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BUILDING HEALTHY CITIES



CITIZEN SPOTLIGHT: ROAD SAFETY IN INDORE

The USAID-funded Building Healthy Cities (BHC) project is a 5-year (2017-2022) learning project that aims to refocus city policies, planning, and services with a health equity lens while improving data-driven decision making for Smart Cities in four countries: Indore in India, Makassar in Indonesia, Da Nang in Vietnam, and Kathmandu in Nepal.

Planning for a Smart City is intrinsically linked to health: transportation, environment, sanitation, education, recreation, technology, and the built environment all influence the health of an urban population. Partnering closely with Indore Smart City Development Limited (ISCDL), BHC has engaged with sectors that contribute, directly or indirectly, to citizens' health and quality of life. This multi-sector engagement aims to provide all municipal sectors a common understanding of how they contribute to health. In Indore these sectors include: health, urban planning and development, information and communications, education, waste management, pollution, food safety and hygiene, women and child development, traffic, and road safety. The project is also committed to helping ISCDL in its efforts to create more bicycle- and pedestrian-friendly infrastructure in Indore.

Road safety and providing clean air are basic rights of citizens of Indore. Since the COVID-19 lockdown, there has been a 40 percent increase in the sale of bicycles in Indore city¹. The reasons are many and include: fear of using public transport, and a need for a fitness alternative due to the shutdown of gyms, fitness classes, and sport clubs. This increase in popularity is a clear indication that Indore citizens can adopt green transport and might even cycle to work on most days. However, to make this a reality the city has to focus on improving cycle friendly infrastructure as currently there is a dire need of cycle lanes, cycle stands, and better traffic management.

A study conducted among 500 students highlights this need; as many as 27 percent of children going to schools on their bicycles met with accidents due to bad roads, unorganized traffic, and

¹ Tina Khatri, "Indore: 40% Growth in Cycle Industry, Cycling Enthusiasts Doubled after Lockdown," *The Free Press Journal*, July 24, 2020. <https://www.freepressjournal.in/indore/indore-40-growth-in-cycle-industry-cycling-enthusiasts-doubled-after-lockdown>.

reckless driving by motorized vehicle drivers. In addition, 60 percent of students with hearing and speech impairment met with road accidents while cycling to their schools. The same study also highlighted the issue of cyclist safety, as there were very limited cycle tracks in the city.² An interview conducted by the Free Press Journal further suggested the lack of cycle tracks in Indore, and revealed that the Bus Rapid Transfer System cycle tracks in particular were risky to use as they either abruptly came to an end or merged with general traffic.³

Citizen feedback is valuable when it comes to planning, especially in urban areas. To support this, BHC is conducting a series of three rapid feedback online surveys in Indore to understand citizens' experiences and feedback towards existing infrastructure for cycling, walking, and driving within the context of road traffic management by the city Traffic Department, Indore Municipal Corporation (IMC) and ISCDL. The first online survey of this series was done in February–March 2021 to specifically target current and future cyclists, to better understand motivations, barriers, and opportunities regarding cycling in Indore.

Methods

The first online rapid feedback survey was designed to gather citizen feedback to understand citizens' experience and feedback towards existing infrastructure for cycling. BHC used Google Forms to create the survey, which contained 44 questions. The Indore Cycle Association provided contact information for city cyclists, and BHC shared the survey through email and WhatsApp. It was launched on February 25, 2020 and closed on March 23, 2020. The survey collected 73 responses, distributed across all of Indore. The gender makeup of the sample (8 percent female) closely resembled the gender composition of the Cycling Association (9 percent female according to the most recent member register). The average age of the respondents was 42; the youngest was 20 years old and the oldest 63 years old. Respondents were also generally well-educated, with over 80 percent reporting having a university or advanced degree or vocational/technical training. In addition, the majority of respondents belonged to higher paying professions.

The survey is not representative of the full city, as the team could not reach out via in-person surveys to a more diverse group of cyclists (industry laborers, daily wage workers, and students) due to COVID-19 restrictions.

² TNN. 2016. "Cycling to School Risky for Kids." *The Times of India*, September 10, 2016. <https://timesofindia.indiatimes.com/city/indore/cycling-to-school-risky-for-kids/articleshow/54263051.cms>.

