1. **Case Growth Rate** 🡨 **General Movement (Days 17-23)**

Mixed-effects ML regression Number of obs = 195,195

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 65 3,827.4 15,210

county\_fips | 3,003 65 65.0 65

-------------------------------------------------------------

Wald chi2(20) = 4429.40

Log likelihood = -869860.27 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

caseRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist1\_lag\_wk23 | -3.235884 .0545663 -59.30 0.000 -3.342832 -3.128936

state\_policy2 | 1.650975 .0641191 25.75 0.000 1.525304 1.776646

demgov2 | -.4718661 .2645764 -1.78 0.075 -.9904263 .046694

weekend2 | -.1841161 .076978 -2.39 0.017 -.3349901 -.033242

z\_median\_household\_income\_2018 | .8368071 .1007225 8.31 0.000 .6393947 1.03422

z\_medianage\_county\_2018 | .1608584 .178623 0.90 0.368 -.1892364 .5109531

z\_pct\_age0to17 | .987227 .4490948 2.20 0.028 .1070174 1.867437

z\_pct\_age18to64 | 1.009198 .4845712 2.08 0.037 .0594563 1.958941

z\_pct\_age65to84 | .5550488 .5689712 0.98 0.329 -.5601142 1.670212

z\_difflifeexp | .059859 .0692401 0.86 0.387 -.0758491 .1955671

z\_pop\_density | .0527554 .0630896 0.84 0.403 -.0708978 .1764087

z\_supermarkets | -.3819588 .0682009 -5.60 0.000 -.5156301 -.2482875

z\_supermarketsLow | -.2625128 .0615456 -4.27 0.000 -.3831399 -.1418857

z\_religion | -.1365633 .0772396 -1.77 0.077 -.2879501 .0148235

z\_percentEmployed | -.1025879 .0866192 -1.18 0.236 -.2723584 .0671827

z\_gini | .3816162 .0713066 5.35 0.000 .2418579 .5213746

z\_avgtimetowork | -.2078996 .078785 -2.64 0.008 -.3623153 -.0534839

z\_perc\_black | .5900604 .0873425 6.76 0.000 .4188723 .7612484

z\_perc\_asian | .0918839 .0821566 1.12 0.263 -.06914 .2529079

z\_perc\_hisplatin | .2909411 .0895881 3.25 0.001 .1153516 .4665305

\_cons | 5.527368 .2324123 23.78 0.000 5.071848 5.982888

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------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 2.349852 .5793569 1.449361 3.809821

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 2.403722 .2517479 1.957653 2.951432

-----------------------------+------------------------------------------------

var(Residual) | 432.4468 1.396458 429.7185 435.1925

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 576.41 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Case Growth Rate** 🡨 **General Movement (Days 17-23) + Same Day**

Mixed-effects ML regression Number of obs = 195,195

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 65 3,827.4 15,210

county\_fips | 3,003 65 65.0 65

-------------------------------------------------------------

Wald chi2(21) = 5569.16

Log likelihood = -869293.1 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

caseRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist1\_lag\_wk23 | -3.312225 .0534634 -61.95 0.000 -3.417011 -3.207439

z\_dist1 | 1.992694 .0574186 34.70 0.000 1.880156 2.105233

state\_policy2 | .7616715 .0685009 11.12 0.000 .6274122 .8959308

demgov2 | -.1121564 .2097361 -0.53 0.593 -.5232317 .2989189

weekend2 | -.8880912 .0795068 -11.17 0.000 -1.043922 -.7322607

z\_median\_household\_income\_2018 | .3848542 .0909776 4.23 0.000 .2065414 .5631669

z\_medianage\_county\_2018 | .0448453 .1601976 0.28 0.780 -.2691364 .3588269

z\_pct\_age0to17 | .7707979 .4013636 1.92 0.055 -.0158602 1.557456

z\_pct\_age18to64 | .6953073 .4331036 1.61 0.108 -.1535602 1.544175

z\_pct\_age65to84 | .3203554 .5084335 0.63 0.529 -.6761559 1.316867

z\_difflifeexp | .0389545 .0618966 0.63 0.529 -.0823606 .1602697

z\_pop\_density | -.0204732 .056608 -0.36 0.718 -.1314229 .0904765

z\_supermarkets | -.447369 .0611136 -7.32 0.000 -.5671494 -.3275887

z\_supermarketsLow | -.2383515 .0551947 -4.32 0.000 -.3465312 -.1301719

z\_religion | -.1066392 .0690503 -1.54 0.122 -.2419753 .0286968

z\_percentEmployed | -.0996248 .077584 -1.28 0.199 -.2516866 .0524371

z\_gini | .166591 .0642024 2.59 0.009 .0407566 .2924254

z\_avgtimetowork | -.1548851 .0704716 -2.20 0.028 -.2930068 -.0167633

z\_perc\_black | .5207621 .0778885 6.69 0.000 .3681035 .6734207

z\_perc\_asian | -.1143378 .0723811 -1.58 0.114 -.2562022 .0275266

z\_perc\_hisplatin | .2187122 .0797177 2.74 0.006 .0624684 .3749559

\_cons | 5.478907 .1830949 29.92 0.000 5.120047 5.837766

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Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 1.406205 .3610741 .8501276 2.32602

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | .6689752 .1974783 .3750934 1.19311

-----------------------------+------------------------------------------------

var(Residual) | 431.3771 1.392291 428.6569 434.1146

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 277.42 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Case Growth Rate** 🡨 **General Movement (Days 17-23) + Employment Cats**

Mixed-effects ML regression Number of obs = 128,245

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 65 2,514.6 7,735

county\_fips | 1,973 65 65.0 65

-------------------------------------------------------------

Wald chi2(38) = 6040.46

Log likelihood = -562449.95 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

caseRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist1\_lag\_wk23 | -4.757609 .0643331 -73.95 0.000 -4.883699 -4.631518

state\_policy2 | 1.744834 .074931 23.29 0.000 1.597972 1.891697

demgov2 | -.5291683 .2917376 -1.81 0.070 -1.100964 .0426269

weekend2 | -.103168 .088458 -1.17 0.243 -.2765426 .0702065

z\_median\_household\_income\_2018 | .4980793 .1342305 3.71 0.000 .2349924 .7611662

z\_medianage\_county\_2018 | .8433748 .2464425 3.42 0.001 .3603564 1.326393

z\_pct\_age0to17 | -.0127835 .7026986 -0.02 0.985 -1.390047 1.36448

z\_pct\_age18to64 | -.1551648 .7614609 -0.20 0.839 -1.647601 1.337271

z\_pct\_age65to84 | -1.117611 .9174173 -1.22 0.223 -2.915716 .6804935

z\_difflifeexp | .0933781 .0809123 1.15 0.248 -.0652072 .2519633

z\_pop\_density | .0071341 .0643751 0.11 0.912 -.1190389 .133307

z\_supermarkets | .0649392 .1167958 0.56 0.578 -.1639764 .2938547

z\_supermarketsLow | -.3502926 .1070367 -3.27 0.001 -.5600806 -.1405046

z\_religion | -.1142569 .099833 -1.14 0.252 -.309926 .0814123

z\_percentEmployed | .020947 .131003 0.16 0.873 -.2358142 .2777081

z\_pct\_emp\_agri\_2016 | .0059362 .1347934 0.04 0.965 -.2582541 .2701265

z\_pct\_emp\_mini\_2016 | -.0761525 .1100106 -0.69 0.489 -.2917693 .1394642

z\_pct\_emp\_util\_2016 | .0262869 .0970312 0.27 0.786 -.1638908 .2164647

z\_pct\_emp\_cons\_2016 | .2377145 .0958992 2.48 0.013 .0497555 .4256735

z\_pct\_emp\_manu\_2016 | .4394029 .1477856 2.97 0.003 .1497485 .7290572

z\_pct\_emp\_whol\_2016 | -.1891198 .1086918 -1.74 0.082 -.4021517 .0239121

z\_pct\_emp\_reta\_2016 | .0931433 .1062688 0.88 0.381 -.1151397 .3014263

z\_pct\_emp\_tran\_2016 | -.0853605 .0796939 -1.07 0.284 -.2415576 .0708366

z\_pct\_emp\_info\_2016 | .1772587 .0764167 2.32 0.020 .0274847 .3270327

z\_pct\_emp\_fina\_2016 | .1502323 .0781113 1.92 0.054 -.0028631 .3033277

z\_pct\_emp\_real\_2016 | .3123593 .0836841 3.73 0.000 .1483415 .4763771

z\_pct\_emp\_prof\_2016 | .2273726 .0999689 2.27 0.023 .0314372 .4233081

z\_pct\_emp\_mana\_2016 | .1367244 .0763031 1.79 0.073 -.012827 .2862758

z\_pct\_emp\_admi\_2016 | .3290789 .0844341 3.90 0.000 .1635911 .4945667

z\_pct\_emp\_educ\_2016 | .24772 .0711303 3.48 0.000 .1083072 .3871327

z\_pct\_emp\_heal\_2016 | .3718436 .1268089 2.93 0.003 .1233027 .6203845

z\_pct\_emp\_arts\_2016 | .5496002 .0996164 5.52 0.000 .3543557 .7448448

z\_pct\_emp\_acco\_2016 | .1951701 .118409 1.65 0.099 -.0369073 .4272475

z\_gini | .1024303 .1001854 1.02 0.307 -.0939295 .29879

z\_avgtimetowork | -.2490672 .1134474 -2.20 0.028 -.47142 -.0267144

z\_perc\_black | .5020222 .1134846 4.42 0.000 .2795964 .7244479

z\_perc\_asian | .23364 .0919908 2.54 0.011 .0533412 .4139387

z\_perc\_hisplatin | .7111373 .1175284 6.05 0.000 .4807859 .9414886

\_cons | 5.937074 .2592849 22.90 0.000 5.428885 6.445263

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Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 2.838627 .7239824 1.721917 4.679554

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 2.370733 .2810592 1.879185 2.990857

-----------------------------+------------------------------------------------

var(Residual) | 375.162 1.494628 372.244 378.1029

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 464.59 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Case Growth Rate** 🡨 **Same-Day Movement**

