

Economics of Congestion



Kingston, Jamaica, like many other rapidly expanding cities, has been unable to avoid ever-increasing traffic congestion. According to a survey conducted by The Human Resource Management Association of Jamaica (HRMAJ), on average, people in Jamaica spend **90 minutes daily in traffic**, representing a massive cost for a small island developing state. This congestion has enormous economic implications and can affect our society's psychological and physiological well-being and substantial environmental costs.

Ian Thomson, from the Economic Commission for Latin America and the Caribbean, explained that "in addition to the congestion costs in terms of lost economic efficiency, there are also negative consequences in terms of social cohesion. The phenomenon of traffic congestion, which is caused mainly by relatively wealthy car drivers, lengthens journey times and, more importantly, forces up public transport fares. Owning a car is one of the fruits of human progress; using it in conditions of acute congestion or contamination is a social ill."

However, the solution may not be as simple as expanding the capacity of Jamaica's road network. As Braess' paradox suggests adding one or more roads to a road network can slow overall traffic flow through it; therefore, it is essential to consider multiple solutions to road congestion and the factors contributing to it.

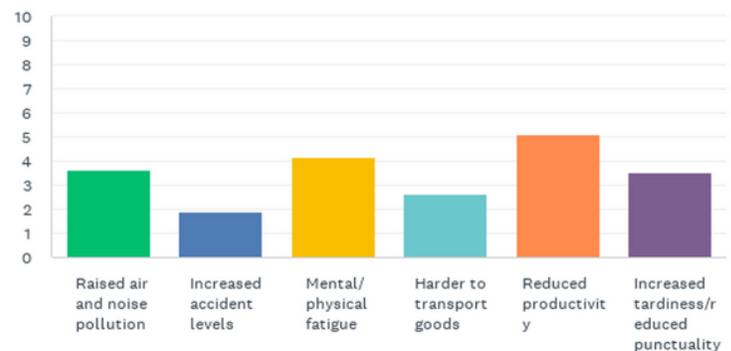
To set the scene, we asked panellists how traffic congestion affected them. Nearly all the panellists said that traffic congestion adversely impacts productivity and quality of life. One panellist emphasised this by explaining the time-consuming nature of congestion and how it eats into time that "could be employed more productively." To follow up on this question, we asked panellists about traffic congestion's impacts/economic costs. The overwhelming majority felt that the most significant impacts were mental/ physical fatigue, ultimately reducing workplace productivity.

Supporting the panellists' viewpoints, productivity consultant Francis Wade stated that "up to 30-40 per cent of some commuters' work-hours are lost daily in long commutes to and from Kingston." He explained the implications this has on Jamaica's labour productivity which has "declined by 1.5 per cent annually since the 1970s." Wade explained, "In the long term, there needs to be more work-from-home to maintain

productivity," which has become more mainstream since the outbreak of COVID-19.

Panellists emphasised that reducing traffic congestion would have a significant impact overall on the sustainable development of Jamaica, with one panellist commenting that reducing traffic congestion "may help improve the value of output produced per person as traffic tends to reduce the hours people actually work and have adverse impacts on their mental health. Circumventing traffic congestion in this way can improve the country's economic prospects and over time it may gradually lay the foundation for an increased quality of life for Jamaicans."

Impacts/Economic Costs of Traffic Congestion

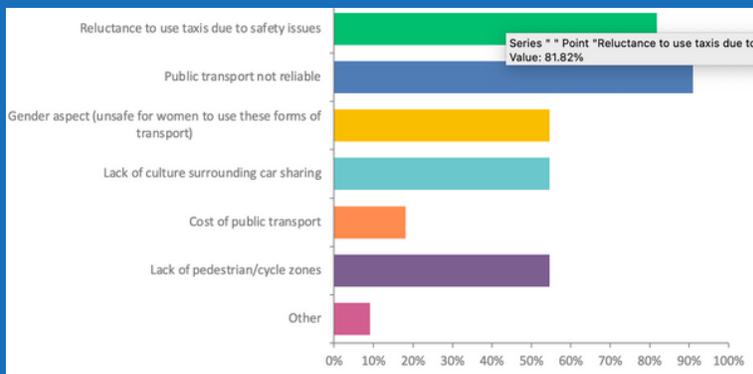


Header Photo: Inter-American Development Bank

The next question posed to the panellists was to rank the major factors contributing to traffic congestion. The responses indicated a lack of integrated transportation system plans and infrastructures, a lack of adequate traffic management/ inefficient traffic systems and, lastly, urban migration are among the main contributors. Indeed, one panellist stated that the congestion problem "should not be attributed to a single factor but a combination of factors whose overall effect has culminated in the level of congestion we are seeing today."