³ FPJ Bureau. 2016. "Safety, an Imp Issue for Cyclists in City." *The Free Press Journal*, May 16, 2016. <https://www.freepressjournal.in/cmcm/safety-an-imp-issue-for-cyclists-in-city>.



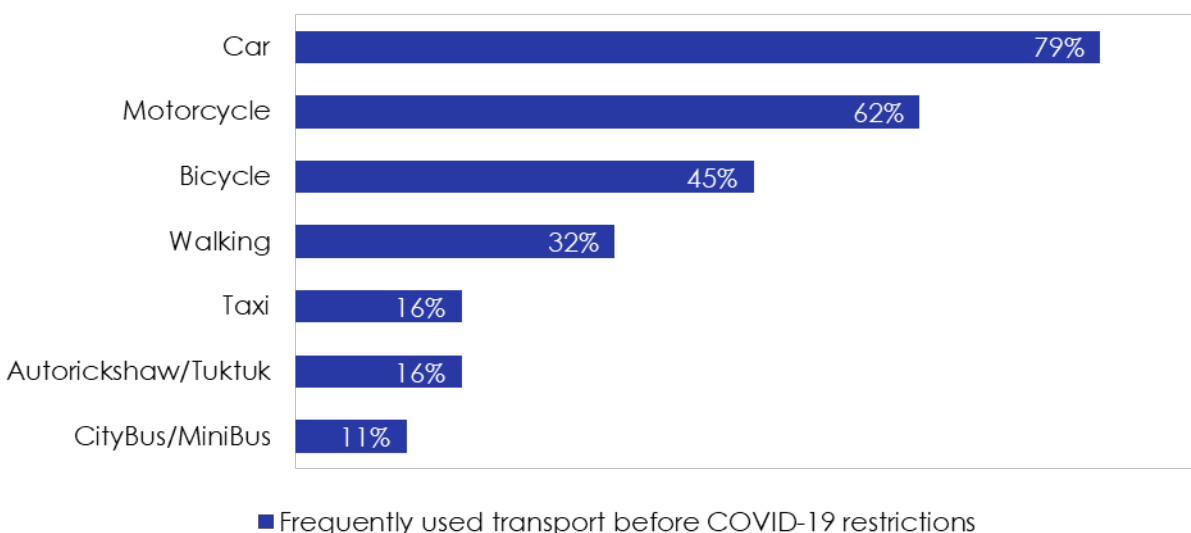
Results

General Information (n=73)

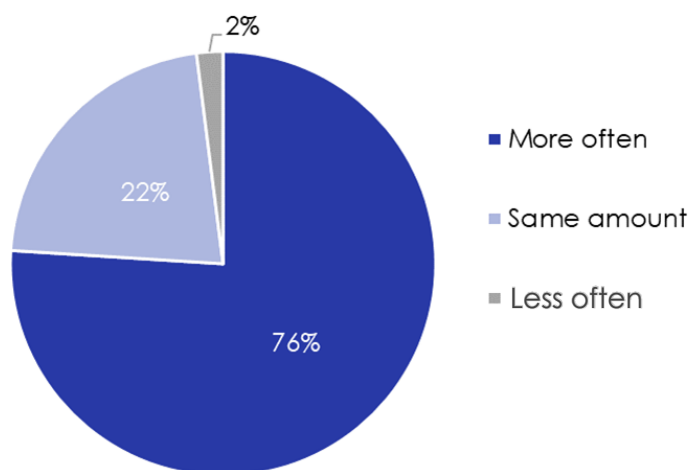
Gender	Males	92%
	Females	8%
Education	Master's degree	59%
	Bachelor's degree	35.6%
	Secondary school certificate	5.4%
Occupation	Work in business	29%
	Work in service	45%
	Medical professional	11%
	Lawyer/professional	4%
	Housewife	3%
	Students	7%
	Other (retired)	1%

