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Electric Mobility in Sweden: Analyzing Consumer Behavior and Regional Spread of BEVs

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Executive Summary

This study examines the adoption of Battery Electric Vehicles (BEVs) in Sweden, focusing on socio-economic factors and consumer behavior from 2020 to 2024. Using official data, it reveals an uneven geographic spread, with BEVs concentrated in metropolitan areas and limited in rural regions. A decline in private leasing, driven by economic challenges, particularly impacts younger, lower-income groups. These findings highlight the need for targeted policies to address regional disparities and economic vulnerabilities.

1 Introduction

Since 2020, the sales of Battery Electric Vehicles (BEVs) in Sweden have grown rapidly, with batteries becoming the predominant energy source for newly registered vehicles by 2022. Despite this impressive growth, the rate of new BEV sales slowed in 2023, and sales figures for 2024 have shown a decline compared to 2023. This deceleration raises pertinent questions about the sustainability of BEV adoption rates and the characteristics of consumer groups driving this transition.

In this study, we aim to identify the primary consumer segments contributing to BEV adoption in Sweden and examine how the geographic distribution of these vehicles has evolved over time. We explore the purchasing and leasing patterns of BEVs, offering insights into the evolution of electric mobility in the context of socio-economic factors. The study aims to further develop previous research findings on the driving mechanisms behind households' consumption of new cars and BEVs.

2 Data and method

The study is based on Sweden's official vehicle statistics and official household data. By matching data on households (approximately 4.5 million households) with data on BEVs (approximately 300,000), we can analyze which socio-economic factors are decisive for whether a household chooses to acquire an electric vehicle and whether they opt to purchase or lease the car.

3 Results

The Swedish fleet of road vehicles is currently undergoing a transition from predominantly using fossil fuels to increasingly relying on electricity as a source of propulsion. By the end of 2023, BEVs were present in all municipalities across Sweden. However, the distribution of BEVs remains uneven between urban and rural areas.

Factors such as higher income, living in a house or condominium, and households with a predominance of men are positively associated with both buying and leasing. These households are largely located in metropolitan municipalities, though not typically in the central part of the municipality. Both households that buy and those that lease often already own a car. There is also a tendency for the oldest car owner in the household to be somewhat younger.

There is no observable secondary market spread from these metropolitan areas to less densely populated regions. This can be largely attributed to the age profile of the BEVs, which are still relatively new. Consequently, these vehicles have not yet permeated into municipalities with an older vehicle fleet.

The observed decline in new BEV sales can be explained by a reduction in private leasing. Those who have chosen to privately lease a car are generally younger, have lower incomes, and are more likely to live in

multi-family dwellings compared to households that purchase a BEV. We conclude that private leasing customers have been more affected by the ongoing economic downturn, and therefore, they have opted not to acquire a new car during 2023 and 2024.