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Presentation Title: Social Influence In The Adoption Of Low Carbon Digital Innovations

Abstract: Efforts to minimise carbon emissions through reductions in energy demand will be essential across all areas of daily life in order to meet international climate change targets. In recent years, digitalisation has enabled a surge of consumer innovations to emerge which challenge high-energy consumption norms by controlling, shifting, sharing, or reducing energy use. Examples include app-based shared mobility services with increased vehicle occupancy rates and smart home technologies for controlling heating, lighting and appliances. However, many innovations remain trapped in small market niches. With their impact on carbon reductions limited thus far, insights are needed regarding diffusion strategies for rapid extensive adoption. The well-established diffusion of innovations (DoI) theory considers communication channels, social networks and social influences as key factors for influencing adoption decisions. To help accelerate innovations to the mass market, our research uses DoI as a framework to investigate 16 low-carbon digital innovations in four different consumption domains: mobility, food, homes, and energy. We conducted an online survey with 3000 UK respondents, consisting of both adopters and non-adopters of the various innovations. Data was collected on the perceptions of innovation attributes, the importance of information channels and social influence mechanisms, communication behaviours and the social network characteristics of respondents to understand the context in which interpersonal information is shared. From our set of innovations, we identified various subgroups with specific attributes based on respondents' perceptions. We use groupwise comparisons (Mann-Whitney U tests, with effect sizes) to test a number of hypotheses on the central tenets of social influence and diffusion theory. Our findings highlight where generalisable insights exist for harnessing social mechanisms to accelerate the diffusion of low carbon digital innovations. We also identify where context shapes social influence factors and adoption, therefore requiring targeted marketing and policy driven diffusion strategies to fast-track a low carbon energy transition.