Mixed-effects ML regression Number of obs = 246,246

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 82 4,828.4 19,188

county\_fips | 3,003 82 82.0 82

-------------------------------------------------------------

Wald chi2(20) = 2570.08

Log likelihood = -1121438.5 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

caseRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist1 | 1.660145 .0553064 30.02 0.000 1.551746 1.768543

state\_policy2 | .2490996 .0600602 4.15 0.000 .1313837 .3668155

demgov2 | .0586524 .2053292 0.29 0.775 -.3437854 .4610902

weekend2 | -.6962586 .0793963 -8.77 0.000 -.8518724 -.5406447

z\_median\_household\_income\_2018 | .4543061 .0847542 5.36 0.000 .2881908 .6204213

z\_medianage\_county\_2018 | -.3075704 .1505327 -2.04 0.041 -.602609 -.0125318

z\_pct\_age0to17 | .413279 .3776842 1.09 0.274 -.3269684 1.153526

z\_pct\_age18to64 | .3913012 .4075277 0.96 0.337 -.4074384 1.190041

z\_pct\_age65to84 | .1070731 .4784657 0.22 0.823 -.8307024 1.044849

z\_difflifeexp | -.0241272 .0582236 -0.41 0.679 -.1382435 .089989

z\_pop\_density | .0942225 .0531676 1.77 0.076 -.009984 .1984291

z\_supermarkets | -.5896432 .0574094 -10.27 0.000 -.7021636 -.4771228

z\_supermarketsLow | -.0557315 .0518672 -1.07 0.283 -.1573894 .0459264

z\_religion | -.0753574 .0649654 -1.16 0.246 -.2026873 .0519725

z\_percentEmployed | .2298333 .072936 3.15 0.002 .0868813 .3727852

z\_gini | .2280343 .0600843 3.80 0.000 .1102712 .3457974

z\_avgtimetowork | .0492701 .0662824 0.74 0.457 -.0806411 .1791813

z\_perc\_black | .8494291 .0733522 11.58 0.000 .7056614 .9931969

z\_perc\_asian | .0090854 .0683651 0.13 0.894 -.1249078 .1430786

z\_perc\_hisplatin | .5247671 .0751367 6.98 0.000 .3775018 .6720323

\_cons | 5.893686 .1800182 32.74 0.000 5.540857 6.246516

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Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 1.383828 .3547004 .8373438 2.286971

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 1.33e-11 9.73e-12 3.15e-12 5.58e-11

-----------------------------+------------------------------------------------

var(Residual) | 528.4351 1.50618 525.4912 531.3954

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 270.20 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Case Growth Rate** 🡨 **Same-Day Movement + Employment Cats**

Mixed-effects ML regression Number of obs = 161,786

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 82 3,172.3 9,758

county\_fips | 1,973 82 82.0 82

-------------------------------------------------------------

Wald chi2(38) = 2022.95

Log likelihood = -743102.68 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

caseRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist1 | 2.654642 .0804156 33.01 0.000 2.49703 2.812253

state\_policy2 | -.5228847 .0771618 -6.78 0.000 -.6741191 -.3716503

demgov2 | .2214131 .1799635 1.23 0.219 -.1313089 .574135

weekend2 | -.9926787 .102996 -9.64 0.000 -1.194547 -.7908102

z\_median\_household\_income\_2018 | -.1744159 .1225047 -1.42 0.155 -.4145206 .0656888

z\_medianage\_county\_2018 | -.5555062 .2255855 -2.46 0.014 -.9976456 -.1133669

z\_pct\_age0to17 | .625261 .6354838 0.98 0.325 -.6202644 1.870786

z\_pct\_age18to64 | .6178996 .6890262 0.90 0.370 -.7325669 1.968366

z\_pct\_age65to84 | .8161175 .8311559 0.98 0.326 -.8129181 2.445153

z\_difflifeexp | .0309716 .0733866 0.42 0.673 -.1128634 .1748067

z\_pop\_density | .0064412 .0592213 0.11 0.913 -.1096304 .1225128

z\_supermarkets | -.6893348 .1061894 -6.49 0.000 -.8974622 -.4812074

z\_supermarketsLow | .048282 .0982556 0.49 0.623 -.1442953 .2408594

z\_religion | -.0046247 .0902564 -0.05 0.959 -.181524 .1722745

z\_percentEmployed | .2090612 .1192919 1.75 0.080 -.0247466 .4428691

z\_pct\_emp\_agri\_2016 | -.3006399 .1235962 -2.43 0.015 -.542884 -.0583958

z\_pct\_emp\_mini\_2016 | -.2886536 .1007479 -2.87 0.004 -.4861158 -.0911913

z\_pct\_emp\_util\_2016 | .1651579 .0894512 1.85 0.065 -.0101631 .340479

z\_pct\_emp\_cons\_2016 | -.0417721 .0881988 -0.47 0.636 -.2146386 .1310943

z\_pct\_emp\_manu\_2016 | .2827395 .136214 2.08 0.038 .0157651 .549714

z\_pct\_emp\_whol\_2016 | .2513218 .100159 2.51 0.012 .0550138 .4476298

z\_pct\_emp\_reta\_2016 | -.0363217 .0978379 -0.37 0.710 -.2280803 .155437

z\_pct\_emp\_tran\_2016 | .1797778 .0735684 2.44 0.015 .0355863 .3239693

z\_pct\_emp\_info\_2016 | -.0425898 .0703598 -0.61 0.545 -.1804925 .0953128

z\_pct\_emp\_fina\_2016 | .0486384 .0719922 0.68 0.499 -.0924637 .1897405

z\_pct\_emp\_real\_2016 | .077892 .0770928 1.01 0.312 -.0732072 .2289911

z\_pct\_emp\_prof\_2016 | .0841546 .091858 0.92 0.360 -.0958838 .264193

z\_pct\_emp\_mana\_2016 | .2599284 .0703824 3.69 0.000 .1219814 .3978754

z\_pct\_emp\_admi\_2016 | .390005 .0777465 5.02 0.000 .2376246 .5423854

z\_pct\_emp\_educ\_2016 | .1989033 .0652956 3.05 0.002 .0709263 .3268804

z\_pct\_emp\_heal\_2016 | .1783138 .1168829 1.53 0.127 -.0507725 .4074

z\_pct\_emp\_arts\_2016 | -.0537614 .0918557 -0.59 0.558 -.2337951 .1262724

z\_pct\_emp\_acco\_2016 | .0060111 .1087828 0.06 0.956 -.2071993 .2192215

z\_gini | -.027327 .0917194 -0.30 0.766 -.2070938 .1524398

z\_avgtimetowork | .4316483 .1028227 4.20 0.000 .2301196 .633177

z\_perc\_black | .6671866 .1017642 6.56 0.000 .4677326 .8666407

z\_perc\_asian | -.1743831 .0777849 -2.24 0.025 -.3268387 -.0219274

z\_perc\_hisplatin | .698883 .1039148 6.73 0.000 .4952137 .9025523

\_cons | 6.178364 .1601064 38.59 0.000 5.864561 6.492166

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Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | .8973417 .283385 .4832191 1.666371

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 5.86e-15 5.04e-15 1.09e-15 3.16e-14

-----------------------------+------------------------------------------------

var(Residual) | 571.2682 2.009013 567.3442 575.2194

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 71.64 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Case Growth Rate** 🡨 **General Movement (Days 17-23) + Same Day + Employment Cats**

Mixed-effects ML regression Number of obs = 128,245

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 65 2,514.6 7,735

county\_fips | 1,973 65 65.0 65

-------------------------------------------------------------

Wald chi2(39) = 7388.14

Log likelihood = -561746.64 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

caseRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist1\_lag\_wk23 | -4.615736 .0622062 -74.20 0.000 -4.737658 -4.493814

z\_dist1 | 2.920704 .0745966 39.15 0.000 2.774497 3.066911

state\_policy2 | .4666764 .0806794 5.78 0.000 .3085476 .6248051

demgov2 | -.0020241 .2151727 -0.01 0.992 -.4237549 .4197066

weekend2 | -1.130738 .0920309 -12.29 0.000 -1.311115 -.9503608

z\_median\_household\_income\_2018 | .0619973 .1127817 0.55 0.583 -.1590509 .2830454

z\_medianage\_county\_2018 | .3732807 .2066802 1.81 0.071 -.0318051 .7783666

z\_pct\_age0to17 | .2357845 .5865917 0.40 0.688 -.9139141 1.385483

z\_pct\_age18to64 | .056691 .6357336 0.09 0.929 -1.189324 1.302706

z\_pct\_age65to84 | -.4613266 .766333 -0.60 0.547 -1.963312 1.040659

z\_difflifeexp | .0841522 .067586 1.25 0.213 -.048314 .2166183

z\_pop\_density | -.037531 .0539769 -0.70 0.487 -.1433238 .0682618

z\_supermarkets | -.2036381 .0978498 -2.08 0.037 -.3954202 -.011856

z\_supermarketsLow | -.3094867 .0896858 -3.45 0.001 -.4852676 -.1337058

z\_religion | -.0816657 .0833167 -0.98 0.327 -.2449634 .0816319

z\_percentEmployed | -.0738641 .1095681 -0.67 0.500 -.2886137 .1408855

z\_pct\_emp\_agri\_2016 | -.0154744 .1129172 -0.14 0.891 -.2367881 .2058393

z\_pct\_emp\_mini\_2016 | -.1441205 .0921281 -1.56 0.118 -.3246882 .0364472

z\_pct\_emp\_util\_2016 | .11446 .0814257 1.41 0.160 -.0451315 .2740515

z\_pct\_emp\_cons\_2016 | .1505569 .0804204 1.87 0.061 -.0070643 .308178

z\_pct\_emp\_manu\_2016 | .4015957 .1239677 3.24 0.001 .1586234 .644568

z\_pct\_emp\_whol\_2016 | -.0902041 .0911967 -0.99 0.323 -.2689463 .0885381

z\_pct\_emp\_reta\_2016 | .1362926 .0891134 1.53 0.126 -.0383665 .3109517

z\_pct\_emp\_tran\_2016 | -.0083728 .0669069 -0.13 0.900 -.1395079 .1227624

z\_pct\_emp\_info\_2016 | .0764057 .0641153 1.19 0.233 -.0492579 .2020694

z\_pct\_emp\_fina\_2016 | .0793988 .0655415 1.21 0.226 -.0490601 .2078577

z\_pct\_emp\_real\_2016 | .1777057 .0702748 2.53 0.011 .0399695 .3154419

z\_pct\_emp\_prof\_2016 | .0456486 .0838978 0.54 0.586 -.1187881 .2100853

z\_pct\_emp\_mana\_2016 | .0724192 .0640348 1.13 0.258 -.0530866 .197925

z\_pct\_emp\_admi\_2016 | .2128566 .0708634 3.00 0.003 .0739669 .3517464

z\_pct\_emp\_educ\_2016 | .1347416 .0596611 2.26 0.024 .0178079 .2516753

z\_pct\_emp\_heal\_2016 | .2179025 .1064421 2.05 0.041 .0092799 .4265252

z\_pct\_emp\_arts\_2016 | .2743361 .0838309 3.27 0.001 .1100305 .4386416

z\_pct\_emp\_acco\_2016 | .0014858 .099324 0.01 0.988 -.1931857 .1961572

z\_gini | -.0728019 .0840009 -0.87 0.386 -.2374405 .0918368

z\_avgtimetowork | -.1781476 .0947371 -1.88 0.060 -.3638289 .0075337

z\_perc\_black | .3501097 .0945808 3.70 0.000 .1647348 .5354846

z\_perc\_asian | -.0309671 .0751334 -0.41 0.680 -.1782258 .1162917

z\_perc\_hisplatin | .4761708 .0976562 4.88 0.000 .2847683 .6675734

\_cons | 5.818776 .1904347 30.56 0.000 5.445531 6.192022

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Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

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state\_fips: Identity |

var(\_cons) | 1.454393 .3957829 .8531887 2.479241

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county\_fips: Identity |

var(\_cons) | 2.12e-09 2.36e-09 2.40e-10 1.87e-08

-----------------------------+------------------------------------------------

var(Residual) | 373.0799 1.47371 370.2027 375.9796

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LR test vs. linear model: chi2(2) = 150.00 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Case Growth Rate** 🡨 **Nonessential Visitations (Days 17-23)**

