**Journal preferences**

We would think about what the most significant outcomes of this paper in would be addressing our **specific research questions and discussion points** (which needs to be more concise by our following work). Do let me know your thoughts which the best option is as follows:

|  |  |  |
| --- | --- | --- |
| **Journals** | **Focus** | **Key reference** |
| Sustainable Cities and Society | Discussion item (combat future pandemic and resilient and sustainable urban management)   * More flexible and regional-oriented policy implications, which considering socioeconomic characteristics with their adjacent areas, would be needed to prevent future pandemics and epidemics while promoting resilient and sustainable urban management. | [Liu et al., (2023)](https://doi.org/10.1016/j.scs.2022.104314). |
| Journal of Transport Geography | Methods (data mining techniques; clustering and classification)   * longitudinal time-series data is used to identify the similar trajectories of mobility reduction in times of UK first national lockdown. * Classification modelling is employed to explore variations in the significant factors and their effects on determining temporal mobility patterns between the identified clusters. | [Budnitz & Tranos (2021)](https://doi.org/10.1080/24694452.2021.1939647)  [Kim (2018).](10.1016/j.jtrangeo.2017.12.003) |

**Response #1**

1. Thank you for your kind suggestion. I briefly noted the cluster name by your suggestion (pace of reduction – extent of reduction – pace of bounce-back). Please check the following graph and table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Average of mobility reductions  by clusters over Months | G1 | G2 | G3 | G4 | National level |
| Mar | -59.35 | -52.77 | -43.15 | -35.65 | -47.73 |
| Apr | -79.31 | -70.99 | -60.78 | -50.07 | -65.29 |
| May | -68.31 | -58.52 | -46.35 | -35.01 | -52.05 |
| Jun | -52.92 | -42.37 | -32.67 | -22.94 | -37.73 |

According to the characteristics of temporal patterns, in terms of variations in evolving mobility reductions over time, between clusters, I can put the cluster name as follows.

* G1: fast-large-slow (FLS)
* G2: fast-moderate-moderate (FMM)
* G3: moderate-moderate-moderate (MMM); similar to the national average
* G4: slow-small-fast (SSF)

1. I have updated the cluster names (from 1, 2, 3, 4 to G4, G3, G1, G2) in the revised manuscript with tables and maps, please check.
2. I have added up the table 2 in the following to describe the share of clusters across regions in England. It provides what is the vast majority of cluster types in each region of England, such as G1 and G2 for London while G3 and G4 for North East. Also, G3 dominated in Midlands.

**Table 2. Share of clusters across regions in England.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Regions in England** | **G1** | **G2** | **G3** | **G4** |
| North East |  |  | **6 (50%)** | **6 (50%)** |
| North West | 3 (8%) | 6 (15%) | **17 (44%)** | **13 (33%)** |
| Yorkshire and The Humber | 2 (10%) | 1 (5%) | 4 (19%) | **14 (67%)** |
| East Midlands | 3 (8%) | 6 (15%) | **19 (48%)** | 12 (30%) |
| West Midlands | 1 (3%) | 8 (27%) | **17 (57%)** | 4 (13%) |
| East of England | 6 (13%) | **22 (49%)** | 12 (27%) | 5 (11%) |
| London | **16 (50%)** | **15 (47%)** | 1 (3%) | (0%) |
| South East | 11 (16%) | **32 (48%)** | 17 (25%) | 7 (10%) |
| South West | 2 (7%) | 6 (21%) | **13 (45%)** | 8 (28%) |

**Response #2**

I agree entirely with your idea. While numerous papers have explored mobility levels during the COVID-19 pandemic, still few have employed longitudinal data to analyse the efficacy of strict nationwide lockdown measures. Therefore, I would like to stress the novelty of this paper would be providing evidence as to why such measures were deemed sufficient prior to the availability of pharmaceutical interventions, such as COVID-19 vaccines. However, in the longer term, such measures can lead to fatigue and a rapid bounce-back of mobility, resulting in a lack of control over the spread of the virus over time.

There are several discussion points that we could refine it with your suggestions to recalibrate the paper structure and contents. For example, the paper could focus on the methodological contributions of data mining or explore how analysis outcomes could be applied to promote sustainable and resilient urban management for preventing future pandemics and epidemics.

Please do let me know your thoughts and ideas on what would be more attractive or sensible for the revision of this manuscript. With your suggestion and reframing, I can reconstruct the manuscript and select rigorous references to support our research questions and discussion items. This work is a top priority on my schedule for next month.