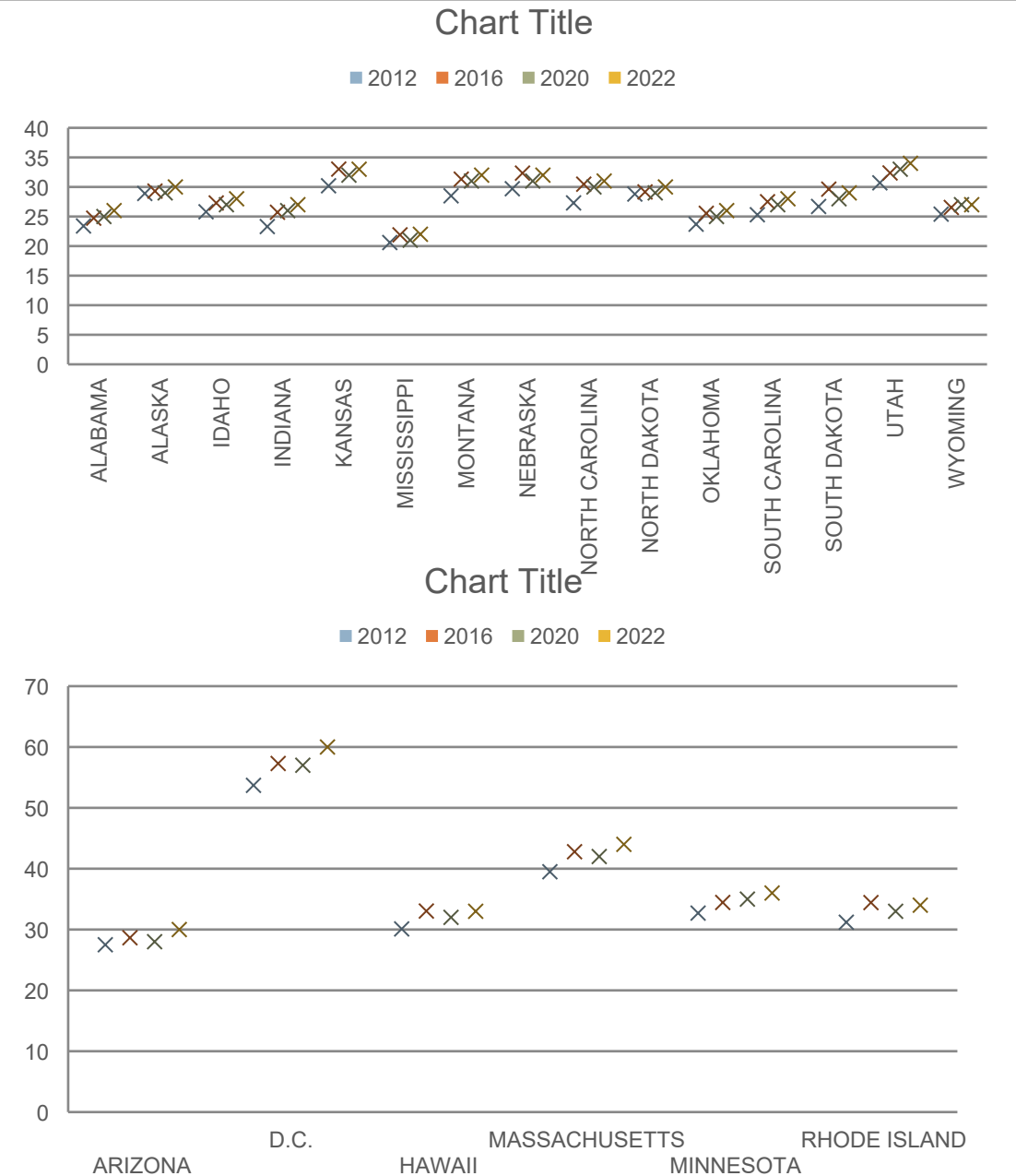# Presidential Election research

From 1972 to 1988, the presidential elections were often one-sided. Republicans have a track record of dominating elections in those years, with their candidates frequently receiving more than 75% of the electoral votes cast across all 50 states. In recent years, from 2004 to 2020, the presidential