



Seat belt and child restraint use in a developing country metropolitan city

Thomas Kolawole Ojo

Department of Geography and Regional Planning, Faculty of Social Sciences, College of Humanities and Legal Studies, University of Cape Coast, Ghana¹



ARTICLE INFO

Keywords:

Seat belt
Child restraint
Gender
Vehicle type
Vehicle usage

ABSTRACT

Seat belt and child restraint use is noted to be poor in developing countries such as Ghana. An unobstructive observational survey guided by the Theory of Planned Behaviour was therefore conducted to assess seat belt and child restraint use in the Cape Coast Metropolis, Ghana. The observational survey was carried out at the entrances of four nursery schools in medium and high class residential areas in the Metropolis to determine seat belt use by drivers and accompanied child being transported/dropped off in school. The results revealed that a total of 1922 vehicles comprising 826(43.0%) cars, 350(18.2%) SUV, 644(33.5%) taxis and 102(5.3%) mini buses with 3844 vehicle occupants comprising 1922 drivers and child apiece were successively observed. The majority of the drivers (53.1%) did not use the seat belt with 13.2% of the children been restrained. The gender of the driver has a relationship with the seat belt use. The vehicle type has a relationship with the child restraint use and the gender of the driver has a significant relationship with child restraint use. The enforcement of the Road Traffic Act 2004 and Road Traffic Regulation 2180 by the officials of Motor Transport and Traffic Department(MTTD) of the Ghana Police Service in collaboration with National Road Safety Commission (NRSC) can establish social norms that may have a greater potential to enhance seat belt and child restraint use in the Metropolis.

1. Introduction

Globally, Road Traffic Crash (RTC) is a leading cause of death killing more than 1.2million people with half of them aged between 15–44 years old. RTCs further maim more than 50 million injured patients annually (Peden et al., 2004). This global burden of Road-Traffic Deaths and Injuries (RTD&Is) is disproportionately borne by countries that can least afford to meet the health service, economic, and societal challenges posed (Ameratunga et al., 2006). Hence, RTD&Is are a major cause of misery in dev WHO, 2009eloping countries (Nantulya and Reich, 2002; Peden et al., 2004; Lagarde, 2007). The fast increasing rate of motorization and the upsurge in the number of vehicles per inhabitant in developing countries may even exacerbate the occurrence of RTDIs by 80% from 2000 to 2020 (Murray and Lopez, 1996; Aaron et al., 1999).

Globally, the estimated economic cost of RTCs to governments is \$518 billion dollars (Abay et al., 2013). For instance, the Russian Federation lost the equivalent of 2.5% of its GDP in 2008 (Ma et al., 2012). Annually, Ghana also loses about 1.7% of its Gross Domestic Product (GDP), which is over \$230 million dollars besides the loss of lives to RTCs (Afukaar et al., 2003).

Available statistics in Ghana reveals that 53% of the fatalities involved occupants of vehicles with the remaining being pedestrians,

cyclists and motorcyclists (NRSC, 2012, 2013, 2014; Thompson, 2012). Thus, many commuters never return home alive, end up being hospitalized for months/years, and sometimes suffer long-term disability (Ackaah and Adonteng, 2011; Yankson et al., 2010). For every driver killed in an RTC, more than three passengers are also killed (Ackaah and Adonteng 2011).

One-fifth of RTDs involve children with an estimated 262,000 killed and 10 million injured (Peden et al., 2008). Globally, RTIs ranked as the third killer of children > 5 years old but ranked tenth in relation to RTIs causing death for children aged 1–4 years. It is projected that by 2020, RTIs will rank as the number one killer and cause of disability for all children > 4 years old (Mathers and Loncar, 2005; Toroyan and Peden, 2007).

RTCs involving children cause significant harm and damage physically, emotionally and often result in serious but unnecessary damage (Sam, 2015). The unique developmental characteristics of children contribute to their vulnerability to RTIs (Toroyan and Peden, 2007). Besides their “small and still developing” bodies are less resistant to RTC forces. The disproportionate nature of large head size predisposes them to head injuries given their higher center of gravity (Will, 2011). These head and limb injuries often result in death or long-term disability. Every parents/guardian wants to keep their wards safe and secure and assist them to live to their fullest potential. With this in

¹ E-mail addresses: ojothomas@gmail.com, thomas.ojo@ucc.edu.gh.

¹ Web page: <https://blogs.ucc.edu.gh/tojo>

mind, preventing potential causes of child injury like RTCs is a novel step to meet this goal (Abbas et al., 2011).

Improving vehicle crash safety can help reduce RTDIs. The installation and proper use of seat belts or child restraints (such as child safety seats, booster seats, and seat belts) is the most important RTC safety innovation aimed at reducing RTDIs by 45%–60% (Durbin et al., 2005; Elliott et al., 2006; Bandstra et al., 2009; FIA, 2009; Sangowawa et al., 2010; Popoola et al., 2013; Chen et al., 2014). The use of seat belts or child restraint prevents the vehicle occupants from hitting the interior parts of the vehicle or being ejected from the vehicle (Abbas et al., 2011).

The Theory of Planned Behaviour (TPB) as a theoretical framework has been adapted for understanding and promoting seat belt and child restraint use (Trifiletti et al., 2005; Bruce et al., 2011; Trifiletti et al., 2005; Armitage and Connor, 2001). A central factor in the theory is the individual's intention to perform a given behaviour. These intentions are assumed to capture the motivational factors that influence behaviour; they are indications of how hard people are willing to try, of how much of an effort of an effort they are planning to exert in order to perform the behaviour.

