lastly, when looking at the charts of the Rio Grande Valley, specifically Sum, there is an increase from approximately \$22 million dollars to \$42 million dollars to the economy. Now this leads to other key points.

Yes, there is a "boost" to the economy, approximately \$20 million, but where is the money going towards? By looking at the block group comparisons the distribution is practically the same. The population is still below that median income line as shown in the histograms. Then looking at the statistical charts the lowest income reported in 2022 is lower than it was in 2018. Finally, this is only factor out of many, and more data post COVID-19 would provide a more concrete foundation when studying only one factor.

## **Conclusion:**

Ultimately, the integration of a large highly-skilled company, SpaceX, to small communities and economies warrants further investigation. Ideally, tracking the movement of the native population, counting the type of occupations being offered, and education levels of households would be factors to analyze. These indicators alongside median income in a weighted analysis would provide a more insightful and diligent look on how multi-billion dollar companies truly impact their environment and communities.

## **References:**



NASA. (2022). *The Shining Star of South Texas: The rise of expanding Frontiers*. NASA. [https://technology.nasa.gov/the-shining-star-of-south-texas-the-rise-of-expanding-frontiers#:~:text=Before%20SpaceX%20made%20its%20historic,Advanced%20Radio%20Astronomy%20\(CARA\).](https://technology.nasa.gov/the-shining-star-of-south-texas-the-rise-of-expanding-frontiers#:~:text=Before%20SpaceX%20made%20its%20historic,Advanced%20Radio%20Astronomy%20(CARA).)