Bicycling Habits

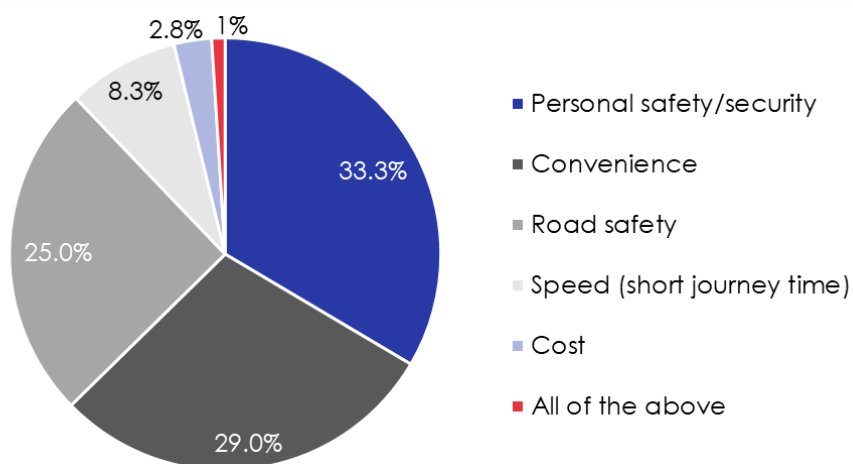
Prior to COVID-19 restrictions, cycling was the third most frequent mode of transport within our sample (45%, n=73). Cars were by far the most frequent mode of transport, followed by motorcycles. CityBus was the least used mode of transport as only 11 percent of survey respondents selected it as an available mode of transport, but this may be due to the higher income level of this sample.



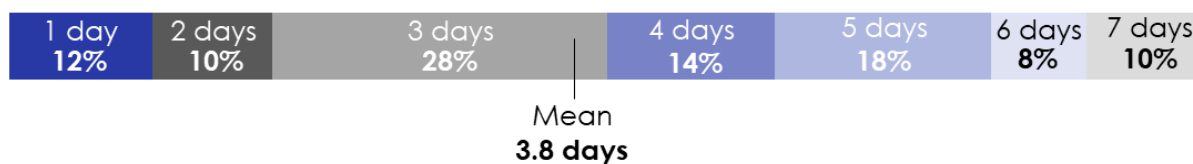
Compared to about a year ago, **76 percent of respondents (n=50) said they were now riding a bicycle more often.**



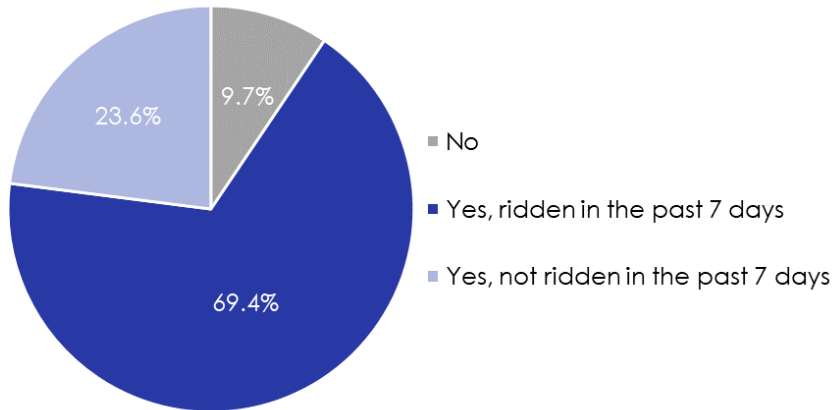
The majority of the respondents (n=72) considered **personal safety/security as the most important factor while choosing a mode of transport (33 percent)**, followed by convenience (29 percent), road safety (25 percent), and speed (8 percent). Only 3 percent considered cost as an important factor while choosing a mode of transport, and 1 percent considered all the stated factors as important.



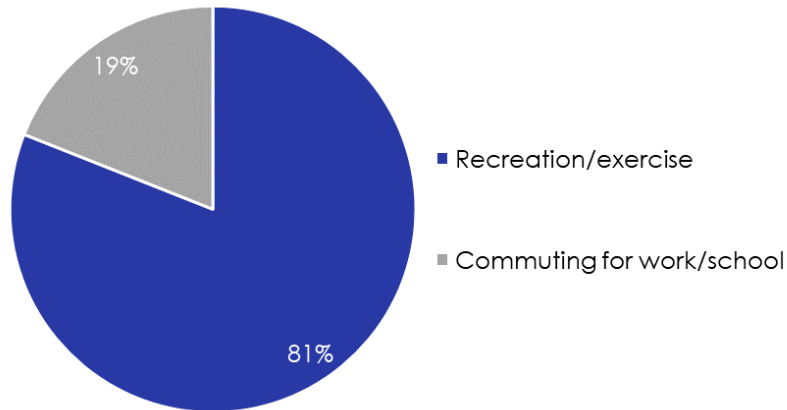
Of 50 responses received, **on average the respondents rode a bicycle for 3.8 days in the week prior to the survey.** Only 10 percent used a bicycle for all 7 days.



