

Description of Additional Supplementary Files

Supplementary Data 1: Biweekly rolling correlation of outbreaks in wave 1.

a-c: Case number (blue), estimated reproduction number (R_t , red; 95% confidence intervals derived from parametric approximation as light red shading), mobility index (green), Government Response Index (GRI, orange), cross-correlation (grey; 95% confidence intervals derived from the bootstrap as light grey shading), and rolling correlation (purple): (a) within-city movement, (b) inter-city inflow, and (c) inter-city outflow. d-e: Model fitting results of rolling correlations between mobility and transmission by mobility index: (d) within-city movement, (e) inter-city inflow, and (f) inter-city outflow, evaluated using the Akaike Information Criterion (AIC). Grey scatter points show rolling correlations; colored lines represent fitted models: constant (red), linear (orange), quadratic (blue), sine (purple), and cosine (black).

Supplementary Data 2: Biweekly rolling correlation of outbreaks in wave 2.

a-c: Case number (blue), estimated reproduction number (R_t , red; 95% confidence intervals derived from parametric approximation as light red shading), mobility index (green), Government Response Index (GRI, orange), cross-correlation (grey; 95% confidence intervals derived from the bootstrap as light grey shading), and rolling correlation (purple): (a) within-city movement, (b) inter-city inflow, and (c) inter-city outflow. d-e: Model fitting results of rolling correlations between mobility and transmission by mobility index: (d) within-city movement, (e) inter-city inflow, and (f) inter-city outflow, evaluated using the Akaike Information Criterion (AIC). Grey scatter points show rolling correlations; colored lines represent fitted models: constant (red), linear (orange), quadratic (blue), sine (purple), and cosine (black).

Supplementary Data 3: Triweekly rolling correlation of outbreaks in wave 1.

a-c: Case number (blue), estimated reproduction number (R_t , red; 95% confidence intervals derived from parametric approximation as light red shading), mobility index (green),

Government Response Index (GRI, orange), cross-correlation (grey; 95% confidence intervals derived from the bootstrap as light grey shading), and rolling correlation (purple): (a) within-city movement, (b) inter-city inflow, and (c) inter-city outflow. d-e: Model fitting results of rolling correlations between mobility and transmission by mobility index: (d) within-city movement, (e) inter-city inflow, and (f) inter-city outflow, evaluated using the Akaike Information Criterion (AIC). Grey scatter points show rolling correlations; colored lines represent fitted models: constant (red), linear (orange), quadratic (blue), sine (purple), and cosine (black).

Supplementary Data 4: Triweekly rolling correlation of outbreaks in wave 2.

a-c: Case number (blue), estimated reproduction number (R_t , red; 95% confidence intervals derived from parametric approximation as light red shading), mobility index (green), Government Response Index (GRI, orange), cross-correlation (grey; 95% confidence intervals derived from the bootstrap as light grey shading), and rolling correlation (purple): (a) within-city movement, (b) inter-city inflow, and (c) inter-city outflow. d-e: Model fitting results of rolling correlations between mobility and transmission by mobility index: (d) within-city movement, (e) inter-city inflow, and (f) inter-city outflow, evaluated using the Akaike Information Criterion (AIC). Grey scatter points show rolling correlations; colored lines represent fitted models: constant (red), linear (orange), quadratic (blue), sine (purple), and cosine (black).