**Supplementary Material: The impact of the COVID pandemic on mobility trends and the associated rise in population-level physical inactivity: insights from international mobile phone and national survey data**

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# Supplementary Data Tables

**Supplementary Table 1**: Questions used to determine Physical Activity Level in Sports England Active Lives Survey

|  |  |
| --- | --- |
|  | Question |
| 1 | (i)During which periods over the past 12 months have you done the following activities?(walking, gardening, cycling, sport and fitness, and dance)(ii) Timeframes in which that these activities have been undertaken: 7-12 months ago, 4-6 months ago, 1- 3 months ago |
| 2 | Have you done these activities in the past 4 weeks since XXXX? |
| 3 | During the past 4 weeks, on how many days did you do the activity? (Number of Days) |
| 4 | How much time did you usually spend doing that activity on each day that you did the activity? (Hours + Minutes) |
| 5 | Was the effort you put into the activity usually enough to: Raise your breathing rate? Make you sweat or out of breath? (yes/no) |

**Supplementary Table 2: Greenspace Mobility**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Country** | **02/20 (%)** | **03/20 (%)** | **04/20 (%)** | **05/20 (%)** | **06/20 (%)** | **07/20 (%)** | **08/20 (%)** | **09/20 (%)** | **10/20 (%)** | **11/20 (%)** | **12/20 (%)** | **01/21 (%)** | **02/21 (%)** | **03/21 (%)** |
| **Japan** | 0.80 | 2.84 | -1.07 | -5.26 | -5.33 | -9.42 | 3.84 | 0.57 | -0.77 | 1.67 | -15.52 | -25.45 | -16.14 | -19.67 |
| **Finland** | 18.73 | 24.61 | 58.27 | 91.84 | 211.20 | 233.52 | 176.90 | 107.37 | 62.26 | 20.83 | 17.06 | 5.16 | 9.64 | 21.00 |
| **Sweden** | 7.53 | 18.77 | 64.20 | 93.84 | 191.53 | 239.06 | 213.13 | 91.33 | 41.13 | 13.17 | 6.29 | 5.10 | 17.39 | 26.56 |
| **Australia** | -0.13 | -13.71 | -35.77 | -24.58 | -14.97 | -12.32 | -13.65 | -5.90 | -8.13 | -11.77 | -8.87 | -4.55 | -16.25 | -12.78 |
| **France** | 20.07 | -31.74 | -63.90 | -14.13 | 37.57 | 133.23 | 162.00 | 61.97 | 13.10 | -24.90 | -14.84 | -22.45 | 1.54 | 14.22 |
| **Germany** | 10.33 | 10.13 | 38.93 | 53.16 | 88.57 | 116.90 | 121.16 | 100.77 | 44.84 | 12.83 | -6.81 | -8.00 | 20.00 | 32.56 |
| **USA** | 20.07 | -31.74 | -63.90 | -14.13 | 37.57 | 133.23 | 162.00 | 61.97 | 13.10 | -24.90 | -14.84 | -22.45 | 1.54 | 14.22 |
| **Spain** | 20.53 | -43.10 | -78.43 | -22.68 | 15.07 | 45.58 | 59.39 | 20.03 | -3.35 | -14.37 | -15.68 | -28.19 | -14.68 | -9.89 |
| **UK** | -1.87 | -1.26 | -18.67 | 26.03 | 38.60 | 70.68 | 84.52 | 61.90 | 18.32 | 2.40 | -3.00 | -14.35 | 1.11 | 13.67 |
| **India** | 2.73 | -17.87 | -56.53 | -58.65 | -51.60 | -50.90 | -51.84 | -45.30 | -41.55 | -34.20 | -17.23 | -13.42 | -13.14 | -10.67 |

Google data (<https://www.google.com/covid19/mobility/>, accessed 10/03/2021) on % mobility.

