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Abstract

In rapidly developing economies, like urban India, where road traffic injury rates are among the world's highest, the corporate workplace offers a non-traditional venue for road safety interventions. In partnership with a major multinational corporation (MNC) with a large Indian workforce, this study aimed to elicit local employee perspectives on road safety to inform a global corporate health platform. The safety attitudes and behaviours of 75 employees were collected through self-report survey and focus groups in the MNC offices in Bangalore and Pune. Analysis of these data uncovered incongruity between employee knowledge of safety strategies and their enacted safety behaviours and identified local preference for interventions and policy-level actions. The methods modelled by this study offer a straightforward approach for eliciting employee perspective for local road safety interventions that fit within a global strategy to improve employee health. Study findings suggest that MNCs can employ a range of strategies to improve the road traffic safety of their employees in settings like urban India including: implementing corporate traffic safety policy, making local infrastructure changes to improve road and traffic conditions, advocating for road safety with government partners and providing employees with education and access to safety equipment and safe transportation options.

Keywords

Injury prevention, road traffic environment, road safety, India, corporate social responsibility

Disciplines

Medicine and Health Sciences | Nursing

Road safety perspectives among employees of a multinational corporation in urban India: Local context for global injury prevention

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Abstract

In rapidly developing economies, like urban India, where road traffic injury rates are among the world's highest, the corporate workplace offers a non-traditional venue for road safety interventions. In partnership with a major multinational corporation with a large Indian workforce, this study aimed to elicit local employee perspectives on road safety to inform a global corporate health platform. The safety attitudes and behaviors of 75 employees were collected through self-report survey and focus groups in the multinational corporation offices in Bangalore and Pune. Analysis of these data uncovered incongruity between employee knowledge of safety strategies and their enacted safety behaviors and identified local preference for interventions and policy-level actions. The methods modeled by this study offer a straightforward approach for eliciting employee perspective for local road safety interventions that fit within a global strategy to improve employee health. Study findings suggest that multinational corporations can employ a range of strategies to improve the road traffic safety of their employees in settings like urban India including: implementing corporate traffic safety policy, making local infrastructure changes to improve road and traffic conditions, advocating for road safety with government partners and providing employees with education and access to safety equipment and safe transportation options.

Keywords

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Introduction

Over a million lives are lost each year to road traffic injury (RTI), with the highest burden borne by low- and middle-income countries (LMICs) (WHO, 2013). This constitutes a major public health crisis, “that has a broad range of social and economic consequences which, if unaddressed, may affect the sustainable development of countries and hinder progress towards the Millennium Development Goals (WHO, 2013).” The upsurge in RTIs in LMICs observed over the past decades corresponds to rapid worldwide globalization and increased availability of mechanized modes of transportation and related infrastructure. As a result, the World Health Assembly declared 2011-2020 the Decade of Action for Road Safety, calling for substantive and multi-sectoral efforts to challenge the global RTI epidemic.

In rapidly developing economies, increases in mobility and vehicle penetration often exceed safety-focused improvements in infrastructure, traffic policy enforcement, and norms around road safety (Bener et al., 2010; Kopits & Cropper, 2005; Winston, Rineer, Menon, & Baker, 1999). It is in these contexts that multi-sectoral road safety responses are essential. Recognizing the risks of RTIs to their employees and their families in LMICs, multinational corporations (MNCs) are playing an increasing role in road safety efforts (Global Road Safety Partnership, 2014) and extending beyond traditional occupational health priorities to include public health initiatives within organizational wellness and safety programs. However, evidence-based strategies for road safety that are effective in high resource, high income countries are often not tested in or easily transferable to the road traffic environments that exist in many LMICs (Grimm & Treibich, 2013; Iyasu, 2014). This makes the task faced by MNCs to protect

their global workforce with a consistent global road safety strategy all the more challenging.

