Putting the Breaks on Road Accidents in India

Project Summary

Over the next 15 years, all UN member states will be expected to enact policies consistent with the targets set out in the Sustainable Development Goals (SDGs). Adopted on September 15th 2015, the SDGs detail 17 new goals and 169 targets for sustainable development. While the new goals set out in the 2030 Agenda may seem ambitious; they are by no means impossible. For example, governments have committed to target 3,6; specifically halving the number of global deaths and injuries resulting from road traffic accidents (UN Sustainable Development, 2015). RTIs are the leading cause of death for young adults aged 15-29 around the world (WHO, 2016). Despite the recent global plateau in RTIs, these injuries are still increasing in middle and low-income countries (Stanton et al., 2016; WHO, 2016). Such trends are both a direct and indirect result of rapid urbanization, motorization, and poor road infrastructure in these countries (Stanton e al., 2016; WHO, 2016). If not addressed, it is estimated that RTIs will become the third leading cause of death worldwide (Murray and Lopez, 1996).

The problem of RTIs is particularly salient in India. The 2013 WHO Global Status Report on Road Safety estimates that with more than 150 million registered vehicles on the road, more than 231,000 people are killed every year in India as a result of traffic crashes (WHO, 2014). In fact, India possesses one of the worst motor-vehicle fatality rates in the world (WHO, 2016). Out of all Indian traffic-related deaths, almost half are vulnerable road users such as pedestrians, cyclists, and motorcyclists (WHO, 2014). Furthermore in 2012, RTIs were cited as the number one cause of death among people aged 15-29 years old (WHO, 2016). Additionally, RTIs pose significant challenges to India's development (Mumford, 2006). Not only does India lose almost 3% of its annual GDP due to RTI, road accidents also affect national health; India is losing approximately 6,747,000 DALY years, equivalent to $5,161,000,000 US (Dalal, Lin & Svinstrom, 2013). India is ranked seven out of the top 25 countries with the highest DALY values (Dalal, Lin & Svinstrom, 2013), and makes up almost 5% global DALY losses due to RTI, an indication of the magnitude of RTI's impact on national health. Thus, the increasing the number of road traffic injuries (RTIs) in urban India, and the attendant development challenges, has been selected as the main focus of this report. Specifically, this report analyzed RTIs and the challenges they pose to international development in India, where they have increased parallel to the rise in the use of smartphones, mobile apps, and Google maps in the country.

The technological climate of India makes it ideal for the implementation of an app-based service that helps to reduce the prevalence of RTIs. On average smartphone users check their phones 150-200 times each day, and when multiplied by the number of smartphones, this produces billions of potential interaction points (Sikowitz, 2016). In the case of India that is over 30 billion moments of interaction between users and their phones (Sikowitz, 2016). In 2013, close to half of all cellular data users in India (48%) were 25 years or younger (Sing, 2013). This is the same group that is most vulnerable to road traffic injuries and fatalities. Furthermore, mobile apps have become the most rapidly adopted technology in human history (Godfrey et al, 2015), creating the ability to rapidly spread and gather information. In

addition, they can be accessed quickly on multiple mediums and through various app stores. The sheer volume and speed in which apps can be accessed positions them as the most cost-effective means, with the largest scope for disseminating important information that can help save millions of lives. Additionally, the use of Google Maps become commonplace in India, and the company has also taken many steps to improve the service and accessibility for the Indian population at large. Google Maps is now capable of understanding and offering directions in Hindi (Rajan, 2016), the most common language in India, spoken by 41.03% of the population as of 2001 (Jain, 2014). Mobile access is a natural part of the daily life for many Indians and we want to capitalize on this to help improve safety.

The app-based service we propose takes advantage of the thriving smartphone and app market in India, by allowing users to readily access information on roads and intersections that are most prone to road accidents, as well as easily report road collisions. Building on the success and technology of Google Traffic, we recommend that Google create a new feature that can be added to Google Maps, called Google CrossWalk. Modeled after Google Traffic, CossWalk is an opt-in feature that also provides colored overlays on Google Maps indicating roads and intersections that are prone to road accidents. To aggregate the data to accurately represent roads according to accident areas, CrossWalk would rely on a combination of existing data collection methods that are currently used on Google Maps (GPS enabled location services, crowd sourced data through Waze), as well as data from new sources on road collisions in India (specifically, historical data, hospital and police records, as well as crowd-sourced data through Waze). Given the underreporting of road accidents in India, we also propose the creation of SafeCrossings, an application that allows the public to report road collisions. SafeCrossings is a user-friendly app that allows the public to quickly report road collisions using a chatbot application that communicates to users (Patel, 2016). This application can be built within existing platforms, so that users are not required to download a new application (Patel, 2016). Users would engage in a seamless conversation with the chatbot, without having to press, pinch, and zoom to find the appropriate button to press (Patel, 2016).