**Supplementary Table 3: Residence Mobility**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Country** | **02/20 (%)** | **03/20 (%)** | **04/20 (%)** | **05/20 (%)** | **06/20 (%)** | **07/20 (%)** | **08/20 (%)** | **09/20 (%)** | **10/20 (%)** | **11/20 (%)** | **12/20 (%)** | **01/21 (%)** | **02/21 (%)** | **03/21 (%)** |
| **Japan** | 2.00 | 4.71 | 12.03 | 13.77 | 6.87 | 7.06 | 7.48 | 5.50 | 4.10 | 4.80 | 6.71 | 9.77 | 7.25 | 6.00 |
| **Finland** | 1.13 | 7.84 | 13.87 | 8.03 | 1.63 | 2.06 | -0.26 | 1.03 | 4.35 | 6.10 | 10.26 | 10.03 | 8.86 | 10.22 |
| **Sweden** | 0.93 | 5.77 | 9.70 | 7.10 | 3.80 | 6.48 | 2.16 | 2.70 | 4.29 | 8.30 | 11.81 | 11.55 | 9.18 | 9.22 |
| **Australia** | -1.20 | 5.23 | 18.23 | 13.00 | 9.20 | 9.23 | 9.97 | 8.33 | 7.23 | 4.87 | 5.42 | 7.13 | 4.89 | 3.56 |
| **France** | 2.00 | 15.68 | 28.27 | 17.26 | 7.47 | 3.87 | 4.48 | 2.00 | 5.55 | 14.20 | 10.90 | 9.74 | 9.21 | 8.56 |
| **Germany** | 1.27 | 8.06 | 14.03 | 8.84 | 5.67 | 3.71 | 2.84 | 1.77 | 4.74 | 8.03 | 12.55 | 13.13 | 11.46 | 9.56 |
| **USA** | -0.07 | 8.10 | 18.23 | 13.19 | 9.30 | 8.97 | 7.61 | 7.17 | 7.16 | 9.53 | 11.03 | 11.13 | 10.57 | 7.89 |
| **Spain** | -1.07 | 15.61 | 29.10 | 18.94 | 8.30 | 2.94 | 3.55 | 4.40 | 6.35 | 9.33 | 9.52 | 12.45 | 9.21 | 7.11 |
| **UK** | 1.27 | 9.26 | 24.60 | 20.52 | 16.63 | 11.97 | 8.94 | 7.67 | 10.03 | 13.53 | 14.52 | 18.42 | 17.04 | 15.44 |
| **India** | 0.40 | 10.39 | 28.53 | 21.87 | 14.73 | 15.77 | 13.06 | 13.47 | 11.61 | 10.17 | 10.81 | 10.35 | 7.04 | 7.44 |

Google data (<https://www.google.com/covid19/mobility/>, accessed 10/03/2021) on % mobility.

**Supplementary Table 4: Walking Direction Requests**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Country** | **02/20 (%)** | **03/20 (%)** | **04/20 (%)** | **05/20 (%)** | **06/20 (%)** | **07/20 (%)** | **08/20 (%)** | **09/20 (%)** | **10/20 (%)** | **11/20 (%)** | **12/20 (%)** | **01/21 (%)** | **02/21 (%)** | **03/21 (%)** |
| **Japan** | 26.61 | -70.06 | -82.73 | -62.24 | -28.72 | 14.65 | 50.14 | 35.17 | -1.76 | -50.20 | -51.01 | -53.96 | -30.98 | -39.18 |
| **Finland** | 4.28 | -24.52 | -28.94 | -11.65 | 27.04 | 46.90 | 53.70 | 26.34 | 8.05 | -8.10 | -19.88 | -14.44 | -11.91 | -10.78 |
| **Sweden** | 11.08 | -17.23 | -23.30 | -16.30 | 15.76 | 38.40 | 43.50 | 29.17 | 18.00 | -14.56 | -23.24 | -20.58 | -11.72 | -7.15 |
| **Australia** | 13.76 | -24.61 | -57.42 | -49.91 | -29.67 | -24.39 | -33.06 | -26.79 | -21.87 | -15.84 | -6.15 | -6.86 | -3.90 | 2.39 |
| **France** | -2.83 | -54.12 | -83.32 | -58.02 | -17.61 | 8.99 | 13.18 | 15.86 | -11.58 | -56.50 | -43.08 | -41.94 | -29.93 | -25.92 |
| **Germany** | 18.66 | -26.82 | -34.63 | -18.51 | 14.84 | 40.06 | 44.21 | 45.75 | 26.99 | -13.93 | -28.07 | -28.06 | -15.65 | -7.57 |
| **USA** | 20.08 | -21.98 | -49.76 | -23.33 | 11.28 | 22.20 | 32.88 | 29.13 | 23.86 | 4.27 | 3.95 | -1.54 | 3.57 | 14.52 |
| **Spain** | 47.29 | -44.76 | -87.63 | -67.56 | -45.12 | -4.65 | 1.66 | -6.18 | -23.42 | -40.98 | -39.60 | -49.57 | -38.69 | -33.88 |
| **UK** | 30.86 | -20.57 | -57.50 | -45.79 | -31.57 | -5.90 | 15.65 | 24.56 | 7.49 | -21.14 | -19.21 | -36.61 | -26.64 | -20.15 |
| **India** | 15.60 | -27.06 | -74.80 | -65.48 | -46.43 | -40.33 | -29.77 | -9.72 | 3.36 | 21.14 | 40.22 | 51.28 | 62.57 | 56.60 |