Indian cities exemplify the road traffic challenges of rapidly developing economies (Grimm & Treibich, 2013). India currently has the second highest incidence of road traffic fatalities in the world contributing to an estimated loss of 3% of the country's gross domestic product (WHO, 2013). In India's cities where ten percent of the world's urban population lives and works (Swerts, Pumain, & Denis, 2014), rapid motorization has become one of the preeminent causes of India's RTI and fatality burden (Grimm & Treibich, 2013). One contributory factor to increased motorization is the emergence of a vibrant middle-class with the ability to purchase vehicles for personal use. It is projected that in concert with improved per capita income in India, the road traffic fatality rate will continue to rise (Kopits & Cropper, 2005).

Approximately 14% of the foreign direct investment in India is contributed by MNCs working in the software and technology sector, and 88% of this investment is clustered in the urban centers of Bangalore, Hyderabad, Chennai, New Delhi and Mumbai/Pune (Mrinalini, Nath, & Sandhya, 2013). MNCs that employ a large global workforce in India have not historically assumed the role of key stakeholders in road safety, but this is changing. By recognizing the importance of RTI and its relative cost to the economic development and sustainability of business, the private sector is an emerging partner in road safety initiatives (Bekefi, 2006; Haworth, Tingvall, & Kowaldo, 2000). A prominent example is the Global Road Safety Partnership established by the World Bank in 1999 to engage the private sector in the effort to change the course of the RTI epidemic (Bekefi, 2006). In India, companies like Renault, Toyota, and Bridgestone

have sponsored road traffic education campaigns focused on children, pedestrians, and other vulnerable road users (Global Road Safety Partnership, 2014).

Despite increases in private sector effort to address road safety in LMICs, including India, MNCs are faced with regional variations in attitudes, infrastructure, norms and regulations/laws. One qualitative study including 15 in-depth interviews with government officials, subject matter experts and traffic injury victims and four focus groups with physicians, nurses and drivers was conducted in Hyderabad, India (Tetali et al., 2013). This study identified key issues regarding inadequate road traffic regulation and enforcement, drivers' lack of knowledge, poor engagement of policy makers in injury prevention efforts and dilapidated infrastructure as the primary threats to road safety. In this study, however, the viewpoint of employees and corporate stakeholders who influence the economically-driven changes to the urban landscape was not represented.

With more MNCs employing large numbers of Indian citizens in urban centers, the corporate workplace has great potential to be an effective site to enact road safety interventions. However, the broad applicability and efficacy of global strategies for diverse road traffic environments remains unknown. As a first step, the purpose of this study was to develop and implement a straightforward method for eliciting local perspectives on road safety from employees of a major MNC. Using this methodology and urban India as an exemplar, we aimed to describe employee experiences traveling on roads in their city of residence, perceptions of road safety and hazards, experiences with road traffic related injuries, and opinions about programs and services that would enhance their road safety and self-efficacy as a road user.

Material and Methods

Site selection and recruitment

This study was conducted in 2013 with employees of a MNC with over 100,000 employees working across the Indian sub-continent. Primary employee responsibilities at MNC offices are in the technology and management sectors. Staff from the MNC's integrated health service program in the United States of America (USA) and India collaborated in the study site selection.

Bangalore, in the southern state of Karnataka, was selected because it is the third largest Indian city with one of the highest road traffic fatality rates (Ministry of Road Transport and Highways, 2011) and is the hub of the Technology, and Research and Development industries in the country. Pune, in Maharashtra, was selected to represent a smaller urban center with an older and less developed road system. Like Bangalore, Pune is developing rapidly to meet demand for Technology and Research and Development industry space and workforce and has a high RTI rate compared to other Indian cities (Mirkazemi & Kar, 2014).

In both Bangalore and Pune, MNC offices are based in large corporate campuses that house the facilities of several different corporations. These campuses function like communities, with cafeterias capable of feeding thousands of employees, intra-campus transportation and even private ambulances on ready to transport ill and injured employees to hospitals. At the time of the study, MNC offices in Bangalore had approximately 45,000 employees across six facilities, and near to 10,000 employees in Pune. Employees in both Bangalore and Pune are eligible for free transportation provided by the MNC to and from corporate campuses by bus or shared cars, particularly during nighttime, off-shift hours.