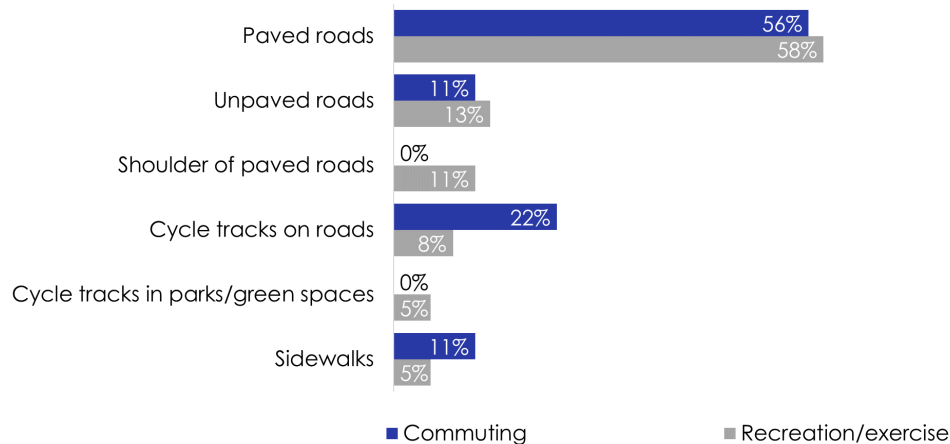
The majority (69 percent) of survey respondents (n=72) had a bicycle and rode it in the past 7 days prior to the survey, while 24 percent had a bicycle but did not ride it.



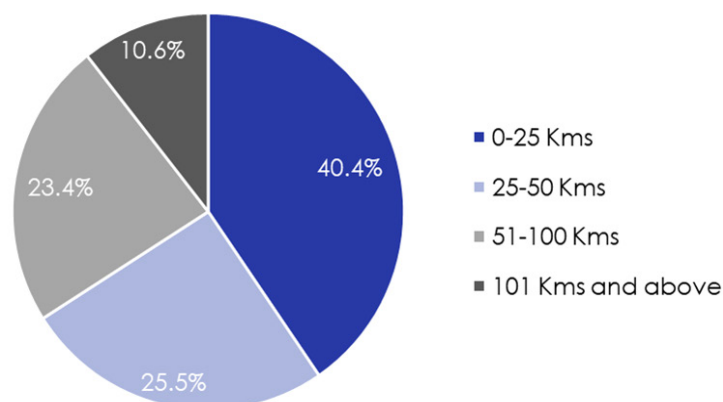
The majority of respondents who rode their bicycle in the last week (81 percent, n=47) did so for recreation and exercise.



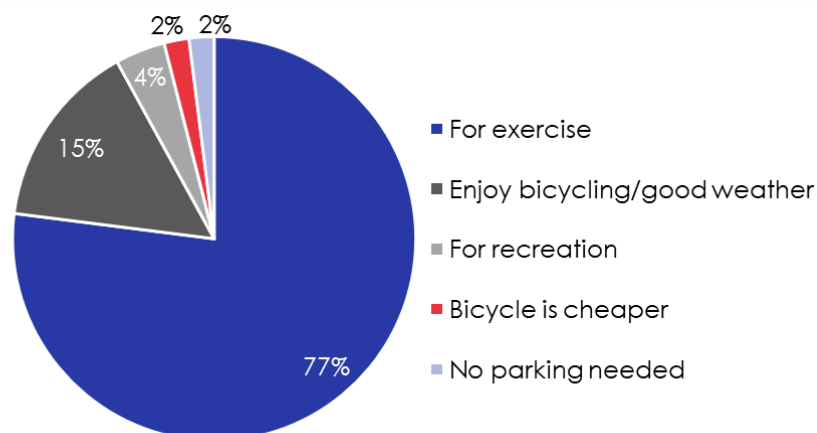
Breaking down the above responses further, it was revealed that the **majority of the respondents used paved roads, regardless of their purpose for riding a bicycle**. A notable difference between those using bicycles to commute versus for recreation/exercise was in the use of cycle tracks on the roads; 22 percent of commuters used the cycle tracks whereas only 8 percent of the total recreational bicyclists used them.



