**MEDIATION CODE**

1. **Main mediation for crude case growth rate using movement without employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(caseRate) iv(z\_trump) mv(z\_dist1\_lag\_wk23) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Main mediation for crude case growth rate using movement with employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(caseRate) iv(z\_trump) mv(z\_dist1\_lag\_wk23) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_pct\_emp\_agri\_2016 z\_pct\_emp\_mini\_2016 z\_pct\_emp\_util\_2016 z\_pct\_emp\_cons\_2016 z\_pct\_emp\_manu\_2016 z\_pct\_emp\_whol\_2016 z\_pct\_emp\_reta\_2016 z\_pct\_emp\_tran\_2016 z\_pct\_emp\_info\_2016 z\_pct\_emp\_fina\_2016 z\_pct\_emp\_real\_2016 z\_pct\_emp\_prof\_2016 z\_pct\_emp\_mana\_2016 z\_pct\_emp\_admi\_2016 z\_pct\_emp\_educ\_2016 z\_pct\_emp\_heal\_2016 z\_pct\_emp\_arts\_2016 z\_pct\_emp\_acco\_2016 z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Main mediation for crude death growth rate using movement without employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(deathRate) iv(z\_trump) mv(z\_dist1\_lag\_wk31) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Main mediation for crude death growth rate using movement with employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(deathRate) iv(z\_trump) mv(z\_dist1\_lag\_wk31) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_pct\_emp\_agri\_2016 z\_pct\_emp\_mini\_2016 z\_pct\_emp\_util\_2016 z\_pct\_emp\_cons\_2016 z\_pct\_emp\_manu\_2016 z\_pct\_emp\_whol\_2016 z\_pct\_emp\_reta\_2016 z\_pct\_emp\_tran\_2016 z\_pct\_emp\_info\_2016 z\_pct\_emp\_fina\_2016 z\_pct\_emp\_real\_2016 z\_pct\_emp\_prof\_2016 z\_pct\_emp\_mana\_2016 z\_pct\_emp\_admi\_2016 z\_pct\_emp\_educ\_2016 z\_pct\_emp\_heal\_2016 z\_pct\_emp\_arts\_2016 z\_pct\_emp\_acco\_2016 z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Main mediation for crude case growth rate using visitations without employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(caseRate) iv(z\_trump) mv(z\_dist2\_lag\_wk23) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Main mediation for crude case growth rate using visitations with employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(caseRate) iv(z\_trump) mv(z\_dist2\_lag\_wk23) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_pct\_emp\_agri\_2016 z\_pct\_emp\_mini\_2016 z\_pct\_emp\_util\_2016 z\_pct\_emp\_cons\_2016 z\_pct\_emp\_manu\_2016 z\_pct\_emp\_whol\_2016 z\_pct\_emp\_reta\_2016 z\_pct\_emp\_tran\_2016 z\_pct\_emp\_info\_2016 z\_pct\_emp\_fina\_2016 z\_pct\_emp\_real\_2016 z\_pct\_emp\_prof\_2016 z\_pct\_emp\_mana\_2016 z\_pct\_emp\_admi\_2016 z\_pct\_emp\_educ\_2016 z\_pct\_emp\_heal\_2016 z\_pct\_emp\_arts\_2016 z\_pct\_emp\_acco\_2016 z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Main mediation for crude death growth rate using visitations without employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(deathRate) iv(z\_trump) mv(z\_dist2\_lag\_wk31) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Main mediation for crude death growth rate using visitations with employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(deathRate) iv(z\_trump) mv(z\_dist2\_lag\_wk31) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_pct\_emp\_agri\_2016 z\_pct\_emp\_mini\_2016 z\_pct\_emp\_util\_2016 z\_pct\_emp\_cons\_2016 z\_pct\_emp\_manu\_2016 z\_pct\_emp\_whol\_2016 z\_pct\_emp\_reta\_2016 z\_pct\_emp\_tran\_2016 z\_pct\_emp\_info\_2016 z\_pct\_emp\_fina\_2016 z\_pct\_emp\_real\_2016 z\_pct\_emp\_prof\_2016 z\_pct\_emp\_mana\_2016 z\_pct\_emp\_admi\_2016 z\_pct\_emp\_educ\_2016 z\_pct\_emp\_heal\_2016 z\_pct\_emp\_arts\_2016 z\_pct\_emp\_acco\_2016 z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Early lag mediation for crude case growth rate without employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(caseRate) iv(z\_trump) mv(z\_dist\_lag\_wk14) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Early-lag mediation for crude death growth rate without employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(deathRate) iv(z\_trump) mv(z\_dist\_lag\_wk25) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Moving-average