Recruitment for study participation targeted a convenience sample of employees who responded to an office-wide email solicitation. Employees were eligible to participate if they: used a roadway to commute to work, were 18 years of age or older, and were proficient in written and spoken English. Approval was secured through the University of Pennsylvania Institutional Review Board. MNC employees provided written informed consent prior to participation in research activities.

Data collection procedure

Participants completed an anonymous survey with items derived from an internal MNC safety survey that included demographic information, road use/vehicle use and road safety behaviors. Six focus group interviews took place in four different MNC offices during daytime working hours. Three focus groups took place in Bangalore on April 25th and April 26th, 2013 with groups of 5, 7, and 22 employees. Three additional focus groups were held in Pune with 10, 13, and 18 employees on April 29th and 30th, 2013. Focus groups lasted approximately 1.5 hours and were facilitated by a research team member using a semi-structured focus group guide as shown in Table 1.

Data Management and Analysis

Survey responses were analyzed using statistical software (IBM Corp., 2010) to describe study participants' demographic, vehicular and road use characteristics, and road safety behaviors. Audio-recordings of focus groups were transcribed, checked for accuracy, and edited to protect the identities of individual participants and enhance the readability of quotes. All changes from verbatim quotes appear in parentheses. Using content analysis, transcripts were independently coded by two members of the research

team. The development of final codes, categories and themes that emerged from the data was based on research team consensus.

Results

Seventy-five employees participated in one of six focus groups described in Table 2. Descriptive analysis of survey data illustrated a range of self-reported behaviors that increase RTI risk for participants and their passengers. Only 65% reported consistent use of safety belts and even fewer approximately 17% required passengers to wear safety belts while operating a four-wheel vehicle. Approximately 48% reported consistent helmet use when driving a two-wheel vehicle and approximately 9% reported consistent helmet use when riding as a passenger on a two-wheeled vehicle as indicated in Table 3.

Qualitative analysis of focus group data explained the context surrounding the self-reported behaviors, yielding three major themes: 1) road user experiences, 2) the relationship between road use and employment, and 3) recommendations for improved road traffic safety in the local environment.

Road user experiences

Perceptions of a dangerous road environment

Despite the everyday nature of road use, participants in both Bangalore and Pune perceived that their local road environment was dangerous. Danger was attributed to an unpredictable mix of people, animals, motorized and non-motorized vehicles on roadways and the differential speed potential of each of these road users. Another perceived danger was the insufficiency of the local infrastructure to keep pace with the rapid population growth in these urban centers of technology and business. A participant from Bangalore described it as, “So after this IT boom (the) population has increased four

times, five times (from the) previous Bangalore population. And the roads, there is no major changes. It is the same old structure.”

Participants expected the traffic police to moderate the chaos created by population growth, mixed vehicle use, and inadequate infrastructure but indicated the inconsistent and unreliable enforcement of traffic laws. Uniformly, participants in both cities viewed the local traffic authority as low-paid, often corrupt and of insufficient numbers to effectively manage the urban roadways. Of particular concern was the ubiquity of bribery for traffic violations. A Pune-based participant remarked, “They’ll take this 50 rupees bribe, which goes into their pocket. And do not issue the proper warrants; do not issue the proper receipt.”

Participants associated different risks to the different modes of transportation that were commonly used for workday commuting. Four-wheeled vehicles were viewed as protective against major bodily harm. “Even if you (have) an accident, at least you don’t lose your limbs or joints, at least to some extent you’re safe.” Participants recognized that using two-wheelers exposed them to unique dangers, but still used them frequently to avoid or work around traffic, reduce transit time, and save on the cost of fuel.

Pedestrians were considered to be at the highest risk for roadway dangers. The few participants who commuted to work as a pedestrian described it as a distressing experience. A Bangalore employee describes her pedestrian commute: “I don’t know (on) which side I should walk, while going left or right. I don’t know which side I should take. They simply hit (people). A couple of times, they didn’t hit me, but they tried.” Public transportation via bus or train was not seen as an acceptable option for daily commuting

due to limited routes, overcrowding, unreliability, and exposure to interpersonal violence for female employees.

