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| **Study ID** | **indicators** | **methods** | **scale** | **practices** |
| 46 | quality of living and working environment  Public accessibility   * Travel time min NA * Extent of congestion   Health and safety   * Casualty   Local development   * Downtime * Economic loss | comparative method which utilizes historical data of a similar project to predict the probable social impacts of the objective project. | Travel time min NA 🡪 min  Extent of congestion 🡪 min  Casualty 🡪 persons  Downtime 🡪 days  Economic loss ¿? | - |

This paper is about a green structure which is supposed to minimize local and global environmental impacts, as well as the social impacts. The objective of social impacts aims to improve the **quality of living and working environment** related to the structure.

The social impacts of a structure are not entirely or directly determined by the structure itself. They involve human factors and market factors. For example, the social impacts caused by bridge failure are associated with not only the probability of failure of the structure but also the traffic volume and the importance of the bridge to the regional economy, among others. Additionally, the structural activities are affecting the greenhouse effect, natural resources depletion or other global environmental problems. The identification and quantification of structures’ global environmental impacts can be difficult in a context as grand and as changeable as the entire planet, but it is still of vital importance to consider this aspect as an

objective in the structural design process.

Social impacts can include the changes to people’s way of life, culture, political systems, community, environment, health and wellbeing, personal and property rights and their fear and aspirations [73]. Social impact assessment [73–75] is defined as the analysis, estimation and management of future social consequences of a current change or development. For bridge structures, a simplified social evaluation indicator system is developed herein by considering the major characteristics of bridges, such as public accessibility, human health and safety, and local development [17,15]. Public accessibility of a bridge mainly refers to the traffic condition, such as travel time and extent of congestion. Human health and safety measures the injuries and casualties induced by structure failure or engineering activities during the life cycle of a bridge. The failure or engineering activities of a bridge can affect the local development by causing downtime and economic loss.