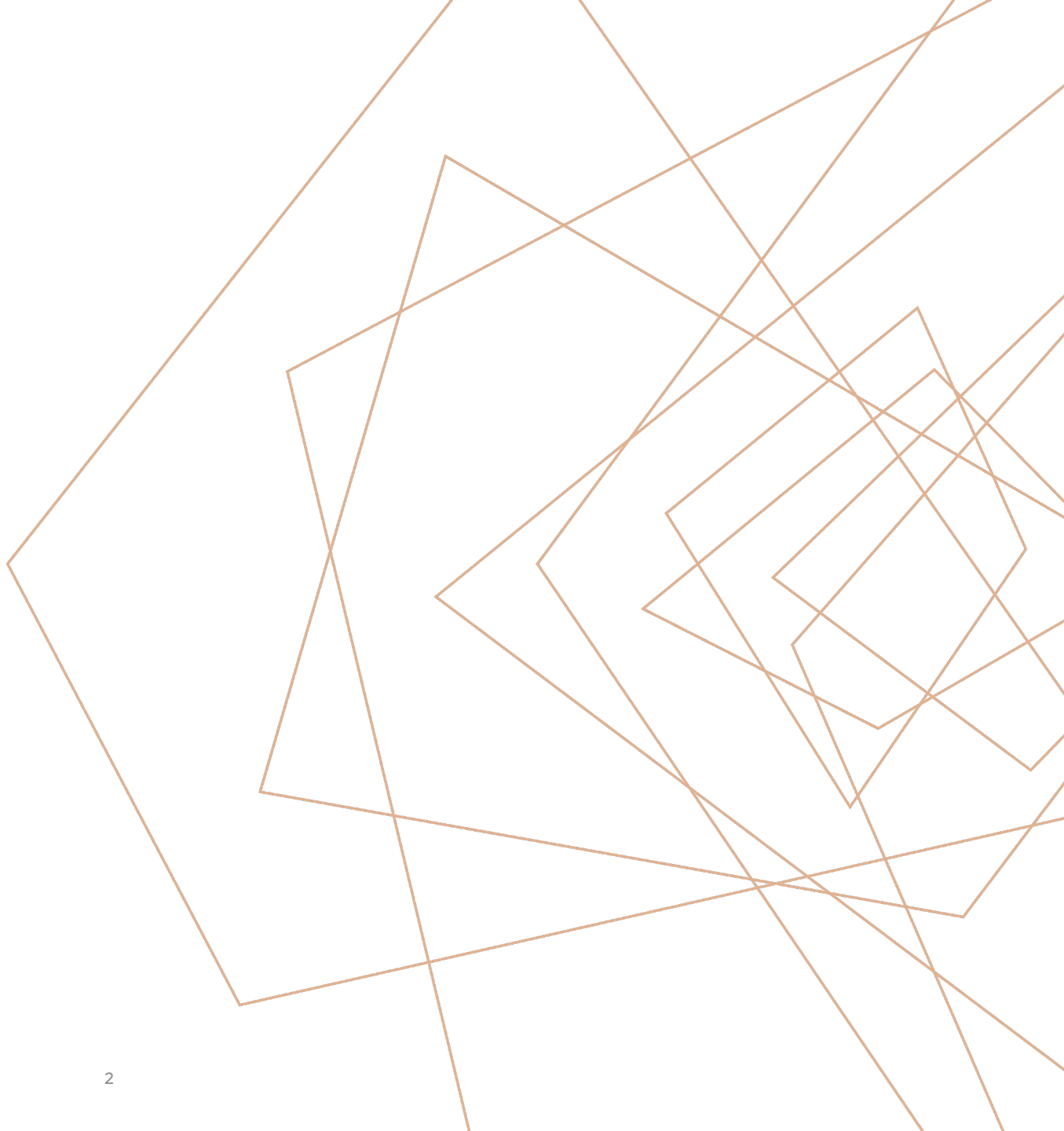
MGTA 452 FINAL PRESENTATION

Group C

PROJECT GOAL

Through the released U.S. Census data, explore poverty levels and migration patterns, alongside electric vehicle (EV) adoption rates, over the past decade. Our aim is to identify distinct trends within each dataset and communicate that through an interactive medium



PROJECT DATA

MAIN SOURCE	U.S Census Bureau
MIGRATION DATASET	[TBU – Shefali]
ELECTRIC VEHICLE DATASET	California demographic data supplemented with vehicle populations by fuel type via the California Energy Commission and Zillow Home Value Index
POVERTY DATASET	Estimates for the past ten years broken out by Age, Sex, Race, Employment Status & Work Experience

WHAT WE DID

Defined Presentation Goals

Collaboratively determined the specific areas of inquiry for individual exploration, culminating in the consensus to present our findings through an interactive web application

Extract Transform Load

Sourced high-fidelity datasets from the U.S. Census Bureau, utilized Visual Studio Code for data transformation, ensuring optimal aggregation to inform our analytical reporting

Migrate

Initially programmed in Python for data manipulation and exploration, we subsequently transposed our code to R to leverage the Shiny framework for web-app development

Deploy

We successfully deployed our interactive web application using the Shiny framework in R, which allowed us to present our data-driven insights in a dynamic and user-friendly interface

WHAT WE FOUND

Migration Patterns

[TBU – Shefali]

Electric Vehicle Adoptions

Despite what we might see on the roads, EV adoption rates remain fairly low within California. Drivers of electric vehicles are found almost exclusively within the largest population centers in the state. Within many of the most populous zip codes ownership rates remain low. There is a strong correlation toward adoption in zip codes where single-family home values and household income are highest. Additional incentives and expansion of infrastructure may be necessary to continue adoption in line with the State's goals

Poverty Level

U.S. Census data from the past decade highlights a strong link between education and poverty, with college graduates facing a significantly lower poverty rate of around 4% compared to nearly 24% for those without a high school diploma. Gender disparities are evident, with males generally experiencing lower poverty rates than females, likely influenced by women's disproportionate childcare responsibilities. Racially, African Americans, Hispanics, and Native Americans have seen a decline in poverty rates, mirrored by a decrease in childhood poverty from 22% to 16%, thanks to economic recovery, effective social policies like the Child Tax Credit, and increased healthcare access. These trends underscore the multifaceted nature of poverty and the importance of targeted interventions for continued economic improvement.

WHO CAN MAKE USE

GOVERNMENT SECTOR

Social Policy Advisors: Could utilize poverty level data to design and implement more effective anti-poverty strategies.

Urban Development Planners: May apply migration patterns to plan for housing, transportation, and public services to accommodate shifting populations.

PRIVATE SECTOR:

Human Resources Directors: Can use migration pattern data to optimize recruitment strategies and adapt to workforce changes.

Sustainability Managers: Might analyze electric vehicle adoption data to align corporate sustainability goals with consumer adoption trends.

ACADEMIC INSTITUTIONS:

•*Economic Researchers:* Could employ poverty data to understand economic disparities and their effects on various demographics.

•*Transportation Scholars:* May use electric vehicle data to study the diffusion of innovation and its implications for environmental policy and vehicle technology curriculums.

THANK YOU

Please find the link to our Web App here.