Participants also associated roadway danger with time of day. The most dangerous times were either late night when traffic laws were not enforced, or during the morning commute when high traffic congestion and the pressure for road users to promptly reach their destinations culminated. In describing arrival outside of the corporate campus in Pune, a participant remarked, “Because this place is crazy at 9 o’clock, 10 o’clock in the morning. I am scared of this place, you know. Just down the road, it’s scary, it’s horrifying.”

Overall, the exposure to road traffic conditions was described as a significant source of stress for which participants felt limited capacity to alleviate. A Bangalore participant when asked to describe his daily road traffic experience suggested that one should “...pray in the morning you shouldn’t get into an accident.” A participant in Pune who offered the advice to “pray that you (arrive) to office without an accident” similarly exemplified how roadway danger was perceived as pervasive and inevitable.

Beliefs about road traffic safety practices

Participants understood that drivers who do not engage in safety practices are at increased risk for RTIs. Behaviors that participants believed increase risk included vehicle modification, such as folding down side mirrors to protect the car from damage while driving. The most commonly mentioned risky practice was driving while listening to music or talking on the telephone.

Behaviors associated with safe driving included helmet use on two-wheeled vehicles, safety belt use in four-wheeled vehicles, and following traffic rules. Despite this

knowledge, participants described several reasons for inconsistent use of these road safety strategies. Barriers to helmet use were plentiful and widely-endorsed including peer pressure and heat. In Pune, a participant described why helmets are rarely used, particularly among passengers.

You follow the crowd, you know. When you see other person who is a pillion and is not wearing a helmet, you feel like a clown. You are the only one who is wearing the helmet alone...and if you wear a helmet it is too hot.

Even if helmets were to be routinely used, employees discussed the issue of the poor quality and inconsistent crashworthiness.

Safeguarding children on the roads was particularly difficult since child restraint systems and child helmets were not commonly available or publicly popular. In the absence of child safety devices, participants described their desire to protect children but offered strategies that would not reduce child injury. A Bangalore employee suggested, “...if children are small, we’ll ask the person is sitting (to) hold him.”

Experiences and beliefs about road traffic injuries

Participants reported frequent observation of road traffic crashes. They perceived that crashes were an increasingly frequent occurrence but that the low speed associated with urban traffic negated the need for increased use of safety devices. Helmet use was seen as least important during the commuting hours in the urban environment. “Within the city, during the peak hour traffic, there are less chances of people getting injured.” Safety belt use was similarly perceived as important only under high-speed circumstances. “less than 50 kilometer speed, you won’t need a safety belt.”

Most participants had been involved in multiple very minor crashes; none had experienced major injuries. In general, emergency medical transportation and services were seen as absent from the urban road environment and the quality and cost of medical care as extremely variable. One of the largest barriers to reaching medical care after a crash was described as the common misconception that helping an injured individual would imply that the responder was at fault for the injury and responsible for cost of injury care.

The relationship between road use risk and employment

Participants in both cities described the tension between employment requirements, such as arriving on time, and traffic pressure and disorganization. For some, the requirements of employment were prioritized above adherence to known road safety practices. A participant in Pune remarked, “reaching (the) office, there’s a deadline ...traffic is something which is not under our control. So to go and reach (the office) on time, we have to do something.”

This tension was also described for employer-provided transportation. In Bangalore, a participant believed, “there’s a lot of pressure on the drivers who are servicing call centers...if he tries to follow the rules and he is delayed by a few minutes, he’ll either be penalized by his employer or the passengers will start shouting at him.” In this situation, the employer-provided service was intended to keep employees safe, by using trained, reputable drivers in company provided or supported vehicles. Participants agreed that the MNC needed to run an efficient company – and this seems especially true for call centers that run for 24 hours, 7 days a week- but the unintended consequence of

these well-intentioned company transport programs was the potential to increase the risk for RTI.

