

CITY UNIVERSITY OF HONG KONG

香港城市大學

Shared Autonomous Vehicle in Mobility on Demand—

An Application Research Using Diffusion of

Innovations Theory

自動駕駛汽車在共享出行中的運用—

一個創新傳播理論的應用研究

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Abstract

Shared autonomous vehicles are foreseen to emerge in the business of mobility on demand officially for commercial purpose in the near future. Both mobility service providers and vehicle manufacturers aiming to transform to mobility providers show big enthusiasm about shared autonomous vehicles and regard them as a revolutionary innovation in mobility on demand business. They are indeed the innovators and early adopters of the innovation of autonomous vehicle. Applying the theory of diffusion of innovation (DOI) as theoretical framework, this study focused on the adoption of shared autonomous vehicle in the business of mobility on demand through a two-round ranking-type Delphi survey and in-depth interviews among 20 experts from mobility providers, vehicle manufacturers and suppliers, and professional researchers. The author established the relevance and significance of adoption factors in perceived attributes (relative advantage, compatibility, complexity, trialability, observability) of innovation on the adoption of shared autonomous vehicle in the mobility on demand business and also explored how those perceived features influence the innovation adoption. The implication for the DOI theory from this study on autonomous vehicles is that the DOI theory is still applicable in the novel innovation, but perceived risk is a critical feature that has been previously ignored. The study also makes suggestions about legislation that could be favorable to the adoption of shared autonomous vehicles.

Keywords: diffusion of innovation, shared autonomous vehicle, robot taxi, mobility on demand, Delphi survey