On average, most respondents rode between 0-25 kilometers on their last bicycle trip.



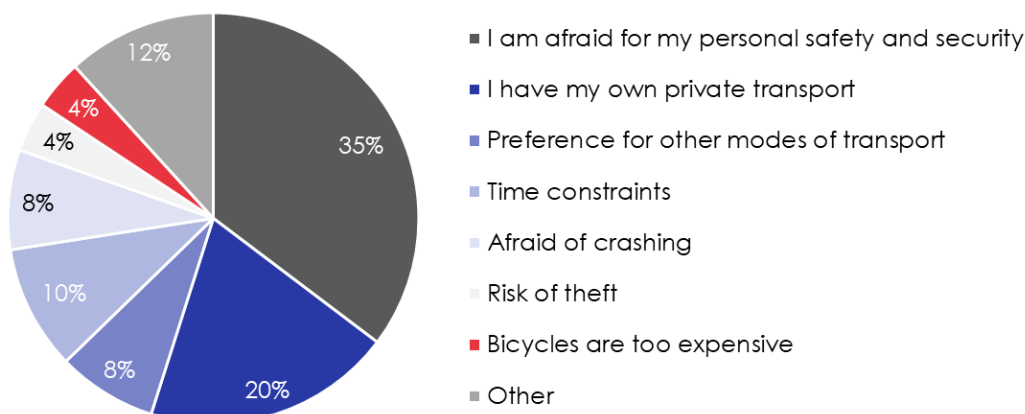
Respondents were asked for their reason behind choosing to ride a bicycle on their last trip (n=48). Of those who could have taken other transport, by far the most common reason cyclists chose the bicycle was for exercise.



Out of 48 responses received, 69 percent agreed that the bicycle trip they responded about is the typical kind of trip they take on their bicycle.

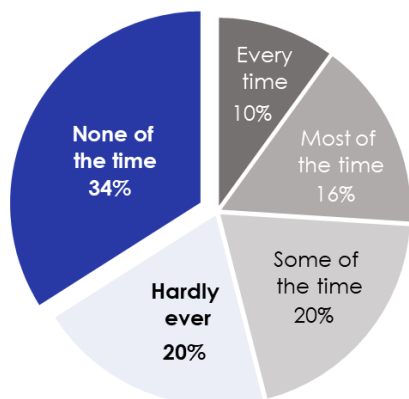
Barriers and Benefits

Among those who did not use their bicycle in the last week prior to the survey, over one-third (35 percent, n=51) of the respondents stated concerns for their personal security and safety as the primary reason.

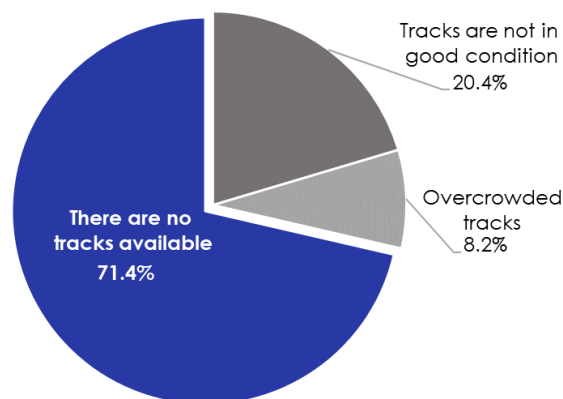


Thirty-four percent of respondents (n=50) mentioned that they did not use cycling tracks while riding a bicycle, with **the primary reason for not using them being that there were no tracks available where the respondents go or want to go (71 percent)**. About 20 percent mentioned that the tracks are not in good condition and 8 percent stated that tracks were overcrowded.

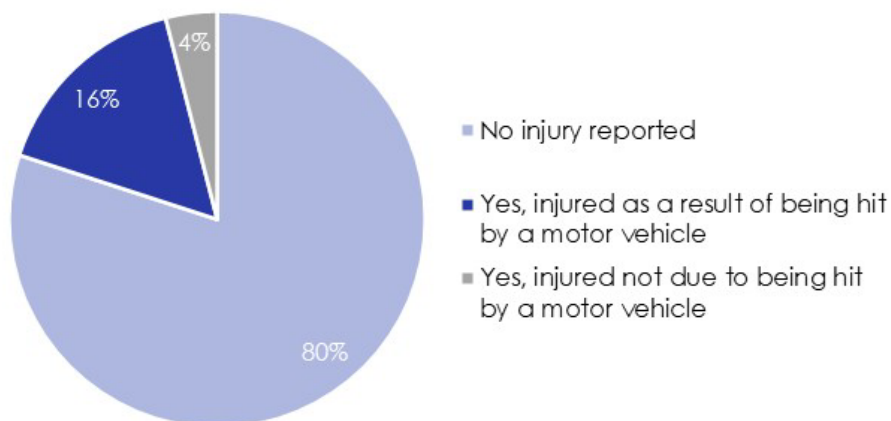
How often do you ride on cycling tracks?
(n=50)