election has started to change. The entire presidential election was no longer won by a single party in a landslide. In modern society, the odds of winning the election for both the Democratic party and the Republican party are about even (based on the research findings).
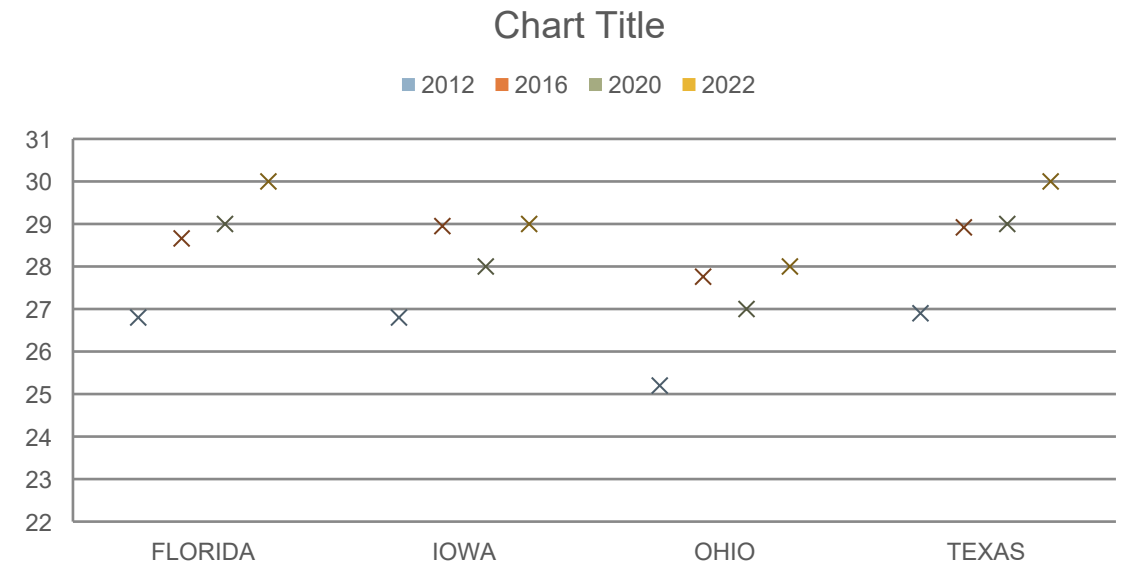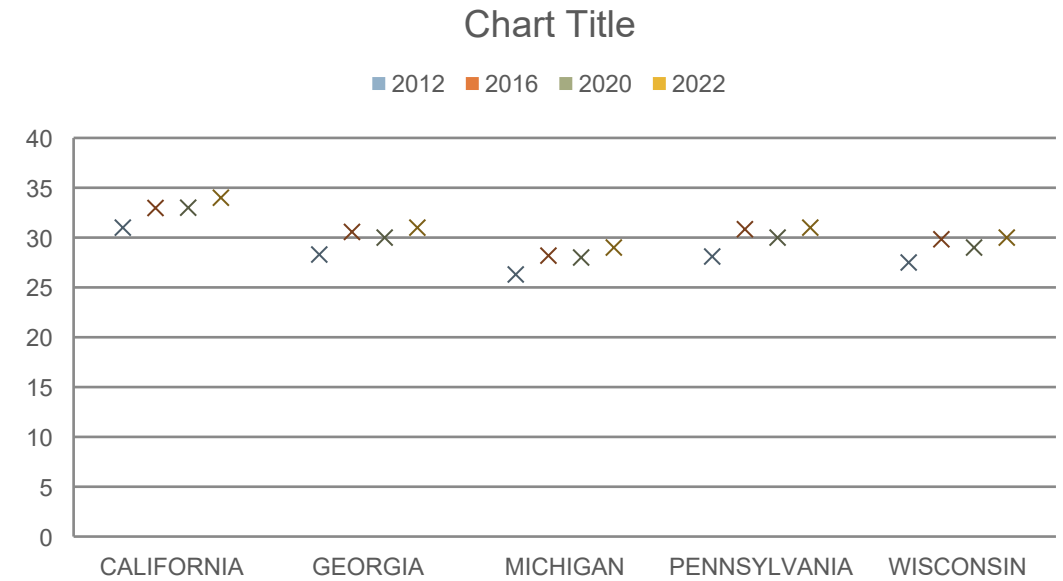
Observation on Tier 3

