Barriers for current and potential cyclists in a starter cycling country: the case of Malta

Cycling and Trauma workshop
Cycling and Society Research Group
23 March 2022

Suzanne Maas, Thérèse Bajada
Institute for Climate Change and Sustainable Development
University of Malta
Introduction

- ‘Starter’ cycling cities are characterised by a low cycling modal share and limited cycling infrastructure.
- Malta, as an urbanized island state, can be characterised as a ‘starter’ cycling city, with a low cycling modal share (<1%).
- (Perceived) road safety is one of the main barriers for further uptake of cycling.
  (Félix et al., 2019; Maas & Attard, 2020)

In recent years however, the modal share in Malta is slowly growing, a (draft) national cycling strategy was published (in 2018), two bicycle sharing schemes were introduced, and there has been some investment in cycling infrastructure and the promotion of cycling.
Research aim

To understand the barriers for current and potential cyclists in Malta, with a focus on the impact of (perceived) road safety and experienced trauma on cycling behaviour.
Making cycling safe and convenient is essential to promote cycling as a mode of transport (Fraser & Lock, 2011; Pucher & Buehler, 2008); road safety is one of the main barriers to more cycling.

The risk of fatality for road users involved in a collision with a vehicle increases exponentially with increase in speed (LaPlante & McCann, 2008; Mütze, 2018).

Cycling standards and guidelines from different countries propose increased separation and protection of cyclists on roads with higher speed limits, to promote road safety and reduce the risk of conflict (e.g. CROW Design Manual for Bicycle Traffic, 2016; TfL London Cycling Design Standards, 2014).

A high level form of protection for cyclists is enshrining cyclists’ vulnerability and safety in traffic legislation, through the concept of presumed liability (Pucher & Buehler, 2008).

While helmets and other personal protection devices may increase safety on a personal level, cycling safety on a societal level is created by creating safe infrastructure and making cycling as simple, carefree and normal as possible, so that more people start doing it (Reynolds et al., 2009), therewith normalising the image of cycling, by “increasing the number and diversity of cycling role models visible” (Goodman et al., 2014), and through “safety in numbers” (Elvik, 2009).
Methodology

Qualit-quantit analysis, utilising three datasets:

1. Road injury accident data over a 5-year period (2016-2021): descriptive statistics (SPSS/R) and spatial analysis (QGIS).

2. (Draft) national cycling strategy: thematic analysis and content analysis.

3. Online survey with members of the national bicycle advocacy group Rota: multivariate analysis and thematic analysis.
Road injury accident data

Accidents involving cyclists (2016-2018) in the Maltese Islands

Two visual hotspots of (grievous) accidents:
1. Harbour area around Valletta
2. Area around Mosta and Mdina
Road injury accident data

Dataset: all reported accidents involving a cyclist, 2016-2021 (n=191)

Accident characteristics

Injury type

Vehicle type

District

- Slight
- Grievous
- Fatal
Road injury accident data

Dataset: all reported accidents involving a cyclist, 2016-2021 (n=191)

Personal characteristics

Gender

- Female: 8.4%
- Male: 91.6%

Age

- 0-17: 10%
- 18-20: 5%
- 21-30: 15%
- 31-40: 25%
- 41-50: 10%
- 51-60: 5%
- 61-70: 3%
- 70+: 1%
Road injury accident data

Dataset: all reported accidents involving a cyclist, 2016-2021 (n=191)

Temporal characteristics

Quarter

Day of the week

Time of day
Further planned analysis of accident dataset:

● Spatio-temporal analysis of accident characteristics (accident location, type of injury, time of day, weekday, year), combined with roads classification dataset using GIS.

● Correlation analysis of personal and accident characteristics (age, gender, type of injury, time of day, day of the week, time of year) using SPSS / R.
(Draft) National Cycling Strategy

Thematic analysis and content analysis:

1. To determine relevant terms and concepts used in the national cycling strategy, in terms of cycling, road safety and accidents,

2. To analyse the frequency of the use of these terms and concepts used, to understand the focus (and potential blind spots) of the document.
(Draft) National Cycling Strategy

Predefined themes:
(chosen for their direct relation to road safety and accidents)

- Safety and security
- Accidents
- Type of infrastructure
- Personal safety devices (helmets, vests)
- Social norm/culture

Emergent themes:
(emerging from thematic analysis of the document)

- Sustainable transport
- Ease of use/cycle friendly
- Commuting
- Travel choices
- Time
- Convenience
- Health
- Pollution
- Modal shift
- Needs/Data
- Concerns
- Stakeholders
- Funding/Investment
- Promotion/education
- Tourism
- Policy/guidelines
Predefined themes:

- Safety and security
- Safety in numbers
- Accidents
- Type of infrastructure
- Personal safety devices (helmets, vests)
- Social norm/culture
Emergent themes:
- Sustainable transport
- Ease of use/cycle friendly
- Commuting
- Travel choices
- Time
- Convenience
- Health
- Pollution
- Modal shift
- Needs/Data
- Concerns
- Stakeholders
- Funding/Investment
- Promotion/education
- Tourism
- Policy/guidelines
Survey with cyclists

Survey with members of the national bicycle advocacy group Rota, to understand cycling behaviour, perception of road safety and experience with trauma.

11 survey questions through online, self-administered questionnaire:

Demographics and cycling habits:
- Age
- Gender
- Cycling experience
- Cycling purpose(s)
- Cyclist type (Geller, 2006)
- Cycling locations

Cycling experiences:
- Perceived road safety
- Perceived support from family/friends
- Experience with accident(s)
- Experience with risky situations
- Cycling behaviour, adaptations to risk
Survey with cyclists

Please have a look at the draft survey here:

https://forms.gle/BZCtXefAozomAN3L6

We welcome your feedback and suggestions!
Expected outcomes

- The injury accident data highlights issues with road safety, one of the main barriers to promote more cycling.
- The limited scope and lack of implementation of the cycling strategy is a barrier for the effective promotion of cycling.
- Existing cyclists are determined in using the bicycle as their (main) mode of transport, but the barriers prevent wider uptake and promotion.

To be refined and elaborated upon, once further analysis has taken place.
Contact details

Suzanne Maas  
B.Sc., M.Sc., Ph.D. (Melit.)  
suzanne.maas@um.edu.mt

Thérèse Bajada  
B.A. (Hons), M.A., Ph.D., F.R.G.S.  
therese.bajada@um.edu.mt

Institute for Climate Change and Sustainable Development
University of Malta  
www.um.edu.mt/iccsd
References