

Impacts of the first COVID-19 Lockdown on Mobility and Consumption of Households in Sri Lanka | Results of a Survey

Sri Lanka was introduced to an unnamed virus on 27th January 2020 when a Chinese tourist was diagnosed with it [1]. Within 8 weeks, the virus named COVID-19 had begun infecting the local population, and the government was taking measures to prevent its spread in Sri Lanka. The government imposed an all-island curfew on 20th March 2020 [2]. Starting from 20th March, the government encouraged Work-from-Home (WFH) and allowed agricultural activities while imposing restrictions on all physical movements [3]. With curfew, the government allowed the distribution of essential items and goods transport by issuing curfew passes. In spite of these measures, people faced many hardships during this time. The department of Transport and Logistics Management, Faculty of Engineering, University of Moratuwa, conducted a survey on 12th April and completed on 20th April 2020, during a period that the country was having curfew almost all the time. The purpose of this survey was to determine the immediate impact of the government's steps on people's lives and their impressions on the future. Over 1100 respondents from all districts of the country took part in the online and email survey. As this would return a biased sample, we normalised the collected data across the

districts and by educational profile to make the representation as accurate as possible [4]. The analysis led to the following 3 noteworthy findings that would be useful for any future emergency or return to curfew if the need so arises.

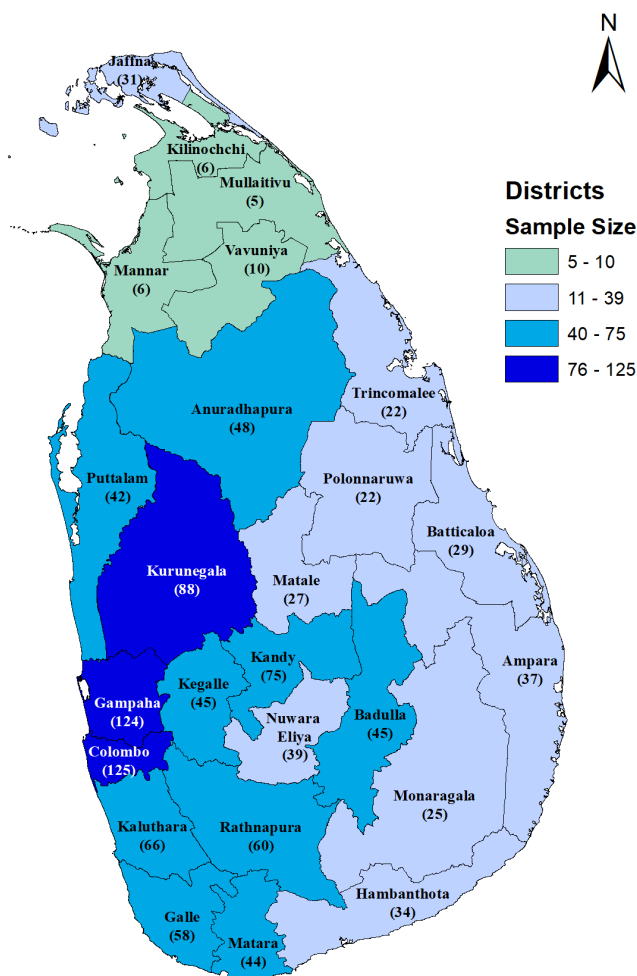


Figure 1: Spatial map of survey coverage

1. The Impacts of Health Advisories and Lockdown on Personal Mobility

Prior to COVID-19, only 21% were allowed to WFH by their employers and this shot up to 46% during the curfew. Of this, 35% were working all 5 days or more which was a significant increase from the previous 8%. However, there were very few people who worked for less than 5 days. It appears that while some people were fully engaged in WFH, others were not engaged at all. Although there are more 'positive' changes than 'negative' changes in WFH policy adaptation during the pandemic, we made use of inferential statistics to know the different 'directions of travel' that the participants took for granted in future policy derivatives. We found that the change in the proportion of respondents who think there will be additional WFH related policies in the future ($p < .05$) was statistically insignificant. Even though there is a trend in WFH practices during the pandemic, the



same trend cannot be expected under the post-COVID-19 circumstances. This implies that positive changes in WFH practices are provisional in the population parameters (95% CI).

2. Overall Impact on Households

Most households indicated that they were affected by the inability to travel, with a majority of households indicating an impact of 80% or more from the normal baseline. On the other hand, as shown in below figure, the impact on household income has been more uniformly spread with almost equal spread of the degree of impact across households. Access to essential items was also not reported acutely, with the majority indicating moderate to high impact levels.