○ 	The data has revealed an interesting result after categorizing states into tiers. Based on 2020 values, 20 states (plus the DC special district) revealed a 9.77% difference between states that vote for the Democratic Party and states that vote for the Republican Party. The blue states have an average educated population (education rate) of 37.83%, while the red states have an average educated population (education rate) of 28.06%. In Tier 3, the calculated upper and lower confidence for blue and red states do not overlap each other. This represented that they use this as a tool to predict the election of a specific state if it falls within those confidence bands.

○ 	As for the increase in education rates (∆ education rate), the average change for blue states is 2.05% and the average change for red states is 1.51%. based on the difference between 2012 and 2020. The evidence is not significant enough to conclude that the D education rate will result in the win of the Democratic party in a state level election. So, based on Tier 3's evidence, it is inconclusive. However, it is reliable enough to determine the possible election outcome based on the education rate (but not the change).

Chart Title

Chart Title
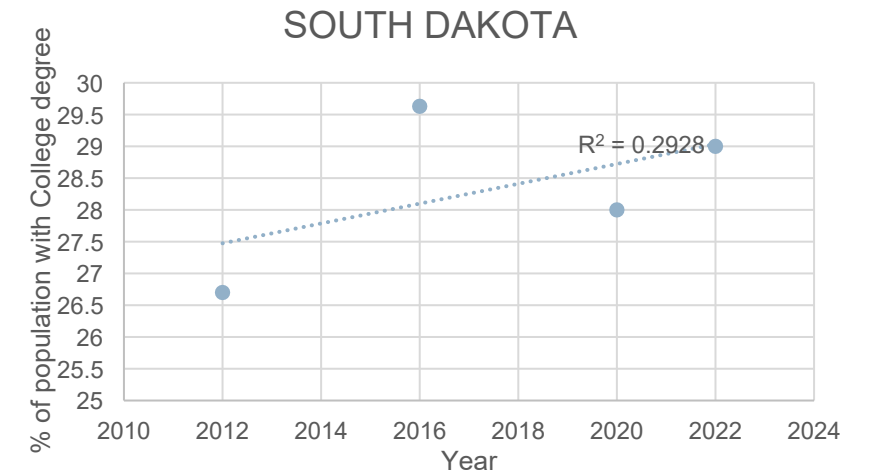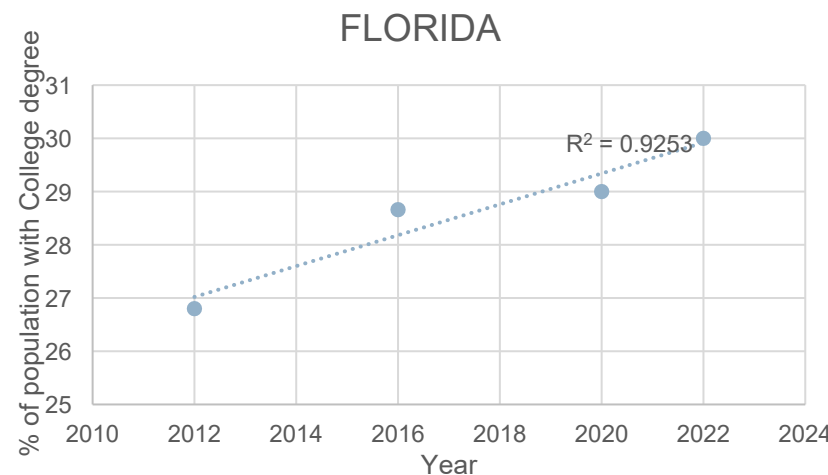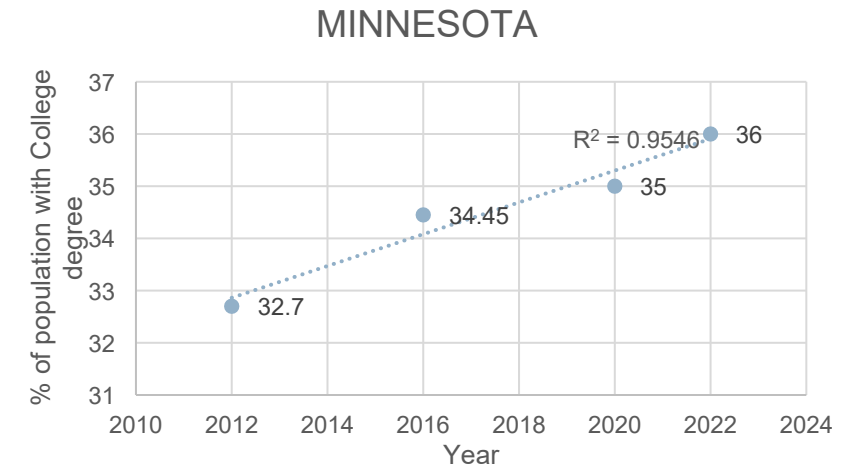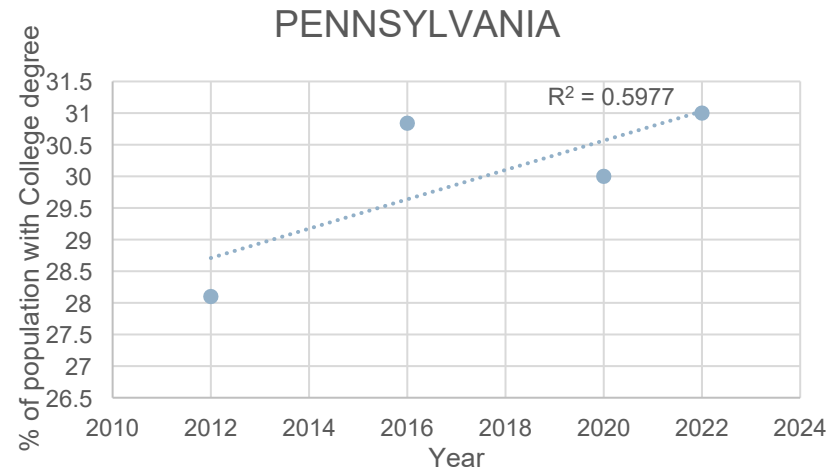
Observation on Tier 1