Mixed-effects ML regression Number of obs = 134,030

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 65 2,628.0 10,270

county\_fips | 2,062 65 65.0 65

-------------------------------------------------------------

Wald chi2(20) = 4855.75

Log likelihood = -591574.52 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

caseRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist2\_lag\_wk23 | -4.240504 .0649081 -65.33 0.000 -4.367721 -4.113286

state\_policy2 | 2.317737 .0743258 31.18 0.000 2.172061 2.463412

demgov2 | -.5390869 .2545588 -2.12 0.034 -1.038013 -.0401609

weekend2 | -.0878559 .0889857 -0.99 0.323 -.2622647 .0865529

z\_median\_household\_income\_2018 | .624167 .1215141 5.14 0.000 .3860037 .8623304

z\_medianage\_county\_2018 | -1.199873 .2403992 -4.99 0.000 -1.671047 -.728699

z\_pct\_age0to17 | -.524102 .7094338 -0.74 0.460 -1.914567 .8663627

z\_pct\_age18to64 | .06927 .7662532 0.09 0.928 -1.432559 1.571099

z\_pct\_age65to84 | .091437 .9167959 0.10 0.921 -1.70545 1.888324

z\_difflifeexp | -.0145462 .0792653 -0.18 0.854 -.1699033 .140811

z\_pop\_density | .0373768 .0657147 0.57 0.570 -.0914217 .1661753

z\_supermarkets | -.7187448 .1490702 -4.82 0.000 -1.010917 -.4265726

z\_supermarketsLow | .1167135 .1093959 1.07 0.286 -.0976985 .3311255

z\_religion | -.0375181 .0994854 -0.38 0.706 -.232506 .1574698

z\_percentEmployed | .4751289 .1230347 3.86 0.000 .2339853 .7162725

z\_gini | .3118756 .0958009 3.26 0.001 .1241091 .499642

z\_avgtimetowork | -.4101564 .1085382 -3.78 0.000 -.6228874 -.1974254

z\_perc\_black | .7204275 .1043337 6.91 0.000 .5159371 .9249179

z\_perc\_asian | .0849673 .0889979 0.95 0.340 -.0894654 .2594

z\_perc\_hisplatin | .7334844 .1106468 6.63 0.000 .5166205 .9503482

\_cons | 5.42703 .2255644 24.06 0.000 4.984932 5.869128

------------------------------------------------------------------------------------------------

------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 2.00031 .5293732 1.190777 3.360191

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 2.665329 .2983001 2.140353 3.319068

-----------------------------+------------------------------------------------

var(Residual) | 396.7343 1.546295 393.7152 399.7766

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 420.17 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Case Growth Rate** 🡨 **Nonessential Visitations (Days 17-23) + Same Day**

Mixed-effects ML regression Number of obs = 133,942

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 65 2,626.3 10,270

county\_fips | 2,062 36 65.0 65

-------------------------------------------------------------

Wald chi2(21) = 7172.33

Log likelihood = -590036.56 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

caseRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist2\_lag\_wk23 | -4.535046 .063417 -71.51 0.000 -4.659341 -4.410751

z\_dist2 | 3.335855 .0662726 50.34 0.000 3.205963 3.465747

state\_policy2 | .7104548 .0792073 8.97 0.000 .5552114 .8656982

demgov2 | -.1720832 .1894213 -0.91 0.364 -.5433421 .1991757

weekend2 | -.3768496 .0886871 -4.25 0.000 -.5506731 -.2030261

z\_median\_household\_income\_2018 | .0616402 .1011403 0.61 0.542 -.1365912 .2598715

z\_medianage\_county\_2018 | -.2981369 .1998297 -1.49 0.136 -.689796 .0935222

z\_pct\_age0to17 | .1436708 .584679 0.25 0.806 -1.002279 1.28962

z\_pct\_age18to64 | .0950463 .6317133 0.15 0.880 -1.143089 1.333182

z\_pct\_age65to84 | -.0262508 .7551406 -0.03 0.972 -1.506299 1.453798

z\_difflifeexp | -.0047623 .065429 -0.07 0.942 -.1330006 .1234761

z\_pop\_density | -.0313915 .0544437 -0.58 0.564 -.1380993 .0753162

z\_supermarkets | -.4591143 .1238645 -3.71 0.000 -.7018842 -.2163444

z\_supermarketsLow | -.1937896 .0909538 -2.13 0.033 -.3720558 -.0155235

z\_religion | -.0328221 .0820146 -0.40 0.689 -.1935679 .1279236

z\_percentEmployed | .1218972 .1019835 1.20 0.232 -.0779867 .3217812

z\_gini | -.0342772 .0796332 -0.43 0.667 -.1903555 .121801

z\_avgtimetowork | -.2721548 .0899475 -3.03 0.002 -.4484488 -.0958609

z\_perc\_black | .4386107 .0860272 5.10 0.000 .2700004 .607221

z\_perc\_asian | -.0779792 .0721413 -1.08 0.280 -.2193736 .0634151

z\_perc\_hisplatin | .3605624 .0909235 3.97 0.000 .1823557 .5387692

\_cons | 5.915939 .1675091 35.32 0.000 5.587627 6.24425

------------------------------------------------------------------------------------------------

------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 1.033643 .2911187 .5951619 1.795171

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 8.89e-10 6.98e-08 1.22e-76 6.48e+57

-----------------------------+------------------------------------------------

var(Residual) | 392.1967 1.516431 389.2358 395.1801

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 115.08 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Case Growth Rate** 🡨 **Nonessential Visitations (Days 17-23) + Employment Cats**

Mixed-effects ML regression Number of obs = 112,970

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 65 2,215.1 7,345

county\_fips | 1,738 65 65.0 65

-------------------------------------------------------------

Wald chi2(38) = 5344.89

Log likelihood = -495398.96 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

caseRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist2\_lag\_wk23 | -4.876835 .0699898 -69.68 0.000 -5.014013 -4.739657

state\_policy2 | 2.365736 .0800102 29.57 0.000 2.208919 2.522553

demgov2 | -.5562539 .2559906 -2.17 0.030 -1.057986 -.0545216

weekend2 | -.0569501 .0941924 -0.60 0.545 -.2415639 .1276637

z\_median\_household\_income\_2018 | .3891929 .1439076 2.70 0.007 .1071391 .6712467

z\_medianage\_county\_2018 | -1.093922 .2673772 -4.09 0.000 -1.617972 -.5698728

z\_pct\_age0to17 | -2.48375 .8272545 -3.00 0.003 -4.105139 -.8623612

z\_pct\_age18to64 | -2.09348 .89578 -2.34 0.019 -3.849176 -.3377833

z\_pct\_age65to84 | -2.716218 1.083335 -2.51 0.012 -4.839516 -.5929208

z\_difflifeexp | -.0036252 .0848265 -0.04 0.966 -.169882 .1626317

z\_pop\_density | .0323754 .0669534 0.48 0.629 -.0988509 .1636017

z\_supermarkets | -.5806383 .1774797 -3.27 0.001 -.9284921 -.2327845

z\_supermarketsLow | .0010727 .1283493 0.01 0.993 -.2504873 .2526328

z\_religion | .0092699 .1076468 0.09 0.931 -.2017139 .2202537

z\_percentEmployed | .4837469 .1484095 3.26 0.001 .1928696 .7746242

z\_pct\_emp\_agri\_2016 | -.1724035 .1720609 -1.00 0.316 -.5096367 .1648296

z\_pct\_emp\_mini\_2016 | -.2591915 .1297267 -2.00 0.046 -.5134511 -.0049319

z\_pct\_emp\_util\_2016 | .108613 .1083202 1.00 0.316 -.1036908 .3209168

z\_pct\_emp\_cons\_2016 | .0504576 .1160867 0.43 0.664 -.1770681 .2779832

z\_pct\_emp\_manu\_2016 | .1329085 .1886242 0.70 0.481 -.2367881 .502605

z\_pct\_emp\_whol\_2016 | -.1529848 .1246702 -1.23 0.220 -.3973339 .0913642

z\_pct\_emp\_reta\_2016 | .0508404 .1244133 0.41 0.683 -.1930051 .2946859

z\_pct\_emp\_tran\_2016 | .0163343 .0913055 0.18 0.858 -.1626212 .1952899

z\_pct\_emp\_info\_2016 | .0604955 .0823898 0.73 0.463 -.1009855 .2219766

z\_pct\_emp\_fina\_2016 | .0132134 .084075 0.16 0.875 -.1515705 .1779974

z\_pct\_emp\_real\_2016 | .083972 .0978892 0.86 0.391 -.1078874 .2758313

z\_pct\_emp\_prof\_2016 | -.0472424 .1081145 -0.44 0.662 -.2591429 .1646582

z\_pct\_emp\_mana\_2016 | .2506268 .0797241 3.14 0.002 .0943706 .4068831

z\_pct\_emp\_admi\_2016 | .4270406 .0943567 4.53 0.000 .2421048 .6119764

z\_pct\_emp\_educ\_2016 | .1250935 .0759024 1.65 0.099 -.0236724 .2738594

z\_pct\_emp\_heal\_2016 | .2315977 .1551125 1.49 0.135 -.0724173 .5356127

z\_pct\_emp\_arts\_2016 | .2637304 .1143209 2.31 0.021 .0396655 .4877953

z\_pct\_emp\_acco\_2016 | .473551 .1462991 3.24 0.001 .18681 .760292

z\_gini | .1091343 .1128979 0.97 0.334 -.1121416 .3304101

z\_avgtimetowork | -.3922744 .1268083 -3.09 0.002 -.6408142 -.1437346

z\_perc\_black | .5541456 .1201081 4.61 0.000 .3187381 .7895531

z\_perc\_asian | .0288249 .0928243 0.31 0.756 -.1531075 .2107572

z\_perc\_hisplatin | .8205162 .1236244 6.64 0.000 .5782168 1.062816

\_cons | 5.380153 .2363329 22.77 0.000 4.916949 5.843357

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------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 1.983379 .5527791 1.148605 3.424841

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 2.544656 .3051937 2.011593 3.218979

-----------------------------+------------------------------------------------

var(Residual) | 374.6765 1.590264 371.5725 377.8063

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 341.87 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Case Growth Rate** 🡨 **Same-Day Visitations**