TPD emphasises three conceptually independent determinants of intention. The first is the *attitude toward the behaviour* and refers to the degree to which a person has a favourable or unfavourable appraisal of the behaviour in question. Certain socio-demographic characteristics of vehicle occupants (such as gender, age, educational level and occupational status) attract certain attitudes. For instance, female drivers are more likely to wear seatbelts and have restraint child passenger because they are risk-averse.

The second predictor is a social factor termed *subjective norm* which refers to the perceived social pressure to perform or not to perform the behaviour. The Road Traffic Act (2004) and the Road Traffic Regulation (2012) stipulate the compulsory use of seat belt by all vehicle occupants in Ghana. But it is assumed that the law only mandates drivers to use the seat belts. This is compounded by a segregated enforcement by the officials of the Motor Transport and Traffic Department (MTTD) of the Ghana Police Service as only drivers are checked. The law also mandates drivers and older passengers (> 18 years) to ensure seat belt/child restraint use by younger passengers (< 18 years) and offenders are to be prosecuted. This subjective norm is supposed to attract a high use of seat belt and child restraints.

The third antecedent of intention is the degree of perceived behavioural control. This refers to the perceived ease or difficulty of performing the behaviour. It is assumed to reflect past experiences as well as the anticipated impediments and obstacles (Abane, 2011). In fact, perceived behavioural control manifests the difficulty and controllability to execute behaviour. Private drivers are also more likely to use seat belt than commercial drivers because of the perceived behavioural control associated challenges with the nature of their work such as dropping and picking of passengers (Edunyah and Simons, 2014; Sam, 2015). Furthermore, the usage of child restraint is affected by potentially confounding variables including seating position, driver status, vehicle type and usage (Elliott et al., 2006; Durbin et al., 2005). Drivers consider the rear seat as the safest place based on the general attitude of children (Monteiro et al., 2013). The rear seat is recommended for the optimal protection of children in an automobile for all children < 13 years of age and the use of age-appropriate restraints, including child safety seats and belt-positioning booster seats (Durbin et al., 2005; Elliott et al., 2006; Monteiro et al., 2011).

There is a phenomenal increase in vehicle ownership by medium and high-income areas' residents in Ghana. These residents use their vehicles to transport or drop their wards in schools. Residents without personal vehicles rely on commercial taxis, minibuses, and company or government vehicles to transport or drop their wards in schools. Though there are other residents who walk or carry their wards to schools.

Therefore, this study leans on the researches of Afukaar et al.

(2010), Ekundah and Simons (2014) and Sam (2015) to further provide empirical evidence on the use of seatbelt and child restraint which have been found to be low in, Kumasi, Tarkwa, and Accra respectively. Based on these previous studies conducted in Ghana the following research questions were formulated:

- 1 What is the rate of driver's seatbelt and child restraint usage in the Metropolis in spite of the Road Traffic Act 2012 and Road Traffic Regulation 2180?
- 2 What factors of behavioural attitudes (gender) influence the seatbelt usage?
- 3 How does the perceived behavioural control (child seating position and the vehicle type and use) influence the use of child restraint? and
- 4 Does behavioural attitude (gender) of the driver influence the use of child restraint?

The study seeks to provide an empirical evidence on the use of seat belt and child restraint in a Ghanaian metropolitan city using the Theory of Planned Behaviour framework. This will add to the literature from the context of a metropolis in the developing world. Moreover, the study will also offer policy implications meant for the relevant enforcement agencies such as the National Road Safety Commission (NRSC) and the officials of the Motor Transport and Traffic Department (MTTD) of the Ghana Police Service to create social norm to increase the use of seat belt and child restraint in the Metropolis.

The study is divided into six sections. The section following the introduction presents the theoretical framework. The next section contains the data and methods. The fourth section is on the results. The discussion of the study is captured in section five. The last section contains the conclusion and policy implication.

2. Theoretical framework

2.1. Theory of planned behaviour

The Theory of Planned Behaviour (TPB) is a theoretical framework used in public health promotion research to help understand human social behaviour (Trifiletti et al., 2005; Armitage and Connor, 2001). TPB has been adapted as a successful framework for promoting seat belt and child restraints studies (Bruce et al., 2011; Trifiletti et al., 2005; Armitage and Connor, 2001).

TPB measures an individual's attitude towards the specific behaviour being observed, along with the subjective norms surrounding the behaviour and the individual's perceived control connected to the behaviour (Figure 1) (Ajzen, 1991). Behavioural attitude, subjective norms and perceived behavioural control influence intention which in turn helps to understand factors influencing the use of seatbelts and child restraint.

TPD has been challenged by the argument that human behaviour is habitual or automatic (Aarts and Dijksterhuis, 2000). Measures of past behaviour have played an important role in attempts to test the validity of this argument. If a behaviour is always reasoned, then the frequency of prior behaviour should have an indirect link to later behaviour since its effects is mediated by intention and perceived behavioural control. However, TPD can help understand seat belt and child restraint use in a metropolis.

3. Data and methods

3.1. Research design

The study adopts a naturalistic exploratory observational design of vehicle occupants (driver and a child) being transported or dropped at the entrances of four private nursery schools in the Cape Coast Metropolis. Two research assistants were trained in a classroom

Download English Version:

<https://daneshyari.com/en/article/6965223>

Download Persian Version:

<https://daneshyari.com/article/6965223>

[Daneshyari.com](https://daneshyari.com)