If you do not use the cycling tracks, what is the primary reason why? (n=49)



Out of 51 respondents, **16 percent stated that they were injured as a result of being hit by a motor vehicle in the past two years.**



Out of 49 respondents that stated their personal safety felt threatened during their last trip riding a bicycle, **37 percent identified the cause for feeling threatened as reckless driving by motorcyclists.** Twenty percent stated they felt threatened by too much car traffic, and only 2 percent considered air pollution a threat.

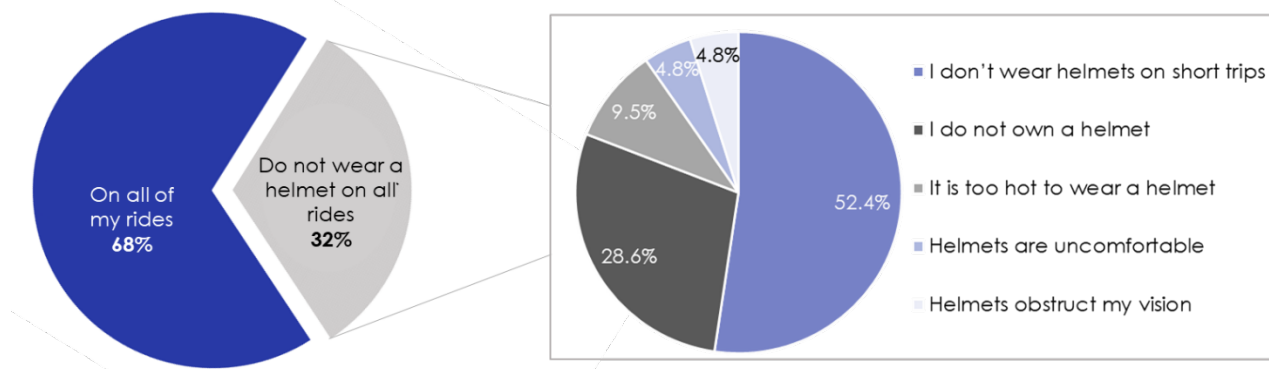


Understanding of Road and Traffic Rules:

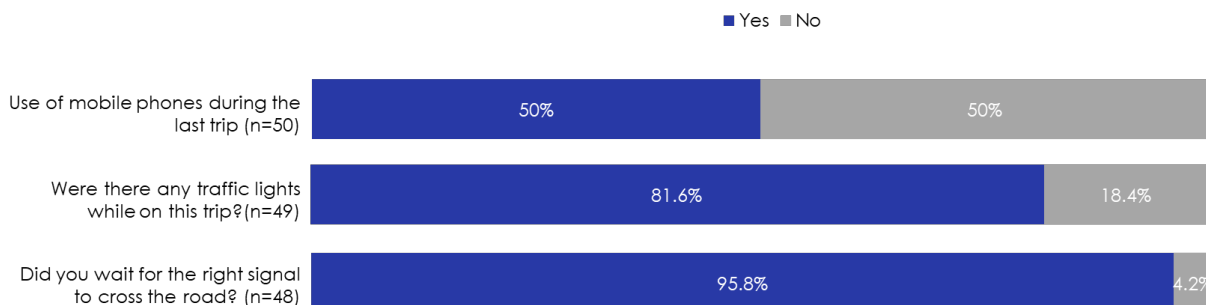
Out of 50 responses, **68 percent used a helmet on all of their rides, while 10 percent did not use a helmet at all or did not have access to one.** The main reason behind not always wearing a helmet was that respondents did not wear helmets on short trips (52 percent).

When riding a bicycle, how often do you wear a helmet (n=50)?

If you do not always wear a helmet, why not (n=21)?