Mixed-effects ML regression Number of obs = 168,996

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 82 3,313.6 12,956

county\_fips | 2,062 53 82.0 82

-------------------------------------------------------------

Wald chi2(20) = 2564.09

Log likelihood = -776717.45 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

caseRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist2 | 2.942554 .0698352 42.14 0.000 2.80568 3.079429

state\_policy2 | -.4128787 .0729647 -5.66 0.000 -.5558869 -.2698704

demgov2 | -.0551406 .1549776 -0.36 0.722 -.3588911 .2486099

weekend2 | -.3537458 .09668 -3.66 0.000 -.5432351 -.1642565

z\_median\_household\_income\_2018 | .1528313 .1067012 1.43 0.152 -.0562992 .3619619

z\_medianage\_county\_2018 | .9556845 .2124513 4.50 0.000 .5392876 1.372081

z\_pct\_age0to17 | .3134721 .6132572 0.51 0.609 -.8884898 1.515434

z\_pct\_age18to64 | -.2831401 .6633377 -0.43 0.669 -1.583258 1.016978

z\_pct\_age65to84 | -1.057769 .7914694 -1.34 0.181 -2.609021 .4934826

z\_difflifeexp | .0279968 .0692535 0.40 0.686 -.1077376 .1637312

z\_pop\_density | .067033 .0583192 1.15 0.250 -.0472705 .1813364

z\_supermarkets | -.2418027 .1318744 -1.83 0.067 -.5002719 .0166664

z\_supermarketsLow | -.2125318 .0972296 -2.19 0.029 -.4030984 -.0219652

z\_religion | -.0391428 .0864723 -0.45 0.651 -.2086254 .1303399

z\_percentEmployed | .0106533 .1082966 0.10 0.922 -.2016042 .2229109

z\_gini | .0521316 .0846971 0.62 0.538 -.1138717 .2181348

z\_avgtimetowork | .2165632 .0956481 2.26 0.024 .0290964 .40403

z\_perc\_black | .7317163 .0901201 8.12 0.000 .5550842 .9083483

z\_perc\_asian | .0210898 .0736527 0.29 0.775 -.1232668 .1654465

z\_perc\_hisplatin | .4456768 .0937748 4.75 0.000 .2618815 .6294721

\_cons | 6.793406 .1376249 49.36 0.000 6.523667 7.063146

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------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | .5794667 .1945722 .3000638 1.119034

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 7.84e-17 7.54e-17 1.19e-17 5.17e-16

-----------------------------+------------------------------------------------

var(Residual) | 574.7162 1.977485 570.8535 578.6051

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 61.60 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Case Growth Rate** 🡨 **Same-Day Visitations + Employment Cats**

Mixed-effects ML regression Number of obs = 142,456

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 82 2,793.3 9,266

county\_fips | 1,738 53 82.0 82

-------------------------------------------------------------

Wald chi2(38) = 2459.44

Log likelihood = -657736.84 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

caseRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist2 | 3.394337 .0807623 42.03 0.000 3.236046 3.552628

state\_policy2 | -.8534526 .0805586 -10.59 0.000 -1.011345 -.6955606

demgov2 | -.0036606 .1330541 -0.03 0.978 -.2644418 .2571206

weekend2 | -.4131845 .1076734 -3.84 0.000 -.6242204 -.2021486

z\_median\_household\_income\_2018 | -.1687713 .1316119 -1.28 0.200 -.4267258 .0891833

z\_medianage\_county\_2018 | .8752937 .2452237 3.57 0.000 .3946642 1.355923

z\_pct\_age0to17 | 1.178872 .7357982 1.60 0.109 -.2632656 2.62101

z\_pct\_age18to64 | .7287088 .79804 0.91 0.361 -.8354208 2.292838

z\_pct\_age65to84 | .3655707 .9656627 0.38 0.705 -1.527093 2.258235

z\_difflifeexp | .0886519 .0761477 1.16 0.244 -.0605949 .2378988

z\_pop\_density | -.0286749 .0620375 -0.46 0.644 -.1502662 .0929163

z\_supermarkets | .1573938 .1617985 0.97 0.331 -.1597255 .4745132

z\_supermarketsLow | -.1154576 .1187255 -0.97 0.331 -.3481554 .1172402

z\_religion | -.0909995 .0956758 -0.95 0.342 -.2785205 .0965216

z\_percentEmployed | -.0124476 .1342556 -0.09 0.926 -.2755838 .2506886

z\_pct\_emp\_agri\_2016 | -.3759616 .1572854 -2.39 0.017 -.6842354 -.0676878

z\_pct\_emp\_mini\_2016 | -.3872867 .118798 -3.26 0.001 -.6201266 -.1544468

z\_pct\_emp\_util\_2016 | .1221882 .1004382 1.22 0.224 -.074667 .3190434

z\_pct\_emp\_cons\_2016 | -.0237967 .1072872 -0.22 0.824 -.2340757 .1864823

z\_pct\_emp\_manu\_2016 | .1372638 .1756707 0.78 0.435 -.2070444 .4815721

z\_pct\_emp\_whol\_2016 | .2391424 .1160489 2.06 0.039 .0116907 .4665942

z\_pct\_emp\_reta\_2016 | -.0631617 .1156141 -0.55 0.585 -.2897612 .1634377

z\_pct\_emp\_tran\_2016 | .018658 .0852508 0.22 0.827 -.1484306 .1857466

z\_pct\_emp\_info\_2016 | -.0559008 .0765916 -0.73 0.465 -.2060177 .094216

z\_pct\_emp\_fina\_2016 | .0528983 .078233 0.68 0.499 -.1004355 .2062321

z\_pct\_emp\_real\_2016 | .2216913 .0908073 2.44 0.015 .0437124 .3996703

z\_pct\_emp\_prof\_2016 | .1075132 .1002351 1.07 0.283 -.088944 .3039705

z\_pct\_emp\_mana\_2016 | .1225873 .0742563 1.65 0.099 -.0229524 .2681269

z\_pct\_emp\_admi\_2016 | .2448825 .0875627 2.80 0.005 .0732628 .4165022

z\_pct\_emp\_educ\_2016 | .1032783 .0702587 1.47 0.142 -.0344262 .2409829

z\_pct\_emp\_heal\_2016 | .0383839 .144213 0.27 0.790 -.2442685 .3210362

z\_pct\_emp\_arts\_2016 | -.1384469 .106386 -1.30 0.193 -.3469595 .0700658

z\_pct\_emp\_acco\_2016 | -.3969086 .1353622 -2.93 0.003 -.6622136 -.1316036

z\_gini | -.1391959 .1030282 -1.35 0.177 -.3411273 .0627356

z\_avgtimetowork | .4398401 .115289 3.82 0.000 .2138778 .6658025

z\_perc\_black | .5474497 .1045172 5.24 0.000 .3425997 .7522996

z\_perc\_asian | -.0864199 .0768892 -1.12 0.261 -.23712 .0642802

z\_perc\_hisplatin | .4427484 .1040413 4.26 0.000 .2388312 .6466656

\_cons | 6.996728 .1334552 52.43 0.000 6.73516 7.258295

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------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | .3084591 .131867 .1334464 .7129981

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 1.53e-14 1.53e-14 2.15e-15 1.09e-13

-----------------------------+------------------------------------------------

var(Residual) | 599.492 2.246732 595.1046 603.9117

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 19.63 Prob > chi2 = 0.0001

Note: LR test is conservative and provided only for reference.

1. **Case Growth Rate** 🡨 **Nonessential Visitations (Days 17-23) + Same Day + Employment Cats**

Mixed-effects ML regression Number of obs = 112,910

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 65 2,213.9 7,345

county\_fips | 1,738 36 65.0 65

-------------------------------------------------------------

Wald chi2(39) = 7628.00

Log likelihood = -494006.21 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

caseRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist2\_lag\_wk23 | -5.056954 .0681851 -74.17 0.000 -5.190595 -4.923314

z\_dist2 | 3.60293 .0726367 49.60 0.000 3.460565 3.745295

state\_policy2 | .6415025 .0849579 7.55 0.000 .474988 .808017

demgov2 | -.189834 .1800652 -1.05 0.292 -.5427553 .1630872

weekend2 | -.4193085 .0938337 -4.47 0.000 -.6032192 -.2353978

z\_median\_household\_income\_2018 | -.0240079 .1187462 -0.20 0.840 -.2567462 .2087303

z\_medianage\_county\_2018 | -.1421536 .2208827 -0.64 0.520 -.5750757 .2907685

z\_pct\_age0to17 | -.9611592 .6781048 -1.42 0.156 -2.29022 .3679018

z\_pct\_age18to64 | -.9934165 .7341501 -1.35 0.176 -2.432324 .4454914

z\_pct\_age65to84 | -1.532924 .8875126 -1.73 0.084 -3.272416 .2065693

z\_difflifeexp | .0235911 .0695556 0.34 0.734 -.1127354 .1599176

z\_pop\_density | -.0323098 .0552634 -0.58 0.559 -.1406241 .0760046

z\_supermarkets | -.2598815 .1466222 -1.77 0.076 -.5472557 .0274926

z\_supermarketsLow | -.2199174 .1059834 -2.08 0.038 -.427641 -.0121938

z\_religion | -.0365649 .0880609 -0.42 0.678 -.209161 .1360312

z\_percentEmployed | .1246833 .1221147 1.02 0.307 -.1146572 .3640237

z\_pct\_emp\_agri\_2016 | -.182472 .1416074 -1.29 0.198 -.4600174 .0950735

z\_pct\_emp\_mini\_2016 | -.2325923 .1067261 -2.18 0.029 -.4417715 -.023413

z\_pct\_emp\_util\_2016 | .1236731 .0893881 1.38 0.166 -.0515243 .2988704

z\_pct\_emp\_cons\_2016 | .0225893 .095806 0.24 0.814 -.165187 .2103656

z\_pct\_emp\_manu\_2016 | .2553313 .1558067 1.64 0.101 -.0500441 .5607067

z\_pct\_emp\_whol\_2016 | -.0610276 .102987 -0.59 0.553 -.2628783 .1408232

z\_pct\_emp\_reta\_2016 | .1879779 .102763 1.83 0.067 -.0134338 .3893896

z\_pct\_emp\_tran\_2016 | .0123744 .0754528 0.16 0.870 -.1355104 .1602591

z\_pct\_emp\_info\_2016 | .0149858 .0680066 0.22 0.826 -.1183047 .1482764

z\_pct\_emp\_fina\_2016 | .017975 .0694161 0.26 0.796 -.118078 .154028

z\_pct\_emp\_real\_2016 | .1159553 .080798 1.44 0.151 -.0424059 .2743165

z\_pct\_emp\_prof\_2016 | -.0898743 .0891977 -1.01 0.314 -.2646987 .08495

z\_pct\_emp\_mana\_2016 | .1276684 .0659171 1.94 0.053 -.0015268 .2568636

z\_pct\_emp\_admi\_2016 | .2132079 .0780217 2.73 0.006 .0602881 .3661276

z\_pct\_emp\_educ\_2016 | .0237091 .0626201 0.38 0.705 -.0990241 .1464422

z\_pct\_emp\_heal\_2016 | .1017923 .1280941 0.79 0.427 -.1492675 .3528522

z\_pct\_emp\_arts\_2016 | .0470671 .0948997 0.50 0.620 -.1389328 .2330671

z\_pct\_emp\_acco\_2016 | .0987461 .1209891 0.82 0.414 -.1383882 .3358805

z\_gini | -.1500086 .0930946 -1.61 0.107 -.3324706 .0324533

z\_avgtimetowork | -.2669475 .1043971 -2.56 0.011 -.4715622 -.0623329

z\_perc\_black | .3435064 .0979804 3.51 0.000 .1514684 .5355445

z\_perc\_asian | -.0870101 .0737594 -1.18 0.238 -.2315759 .0575557

z\_perc\_hisplatin | .4380672 .1003297 4.37 0.000 .2414245 .6347098

\_cons | 6.003335 .1684771 35.63 0.000 5.673126 6.333545

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------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | .8766748 .268617 .4808688 1.598271

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 6.00e-11 6.52e-11 7.13e-12 5.05e-10

-----------------------------+------------------------------------------------

var(Residual) | 369.3826 1.555096 366.3472 372.4431

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 74.57 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Death Growth Rate** 🡨 **General Movement (Days 25-31)**