Apple data (<https://covid19.apple.com/mobility>, accessed 10/03/2021) on walking direction requests.

**Table 5: Stringency Index**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Country** | **02/20 (%)** | **03/20 (%)** | **04/20 (%)** | **05/20 (%)** | **06/20 (%)** | **07/20 (%)** | **08/20 (%)** | **09/20 (%)** | **10/20 (%)** | **11/20 (%)** | **12/20 (%)** | **01/21 (%)** | **02/21 (%)** | **03/21 (%)** |
| **Japan** | 26.23 | 41.16 | 45.74 | 41.90 | 27.78 | 27.99 | 32.71 | 33.06 | 33.04 | 36.67 | 46.89 | 49.36 | 49.64 | 46.91 |
| **Finland** | 15.00 | 45.10 | 63.95 | 55.88 | 39.51 | 36.62 | 33.58 | 32.41 | 35.90 | 41.27 | 51.47 | 52.31 | 53.50 | 52.31 |
| **Sweden** | 0.00 | 28.02 | 64.26 | 64.81 | 61.48 | 59.26 | 57.47 | 55.56 | 55.56 | 59.01 | 67.92 | 69.44 | 69.44 | 69.44 |
| **Australia** | 19.44 | 38.20 | 71.48 | 67.35 | 55.01 | 69.82 | 75.10 | 74.72 | 65.67 | 52.76 | 65.99 | 60.68 | 63.26 | 50.46 |
| **France** | 9.73 | 65.74 | 87.96 | 80.08 | 66.20 | 48.09 | 47.37 | 48.40 | 50.17 | 78.33 | 70.34 | 63.89 | 65.28 | 78.09 |
| **Germany** | 13.33 | 48.77 | 76.85 | 63.84 | 61.33 | 56.79 | 57.93 | 50.50 | 55.21 | 64.03 | 75.24 | 83.51 | 82.87 | 77.78 |
| **USA** | 5.56 | 45.77 | 72.69 | 72.69 | 70.71 | 68.26 | 67.13 | 64.20 | 64.05 | 69.63 | 71.88 | 71.76 | 68.32 | 65.74 |
| **Spain** | 11.11 | 51.73 | 85.19 | 78.58 | 54.17 | 59.48 | 62.80 | 61.02 | 64.67 | 71.30 | 73.45 | 72.73 | 71.30 | 71.30 |
| **UK** | 11.11 | 36.63 | 79.63 | 74.23 | 70.87 | 65.38 | 67.64 | 65.57 | 67.89 | 68.33 | 72.36 | 86.89 | 87.50 | 85.29 |
| **India** | 10.19 | 54.52 | 98.64 | 82.08 | 76.28 | 76.70 | 79.76 | 79.11 | 68.08 | 64.04 | 68.98 | 67.73 | 61.90 | 63.43 |

Oxford data (<https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker>, accessed 10/03/2021) on the stringency index.

