

DATA SCIENCE SEMINAR SERIES

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ROOM 378, ALTER HALL

TEMPLE UNIVERSITY

The Effect of Data Breach Announcement on Customer Behavior: Evidence from a Natural Experiment

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Abstract:

Data breach incidents have become increasingly common and businesses incur enormous costs to recover from such events. In this study, we assess the effects of a data breach announcement by a multi-channel retailer on customer behavior. We exploit a *natural* experiment and use *individual* customer transaction data from the retailer to conduct a detailed and systematic empirical examination of the effects of a data breach announcement on customer spending and channel migration behavior. For identification of the data breach announcement effects, we compare the change in customer behavior *before* and *after* the data breach announcement *between* two groups of customers—a treatment group (customers whose information is breached) and a control group (customers whose information is not breached)—using the difference-in-differences modeling framework. We find that the data breach results in a significant decrease in customer spending. Our analysis also finds a silver lining for the focal multi-channel retailer in that we find that a significant portion of the firm's customers migrate from the breached channel to the unbreached channels of the retailer. Further, we find that customers with a greater retailer patronage are more forgiving as the negative effect of the data breach announcement is *lower* for customers with stronger retailer patronage as compared to customers with lower retailer patronage. We perform a series of robustness checks and falsification tests to validate our findings. We propose and test for customer data vulnerability as a possible mechanism behind the actions of customers following data breach announcement. Based on our results, we offer prescriptions for managers on how to engage with customers following data breach announcements and elaborate on the strategic role of multi-channel strategy in absorbing negative demand shocks.