Mixed-effects ML regression Number of obs = 171,171

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 57 3,356.3 13,338

county\_fips | 3,003 57 57.0 57

-------------------------------------------------------------

Wald chi2(20) = 1347.13

Log likelihood = -688020.91 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

deathRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist1\_lag\_wk31 | -.7133804 .0399865 -17.84 0.000 -.7917525 -.6350082

state\_policy2 | .2971714 .0473502 6.28 0.000 .2043667 .3899761

demgov2 | .1423714 .2643794 0.54 0.590 -.3758026 .6605454

weekend2 | -.4956865 .0528146 -9.39 0.000 -.5992012 -.3921718

z\_median\_household\_income\_2018 | .8662519 .0771772 11.22 0.000 .7149873 1.017517

z\_medianage\_county\_2018 | .086123 .1363279 0.63 0.528 -.1810748 .3533207

z\_pct\_age0to17 | .1026252 .3443996 0.30 0.766 -.5723855 .777636

z\_pct\_age18to64 | -.0877024 .3715578 -0.24 0.813 -.8159422 .6405375

z\_pct\_age65to84 | -.3465108 .4363901 -0.79 0.427 -1.20182 .5087981

z\_difflifeexp | .005816 .0531002 0.11 0.913 -.0982585 .1098904

z\_pop\_density | .0811924 .0481778 1.69 0.092 -.0132343 .1756191

z\_supermarkets | -.2042874 .0521393 -3.92 0.000 -.3064786 -.1020962

z\_supermarketsLow | .155688 .0469656 3.31 0.001 .0636371 .2477389

z\_religion | -.0866936 .0592164 -1.46 0.143 -.2027556 .0293684

z\_percentEmployed | .1120411 .0662173 1.69 0.091 -.0177423 .2418246

z\_gini | .405633 .0544353 7.45 0.000 .2989417 .5123243

z\_avgtimetowork | -.0409832 .060364 -0.68 0.497 -.1592946 .0773281

z\_perc\_black | .7202716 .06723 10.71 0.000 .5885032 .8520401

z\_perc\_asian | .4082357 .0654471 6.24 0.000 .2799618 .5365096

z\_perc\_hisplatin | .2293804 .0691565 3.32 0.001 .0938362 .3649246

\_cons | 2.102943 .2334822 9.01 0.000 1.645327 2.56056

------------------------------------------------------------------------------------------------

------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 2.504367 .6715308 1.480653 4.235868

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 2.096466 .1388169 1.841305 2.386986

-----------------------------+------------------------------------------------

var(Residual) | 179.6957 .6198021 178.485 180.9146

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 1067.86 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Death Growth Rate** 🡨 **General Movement (Days 25-31) + Same Day**

Mixed-effects ML regression Number of obs = 171,171

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 57 3,356.3 13,338

county\_fips | 3,003 57 57.0 57

-------------------------------------------------------------

Wald chi2(21) = 1404.45

Log likelihood = -687999.34 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

deathRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist1\_lag\_wk31 | -.7020454 .0399186 -17.59 0.000 -.7802844 -.6238063

z\_dist1 | .2735891 .0413703 6.61 0.000 .1925048 .3546734

state\_policy2 | .1579612 .0519135 3.04 0.002 .0562126 .2597099

demgov2 | .202391 .2622571 0.77 0.440 -.3116235 .7164055

weekend2 | -.5869439 .0545954 -10.75 0.000 -.6939489 -.4799389

z\_median\_household\_income\_2018 | .7982182 .0770923 10.35 0.000 .6471202 .9493163

z\_medianage\_county\_2018 | .0674039 .1350091 0.50 0.618 -.1972091 .3320168

z\_pct\_age0to17 | .0779241 .3410202 0.23 0.819 -.5904632 .7463114

z\_pct\_age18to64 | -.1275235 .3679386 -0.35 0.729 -.8486698 .5936228

z\_pct\_age65to84 | -.3711761 .4320983 -0.86 0.390 -1.218073 .475721

z\_difflifeexp | .0014131 .0525801 0.03 0.979 -.101642 .1044682

z\_pop\_density | .0701711 .04773 1.47 0.142 -.0233781 .1637203

z\_supermarkets | -.212521 .051639 -4.12 0.000 -.3137316 -.1113104

z\_supermarketsLow | .1602264 .0465062 3.45 0.001 .069076 .2513768

z\_religion | -.0821033 .0586358 -1.40 0.161 -.1970273 .0328208

z\_percentEmployed | .1116941 .0655631 1.70 0.088 -.0168072 .2401954

z\_gini | .3735355 .0541113 6.90 0.000 .2674793 .4795916

z\_avgtimetowork | -.0337092 .0597781 -0.56 0.573 -.1508722 .0834538

z\_perc\_black | .7061785 .066601 10.60 0.000 .575643 .8367141

z\_perc\_asian | .3772293 .0649808 5.81 0.000 .2498692 .5045894

z\_perc\_hisplatin | .2160034 .068505 3.15 0.002 .0817361 .3502708

\_cons | 2.11436 .2314647 9.13 0.000 1.660698 2.568023

------------------------------------------------------------------------------------------------

------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 2.461513 .658755 1.456806 4.159129

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 1.992771 .1362975 1.742764 2.278642

-----------------------------+------------------------------------------------

var(Residual) | 179.7133 .6198777 178.5024 180.9323

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 1007.46 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Death Growth Rate** 🡨 **General Movement (Days 25-31) + Employment Cats**

Mixed-effects ML regression Number of obs = 112,461

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 57 2,205.1 6,783

county\_fips | 1,973 57 57.0 57

-------------------------------------------------------------

Wald chi2(38) = 1257.73

Log likelihood = -468470.72 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

deathRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist1\_lag\_wk31 | -1.13053 .0569733 -19.84 0.000 -1.242195 -1.018864

state\_policy2 | .4481782 .0686169 6.53 0.000 .3136915 .5826648

demgov2 | .0341384 .209783 0.16 0.871 -.3770287 .4453055

weekend2 | -.6429448 .075508 -8.51 0.000 -.7909378 -.4949519

z\_median\_household\_income\_2018 | .4437142 .1162314 3.82 0.000 .2159049 .6715235

z\_medianage\_county\_2018 | .2859157 .2138746 1.34 0.181 -.1332707 .7051022

z\_pct\_age0to17 | -.3614008 .6070283 -0.60 0.552 -1.551154 .8283529

z\_pct\_age18to64 | -.673081 .6579593 -1.02 0.306 -1.962658 .6164956

z\_pct\_age65to84 | -1.115305 .7929712 -1.41 0.160 -2.669499 .4388904

z\_difflifeexp | .0512093 .0699854 0.73 0.464 -.0859595 .1883781

z\_pop\_density | -.0059827 .0559783 -0.11 0.915 -.1156982 .1037328

z\_supermarkets | -.1336467 .1010826 -1.32 0.186 -.3317649 .0644716

z\_supermarketsLow | .288919 .0930057 3.11 0.002 .1066311 .4712068

z\_religion | -.1298276 .0862262 -1.51 0.132 -.2988278 .0391725

z\_percentEmployed | .2809473 .1134677 2.48 0.013 .0585547 .5033399

z\_pct\_emp\_agri\_2016 | -.1542458 .1170919 -1.32 0.188 -.3837417 .0752501

z\_pct\_emp\_mini\_2016 | -.0170324 .0954987 -0.18 0.858 -.2042065 .1701416

z\_pct\_emp\_util\_2016 | .0574147 .0844642 0.68 0.497 -.1081321 .2229615

z\_pct\_emp\_cons\_2016 | .0594863 .0833958 0.71 0.476 -.1039665 .2229391

z\_pct\_emp\_manu\_2016 | .2141765 .1286391 1.66 0.096 -.0379516 .4663046

z\_pct\_emp\_whol\_2016 | -.0145043 .0945929 -0.15 0.878 -.1999029 .1708944

z\_pct\_emp\_reta\_2016 | .0728309 .0924502 0.79 0.431 -.1083681 .25403

z\_pct\_emp\_tran\_2016 | .0289921 .0694133 0.42 0.676 -.1070554 .1650397

z\_pct\_emp\_info\_2016 | .0119938 .0664673 0.18 0.857 -.1182797 .1422672

z\_pct\_emp\_fina\_2016 | .2253885 .0679791 3.32 0.001 .092152 .358625

z\_pct\_emp\_real\_2016 | .1207539 .0728386 1.66 0.097 -.0220071 .263515

z\_pct\_emp\_prof\_2016 | .2879697 .0868832 3.31 0.001 .1176817 .4582577

z\_pct\_emp\_mana\_2016 | .3254467 .0664345 4.90 0.000 .1952375 .4556559

z\_pct\_emp\_admi\_2016 | .4105474 .0734694 5.59 0.000 .2665501 .5545447

z\_pct\_emp\_educ\_2016 | .309912 .0618007 5.01 0.000 .1887848 .4310391

z\_pct\_emp\_heal\_2016 | .3606666 .1103841 3.27 0.001 .1443177 .5770155

z\_pct\_emp\_arts\_2016 | .1897727 .0866785 2.19 0.029 .0198861 .3596594

z\_pct\_emp\_acco\_2016 | .179917 .1028943 1.75 0.080 -.0217521 .381586

z\_gini | .2236538 .0869598 2.57 0.010 .0532158 .3940918

z\_avgtimetowork | .2370053 .0980545 2.42 0.016 .044822 .4291886

z\_perc\_black | .7250367 .097696 7.42 0.000 .5335559 .9165174

z\_perc\_asian | .1857679 .0766947 2.42 0.015 .035449 .3360868

z\_perc\_hisplatin | .3846526 .1006197 3.82 0.000 .1874417 .5818635

\_cons | 2.234757 .1863281 11.99 0.000 1.869561 2.599953

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------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 1.357374 .4145632 .7459833 2.469845

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 1.954172 .2030047 1.594181 2.395455

-----------------------------+------------------------------------------------

var(Residual) | 241.2421 1.026515 239.2385 243.2624

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 410.29 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Death Growth Rate** 🡨 **Same Day Movement [3-level model doesn’t converge]**