mediation for crude case growth rate without employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(caseRate\_mov3) iv(z\_trump) mv(z\_dist\_lag\_wk23) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Moving-average mediation for crude death growth rate without employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(deathRate\_mov3) iv(z\_trump) mv(z\_dist\_lag\_wk31) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Mediation for crude case growth rate excluding 0s without employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(caseRate\_no0s) iv(z\_trump) mv(z\_dist\_lag\_wk23) cv(state\_policy2 state\_policy\_religiousn2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Mediation for crude death growth rate excluding 0s without employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(deathRate\_no0s) iv(z\_trump) mv(z\_dist\_lag\_wk31) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Mediation for exponential case growth rate using movement without employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(case\_r) iv(z\_trump) mv(z\_dist1\_lag\_wk23) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Mediation for exponential death growth rate using movement without employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(death\_r) iv(z\_trump) mv(z\_dist1\_lag\_wk31) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Mediation for exponential case growth rate using visitations without employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(case\_r) iv(z\_trump) mv(z\_dist2\_lag\_wk23) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Mediation for exponential death growth rate using visitations without employment categories**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(death\_r) iv(z\_trump) mv(z\_dist2\_lag\_wk31) cv(state\_policy2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Main mediation for crude case growth rate using movement without employment categories with additional state policies**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(caseRate) iv(z\_trump) mv(z\_dist1\_lag\_wk23) cv(state\_policy2 state\_policy\_non\_essentialn2 state\_policy\_k12\_schoolsn2 state\_policy\_childcaren2 state\_policy\_restaurantn2 state\_policy\_religiousn2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Main mediation for crude death growth rate using movement without employment categories with additional state policies**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(deathRate) iv(z\_trump) mv(z\_dist1\_lag\_wk31) cv(state\_policy2 state\_policy\_non\_essentialn2 state\_policy\_k12\_schoolsn2 state\_policy\_childcaren2 state\_policy\_restaurantn2 state\_policy\_religiousn2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Main mediation for crude case growth rate using visitations without employment categories with additional state policies**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(caseRate) iv(z\_trump) mv(z\_dist2\_lag\_wk23) cv(state\_policy2 state\_policy\_non\_essentialn2 state\_policy\_k12\_schoolsn2 state\_policy\_childcaren2 state\_policy\_restaurantn2 state\_policy\_religiousn2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle

1. **Main mediation for crude death growth rate using visitations without employment categories with additional state policies**

bootstrap indeff = r(ind\_eff) direff = r(dir\_eff) toteff = r(tot\_eff), reps(100) cluster(state\_fips) idcluster(nstate\_fips) group(county\_fips): ///

ml\_mediation, dv(deathRate) iv(z\_trump) mv(z\_dist2\_lag\_wk31) cv(state\_policy2 state\_policy\_non\_essentialn2 state\_policy\_k12\_schoolsn2 state\_policy\_childcaren2 state\_policy\_restaurantn2 state\_policy\_religiousn2 demgov weekend2 z\_median\_household\_income\_2018 z\_medianage\_county\_2018 z\_pct\_age0to17 z\_pct\_age65to84 z\_pct\_age85plus z\_difflifeexp z\_pop\_density z\_supermarkets z\_supermarketsLow region2 region3 region4 z\_religion z\_percentEmployed z\_gini z\_avgtimetowork z\_perc\_black z\_perc\_asian z\_perc\_hisplatin) l3id(state\_fips) l2id(county\_fips) mle