

Investigating the Spillover in the Internet Diffusion: Does Distance matter?

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Cite as:

ZHENG Li (2020), Investigating the Spillover in the Internet Diffusion: Does Distance matter?. *Proceedings of the European Marketing Academy*, 49th, (64568)

Paper from the 49th Annual EMAC Conference, Budapest, May 26-29, 2020.



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Abstract

This article challenge the two key assumptions that the classical diffusion model implies: 1) all members of a given population equally affect and are affected by one another; 2) the prior adoption's potential influence remains constant through time from the beginning of their occurrence. We apply a spatial dynamic panel data (SDPD) model to discover the heterogeneity both within the space and over time. Captured by space-specific covariates such as economy, demography and telecommunication infrastructure, the spatial heterogeneity drives the marginal diffusion speed across spaces. Several kinds of 'influence set' such as geographic, technological and social-demographic similarity constructs the spillover influence from a certain region to another, which connects current adopters in each region to past adopters in the related regions. Finally, the social-demographic similarity is in favor of others in describing the spillover in the Internet diffusion across 31 regions over 19 years.

Keywords: *Innovation Diffusion; Spatial Dynamic Panel Data Model; Prediction*

Track: Methods, Modelling & Marketing Analytics