Mixed-effects ML regression Number of obs = 246,246

Group variable: county\_fips Number of groups = 3,003

Obs per group:

min = 82

avg = 82.0

max = 82

Wald chi2(20) = 2872.44

Log likelihood = -981721.3 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

deathRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist1 | .4468062 .0325403 13.73 0.000 .3830284 .5105839

state\_policy2 | .6153258 .0327643 18.78 0.000 .5511091 .6795426

demgov2 | -.1027782 .0445492 -2.31 0.021 -.1900931 -.0154633

weekend2 | -.5428204 .0450007 -12.06 0.000 -.6310201 -.4546206

z\_median\_household\_income\_2018 | .6886896 .0601117 11.46 0.000 .5708727 .8065064

z\_medianage\_county\_2018 | .0514609 .1104261 0.47 0.641 -.1649703 .2678922

z\_pct\_age0to17 | -.9298302 .248349 -3.74 0.000 -1.416585 -.4430751

z\_pct\_age18to64 | -1.084993 .2661225 -4.08 0.000 -1.606584 -.563403

z\_pct\_age65to84 | -1.537268 .3144684 -4.89 0.000 -2.153615 -.9209212

z\_difflifeexp | .0473029 .0389896 1.21 0.225 -.0291153 .1237211

z\_pop\_density | .3255699 .0393027 8.28 0.000 .248538 .4026019

z\_supermarkets | -.227996 .0413538 -5.51 0.000 -.3090479 -.1469441

z\_supermarketsLow | .137345 .0381262 3.60 0.000 .0626189 .2120711

z\_religion | -.0830481 .0439079 -1.89 0.059 -.169106 .0030098

z\_percentEmployed | .1255382 .0515925 2.43 0.015 .0244187 .2266576

z\_gini | .3823653 .043347 8.82 0.000 .2974066 .4673239

z\_avgtimetowork | .2232922 .0466068 4.79 0.000 .1319445 .3146399

z\_perc\_black | .629441 .0442129 14.24 0.000 .5427854 .7160967

z\_perc\_asian | .2515609 .0447514 5.62 0.000 .1638497 .3392721

z\_perc\_hisplatin | .1742849 .0406012 4.29 0.000 .094708 .2538617

\_cons | 1.653674 .0355299 46.54 0.000 1.584036 1.723311

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------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 1.733187 .0980775 1.551235 1.936481

-----------------------------+------------------------------------------------

var(Residual) | 168.7083 .483766 167.7628 169.6592

------------------------------------------------------------------------------

LR test vs. linear model: chibar2(01) = 680.31 Prob >= chibar2 = 0.0000

1. **Death Growth Rate** 🡨 **Same-Day Movement + Employment Cats**

Mixed-effects ML regression Number of obs = 161,786

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 82 3,172.3 9,758

county\_fips | 1,973 82 82.0 82

-------------------------------------------------------------

Wald chi2(38) = 2212.43

Log likelihood = -670404.38 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

deathRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist1 | .7061249 .0525547 13.44 0.000 .6031196 .8091301

state\_policy2 | .8450194 .0499075 16.93 0.000 .7472024 .9428363

demgov2 | -.1170803 .1798091 -0.65 0.515 -.4694998 .2353391

weekend2 | -.769713 .0657663 -11.70 0.000 -.8986126 -.6408134

z\_median\_household\_income\_2018 | .1158899 .0891992 1.30 0.194 -.0589373 .2907171

z\_medianage\_county\_2018 | -.0409949 .1638114 -0.25 0.802 -.3620593 .2800694

z\_pct\_age0to17 | -.731923 .4663665 -1.57 0.117 -1.645984 .1821385

z\_pct\_age18to64 | -1.052478 .5054128 -2.08 0.037 -2.043069 -.0618872

z\_pct\_age65to84 | -1.23563 .6090212 -2.03 0.042 -2.42929 -.0419708

z\_difflifeexp | .0149667 .0537104 0.28 0.781 -.0903037 .1202371

z\_pop\_density | .1124132 .0428212 2.63 0.009 .0284851 .1963413

z\_supermarkets | -.1752716 .0775284 -2.26 0.024 -.3272245 -.0233188

z\_supermarketsLow | .2851964 .0711754 4.01 0.000 .1456952 .4246977

z\_religion | .0247871 .0662451 0.37 0.708 -.1050509 .154625

z\_percentEmployed | .2487238 .0870275 2.86 0.004 .078153 .4192946

z\_pct\_emp\_agri\_2016 | -.2245317 .0896261 -2.51 0.012 -.4001956 -.0488678

z\_pct\_emp\_mini\_2016 | -.0472338 .073134 -0.65 0.518 -.1905738 .0961061

z\_pct\_emp\_util\_2016 | .0616081 .0645659 0.95 0.340 -.0649388 .1881549

z\_pct\_emp\_cons\_2016 | .0138488 .0637824 0.22 0.828 -.1111625 .1388601

z\_pct\_emp\_manu\_2016 | .161645 .0983304 1.64 0.100 -.0310791 .3543691

z\_pct\_emp\_whol\_2016 | .1450757 .072319 2.01 0.045 .0033331 .2868183

z\_pct\_emp\_reta\_2016 | -.0114476 .0706958 -0.16 0.871 -.1500088 .1271136

z\_pct\_emp\_tran\_2016 | .1050953 .0530319 1.98 0.048 .0011547 .2090359

z\_pct\_emp\_info\_2016 | .0341219 .0508293 0.67 0.502 -.0655018 .1337455

z\_pct\_emp\_fina\_2016 | .1142519 .0519706 2.20 0.028 .0123914 .2161123

z\_pct\_emp\_real\_2016 | .0895573 .055665 1.61 0.108 -.019544 .1986587

z\_pct\_emp\_prof\_2016 | .2089057 .0664678 3.14 0.002 .0786313 .3391801

z\_pct\_emp\_mana\_2016 | .2759339 .0507766 5.43 0.000 .1764135 .3754542

z\_pct\_emp\_admi\_2016 | .3458365 .0561749 6.16 0.000 .2357357 .4559373

z\_pct\_emp\_educ\_2016 | .1964459 .0472975 4.15 0.000 .1037445 .2891474

z\_pct\_emp\_heal\_2016 | .2535626 .0843703 3.01 0.003 .0881998 .4189253

z\_pct\_emp\_arts\_2016 | .0530659 .0662975 0.80 0.423 -.0768748 .1830065

z\_pct\_emp\_acco\_2016 | .0560045 .0787382 0.71 0.477 -.0983196 .2103285

z\_gini | .2165484 .0666076 3.25 0.001 .086 .3470968

z\_avgtimetowork | .5643194 .0752981 7.49 0.000 .4167379 .7119009

z\_perc\_black | .6351048 .075244 8.44 0.000 .4876293 .7825803

z\_perc\_asian | .2327533 .0602274 3.86 0.000 .1147097 .3507969

z\_perc\_hisplatin | .3892623 .0777759 5.00 0.000 .2368244 .5417002

\_cons | 1.938226 .1599839 12.12 0.000 1.624664 2.251789

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------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 1.057356 .3266181 .5771441 1.937127

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | .7812018 .1180467 .5809503 1.050479

-----------------------------+------------------------------------------------

var(Residual) | 231.8237 .8201016 230.2219 233.4367

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 329.01 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Death Growth Rate** 🡨 **General Movement (Days 25-31) + Same Day + Employment Cats**

Mixed-effects ML regression Number of obs = 112,461

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 57 2,205.1 6,783

county\_fips | 1,973 57 57.0 57

-------------------------------------------------------------

Wald chi2(39) = 1300.85

Log likelihood = -468455.5 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

deathRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist1\_lag\_wk31 | -1.090462 .0572246 -19.06 0.000 -1.20262 -.9783037

z\_dist1 | .3754063 .0675595 5.56 0.000 .2429921 .5078205

state\_policy2 | .2736466 .075604 3.62 0.000 .1254654 .4218277

demgov2 | .1087538 .2057452 0.53 0.597 -.2944993 .5120069

weekend2 | -.7651934 .0786587 -9.73 0.000 -.9193616 -.6110253

z\_median\_household\_income\_2018 | .384266 .1155335 3.33 0.001 .1578245 .6107076

z\_medianage\_county\_2018 | .2176108 .2120376 1.03 0.305 -.1979752 .6331969

z\_pct\_age0to17 | -.3123309 .6006745 -0.52 0.603 -1.489631 .8649694

z\_pct\_age18to64 | -.6271812 .6510579 -0.96 0.335 -1.903231 .6488688

z\_pct\_age65to84 | -.9988464 .7849189 -1.27 0.203 -2.537259 .5395665

z\_difflifeexp | .0499996 .0692506 0.72 0.470 -.0857292 .1857283

z\_pop\_density | -.0130136 .0554268 -0.23 0.814 -.1216482 .095621

z\_supermarkets | -.170139 .1002359 -1.70 0.090 -.3665978 .0263198

z\_supermarketsLow | .2957032 .0920672 3.21 0.001 .1152549 .4761515

z\_religion | -.1251064 .085315 -1.47 0.143 -.2923207 .0421079

z\_percentEmployed | .2649687 .1123222 2.36 0.018 .0448213 .4851161

z\_pct\_emp\_agri\_2016 | -.1565122 .1158969 -1.35 0.177 -.3836659 .0706416

z\_pct\_emp\_mini\_2016 | -.026848 .0945352 -0.28 0.776 -.2121336 .1584376

z\_pct\_emp\_util\_2016 | .0689951 .0836398 0.82 0.409 -.0949359 .2329261

z\_pct\_emp\_cons\_2016 | .0484761 .0825724 0.59 0.557 -.1133627 .210315

z\_pct\_emp\_manu\_2016 | .2093376 .1273492 1.64 0.100 -.0402623 .4589376

z\_pct\_emp\_whol\_2016 | -.0012587 .0936691 -0.01 0.989 -.1848467 .1823293

z\_pct\_emp\_reta\_2016 | .0787465 .0915227 0.86 0.390 -.1006347 .2581278

z\_pct\_emp\_tran\_2016 | .0380074 .0687368 0.55 0.580 -.0967142 .1727291

z\_pct\_emp\_info\_2016 | -.0013767 .0658382 -0.02 0.983 -.1304173 .1276638

z\_pct\_emp\_fina\_2016 | .2154716 .0673189 3.20 0.001 .083529 .3474142

z\_pct\_emp\_real\_2016 | .1042188 .0721654 1.44 0.149 -.0372228 .2456604

z\_pct\_emp\_prof\_2016 | .2641156 .0861105 3.07 0.002 .0953422 .432889

z\_pct\_emp\_mana\_2016 | .3164372 .0657878 4.81 0.000 .1874955 .4453788

z\_pct\_emp\_admi\_2016 | .3953703 .0727795 5.43 0.000 .2527251 .5380154

z\_pct\_emp\_educ\_2016 | .294685 .0612364 4.81 0.000 .174664 .4147061

z\_pct\_emp\_heal\_2016 | .3387631 .109346 3.10 0.002 .124449 .5530773

z\_pct\_emp\_arts\_2016 | .1530796 .0860515 1.78 0.075 -.0155783 .3217375

z\_pct\_emp\_acco\_2016 | .1545857 .1019478 1.52 0.129 -.0452284 .3543998

z\_gini | .1998823 .0861768 2.32 0.020 .0309789 .3687858

z\_avgtimetowork | .2500904 .0970429 2.58 0.010 .0598898 .4402909

z\_perc\_black | .7031252 .0967222 7.27 0.000 .5135531 .8926973

z\_perc\_asian | .1503265 .07596 1.98 0.048 .0014475 .2992055

z\_perc\_hisplatin | .3553317 .0996207 3.57 0.000 .1600788 .5505846

\_cons | 2.242031 .1823086 12.30 0.000 1.884713 2.599349

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------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 1.291874 .3999244 .7042301 2.369878

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 1.831196 .1994191 1.479239 2.266896

-----------------------------+------------------------------------------------

var(Residual) | 241.2645 1.026642 239.2607 243.2851

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 366.55 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Death Growth Rate** 🡨 **Nonessential Visitation (Days 25-31)**