Recommendations to Enhance Road Traffic Safety

Employee recommendations for the worksite

Employer-provided road safety education was strongly endorsed and some participants had already been exposed to a limited MNC-provided campaign on road safety. In Bangalore, an employee described “We get mailings, and we have some danglers in our floors with what is the speed limit...what is the plus points of wearing a helmet.” Despite varying levels of exposure to employer-provided road safety education, employees felt that there were particular strategies that had not been used to better engage employees in RTI safety education. Participants preferred more interactive, video or human-delivered content to informational emails or other content that required reading.

Employer provided transportation to and from the workplace was seen as another way to enhance safety. Although this seems in opposition to the tensions described about job requirements and employer-provided transportation, participants believed that employer-hired drivers are trained, relatively safe, and monitored. This perceived safety benefit was offset by the current duration of transport time when using employer-provided transportation, because of the need to pick up riders from multiple geographic locations. Increasing the number of vehicles for employer-provided transportation, configuring routes to decrease commute time, and creating a web-based system to cultivate the ease of carpooling among employees were suggested.

Participants recommended that employers improve the infrastructure and enforcement of road safety rules, like safety belt and helmet use, within corporate office

campuses. They realistically understood that employers have limited power to alter the city road structure, but did recommend attending to roads and rules within their local sphere of influence. In Pune, an employee offered, “So at least we can start laying good roads within the campus. We cannot expect (this) outside the campus, but at least within the campus.”

Participants recommended that employers highlight individuals who are safety role models and publicly reprimand individuals who demonstrate poor safety practices. “Maybe any person who has not violated...any traffic rule or who has not (had an) accident, maybe he should be appreciated. (Don’t) just give him reward, but recognize him.” And while a punitive approach would not be acceptable in all corporate workplaces, a Pune participant suggested recognition of a

‘road rogue,’ I would say catch all of (those) who drive fast and highlight (them).

Don’t allow (them) to come (on) a two-wheeler again to office. Let him use a cab...

I know it would be harsh, but at least for one week or one month.

Employee recommendations for the public/government

Public officials and state government were seen as important stakeholders in road safety regulation and policy enforcement. The government was viewed as responsible for educating the population about traffic rules and safe driving practices. The use of media (e.g. television, newspaper) was understood as a central vehicle through which to relay information to the public. Road safety education was also seen as important for children and a shared responsibility between schools and parents.

Employee recommendations for individuals

Individual responsibility was endorsed as the primary factor through which improvements in road traffic safety would occur. Respect and discipline were common themes across all six focus groups. “First you need respect, like I said, it requires self-discipline.” Participants were optimistic about the public’s capacity to learn new safety practices and road traffic discipline. “You have to learn and you have to follow the traffic rules.”

Discussion

This study elicited the road safety perspectives of MNC employees in order to inform locally-targeted, corporate-sponsored strategies at the individual, corporate and governmental level and present a straightforward method for gaining these insights. Employee-identified barriers to road safety included: inadequate adoption of road safety best practices, dissonance between road safety knowledge and actual practice (both personal and observed), inadequate road infrastructure, inconsistent enforcement of traffic policies by police, and corporate business cost and efficiency strategies which were at odds with road safety, e.g., requiring on-time arrival to work during high traffic times of day. Major facilitators included: endorsement of the ethic of personal responsibility, workplace-based road safety interventions including employer-provided transportation and educational campaigns and corporate safety policies.

This study reinforced that the stakeholders in injury prevention in the urban Indian context understand road safety as an extension of personal effort and responsibility. In a previous study to inform governmental and non-governmental organization action, Tetali et al. (2013) elicited local perspective on drunk driving and helmet use in the city of Hyderabad. Participants in the study who included government

officials, subject matter experts, road traffic injury victims, medical/nursing personnel and taxi drivers, endorsed the importance of personal responsibility for road safety. The current study extended these findings by focusing exclusively on road users within the context of employment by a MNC in order to inform corporate policy and programming across a range of road safety concerns and behaviors. Our results indicate that workplace-based interventions that target individual behavior may expect buy-in and acceptance, because participants understood road safety as something that could be changed by their personal effort and actions.