- The data shows a closer distribution between the states that vote for Republican party and the states that vote for democratic party. However, the evidence is not strong enough to be accepted. On the contrary, the tier 1 seems to provide a weaker result than tier 3.

Chart Title

2012 ■ 2016 ■ 2020 ■ 2022

CALIFORNIA GEORGIA MICHIGAN PENNSYLVANIA WISCONSIN

Chart Title

2012 ■ 2016 ■ 2020 ■ 2022

FLORIDA IOWA OHIO TEXAS

Regression analysis on Selected States
(2 states are selected to represent the Tiers that they are in; they selected based on having the closest value to its Tier's Median, and Mean)

- The regression analysis has shown that there no strong evidence

- The null hypothesis is accepted, and the alternative hypothesis is rejected

Results

◦ Research has shown that states with a high education rate (college degree) of around 31-60% have the tendency to vote for the Democratic party, and states with a low education rate (college degree) of around 20-29% have the tendency to vote for the Republican party. These variables have shown moderate correlation in the research. The research has also shown that states with 29%-31% tend to swing between both political parties. The entire research concludes that the Democratic party is likely to win the upcoming election in 2024 based on the projection which uses the 2022 education data (the education rate went up around 1-2% comparing 2020 to 2022 data, meaning more states have education rate of 30% or higher). However, the increase of education rate (Δ education rate) is still inconclusive.

** the increase of education rate (Δ education rate) is not the same as high education rate.