Mixed-effects ML regression Number of obs = 117,534

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 57 2,304.6 9,006

county\_fips | 2,062 57 57.0 57

-------------------------------------------------------------

Wald chi2(20) = 979.46

Log likelihood = -489885.12 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

deathRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist2\_lag\_wk31 | -.8249844 .0545511 -15.12 0.000 -.9319026 -.7180662

state\_policy2 | .579518 .0643512 9.01 0.000 .4533919 .7056442

demgov2 | .0445042 .2343383 0.19 0.849 -.4147904 .5037987

weekend2 | -.6047256 .073971 -8.18 0.000 -.749706 -.4597451

z\_median\_household\_income\_2018 | .7666775 .1057894 7.25 0.000 .5593341 .974021

z\_medianage\_county\_2018 | .0172177 .2090903 0.08 0.934 -.3925917 .4270271

z\_pct\_age0to17 | -.2384304 .6188239 -0.39 0.700 -1.451303 .9744421

z\_pct\_age18to64 | -.3763767 .6682343 -0.56 0.573 -1.686092 .9333385

z\_pct\_age65to84 | -.7073338 .7997823 -0.88 0.376 -2.274878 .8602107

z\_difflifeexp | .0588818 .0690634 0.85 0.394 -.0764799 .1942434

z\_pop\_density | .0626279 .0571651 1.10 0.273 -.0494136 .1746694

z\_supermarkets | -.5329943 .1297548 -4.11 0.000 -.787309 -.2786796

z\_supermarketsLow | .4442467 .0951345 4.67 0.000 .2577864 .6307069

z\_religion | -.0784275 .0867235 -0.90 0.366 -.2484024 .0915474

z\_percentEmployed | .3920515 .1070612 3.66 0.000 .1822153 .6018876

z\_gini | .5910117 .0833375 7.09 0.000 .4276732 .7543502

z\_avgtimetowork | .0617394 .0944767 0.65 0.513 -.1234315 .2469103

z\_perc\_black | .8703547 .0909756 9.57 0.000 .6920458 1.048664

z\_perc\_asian | .2918501 .0783136 3.73 0.000 .1383583 .4453418

z\_perc\_hisplatin | .3718403 .0966639 3.85 0.000 .1823825 .5612982

\_cons | 2.137579 .2073554 10.31 0.000 1.73117 2.543988

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------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 1.734432 .5200841 .9636456 3.121744

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 2.376057 .2142178 1.991202 2.835297

-----------------------------+------------------------------------------------

var(Residual) | 242.1246 1.007953 240.157 244.1082

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 553.30 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Death Growth Rate** 🡨 **Nonessential Visitation (Days 25-31) + Same Day**

Mixed-effects ML regression Number of obs = 117,446

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 57 2,302.9 9,006

county\_fips | 2,062 28 57.0 57

-------------------------------------------------------------

Wald chi2(21) = 1093.24

Log likelihood = -489506.21 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

deathRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist2\_lag\_wk31 | -.8064113 .0544754 -14.80 0.000 -.9131812 -.6996414

z\_dist2 | .5632402 .0574688 9.80 0.000 .4506033 .675877

state\_policy2 | .2575135 .0725775 3.55 0.000 .1152643 .3997628

demgov2 | .1224421 .2331784 0.53 0.600 -.3345792 .5794633

weekend2 | -.6500989 .0741846 -8.76 0.000 -.7954979 -.5046998

z\_median\_household\_income\_2018 | .6636597 .1039762 6.38 0.000 .4598701 .8674493

z\_medianage\_county\_2018 | .192089 .204734 0.94 0.348 -.2091822 .5933602

z\_pct\_age0to17 | -.0073307 .6046612 -0.01 0.990 -1.192445 1.177783

z\_pct\_age18to64 | -.2664601 .6528018 -0.41 0.683 -1.545928 1.013008

z\_pct\_age65to84 | -.5967308 .7813004 -0.76 0.445 -2.128051 .9345898

z\_difflifeexp | .0568163 .0673814 0.84 0.399 -.0752489 .1888815

z\_pop\_density | .045713 .0557511 0.82 0.412 -.0635572 .1549833

z\_supermarkets | -.4606132 .1270969 -3.62 0.000 -.7097186 -.2115079

z\_supermarketsLow | .3807694 .0930443 4.09 0.000 .1984058 .5631329

z\_religion | -.0821707 .0846251 -0.97 0.332 -.2480329 .0836915

z\_percentEmployed | .3233253 .104624 3.09 0.002 .118266 .5283846

z\_gini | .5267258 .0815827 6.46 0.000 .3668266 .686625

z\_avgtimetowork | .0752638 .0923487 0.81 0.415 -.1057364 .2562639

z\_perc\_black | .8135501 .0889313 9.15 0.000 .6392479 .9878523

z\_perc\_asian | .2601748 .0767366 3.39 0.001 .1097739 .4105758

z\_perc\_hisplatin | .2999805 .094651 3.17 0.002 .1144679 .4854931

\_cons | 2.285109 .2066656 11.06 0.000 1.880052 2.690166

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Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 1.727164 .5155559 .9621684 3.100387

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county\_fips: Identity |

var(\_cons) | 2.03706 .2039849 1.674046 2.478795

-----------------------------+------------------------------------------------

var(Residual) | 242.2943 1.009081 240.3246 244.2802

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 462.81 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Death Growth Rate** 🡨 **Nonessential Visitation (Days 25-31) + Employment Cats**

Mixed-effects ML regression Number of obs = 99,066

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 57 1,942.5 6,441

county\_fips | 1,738 57 57.0 57

-------------------------------------------------------------

Wald chi2(38) = 1021.85

Log likelihood = -417361.77 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

deathRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist2\_lag\_wk31 | -1.037365 .0622977 -16.65 0.000 -1.159466 -.9152637

state\_policy2 | .6905332 .0741679 9.31 0.000 .5451668 .8358997

demgov2 | -.0288357 .2060659 -0.14 0.889 -.4327173 .375046

weekend2 | -.6578856 .0843359 -7.80 0.000 -.823181 -.4925902

z\_median\_household\_income\_2018 | .3995995 .1290193 3.10 0.002 .1467262 .6524727

z\_medianage\_county\_2018 | -.0805126 .2398529 -0.34 0.737 -.5506157 .3895905

z\_pct\_age0to17 | -.961762 .7397482 -1.30 0.194 -2.411642 .4881179

z\_pct\_age18to64 | -1.17275 .8012806 -1.46 0.143 -2.743231 .3977307

z\_pct\_age65to84 | -1.598957 .968873 -1.65 0.099 -3.497913 .2999996

z\_difflifeexp | .0498866 .0759399 0.66 0.511 -.0989528 .1987261

z\_pop\_density | .000316 .060191 0.01 0.996 -.1176561 .1182881

z\_supermarkets | -.4007443 .1590474 -2.52 0.012 -.7124714 -.0890171

z\_supermarketsLow | .4283611 .115366 3.71 0.000 .2022478 .6544743

z\_religion | -.0819128 .0962217 -0.85 0.395 -.2705038 .1066782

z\_percentEmployed | .4220963 .1330025 3.17 0.002 .1614162 .6827765

z\_pct\_emp\_agri\_2016 | -.3311287 .1544796 -2.14 0.032 -.6339031 -.0283543

z\_pct\_emp\_mini\_2016 | -.0901938 .116424 -0.77 0.439 -.3183806 .137993

z\_pct\_emp\_util\_2016 | .1036643 .0974182 1.06 0.287 -.0872719 .2946006

z\_pct\_emp\_cons\_2016 | .0531437 .1043318 0.51 0.610 -.1513428 .2576301

z\_pct\_emp\_manu\_2016 | .1657807 .1697337 0.98 0.329 -.1668913 .4984526

z\_pct\_emp\_whol\_2016 | .022421 .1121639 0.20 0.842 -.1974163 .2422582

z\_pct\_emp\_reta\_2016 | .0441554 .1119031 0.39 0.693 -.1751707 .2634814

z\_pct\_emp\_tran\_2016 | .0733936 .0821883 0.89 0.372 -.0876924 .2344797

z\_pct\_emp\_info\_2016 | .0034663 .0740916 0.05 0.963 -.1417506 .1486832

z\_pct\_emp\_fina\_2016 | .198411 .0756359 2.62 0.009 .0501674 .3466547

z\_pct\_emp\_real\_2016 | .0596126 .0880477 0.68 0.498 -.1129577 .2321829

z\_pct\_emp\_prof\_2016 | .1741132 .0972049 1.79 0.073 -.0164048 .3646312

z\_pct\_emp\_mana\_2016 | .3175049 .0717622 4.42 0.000 .1768537 .4581562

z\_pct\_emp\_admi\_2016 | .4822972 .0848755 5.68 0.000 .3159444 .6486501

z\_pct\_emp\_educ\_2016 | .27153 .068213 3.98 0.000 .137835 .4052251

z\_pct\_emp\_heal\_2016 | .3287472 .1395459 2.36 0.018 .0552423 .6022521

z\_pct\_emp\_arts\_2016 | .1333423 .1027688 1.30 0.194 -.0680808 .3347654

z\_pct\_emp\_acco\_2016 | .2719302 .1314722 2.07 0.039 .0142493 .529611

z\_gini | .3321796 .1013041 3.28 0.001 .1336272 .530732

z\_avgtimetowork | .2848085 .1136543 2.51 0.012 .0620501 .5075669

z\_perc\_black | .6755025 .1071392 6.30 0.000 .4655136 .8854913

z\_perc\_asian | .0969149 .0813091 1.19 0.233 -.062448 .2562777

z\_perc\_hisplatin | .4211976 .1097405 3.84 0.000 .2061103 .636285

\_cons | 2.038226 .1915035 10.64 0.000 1.662886 2.413565

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Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

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state\_fips: Identity |

var(\_cons) | 1.199153 .3793914 .6450139 2.22936

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 2.086768 .237096 1.670174 2.607273

-----------------------------+------------------------------------------------

var(Residual) | 265.2483 1.202639 262.9016 267.6159

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 326.97 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Death Growth Rate** 🡨 **Same-Day Visitation**

Mixed-effects ML regression Number of obs = 168,996

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 82 3,313.6 12,956

county\_fips | 2,062 53 82.0 82

-------------------------------------------------------------

Wald chi2(20) = 1969.06

Log likelihood = -700287.83 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

deathRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist2 | .554245 .045634 12.15 0.000 .4648039 .6436861

state\_policy2 | .8568815 .0473921 18.08 0.000 .7639947 .9497682

demgov2 | -.1699107 .2362565 -0.72 0.472 -.6329649 .2931435

weekend2 | -.5384934 .0614046 -8.77 0.000 -.6588442 -.4181425

z\_median\_household\_income\_2018 | .4595659 .0802018 5.73 0.000 .3023732 .6167587

z\_medianage\_county\_2018 | .4388867 .1572677 2.79 0.005 .1306477 .7471258

z\_pct\_age0to17 | -.6498674 .4696718 -1.38 0.166 -1.570407 .2706725

z\_pct\_age18to64 | -1.075113 .5066534 -2.12 0.034 -2.068135 -.0820901

z\_pct\_age65to84 | -1.588829 .6072298 -2.62 0.009 -2.778978 -.3986809

z\_difflifeexp | .0267871 .0521369 0.51 0.607 -.0753993 .1289735

z\_pop\_density | .1757936 .0429222 4.10 0.000 .0916676 .2599195

z\_supermarkets | -.2458094 .097893 -2.51 0.012 -.4376762 -.0539427

z\_supermarketsLow | .2618936 .0714234 3.67 0.000 .1219062 .4018809

z\_religion | .0300745 .0656002 0.46 0.647 -.0984995 .1586485

z\_percentEmployed | .265098 .0805231 3.29 0.001 .1072756 .4229204

z\_gini | .4782874 .0626253 7.64 0.000 .3555441 .6010308

z\_avgtimetowork | .3523461 .0712144 4.95 0.000 .2127685 .4919237

z\_perc\_black | .7490172 .0689752 10.86 0.000 .6138283 .8842062

z\_perc\_asian | .4808097 .0623841 7.71 0.000 .3585392 .6030803

z\_perc\_hisplatin | .3453536 .0738611 4.68 0.000 .2005886 .4901186

\_cons | 2.068462 .209755 9.86 0.000 1.65735 2.479574

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Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

