

FMRI Project Highlight

Evaluating Public Acceptance of Autonomous Delivery Robots During COVID-19 Pandemic

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Autonomous delivery robot (ADR) technology for last-mile freight deliveries is a valuable step towards low-carbon logistics. The ongoing COVID-19 pandemic has put a global spotlight on ADRs for contactless package deliveries, and tremendous market interest has been pushing ADR developers to provide large-scale operation in several US cities. The deployment and penetration of ADR technology in this emerging marketplace calls for collection and analysis of consumer preference data on ADRs. This study addresses the need for research on public acceptance of ADRs and offers a detailed analysis of consumer preferences, trust, attitudes, and willingness to pay (WTP) using a representative sample of consumers in Portland. The results reveal six underlying consumer segments: Direct Shoppers, E-Shopping Lovers, COVID Converts, Omnichannel Consumers, E-Shopping Skeptics, and Indifferent Consumers. By identifying the WTP determinants of these latent classes, this study provides actionable guidance for fostering mass adoption of low-carbon deliveries in the last-mile (see Figure 1).

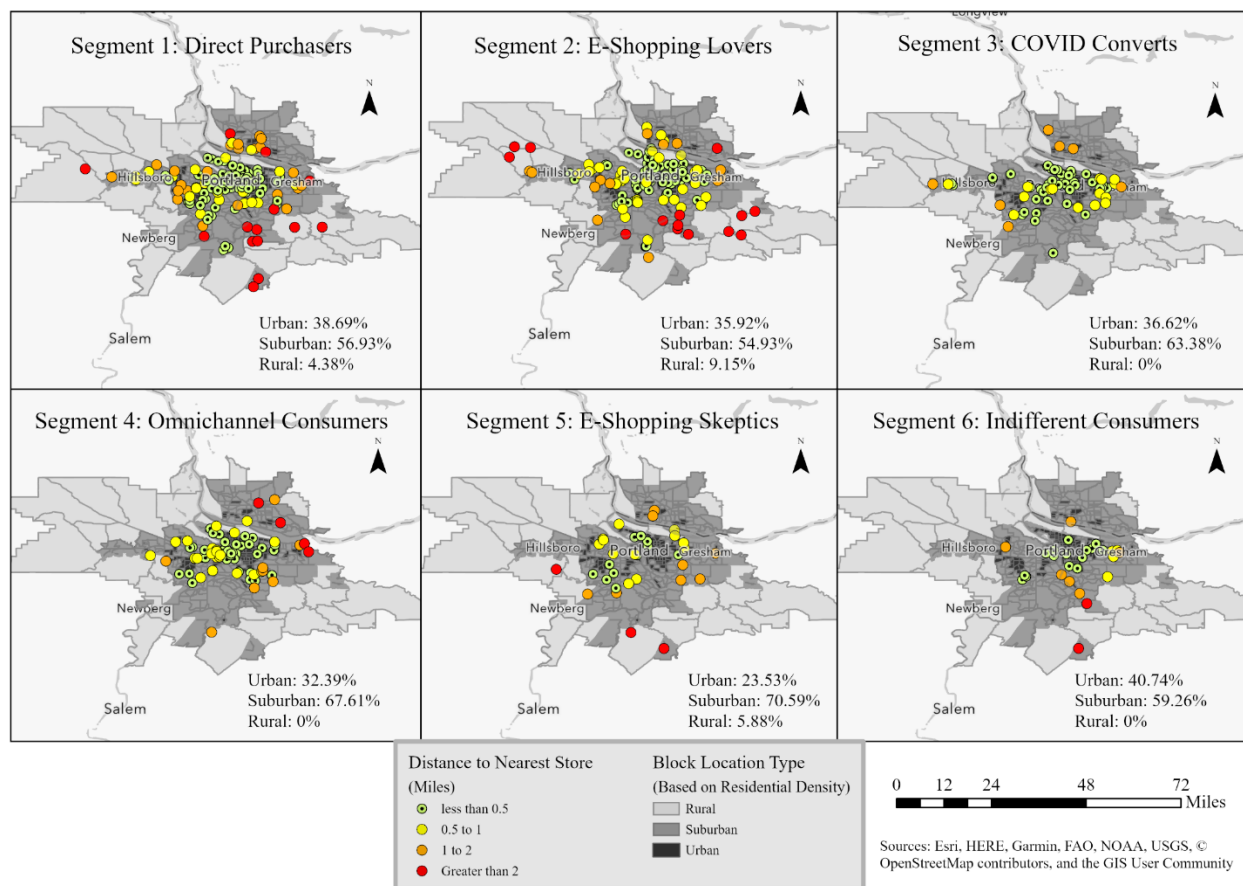


Figure 1 Spatial distribution of consumers in each latent segment during COVID-19.