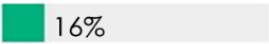
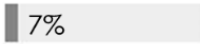
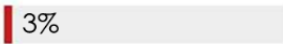
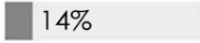
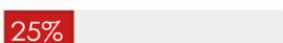
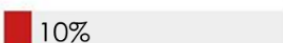
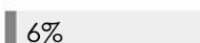
Most respondents followed basic traffic norms during their last ride, though fully half of the sample still used their mobiles on their last cycling trip.



The table below summarizes responses to questions regarding road and traffic rules. Most (97, 73, and 84 percent respectively) respondents knew the correct answers for **zebra crossings** (they are meant for pedestrians crossing the road); **boarding and alighting from a vehicle in motion** (it is prohibited); and could list the rules to follow when **in a road accident that has caused injury to a person**.

On the other hand, only 16 percent of people knew that **they should walk on the right side of a road without a footpath**, and the same percentage knew the rule behind the **broken white lines** (the cyclist/motorcyclist/driver cannot change track). Only 41 percent gave the correct response that the **vehicle should not touch or cross a yellow line**.



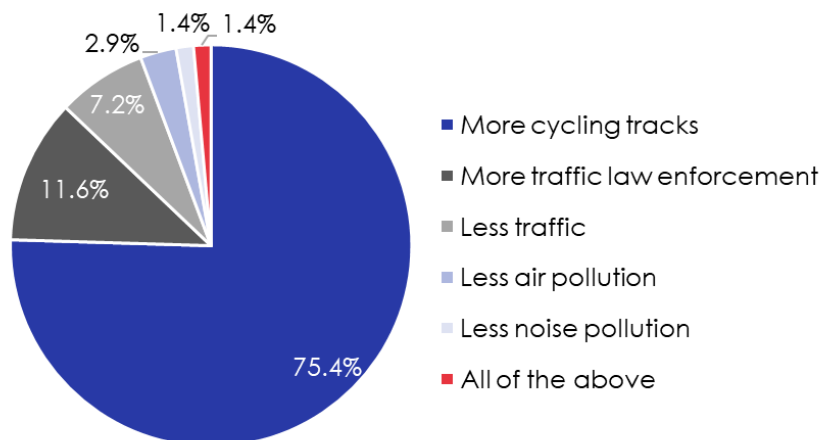
Question	Correct Response	Incorrect Response	Don't know
On a road without a footpath, which side should the pedestrians walk upon (n=69)	 16%	 77%	 7%
Zebra lines are meant for what? (n=70)	 97%	 3%	 -
Rule behind boarding and alighting from a vehicle in motion (n=68)	 73%	 12%	 14%
Rule behind continuous yellow marking on the road. (n=70)	 41%	 25%	 34%
Rule behind broken white lines on the road (n=68)	 16%	 70%	 13%
Understanding about rules to follow when in a road accident that has caused injury to a person (n=67)	 84%	 10%	 6%

Improving Road Safety

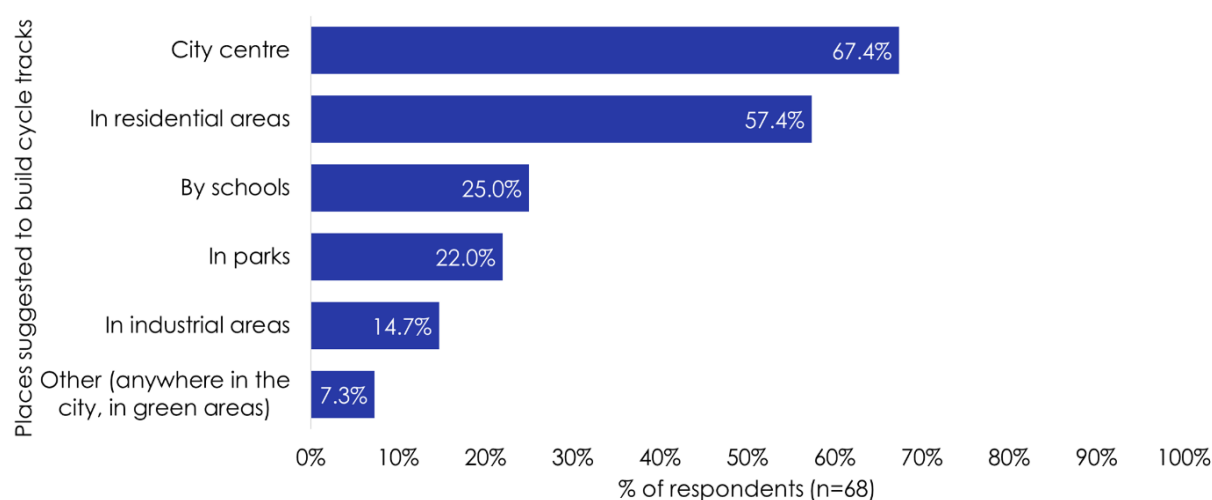
Out of 69 respondents, **only 13 percent were very satisfied with how their community was designed for making bicycling safe, whereas 22 percent were very dissatisfied.** The majority of respondents (28 percent) were somewhat dissatisfied.