Recognizing that personal action for road safety can be challenged by infrastructure and policy, participants recommended ways to shape the MNC environment to be supportive of individual road safety behavior. Potential interventions included: improvement of safety infrastructure and enforcement of vehicular and driving standards on corporate campus roadways, interactive road safety education, policies that would lessen pressure for work arrival at high-traffic times, improvement of company-provided transportation or car-pooling options, and advocacy efforts targeted to local government.

Workplace interventions in the USA to reduce RTI through employee actions include awareness and education campaigns, incentivizing road safety behaviors and worksite enforcement of best practices (Segui-Gomez, 2000). Incentives are a particularly effective strategy when applied in conjunction with: observation at workplace entrance/exit, group discussions, and educational programs (Segui-Gomez, 2000). Interventions that are based solely on observation, such as checking for seatbelt or helmet use at point of workplace entry are more effective if the program/observation is visible

and well known and when drivers associate non-compliance with negative consequences (Clayton & Helms, 2009). The current study indicates that these interventions will likely need local adaptation in order to optimize safety outcomes within non-US, global settings. Participants described that “best practice” behaviors were discordant with the perceived normative behavior in their local environment supporting the observations of Johnston that safety strategies and interventions developed and tested in lower-risk, high-resource settings may have limited effectiveness in higher-risk, lower-resource settings (Johnston, 2010).

Workplace-based interventions for road safety are most effective when they include and engage employee commitment at all levels of the corporate/institutional hierarchy (Newnam & Watson, 2011). MNCs that operate in regions of the world with different social, cultural, and infrastructural dimensions of traffic safety will find the operationalization of standards for “safety culture” among their global workforce a substantial challenge (Lorenzo, Esqueda, & Larson, 2010). With this challenge in mind, this study demonstrates how to enact the important first step towards establishing a globally-relevant culture of safety in an MNC by gathering high quality data on road safety knowledge and practices among employees and contextualizing these data within a local road traffic environment (Shallenberger, 2014). While the results of this study are most relevant to India and specifically to the urban settings surrounding Pune and Bangalore, the methods through which these strategies were identified, could easily be replicated at corporate locations in other countries and in settings that share the high-risk features of the urban Indian traffic environment.

Recommendations for MNCs with global workforces, particularly in India, could consider several approaches to reduce RTI informed by the results of this study. First, evaluate local knowledge of road safety attitudes and practices and refine and improve knowledge campaigns to address local perceptions about road traffic safety. Second, when initiating a road safety intervention, design delivery systems that are interactive, engaging, and targeted to individual knowledge, attitudes and beliefs. Third, use approaches that recognize the real-world economic trade-offs that exist to practicing safety by employing behavioral economics like financial reward and public recognition. Fourth, MNCs can make the workplace environment a model for safe structure and practice by improving road infrastructure on corporate campuses and enforcing road safety behaviors uniformly on all corporate campuses. Fifth, employers can think of innovative ways to help employees avoid road traffic risks such as examining the structure of employee policies, altering inflexible shift times, revising communications that encourage pressure to speed in drivers of company-provided transportation and other behaviors that may encourage risky road traffic safety practices. Finally, MNCs can work with regional and local government to collaborate in the development of policies and benefits for businesses that provide public safety services that reduce RTIs.

Implications for MNC road safety interventions should be interpreted within the limitations of this study. Participants consisted of employees from one MNC with locations in Pune and Bangalore who volunteered and were available to leave their employment responsibilities for the duration of the interviews. While the anonymity of the methods encouraged open and honest participation (supervisory and managerial staff were not permitted to observe focus groups and data were aggregated), the 75 participants

may have been reluctant to disclose unsafe behaviors and may not have represented the thousands of employees working at each corporate campus and employees at other campuses across each city or to other cities or other MNCs. Each focus group was, however, diverse in the type of work employees did including software development, management, call-center support. The level of participation in the focus groups ranged widely from 5 to 22 employees, which may have altered the content, tone, and participation level. In addition, although all participants conducted their work in the English language, there were varying degrees of English proficiency, which could potentially change or limit the manner in which questions were understood and answered. Finally, data from Pune and Bangalore were analyzed as a single dataset. Interpretation of results cannot be generalized to either city or other urban centers in India. Rather, the findings should be interpreted as an example of the kind of local perspective that is important to elicit and understand when planning and enacting corporate road safety interventions.

