Public Perception of the Collection and Use of Connected Vehicle Data

the ISSUE

Connected vehicles (CVs) offer potential improvements, including improved efficiency, safety, and optimum use of infrastructure, to the existing transportation system. To maximize these benefits, sufficient market penetration is needed. Past studies highlighted data privacy and security as possible barriers to CV acceptance. Currently, there is limited understanding about the public's perception of CVs, data sharing, and adoption, which leaves significant ambiguity in the planning for and development of CVs (i.e., data management practices and policies.)

the RESEARCH

This study carried out a questionnaire survey of 2,400 U.S. adults with three primary objectives: (1) define the public's CV data sharing intention, (2) ascertain how CV data sharing intention is associated with CV adoption, and (3) understand the overall process of development of behavioral intention to adopt CVs. To do this, several series of factor analyses and structural models were conducted. Theories of human behavior and existing technology acceptance models were used as the bases for this study's methodology.

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Project Title

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the FINDINGS

Results showed that perceived data privacy and security was found to reduce CV acceptance directly and indirectly through data sharing intention. Perceived data privacy and security was also found to lower the trust toward CVs. Stakeholders should minimize the data issues associated with CVs and educate users about such efforts. The data sharing intention was found to depend on the use of CV data but not the type of data. Stakeholders should assure the public about intended data uses. It was found that enforcement and fees assessment were the least desirable uses of CV data. Another contribution of this study is the development of a novel connected vehicle acceptance model, which explains the overall development of public attitude and behavioral intention to use CVs. Differences in CV acceptance among different socio-demographic groups were discovered and can be utilized for developing educational efforts.

the IMPACT

This research is expected to directly impact the development of data management policies, particularly for CVs. With a better understanding of public perceptions, policy makers will have a clearer idea of what policies may be more acceptable and may promote CV adoption. Second, this research has provided a detailed understanding of the differences in CV perception between different socio-demographic groups. This information will primarily help in the development of educational and marketing materials. Through appropriate and targeted efforts, CV acceptance and adoption can be improved. Longer term, increased acceptance of CVs will increase the observed CV benefits.

For more information on this project, download the Main report at https://www.ugpti.org/resources/reports/details.php?id=1045