When asked what would encourage them to cycle more, most respondents (75 percent; n=69) wanted more cycling tracks in the city. Better traffic law enforcement and less traffic on the roads were the second and third most common responses. Respondents also suggested measures to be adopted by the city to promote cycling and walking such as cycle training workshops, free cycle repair clinics, no car days, and equal streets hours on Sunday.



Sixty-seven percent of respondents wanted cycle tracks to be built in the city centre, 57 percent wanted the cycling tracks in residential areas, 25 percent said that there should be cycling tracks around schools, 22 percent suggested that they be by parks, and 15 percent wanted them in industrial areas.



Discussion

Acknowledging the limitation of this sample, this survey has identified a need of better cyclist infrastructure in the city along with more awareness regarding road and traffic rules. The survey suggests that the majority of respondents who were currently using a bicycle for recreation and fitness could be encouraged towards using a bicycle for their day-to-day commute by providing them with safer road traffic conditions, better biking infrastructure, and greater traffic law enforcement and management. Going a little deeper into the city's landscape and current



context, it was found that 7 percent of all road accident deaths in Indore in 2012 were cyclists.⁴ The survey revealed that personal safety and security was a key reason why many potential cyclists did not choose to cycle on a daily basis, along with a lack of cycling infrastructure, and heavy traffic. Many of the existing cyclists also preferred to use safer and faster modes of transport based on their income levels and availability of resources.

While the survey revealed the concerns of citizens regarding personal safety, it also found that 32 percent of respondents did not use helmets while cycling. It further revealed that of that group, a high proportion did not own a helmet; that percent would likely be higher in a wider sample. While it is the city's responsibility to provide its residents with good cycling infrastructure, citizens need to take ownership by adopting the rules and norms that are formulated for their personal safety.

Though the concerns regarding personal safety and security stand true irrespective of gender, women faced extra issues given the high rate of crime against women. Studies have revealed that dark, uneven and unshaded pathways affect women disproportionately, as they may feel unsafe, are more likely to be harassed, and are often accompanied by dependents. Hence, there is a dire need to improve cycling infrastructure in urban areas.⁵ A study done by OLA Mobility Institute revealed that 95 percent of the female respondents considered environmentally sustainable modes of transport very important. However, only 4 percent of women preferred non-motorized transport which may be due to their perception regarding the street environment, as 69 percent of the women felt that there were insufficient cycle tracks.⁶

While there is momentum in Indore City to promote sustainable and green transport, urban transport investments are largely gender blind with a limited understanding of the relationship between gender and transport inequity. To make cycling infrastructure more inclusive, the city would need to focus on women's safety, comfort, convenience, and affordability in sustainable transport. In order to increase women's cycling shares, the city needs to provide a safe cycling environment, i.e. paved roads with dedicated, well-lit cycle tracks, patrolling in secluded areas, and reduced motor vehicle speed where bicycles share the way with other motor vehicles.

⁴ Ghatge et al. 2014. "Pedalling Towards a Greener India: A Report on Promoting Cycling in the Country." New Delhi, India: The Energy and Resources Institute.
https://www.teriin.org/eventdocs/files/Cycling_Report_LR.pdf.

⁵ Asija, Navdeep K. 2018. "Panchkula: A Safety Analysis Report." SAFETIPIN.
<https://safetipin.com/report/panchkula-report-2018/>.

⁶ Shah, Sonal, and Aishwarya Raman. 2019. "What Do Women and Girls Want From Urban Mobility Systems?" OLA Mobility Institute. https://olawebcdn.com/ola-institute/ola_women_and_mobility.pdf.

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