Since lower-income households represent mostly those in informal employment, including agriculture, construction, etc., we attempted to correlate the degree of impact on income with the percentage of the population engaged in informal employment in each district. The results shows this to be highly correlated with an R^2 of 93%. We observed an almost identical relationship for the impact on accessing essential items (R^2 of 92%), indicating that those in informal employment were the worst

affected in both the loss of income and facing difficulties in accessing essential items. This could be due to a lack of employment and the inability to access online services, credit, etc., commonly associated with informal and temporary employment.

3. Changes to Travel and Consumption Patterns of Households

There were approximately 13% new adopters for online purchasing, an increase of 29% using online shopping to buy dry goods and 23% buying medicine. Overall, the proportion of people using online services to buy perishables, protein, as well as sanitary and personal protective equipment increased within the range of 12%-20% though recording relatively smaller gains in medical services (8%) and banking services (5%). However, banking services marked a special case with 50% of the households using online sources after the curfew was imposed as many banks already had an online presence before the pandemic. We can elaborate this notion as an explosion in e-commerce/online/teleshopping services due to a lack of access to food and other essentials through traditional brick and mortar retailers.

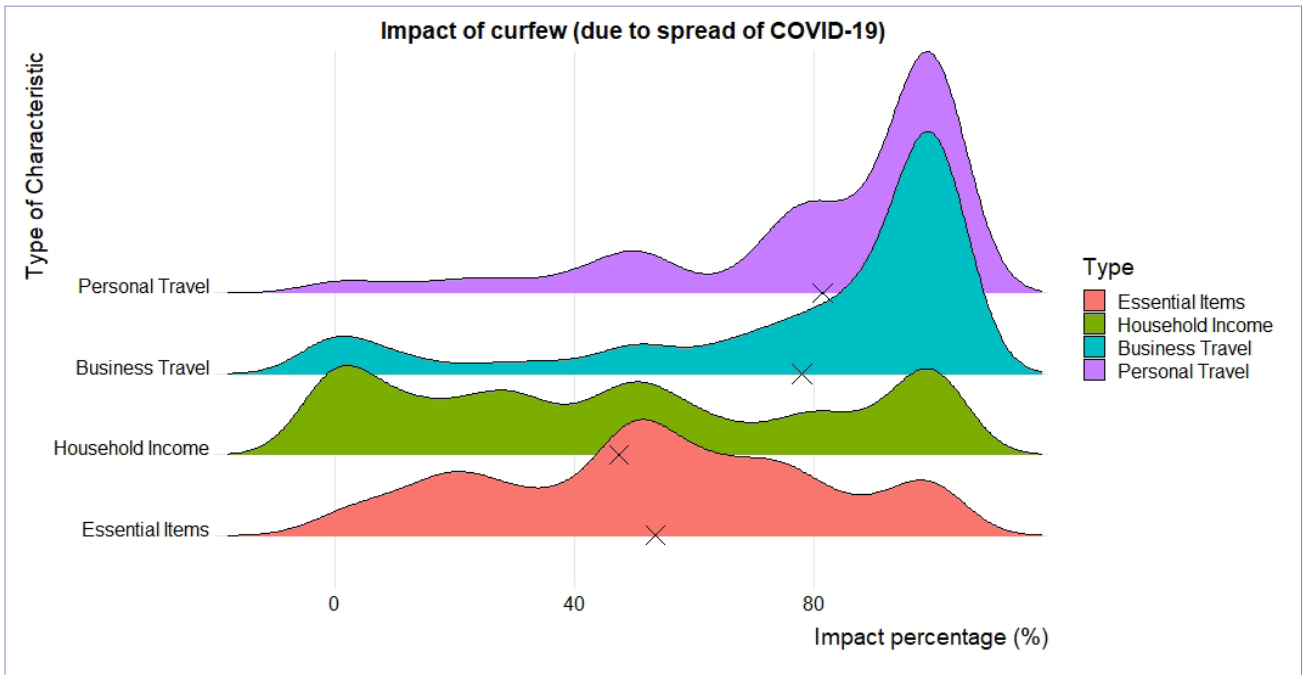


Figure 2: Impact of curfew on access to selected needs

“ The responses indicate that consumers still prefer the brick and mortar shopping experience over buying online. The decreased trend in the long run further confirms the competition that can occur between online retailers and offline retailers. ”

With respect to accessing essential goods during the COVID-19 related curfew, around 2/3rd of all households have experienced difficulties, with the least being for perishable goods, where 58% of the respondents rated it difficult to access. Dry goods (59%), protein (64%), medical (65%), banking services (68%), medical services (69%), and house-

hold repairs at 75% are the remaining pain points endured by the public with the said numbers facing accessibility challenges. Overall, the supply chain activities within Sri Lanka have become comparatively unusual, resulting in a significant deviation from the usual route due to travel restrictions between supply and demand.