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state\_fips: Identity |

var(\_cons) | 1.954746 .5833193 1.089135 3.508318

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county\_fips: Identity |

var(\_cons) | .8735585 .118651 .6693875 1.140004

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var(Residual) | 231.7433 .8021676 230.1764 233.3209

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 471.70 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Death Growth Rate** 🡨 **Same-Day Visitation + Employment Cats**

Mixed-effects ML regression Number of obs = 142,456

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 82 2,793.3 9,266

county\_fips | 1,738 53 82.0 82

-------------------------------------------------------------

Wald chi2(38) = 2041.41

Log likelihood = -597590.47 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

deathRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist2 | .643026 .0539016 11.93 0.000 .5373808 .7486713

state\_policy2 | 1.000965 .0543163 18.43 0.000 .8945067 1.107423

demgov2 | -.2230192 .1851638 -1.20 0.228 -.5859335 .1398951

weekend2 | -.6109974 .070516 -8.66 0.000 -.7492062 -.4727885

z\_median\_household\_income\_2018 | .123459 .096199 1.28 0.199 -.0650877 .3120056

z\_medianage\_county\_2018 | .2589273 .178547 1.45 0.147 -.0910185 .6088731

z\_pct\_age0to17 | -.8515685 .5536051 -1.54 0.124 -1.936614 .2334776

z\_pct\_age18to64 | -1.268212 .5992588 -2.12 0.034 -2.442738 -.0936864

z\_pct\_age65to84 | -1.625625 .7248483 -2.24 0.025 -3.046302 -.2049488

z\_difflifeexp | .0349338 .056707 0.62 0.538 -.0762099 .1460774

z\_pop\_density | .0955147 .0446327 2.14 0.032 .0080362 .1829933

z\_supermarkets | -.082782 .1189892 -0.70 0.487 -.3159966 .1504326

z\_supermarketsLow | .2801789 .0855773 3.27 0.001 .1124504 .4479073

z\_religion | .0323622 .0720251 0.45 0.653 -.1088045 .1735289

z\_percentEmployed | .2652604 .0990646 2.68 0.007 .0710974 .4594234

z\_pct\_emp\_agri\_2016 | -.3474246 .1147469 -3.03 0.002 -.5723243 -.1225248

z\_pct\_emp\_mini\_2016 | -.0672927 .0865603 -0.78 0.437 -.2369478 .1023623

z\_pct\_emp\_util\_2016 | .0624942 .0721671 0.87 0.387 -.0789508 .2039392

z\_pct\_emp\_cons\_2016 | .0807241 .0774394 1.04 0.297 -.0710544 .2325026

z\_pct\_emp\_manu\_2016 | .1928369 .1256303 1.53 0.125 -.0533939 .4390677

z\_pct\_emp\_whol\_2016 | .1740373 .0830589 2.10 0.036 .0112448 .3368299

z\_pct\_emp\_reta\_2016 | -.0191308 .0829172 -0.23 0.818 -.1816455 .143384

z\_pct\_emp\_tran\_2016 | .0927684 .0608004 1.53 0.127 -.0263983 .211935

z\_pct\_emp\_info\_2016 | .0631472 .0549021 1.15 0.250 -.0444589 .1707533

z\_pct\_emp\_fina\_2016 | .1296866 .0560062 2.32 0.021 .0199164 .2394568

z\_pct\_emp\_real\_2016 | .1340613 .0652104 2.06 0.040 .0062512 .2618713

z\_pct\_emp\_prof\_2016 | .2065069 .0720543 2.87 0.004 .0652831 .3477307

z\_pct\_emp\_mana\_2016 | .2276469 .0530809 4.29 0.000 .1236103 .3316835

z\_pct\_emp\_admi\_2016 | .3874009 .0628708 6.16 0.000 .2641763 .5106254

z\_pct\_emp\_educ\_2016 | .1783448 .0506133 3.52 0.000 .0791446 .277545

z\_pct\_emp\_heal\_2016 | .2562824 .1033296 2.48 0.013 .0537602 .4588046

z\_pct\_emp\_arts\_2016 | .0912809 .0764733 1.19 0.233 -.0586039 .2411657

z\_pct\_emp\_acco\_2016 | .0200659 .0974911 0.21 0.837 -.1710132 .211145

z\_gini | .3030385 .0753799 4.02 0.000 .1552966 .4507804

z\_avgtimetowork | .6450827 .0848169 7.61 0.000 .4788446 .8113207

z\_perc\_black | .5746253 .0804505 7.14 0.000 .4169452 .7323054

z\_perc\_asian | .2341159 .0631294 3.71 0.000 .1103846 .3578473

z\_perc\_hisplatin | .3766758 .0831202 4.53 0.000 .2137632 .5395883

\_cons | 2.02547 .1701038 11.91 0.000 1.692072 2.358867

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------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 1.0875 .3318236 .598007 1.977663

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | .5463328 .1287634 .3442233 .8671101

-----------------------------+------------------------------------------------

var(Residual) | 257.0378 .9690524 255.1455 258.9442

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 246.09 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.

1. **Death Growth Rate** 🡨 **Nonessential Visitation (Days 25-31) + Same Day + Employment Cats**

Mixed-effects ML regression Number of obs = 99,006

-------------------------------------------------------------

| No. of Observations per Group

Group Variable | Groups Minimum Average Maximum

----------------+--------------------------------------------

state\_fips | 51 57 1,941.3 6,441

county\_fips | 1,738 28 57.0 57

-------------------------------------------------------------

Wald chi2(39) = 1117.07

Log likelihood = -417092.58 Prob > chi2 = 0.0000

------------------------------------------------------------------------------------------------

deathRate | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------------------------+----------------------------------------------------------------

z\_dist2\_lag\_wk31 | -.9993229 .0623156 -16.04 0.000 -1.121459 -.8771866

z\_dist2 | .5970714 .0676826 8.82 0.000 .464416 .7297268

state\_policy2 | .3643831 .083141 4.38 0.000 .2014297 .5273364

demgov2 | .041906 .2021258 0.21 0.836 -.3542533 .4380652

weekend2 | -.713644 .084643 -8.43 0.000 -.8795411 -.5477469

z\_median\_household\_income\_2018 | .3271568 .1265053 2.59 0.010 .079211 .5751027

z\_medianage\_county\_2018 | .1003202 .2351753 0.43 0.670 -.3606149 .5612552

z\_pct\_age0to17 | -.5905036 .7238402 -0.82 0.415 -2.009204 .8281972

z\_pct\_age18to64 | -.8774043 .7835676 -1.12 0.263 -2.413169 .65836

z\_pct\_age65to84 | -1.267642 .947366 -1.34 0.181 -3.124445 .5891613

z\_difflifeexp | .0526293 .0742083 0.71 0.478 -.0928163 .1980749

z\_pop\_density | -.0155723 .0588159 -0.26 0.791 -.1308493 .0997048

z\_supermarkets | -.3140654 .1562692 -2.01 0.044 -.6203475 -.0077833

z\_supermarketsLow | .3817497 .1128026 3.38 0.001 .1606607 .6028387

z\_religion | -.0960371 .0940241 -1.02 0.307 -.2803209 .0882467

z\_percentEmployed | .3519791 .1301207 2.71 0.007 .0969472 .607011

z\_pct\_emp\_agri\_2016 | -.3277473 .1508503 -2.17 0.030 -.6234084 -.0320861

z\_pct\_emp\_mini\_2016 | -.0905539 .1137092 -0.80 0.426 -.3134198 .1323121

z\_pct\_emp\_util\_2016 | .1046585 .0951297 1.10 0.271 -.0817924 .2911094

z\_pct\_emp\_cons\_2016 | .0534015 .1019894 0.52 0.601 -.1464942 .2532971

z\_pct\_emp\_manu\_2016 | .1845423 .1657602 1.11 0.266 -.1403417 .5094263

z\_pct\_emp\_whol\_2016 | .0351403 .1095719 0.32 0.748 -.1796167 .2498974

z\_pct\_emp\_reta\_2016 | .0722302 .1093488 0.66 0.509 -.1420894 .2865498

z\_pct\_emp\_tran\_2016 | .0736476 .0802594 0.92 0.359 -.0836579 .2309531

z\_pct\_emp\_info\_2016 | -.0047704 .0723663 -0.07 0.947 -.1466058 .1370649

z\_pct\_emp\_fina\_2016 | .1973978 .0738591 2.67 0.008 .0526366 .3421589

z\_pct\_emp\_real\_2016 | .0678243 .0859814 0.79 0.430 -.1006962 .2363447

z\_pct\_emp\_prof\_2016 | .1629238 .0949341 1.72 0.086 -.0231436 .3489912

z\_pct\_emp\_mana\_2016 | .2927716 .0701283 4.17 0.000 .1553227 .4302205

z\_pct\_emp\_admi\_2016 | .4436622 .0830192 5.34 0.000 .2809475 .6063768

z\_pct\_emp\_educ\_2016 | .2493226 .0666651 3.74 0.000 .1186615 .3799837

z\_pct\_emp\_heal\_2016 | .3014894 .136309 2.21 0.027 .0343287 .5686501

z\_pct\_emp\_arts\_2016 | .1058281 .1009232 1.05 0.294 -.0919778 .303634

z\_pct\_emp\_acco\_2016 | .1965709 .128728 1.53 0.127 -.0557315 .4488732

z\_gini | .2878406 .0991732 2.90 0.004 .0934647 .4822165

z\_avgtimetowork | .2933835 .1112804 2.64 0.008 .075278 .511489

z\_perc\_black | .6329424 .1047529 6.04 0.000 .4276305 .8382544

z\_perc\_asian | .0769067 .0794869 0.97 0.333 -.0788847 .2326981

z\_perc\_hisplatin | .3514378 .1075263 3.27 0.001 .1406902 .5621855

\_cons | 2.207403 .1884622 11.71 0.000 1.838024 2.576782

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------------------------------------------------------------------------------

Random-effects Parameters | Estimate Std. Err. [95% Conf. Interval]

-----------------------------+------------------------------------------------

state\_fips: Identity |

var(\_cons) | 1.151693 .36993 .6136574 2.16146

-----------------------------+------------------------------------------------

county\_fips: Identity |

var(\_cons) | 1.769815 .2269836 1.376446 2.275605

-----------------------------+------------------------------------------------

var(Residual) | 265.3842 1.203692 263.0355 267.7539

------------------------------------------------------------------------------

LR test vs. linear model: chi2(2) = 265.69 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.