By 2050 the global population is expected to be two-thirds urban, a reversal of the dominant population distribution of the mid-twentieth century (DESA, 2014). It is now evident that urbanization is a trend that will continue well beyond the expiration of the sustainable development goals. But despite the socio-economic progress associated with urbanization, its contribution to the rise of traffic-related injuries and fatalities in developing countries cannot be ignored. While urbanization does pose a challenge to public safety, this report has highlighted that technological innovation can be used to alleviate some of the problems stemming from urbanization and RTIs in India. Not only does the data support the use of app-based mapping of RTIs, there is arguably a global culture that yearns for new technology to combat shared problems. What makes our proposed app unique is that it is aimed at improving traffic accident reporting while also changing the behaviour of road users; drivers will know to drive cautiously in high-accident areas, while pedestrians and non-motorized road users will be more likely to self- monitor their use of the road. As opposed to simply providing a series of recommendations to be implemented by governments or NGOs, this report has instead developed recommendations that incorporate those citizens most affected by the problem as part of the solution.

Biographies

Shabnam Medhizadah is currently finishing her second year as a Masters student in the Health and Rehabilitation Sciences program at the University of Western Ontario. Her current area of research focuses on the fitness to drive abilities of medically at-risk older drivers in Canada. Her present projects include constructing and validating a short form of the Fitness-to-Drive Screening Measure$^{©}$. Ms. Medhizadah is an active member of the i-Mobile Research Lab, a lab focusing on fitness to drive screening measures, assessments, and interventions with a special focus on medically at risk drivers. Ms. Medhizadah has collaborated internationally, with the Catholic University of Health and Allied Sciences on the high instances of motor vehicle accidents in Mwanza. Ms. Medhizadah has presented her work at national and international conferences including the Canadian Association of Occupational Therapy (CAOT), and American Association for Driver Rehabilitation Specialists (ADED). She has also received the Queen Elizabeth Diamond Jubilee Scholarship, aimed to develop global citizens and enable young scholars to pursue community development in Canada and the Commonwealth.

Ryan Haughton holds a Bachelor's Degree in Honours Political Science from the University of Waterloo, specializing in Public Policy and Administration with a minor in Management Studies and is currently completing a Master's Degree in Global Governance at the Balsillie School of International Affairs in Waterloo. Ryan's major research project examined the intersection of economic development, urbanization and urbanism in China, specifically looking at increases in income and internal migration, and their connection to the marginalization of migrant workers and the rise of obesity in China. He places great value in informed decision-making and project implementation based upon comprehensive research. Currently he is interning with the United Nations Development Programme (UNDP) in Jakarta, Indonesia working as a Local Economic Development Analyst with the Democratic Governance and Poverty Reduction Unit (DGPRU). Ryan's research interests include: economic development, emerging economies, multilateral institutions, diplomacy, urbanization, international political economy and migration.

Aramide Odutayo obtained a Bachelors of Arts in Political Science at Western University, in London, Canada, and is currently completing her Masters of Arts in Global Governance at the Balsillie School of International Affairs, University of Waterloo, in Waterloo, Canada. Her research interests are incredibly diverse, covering topics in the fields of urbanization, international development, international migration, human rights, gender, and social justice. Aramide's recent work experience includes a Graduate Fellowship, with the Hungry Cities Project, at the Centre of International Governance Innovation as well as a Policy Research Internship at the Brookfield Institute for Innovation + Entrepreneurship in Toronto, Canada. Aramide is now completing an internship as a Policy and Advocacy Assistant with the United Nations Population Fund Liaison Office to the African Union and the Economic Commission for Africa, in Addis Ababa, Ethiopia. Aramide is an avid writer and blogger and her work has been published on a variety of forums including Global Policy Journal, the Social Contract, E-International Relations, and Women and Politics. Her forthcoming publication entitled, "Human Security and the International Refugee Crisis" will be published in the Journal of Global Ethics in December 2016.