When asked about their thoughts on some of the solutions to road congestion, most panellists felt that improving public transport and having improved government provision of public transport were the two leading solutions. Panellists highlighted the current reluctance to use public transport due to its lack of reliability. They also felt that intelligent navigation systems could contribute to the solution. They noted that the Ministry of Transport, Works and Housing has already been involved in this through its "Intelligent Transportation System Project" that aimed to "improve the ability to detect and respond to incidents, such as disabled vehicles and to improve coordination between the traffic management and traffic enforcement agencies". However, the project began in 2016 and there is a limit to up-to-date data availability on the efficacy of this project. Karsten Mueller,, explained some possible solutions to traffic congestion, including to expand "dedicated bus lanes; slowly phase in congestion charging; and plant trees and building covered walkways so that people can get from A to B on foot... the government can invest in a tram line connecting Mona, Halfway Tree, New Kingston, and Downtown, and develop bike lanes."

Reasons why people do not use other forms of transport



One of the other major concerns with the surge of congestion is the increase in vehicle pollution, including higher air and noise pollution levels. Panellists felt that most drivers were not aware of the environmental implications of traffic congestion. Congestion involves the engine starting and stopping, which means extra fuel consumption and, therefore, emissions such as carbon monoxide and nitrogen oxide, which have a huge impact on the environment and public health.

Panellists indicated that it is crucial to consider ways to disincentivise car use and design more effective public education campaigns. Wendel Ivey, Research Manager at JN Consult, explained that the "best way to increase knowledge of the public health risk is through a gradual strategy of moving towards vehicles that are more environmentally friendly" he also suggested "designated areas where only foot traffic is allowed, and fines be levied for breaches [and that] the public transport would have to rival private transportation in terms of efficiency and cost." To tackle air pollution, panellists felt that it was essential to implement a number of steps, including ensuring that only the cleanest domestic fuels are sold, developing new standards for tyres and brakes as well as addressing toxic non-exhaust emissions of microplastics may also be essential to consider.

Stuart Davies explained the positive impact a change to policy measures could have:

While increased car ownership often indicates a prosperous society, the social and environmental costs can often be overshadowed. When these costs are not internalised, consumers will tend to overuse so giving rise to the 'commons tragedy.' Road congestion is one such tragedy that society will need to manage carefully, particularly in small island developing states. Managing road congestion effectively requires a suite of measures that promote greener alternative modes of transport, enhance road infrastructure, and influence our behaviours for making greener choices.



DR. STUART DAVIES
Senior Economist, UN Jamaica



JUTC Buses Photo originally appears at JamaicaExperiences.com

Lastly, we asked panellists to consider the tourist industry's role in Jamaica's economy and how the sector might impact congestion. Keenan Falconer emphasised that the tourist industry is a contributor "as transport is a huge component in getting tourists around, and their onsite operations also utilise large amounts of energy. They are well-positioned to take the lead in implementing cleaner alternatives given their size in terms of both direct and indirect employment." Dr Anne Crick, Senior Lecturer at UWI explained some of the ways to do this, through planting more trees, ensuring best practices to reduce emissions are strictly followed, improving access to electric vehicles and support businesses near to hotels.

Nadine McCloud, further highlights the need to address the congestion in Jamaica:

Congestion is a significant distorting externality for Jamaicans. It cuts into work and leisure time and, by extension, leads to suboptimal work and home production levels, inter alia. Yet, there is no silver bullet to reigning in our congestion problem that stems from a plurality of factors. A workable congestion toolkit should explore the collective social impact of meaningful spatial permutations of a road pricing mechanism and its disposition (congestion charge in certain zones), an improved public transportation system including a generalised school bus system, shift work and remote work schedules and sensitisation campaigns.



DR. NADINE McCLOUD
Head, Department of Economics, UWI Mona

Conclusion

In conclusion, Jamaica, like many other countries, continues to struggle with increasing urbanisation resulting in high traffic congestion levels. This congestion impacts not only our physical and mental health but also the health of the environment. The Sustainable Development Goals, Goal 13, "Take urgent action to combat climate change and its impacts", must be considered. The world remains "woefully off track in meeting the Paris Agreement target of limiting global warming to 1.5°C above pre-industrial levels and reaching net-zero carbon dioxide CO2 emissions globally by 2050" and it is important Jamaica plays in role in addressing this. Evidently, there is not one single solution to combatting the rising congestion. We must take a multi-stakeholder approach that also involves raising public awareness and education on the topic to create a mindset shift and hopefully encourage people to consider other forms of transport.



Photo: Norman Grindley | The Jamaica Gleaner