



# Analysis of the influences of attitudinal factors on car ownership decisions among urban young adults in a developing country like India



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## ABSTRACT

Young adults' travel behaviour is highly volatile and sensitive to the changes in socio-demographics, land use, and transportation systems. Thus, young adults' mobility-related decisions, especially car ownership, are relevant to future transportation planning and policy for any country. Developing countries like India has a significant share of young adults, but case studies exploring the factors influencing the future car ownership decisions of young populace are very limited. Particularly, studies examining the influences of attitudinal factors on young adults' car ownership decision are very few. The present study contributes to the discussion on young adults' car ownership behaviour by presenting the results of an attitudinal survey conducted in Bangalore city, India. The survey gathered individuals' perception about status, peer influence, transport policies, car ownership, etc., apart from the usual set of personal and household socio-demographic information. Descriptive analysis followed by Structural Equation Modelling (SEM) is employed for exploring the car ownership decisions of young adults. The analysis suggest that those who do not intend to buy a car in next 5 years are significantly more likely to agree that an individual does not have to buy a car if he/she gets job near home, if public transport is good, if bicycle infrastructure is good, and also that people do not have to buy car if car ownership and other taxes are high. The statistical model reveals that individuals who come from car owning families are more likely to buy a car than who do not, and the effect is mediated by the factor related to comfort. That is the 'club effect' of car ownership appears to be due to the comfort-oriented outlook of individuals belonging to car owning families. Further, young adults who have a pro-sustainability mentality are less likely to own a car in future.

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## 1. Introduction

In many cities, transportation planners have been striving to manage private vehicle (especially car) travel demand. Increased dependency on the car can lead to far-flung issues such as pollution, congestion, accidents, and transport-related inequity. Management of car ownership and use will be a challenge for most of the developing economies as there is (generally) a positive link between GDP and car ownership (Dargay, Gately, & Sommer, 2007) and an association between

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car use and environmental issues (Chapman, 2007). Projection indicates that, by 2025, China, with overall annual GDP growth rate of 8% will be second-largest economy, followed by India with annual GDP growth rate of 7% (Kalmbach, Bernhart, Kleimann, & Hoffmann, 2011). In the period to 2025, car ownership in China will grow 36% annually, 14% in India, and nearly 1% in North America and Europe (Kalmbach et al., 2011). From the perspective of sustainable transportation planning, understanding the future car ownership behaviour of individuals will be highly important for developing countries. Among the individuals in a nation, the travel behaviour (in general) of young adults (aged between 20–30 years) deserves special attention as this populace is more mobile than other age groups; and, they inherit their travel behaviour with age but alter it over time (as it is not deep-rooted) in responses to the changes in society, economy, and transportation systems (Kuhnimhof, Armoogum et al., 2012). Hence from planning and policy side, an investigation into the car ownership behaviour of young adults in developing countries merit attention at a time when these countries are witnessing rapid social, economic, and transportation-related alterations.

## 2. Background & motivation

### 2.1. Evolution of young adults' car travel behaviour around the world

Travel behaviour of young adults has been a topic of scientific discourse and the studies on it indicate a significant change in the travel behaviour of young adults in developed nations (Kuhnimhof, Armoogum et al., 2012). Noteworthy among the findings is the decreasing preference for owning a car and using it for travelling (Noble, 2005; Nordbakke & Ruud, 2005). Kuhnimhof, Buehler, and Dargay (2011) noted decreasing car availability, reduction in car mileage, increasing use of other modes of travel, and growing multimodal travel practices among young adults (age 20–29) in Germany and Britain. A remarkable finding of their analysis is that men are bringing down their car travel more than women. Ruud and Nordbakke (2005) also observed a decline in driving license ownership and car access among young adults in Norway and Sweden. The authors point out that the share of public transport use among young adults is increasing and at the same time they are also very critical of the quality of public transport. There has been a fall in the share of young adults who hold a license to drive in Great Britain since 1993, as evident from the study of Noble (2005). A notable finding of this analysis is that license holding among women is increasing while it is falling among men. Kuhnimhof, Armoogum et al. (2012) compared the travel behaviour of young adults in countries France, Germany, Great Britain, Norway, the U.S., and Japan. It was seen that driving license ownership, household car ownership, and average daily car travel distance had decreased in most study countries, and most significantly among men. It was also found that in most of the study countries the decrease in car travel was either partially or fully compensated by the increased use of other transport modes. Kuhnimhof, Buehler, Wirtz, and Kalinowska (2012) explored the travel trends among young adults in Germany. They identified that the reasons for less car use among young Germans were increasing multimodal travel among car owners and the decreasing gender gap with respect to car use.

### 2.2. Factors shaping young adults' travel behaviour

Young adults' mobility-related decisions are influenced by several factors. Driving behaviour, especially going fast, is found to be due to the exhilaration seeking attitude of young adults (Wright & Egan, 2000). Lim and Chi (2013) found that relative to a handheld cell phone ban for all drives, total cell phone ban targeting only young drivers was not effective in reducing non-alcohol-related fatal crashes. Delbosc and Currie (2014) administered an online survey for understanding the attitudes among young Australians towards car ownership and licensing. The analysis found that car was not a status symbol among young Australians, and electronic communications and environmental concerns were not influencing their travel decisions. Influence of household structure on Norwegian adolescents' car use for leisure activities was investigated by Bjerkan and Nordtømme (2014). After controlling for several variables, the authors found that car was a less preferred mode of travel for the adolescents in single-parent households when compared to the adolescents in dual-parent households. Sigurdardottir, Kaplan, and Møller (2014) applied a thematic narrative analysis for investigating the motivation behind intended time-frame for driving license and car ownership among Danish adolescents. The analysis suggested the existence of three groups: one having car-oriented life style and car-oriented social networks and associate cars with high relational values; the second group, viewing car ownership as a barrier and conceiving car-oriented lifestyle only in the long-term; the third group, having low interest in cars and imagining a cycling-oriented future. Kaplan, e Silva, and Di Ciommo (2014) explored the effect of price and travel mode fairness and spatial equity in transit provision on the habitual transit use of young people in Copenhagen and Lisbon. An important finding of the analysis was those who are in their twenties are concerned about price and travel mode fairness and the spatial equity between different locations. Simons et al. (2014) conducted a focus group analysis for identifying the factors influencing the mode choice of students and young working adults (age 18–25). The main factors observed from the study were related to person, social influence, and physical environment. Steg (2005), in their analysis on motives of car use from Groningen and Rotterdam cities of the Netherlands, found that young respondents (age  $\leq 25$ ) valued symbolic and affective functions of car use more strongly than the respondents in other age groups did. The effects of travel demand management policies on the mode choice of students, teaching, and administrative staffs in University of Trieste were investigated by Rotaris and Danielis (2014). The study found differences

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