As shown in below figure, during the COVID-19 pandemic, "visiting the outlet" or "street vendor deliveries" became the widespread adoption in accessing essential items. Online shopping and mobile order deliveries were more popular when accessing medicines and sanitary items than other product categories. Despite the curfew, the government relaxed it for people to attend to basic needs in low-risk areas from time to time. As such, essentials were kept open for limited time windows for physical access.

Survey results highlight that the trends in online shopping services might flatten in the long run. The responses indicate that consumers still prefer the brick and mortar shopping experience over buying online. The decreased trend in the long run further confirms the competition that can occur between online retailers and offline retailers.

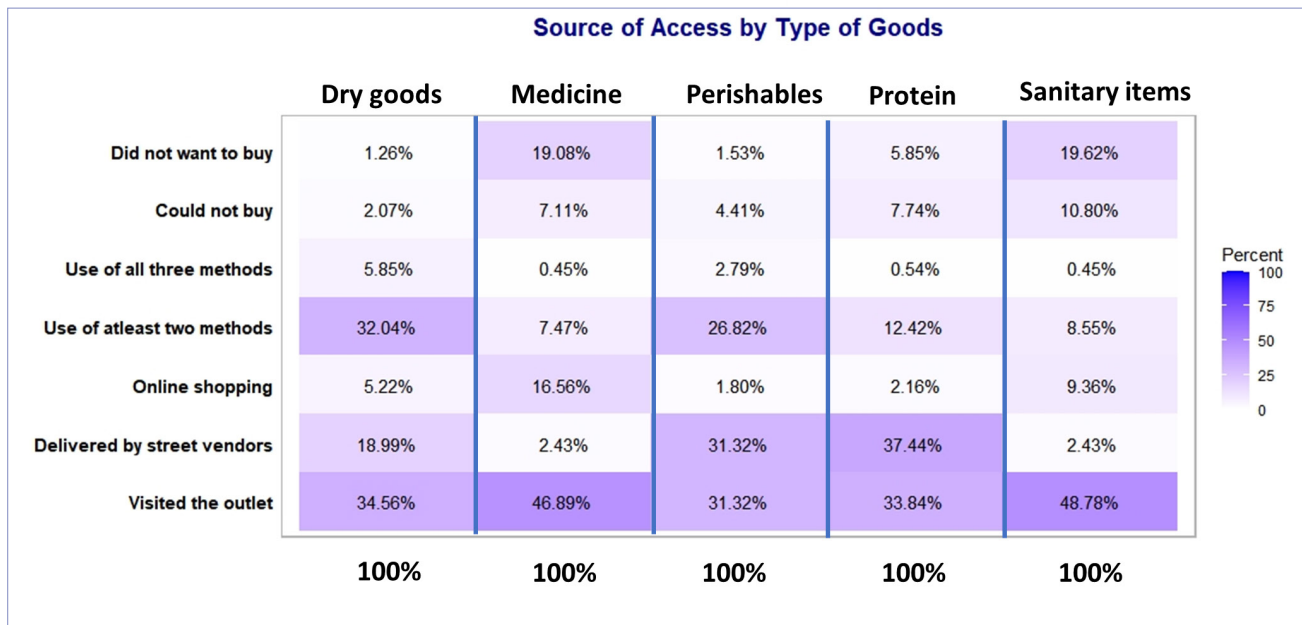


Figure 3: Essential item fulfilment sources during the curfew

The following five conclusions were reached from this survey-based work.

1. Bringing only the essential workers to the workplace and letting others WFH will reduce the number of passenger movements and, therefore, minimise traffic congestion, leading to optimal resource usage.
2. Public transport sector in Sri Lanka can be recalibrated as a result of the COVID-19 pandemic to provide safe, improved, less crowded and convenient demand-driven services.
3. Lack of confidence amongst the delivery players and online vendors is the prominent reason customers prefer going to brick and mortar stores. Thus, it is the role of policymakers and practitioners to ensure that the entire consumer purchasing cycle seamlessly reaches completion.
4. Overall deterioration in access to essentials was a major concern during the COVID-19 pandemic, and supply chain activities in the country must be recalibrated to ensure benefits to all stakeholders.
5. These results would be useful in understanding how society would deal with a similar unforeseen event in the future if it were to arise. It also provides vital learnings on the important role of transport and logistics on the economic fabric and the lifestyle of people in a developing country.

References

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