

Role of Nudge Theory in the Adoption of EVs: Evidence from India

Monika Jain

Birla Institute of Management Technology, Greater Noida, India

Abstract. Air pollution is a serious problem in India. The situation becomes more acute in winters when a smoky brown haze blankets India's northern plains and the national capital, New Delhi. As the severity increases, the government restricts construction activities and even closes schools to protect children. India is now the world's second most polluted country, and according to the WHO¹, 14 of the world's 20 most polluted cities are located in India. The Indian automobile industry is the country's third-highest emitter of greenhouse gases. Electric Vehicles (EVs) offer a promising solution that can support efforts to overcome the issue of climate change and help reduce pollution levels. Though EV sales are rising, India still has a long way to go. India needs to catch up with other countries in EV adoption. Nudges by the government are paramount to accelerate EV adoption in India.

Keywords: electric vehicles, air pollution, nudge, pollution, greenhouse gases.

1. Introduction

A toxic haze hangs heavily over north India each year as winter sets in, affecting the health of millions of people. The AQI (Air quality index) in Delhi NCR has been consistently deteriorating. According to ANI², the Air Quality Index on November 4, 2022, stood at 529 in Noida (Uttar Pradesh) in the "Severe" category, 478 in Gurugram (Haryana) in the "Severe" category, and 534 in Dhirpur in the "Severe" category. The total AQI in Delhi also stood at 431, putting it in the "Severe" category. The "Severe" air quality category leads to public health warnings of crisis and risks to the respiratory system.

Delhi government decided to suspend the elementary schools due to soaring air pollution levels in the city. Chief Minister Arvind Kejriwal announced this in a press conference on Friday, November 4, 2022. He said, "unless the air quality

-
1. <https://www.financialexpress.com/auto/car-news/vehicle-sharing-the-solution-to-hazardous-air-pollution-in-india/1494231/>
 2. <https://zeenews.india.com/india/live-updates/delhi-ncr-pollution-live-updates-schools-closed-due-to-pollution-in-delhi-noida-ghaziabad-check-latest-updates-here-2531292>

This shortened version of the article is for promotional purposes on publicly accessible databases.

Readers who wish to obtain the full text version of the article can order it via the url

<https://www.neilsonjournals.com/JOBE/abstractjobe15nudge.html>

Any enquiries, please contact the Publishing Editor, Peter Neilson pneilson@neilsonjournals.com

© NeilsonJournals Publishing 2022.

improves, schools in the national capital area will stay closed and all outdoor activities for all students above Class 5 will also be closed”. He added that the Delhi government was also mulling over implementing the odd-even scheme where one-day vehicle numbers ending with odd numbers will ply and the following day vehicle numbers ending with even numbers will ply. Additionally, pollution-control measures, such as mechanical sweeping, water spraying, limiting vehicles transporting non-essential products, restricting all construction activities etc., will continue.

This grave situation is not just limited to India’s capital city but is prevalent in others parts of the country. India’s 1.4 billion population is exposed to hazardous levels of ambient PM 2.5—delicate particulate matter released by industries and automobiles, among other sources. According to the European Union’s Joint Research Centre³, India is the third largest carbon emitter in the world, next to the United States & China. Not only this, according to the World Health Organization (WHO⁴), 14 of the world’s 20 most polluted cities are located in India. Air pollution reduces average Indian life expectancy by 6.3 years compared to what it would be if the WHO recommendation were fulfilled and by 3.4 years compared to what it would be if pollution were lowered to meet the country’s national standard.

2. Need

The Indian automobile sector is the fifth largest in the world and is anticipated to become the third largest by 2030, accounting for over 50% of India’s oil demand⁵. Vehicular emissions are one of the major sources of air pollution in India. India’s automobile industry is also the third highest emitter of greenhouse gases (GHG), accounting for 14% of energy-related CO₂ emissions⁶. Since 1990, these emissions have more than quadrupled, and with India’s urban population predicted to treble by 2050, they are set to rise much higher. As India’s economy grows, emissions from this industry are also projected to increase further. According to the Ministry of Electronics & Information Technology, Government of India, over 400 million customers will need mobility solutions by 2030. Maintaining the current trajectory of an ever-increasing number of vehicles on the road that uses expensive imported fuel and emits high levels of air pollution is challenging. The country requires a transportation revolution, and better vehicles will all be part of this transportation revolution. Most of these “better vehicles” will undoubtedly be electric, and switching to electric cars may save

3. https://joint-research-centre.ec.europa.eu/jrc-news/global-co2-emissions-rebound-2021-after-temporary-reduction-during-covid19-lockdown-2022-10-14_en

4. <https://www.financialexpress.com/auto/car-news/vehicle-sharing-the-solution-to-hazardous-air-pollution-in-india/1494231/>

5. <https://www.investindia.gov.in/sector/automobile>

6. <https://www.carbonbrief.org/the-carbon-brief-profile-india/>