Table 1: Preliminary and final selected variable for the BRT model

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| Sl. no. | Predictors for the COVID-19 | Preliminary selected variables | Variable for the final model |
| 1. | Average temperature (°C) | \* | √ |
| 2. | Monthly relative humidity (%) | \* | √ |
| 3. | Diurnal temperature change (°C) | \* | √ |
| 4. | Temperature Seasonality (%) | \* | √ |
| 5. | Mean temperature of coldest month (°C) | \* | - |
| 6. | Mean Temperature of Coldest Quarter (°C) | \* | - |
| 7. | No of Passengers | \* | √ |
| 8. | API values (per 1000 pops) | \* | √ |

Table 2: Meteorological medians (10th, 90th percentiles) of climatic, bioclimatic, and API values for COVID-19 cases in different climate zone and largest spillover countries in the World

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| Countries | Medians (10th, 90th percentiles) | | | | |
| Avg. Temperature (oC) | Temperature seasonality (%) | Avg. Relative Humidity (%) | Mean Diurnal range ( oC) | API values  (per 1000 pops) |
| Largest spillover countries | | | | | |
| USA | 10 (6,17) | 84 (47,93) | 65 (60,71) | 8 (7,11) | - |
| Spain | 12 (10,15) | 57 (48,66) | 70 (63,77) | 9 (6,10) | - |
| Italy | 11 (9,13) | 70 (63,72) | 63 (62,71) | 8 (6,9) | - |
| Germany | 8 (7,9) | 58 (57,66) | 66 (64,69) | 7 (7,7) | - |
| UK | 7 (6,9) | 44 (41,45) | 73 (67,76) | 6 (5,6) | - |
| Russia | 2 (0,4) | 111 (102,115) | 82 (75,89) | 8 (7,8) | - |
| Turkey | 11 (9,14) | 68 (67,84) | 69 (63,71) | 8 (5,11) | - |
| France | 10 (8,12) | 59 (54,64) | 68 (66,70) | 7 (5,8) | - |
| Brazil | 27 (25,28) | 22 (20,23) | 73 (67,77) | 8 (7,9) | 0.12 (0.06,0.18 |
| India | 28 (27,30) | 22 (20,55) | 59 (43,72) | 8 (5,10) | 0.005 |
|  |  |  |  |  | (0.001, 0.009) |
| Climatic zone | | | | | |
| Tropical | 25 (10,31) | 27 (8,80) | 65 (41,78) | 7 (4,11) | - |
| Sub-tropical | 17 (10,25) | 58 (33,96) | 64 (41,72) | 8 (5,12) | - |
| Temperate | 9 (4,17) | 70 (46,97) | 67 (57,77) | 7 (5,11) | - |

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| --- | --- | --- | --- | --- | --- | --- |
| Countries | Predictors importance (%) to the COVID-19 cases | | | | | |
| Avg. Temperature (°C) | Temperature seasonality (%) | Avg. Relative Humidity (%) | Mean Diurnal range (°C) | No of Passengers | API values  (per 1000 pops) |
| Largest spillover countries | | | | | | |
| USA | 75.1 | 21.5 | 2.4 | 0.8 | 0.2 | - |
| Spain | 0.7 | 0.21 | 99.0 | 0.07 | 0.02 | - |
| Italy | 4.0 | 64.3 | 32.2 | 0.3 | 0.01 | - |
| Germany | 34.3 | 1.0 | 4.4 | 60.2 | 0.1 | - |
| UK | 39.4 | 3.0 | 56.6 | 3.0 | 0.3 | - |
| Russia | 2.7 | 92.3 | 4.3 | 0.4 | 0.3 | - |
| Turkey | 82.8 | 3.7 | 7.4 | 5.1 | 1.0 | - |
| France | 90.7 | 0.1 | 6.0 | 3.1 | 0.1 | - |
| Brazil | 11.6 | 41.4 | 10.3 | 23.1 | 1.4 | 12.2 |
| India | 13 | 1.4 | 2.0 | 80.7 | 0.9 | 2.0 |
| Climatic zone | | | | | | |
| Tropical | 4.0 | 33.3 | 6.7 | 54.7 | 1.7 | 10.0 |
| Sub-tropical | 66.5 | 5.5 | 22.3 | 5.5 | 0.8 | - |
| Temperate | 47.7 | 12.0 | 30.5 | 9.2 | 0.9 | - |

Table 3: Relative importance of predictors in % of climatic, bioclimatic, travel passenger and API variables and goodness of fit for the BRT model