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Safety of motorised two-wheeler riders in the formal and informal transport sector

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Introduction

- Transport safety issues and the provision of transport are becoming increasingly important social equity issues.
- Growth of cities, largely due to migration, has led to urbanization with high densities of citizens.
- The large number of private, public and informal transport vehicles on the road has led to an increasing number of traffic collisions as vehicles compete in limited, unsafe spaces.
- Public transport systems and road infrastructure have been unable to meet the demands of these developments in cities.

Objective

- To discuss the safety issues of motorised two-wheeler vehicles in the formal and informal transport sector.



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Structure of paper and presentation

- Key points.
- Introduction: stats, safety of motorized two-wheeler vehicles in the formal and informal transport sector.
- Motorised two-wheeler taxis
- Motorised two-wheeler experience in low and middle-income countries
- Evidence on safety issues and possible interventions:
 - i. MTW standards
 - ii. Road design
 - iii. MTW driver training and licensing.
 - iv. Helmet use and protective clothing
- MTW taxi issues ('informal sector')
- Safety standards, recommendations and conclusions.

Key points

- Transport systems and road infrastructure are not meeting the demand of rapidly growing cities which has led to the development of the informal transportation.
- Motorised two-wheeler vehicles are popular in the informal transport sector due to their cheap cost and ability to navigate quickly through congested roads.
- Drivers are more likely to be involved in collisions, injuries and fatalities due to their small size, poor visibility and lack of protection. Their vehicles are often old, unmaintained and lack personal protective equipment.
- Young, male drivers in general are more likely to speed, take risks and not use protective equipment such as helmets.
- Users of informal transport live predominantly in the poorer peripheries of cities, which, compared to more affluent parts, have limited, non-existent, inefficient or unaffordable public transport.
- Informal transport drivers are typically poor, uneducated, young men who due to lack of other employment options move into the informal sector.
- MTW such as motorcycles, mopeds and scooters are a relatively cheap, fast and convenient form of transport that have become popular as private vehicles both in the formal and informal transport sector.

Statistics on Road Traffic Collisions

- In 2010 road transit injuries were the eighth global leading cause of death.¹
- Globally, road transit injuries account for 12% of all disease.²
- There are 78.2 million injuries and 1.3 million annual deaths worldwide due to all vehicle collisions.¹
- 90% of transit collisions occur in LICs and MICs which possess only 50% of motorized vehicles worldwide. 1
- Worldwide, more than 50% of fatalities are pedestrians and drivers of motorized two-wheeler vehicles. 1

Who are the users?

- Normally the poorest citizens who inhabit the peripheries of cities which are served by non-existent, inefficient or unaffordable public transport.

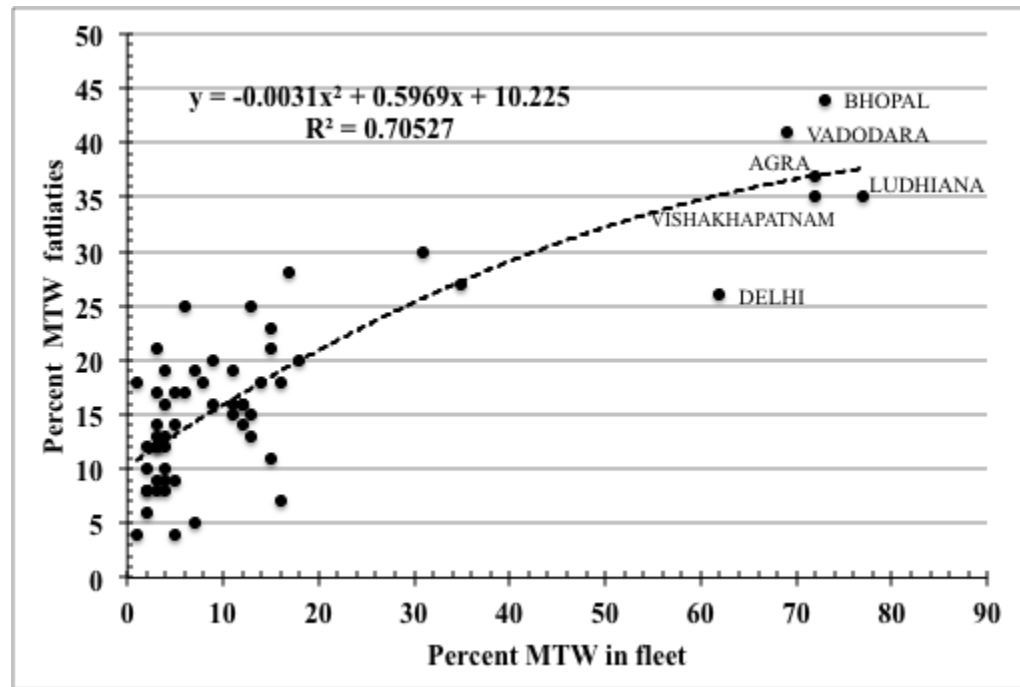


Photo used with permission from Diana Valdes.³⁹

Motorised two-wheeler taxis

- MTW taxis are widely available all over the world as a form of low-cost public transport especially in low and middle-income countries where MTW form a large proportion of the vehicle fleet.
- They also operate in small numbers in few large cities of high-income countries.
- This model is being introduced in many parts of the world. For example, cab aggregator Uber entered the bike taxi market in 2016 in cities around Delhi (India) in 2016 with the launch of UberMOTO

Motorised two-wheeler experience in low and middle-income countries



Percent motorised two-wheeler (MTW) fatalities in OECD countries (no labels) for the years 2001 and 2011 and Indian cities (with labels) in 2013 vs. percent MTW in fleet (Data from references Dinesh Mohan, Tiwari, & Mukherjee, 2016;

Safety issues of motorised-two wheeler vehicles

- Ability to gain high speeds.
- Poor visibility.
- Risk taking behavior of their drivers.
- Road conditions.
- Lack of physical protection.
- Lack of transit laws/enforcement.