Conclusions

MNCs with global workforces are well-situated to become a force for change in road safety (Bekefi, 2006), particularly in places like urban India where the concurrence of economic development and increased motorization has elevated RTIs to epidemic proportion (Patel et al., 2011) and public sector response is slow and resource constrained. A range of road safety interventions available for MNC implementation emerged from this study. More importantly, this study reinforced that to meet the challenges of employees in different road traffic environments requires a ‘glocal’ approach (Jain & De Moya, 2013) that balances customization to local contexts with the

consistency and quality of an overarching corporate strategy to protect employees.

Interviews, focus groups and surveys of local representatives of a global workforce, as part of health risk assessment tools or as series of stand-alone inquiries, offer a replicable and straightforward methodology to gather employee perspective for local road traffic intervention strategies.

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Table 1: Exemplar questions used to guide focus group interviews

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- 1) Describe your typical experience travelling to and from work using a roadway?
 - 2) What are your biggest concerns or worries about travelling on the road?
 - 3) What do you see as the best ways to improve your experience travelling on the road?
 - 4) Thinking about it in a different way, in what ways does road travel benefit your daily life or make things easier for you?
 - 5) Among other road users that you share the road with during a typical commute to work, what are some driving behaviors or other travelling behaviors that you view as unsafe or dangerous?
 - 6) Have you or any of your family members ever been in an accident or crash on the roadway? What was that like?
 - 7) What kind of programs or services do you think would make you safer when using the roadways?
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Table 2: Demographic and road use characteristics

	Bangalore (n=34)	Pune (n=41)
Gender		
Male	88%	85%
Female	12%	15%
Age		
18-25 years	12%	22%
26-30 years	38%	24%
31- 40 years	50%	44%
41-50 years	0%	10%
Vehicle owner		
Yes	88%	93%
No	12%	7%
Type of vehicle owned		
2-Wheeler	32%	32%
4-Wheeler	12%	10%
2-Wheeler & 4-Wheeler	48%	51%
NR (no response)	8%	7%
Years of driving experience		
<1 year	6%	5%
1-5 years	12%	22%
6-10 years	41%	17%
11+ years	27%	49%
NR	6%	0%
Don't know how to drive	9%	7%
Typical mode of travel to workplace		
Public transportation	9%	2%
MNC provided transport	3%	15%
Own 4-wheel vehicle	15%	24%
Own 2-wheel vehicle	27%	17%
Carpool	24%	37%
Own 4-wheel and 2-wheel vehicles	12%	5%
Public transport and MNC provided transport	3%	0%
Walk	3%	0%
NR	6%	0%

Table 3: Self-reported driving behaviors (n=75)

Driving Behavior	All of the time	Most of the time	Half of the time	Some of the time	Never	NR
<i>Risk Behaviors</i>						
Over speed	13%	12%	21%	31%	15%	8%
Break traffic rules	0%	1%	3%	47%	44%	5%
Talk on phone while driving	1%	1%	3%	35%	55%	5%
Text message while driving	1%	0%	0%	13%	80%	5%
<i>Protective Behaviors</i>						
Wear seat belt (SB)	65%	5%	4%	6%	1%	19%
Have front seat passenger wear SB	29%	19%	17%	11%	8%	16%
Have all passengers wear SB	17%	16%	9%	25%	16%	16%
Wear helmet as 2-wheeler driver	48%	15%	8%	10%	5%	13%
Wear helmet as 2-wheeler pillion	9%	4%	5%	24%	36%	21%