

Examining Crash Factors in Free-Floating Carsharing

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Abstract-

In this study, 2.2 million carsharing trips from a leading operator in Madrid were analysed to identify crash factors, focusing on driver age, gender, trip timing and prior platform usage. Using a logit model, the findings indicate higher crash probabilities among drivers aged 25 years and under, drivers with fewer than six prior trips on the platform, and trips between midnight and 7 am. Younger drivers and nighttime trips also show a stronger association with at-fault crashes compared to older driver and daytime trips. The quantitative analysis was complemented by eight interviews with company management (n=4) and service users (n=4). Their insights suggested that risky behaviour, inexperience and lack of ownership may contribute to these patterns. This research highlights the need for targeted carsharing regulations and operator strategies to mitigate risks, particularly for younger drivers.

Index Terms- crashes, carsharing, human factors

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