Evidence on safety issues and possible interventions

- i. MTW standards
- ii. Road design
- iii. MTW driver training and licensing.
- iv. Helmet use and protective clothing



Poor visibility

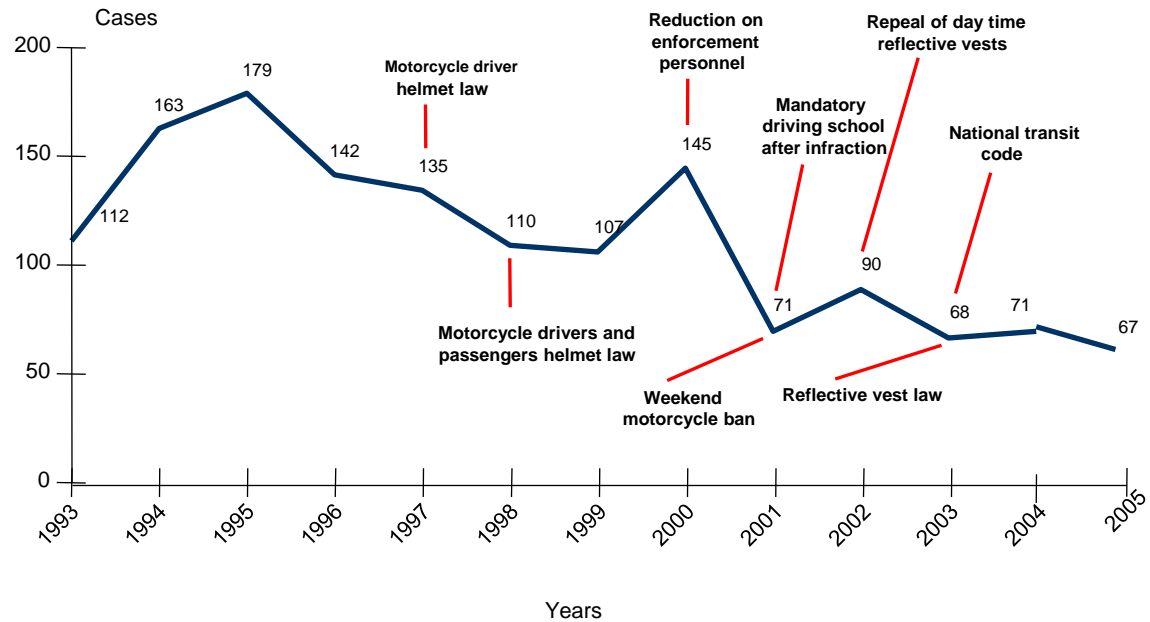
Safety issue:

- Small vehicles that weave around cars (enter blind spots more easily).

Interventions and their respective reduction in collision risks:

- Reflective or high visibility clothing compared to none (37%),
- White-helmet instead of a black helmet (24%)
- Light-coloured helmet in place of a dark-coloured helmet (19%)
- Daytime headlight use (27%).¹⁰

Motorcyclist deaths by traffic injuries in Cali 1993 - 2005



Source: Fatal injury surveillance system, Cali
Prepared by Alvaro Sanchez O. CISALVA Institute- Universidad del Valle, Colombia.

Motorised two-wheeler taxi issues ('informal sector')

- *The informal transport sector is both appreciated and under-valued by government and traffic officials. Many see its benefits in the provision of a needed service which they are unable to provide, while others see it as a dangerous, illegitimate sector that creates social problems.*
- *If informal transport was prohibited without the provision of adequate public transport, it would have detrimental effects on the mobility of the poorest citizens, their subsequent economic productivity and livelihoods.*
- *Many of these “unregulated” informal transport services are “regulated” unofficially. Normally they belong to a group, which has a leader. They earn minimum wage or less and are vulnerable to exploitation by their “leaders” of the informal transport sector.*

Pros and Cons of Regulating the Informal Transport

PROS	CONS
Prevent transit collisions and the subsequent injuries and fatalities.	Suppresses competition.
Reduces over-competition (over-supply causes fierce competition).	Adds administrative and overhead costs.
Promotes fair pricing.	Presupposes institutional capacity.
Sets minimal services (define where and when the drivers operate, ³⁸ maximum vehicle passenger capacity and safety equipment), driver fitness (min and max age and max number of previous accidents and infractions), vehicle requirements (periodic roadworthiness certificates) and identity standards .	Poses potential cognitive barriers to undereducated drivers. Entry requirements mean that many previously eligible drivers will no longer have work.
Protects operators' rights and interests.	Invites abuse among underpaid enforcement officers and civil servants.

Table adapted from: Cervero R, United Nations Centre for Human Settlements (Habitat). Informal Transport in the Developing World. Nairobi: United Nations Centre for Human Settlements (Habitat); 2000.

Safety standards, recommendations and conclusions.

- The provision of transport is an often unrecognised, important social equity issue affecting the poorest citizens in the poorest regions of the world.
- Informal transport drivers of motorised two-wheeler vehicles are typically poor, uneducated, young men who due to lack of other employment options move into the informal sector.
- Providers and users of informal transport live predominantly in the poorer peripheries of cities, which, compared to more affluent parts, have limited, non-existent, inefficient or unaffordable public transport.
- Most of the safety issues discussed in this paper are predictable and preventable.

Not to be forgotten....

- Finally, can access to a good and efficient public transportation be considered a social equity issue? A former mayor from a LMIC city with successful transport policies stated that when you invest more on public transportation, citizens will choose the formal over the informal system, so the latter does not need to be regulated and generate formal opportunities to work.