

## Assessment of Railway Transport Safety in Bangladesh: A Before-After Study of COVID-19 Case

Armana Huq<sup>1</sup>, Hamim Tasin<sup>2</sup>, Syeda Manila Jannat<sup>3</sup>

<sup>1</sup>Assistant Professor, Accident Research Institute (ARI)  
Bangladesh University of Engineering and Technology (BUET), Dhaka 1000, Bangladesh  
ahuq002@fiu.edu; ashuq@ari.buet.ac.bd

<sup>2</sup>Graduate Research Assistant  
Bangladesh University of Engineering and Technology (BUET), Dhaka 1000, Bangladesh  
hamimtasin2208@gmail.com

<sup>3</sup>Lecturer  
Military Institute of Science and Technology (MIST), Dhaka 1216, Bangladesh  
syedatonny15@gmail.com

**Abstract** - The COVID-19 pandemic in Bangladesh is part of the global pandemic of coronavirus disease 2019, caused by extreme acute respiratory syndrome, coronavirus 2 (SARS-CoV-2). In March 2020, the virus was reported as having spread to Bangladesh and the Institute of Epidemiology Disease Control and Research (IEDCR), announced the first 3 (three) identified cases on 8 March 2020. In order to protect the population and to prevent the outbreak of novel coronavirus-2, the government implemented non-therapeutic measures such as declared "lockdown" throughout the nation from March 26, 2020 to May 30, 2020 and prepared some necessary steps to spread awareness to keep this syndrome away from them as Bangladesh being the second most affected country in South Asia, after India. Due to transport restrictions put in place to mitigate the pandemic, commercial road transport, both passenger and goods, has been severely impacted by COVID-19 in Bangladesh. The COVID-19 also contributed to the accident patterns and casualties of railway related accidents. An attempt has been made in this study to demonstrate the before-after effect of COVID-19 pandemic to highlight the variation in the perspective of railway transportation accidents. A comprehensive descriptive analysis has been conducted to find the major factors contributed to the railway accidents. The study also includes hotspot analysis using ArcGIS. The study has been conducted utilizing two years (2019-2020) of daily newspaper-based data which is classified by two categories: 299 days (May 14, 2019 to March 7, 2020) before and 299 days (March 8, 2020 to December 31, 2020) after the first case of COVID-19 was reported on March 8 in Bangladesh. The results reveal that railway accidents are significantly declining due to this pandemic situation. Finally, based on the findings, probable countermeasures to the guidelines for the prevention of certain incidents have been discussed with recommendations.

**Keywords:** COVID-19, Lockdown Period, Safety, Railway Accidents, Before-After Study.