**Supplementary Table 6: active Lives Active**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Date** | **Nov/19 – Jan/20 (%)** | **Jan – Mar/20 (%)** | **Mar – May/20 (%)** | **May – Jul/20 (%)** | **Jul – Sep/20 (%)** | **Sep – Nov/20 (%)** |
| **Overall** | 0.1 | -0.3 | -7.1 | -4.4 | -3.1 | -1.8 |
| **Sex** | **Male** | -0.4 | -0.1 | -8.9 | -5.4 | -3.8 | -0.7 |
| **Female** | 0.5 | -0.5 | -5.4 | -3.2 | -2.2 | -2.8 |
| **Age** | **16-34** | -0.3 | -2.1 | -10.1 | -4.9 | -3.4 | -1.7 |
| **35-54** | 1.2 | 1.2 | -3.9 | -4 | -3.2 | -2.4 |
| **55-74** | 0.8 | -1.3 | -7.3 | -3.1 | -1.6 | 0 |
| **75+** | -3.2 | 3.6 | -6.6 | -6.1 | -4 | -4.1 |
| **Ethnicity** | **White British** | 0 | 0.1 | -6.2 | -3.5 | -2.6 | -0.7 |
| **White Other** | 0.5 | -2.1 | -3.8 | 0.8 | -4.7 | -10 |
| **Asian (excl Chinese)** | 2.1 | -2.6 | -14 | -9.6 | -4.3 | -7.6 |
| **Black** | -3.1 | -0.6 | -14.2 | -8.6 | -4.5 | -9.1 |
| **Chinese** | 0 | -1.6 | -13.6 | -20.4 | -11.3 | 7.5 |
| **Mixed** | -1.7 | 7.3 | -7.4 | -6.9 | -6 | 1.3 |
| **SES** | **Higher** | 1.1 | -0.6 | -5.4 | -3.6 | -2 | -1.1 |
| **Middle** | 0.7 | 0.7 | -6.7 | -3.4 | -2.9 | 1.7 |
| **Lower** | -1.3 | -0.6 | -6.4 | -3.8 | -2.1 | -3.2 |

Sports England Survey data (<https://www.sportengland.org/know-your-audience/data/active-lives/active-lives-data-tables>, accessed 01/07/2021) on % active individuals, SES: socioeconomic status

**Supplementary Table 7: Active Lives Inactive**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Date** | **Nov/19 – Jan/20 (%)** | **Jan – Mar/20 (%)** | **Mar – May/20 (%)** | **May – Jul/20 (%)** | **Jul – Sep/20 (%)** | **Sep – Nov/20 (%)** |
| **Overall** | 0.7 | 0.7 | 7.4 | 5.3 | 3.2 | 2.2 |
| **Sex** | **Male** | 1.3 | 0.6 | 9 | 5.7 | 3 | 1.1 |
| **Female** | 0.3 | 0.8 | 5.9 | 4.6 | **3** | 3.2 |
| **Age** | **16-34** | 0 | 3.1 | 9.2 | 4.7 | 3 | 1.7 |
| **35-54** | 0.8 | -0.9 | 4.6 | 4.3 | 2.8 | 1.9 |
| **55-74** | 0.8 | 1.2 | 7.9 | 5.2 | 2.1 | 2.1 |
| **75+** | 1.7 | -3.3 | 8.3 | 8.6 | 5.6 | 4.1 |
| **Ethnicity** | **White British** | 0.7 | 0.4 | 6.7 | 4.6 | 2.9 | 2.3 |
| **White Other** | -2 | -0.6 | 7.1 | 1.9 | 3.5 | 6.5 |
| **Asian (excl Chinese)** | 0.8 | 3.5 | 10.8 | 8.9 | 3.5 | 0.6 |
| **Black** | 5.5 | -2.2 | 10.7 | 6.3 | 2.5 | 2.3 |
| **Chinese** | 0.2 | -6.1 | 10.4 | 16.9 | 13.6 | -1.7 |
| **Mixed** | 4.4 | -2.4 | 8.8 | 3.7 | 8.2 | -1.8 |
| **SES** | **Higher** | 0 | 0.6 | 5.3 | 4.4 | 1.7 | 1.3 |
| **Middle** | 0.5 | -0.2 | 7.1 | 4.6 | 3.4 | 0.2 |
| **Lower** | 3 | 2.2 | 7.9 | 5 | 2.6 | 3.6 |

Sports England Survey data (<https://www.sportengland.org/know-your-audience/data/active-lives/active-lives-data-tables>, accessed 01/07/2021) on % inactive individuals, SES: socioeconomic status