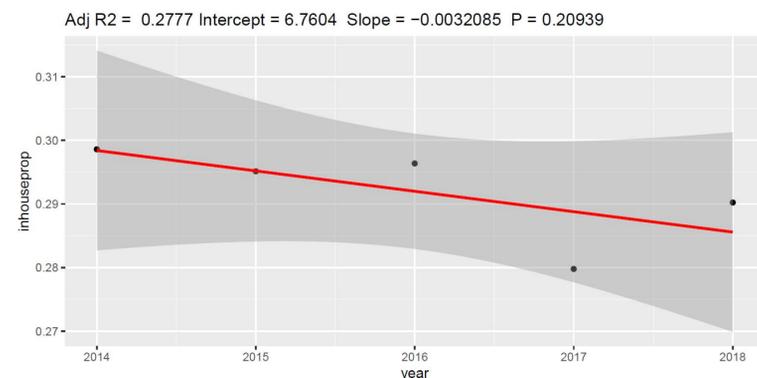


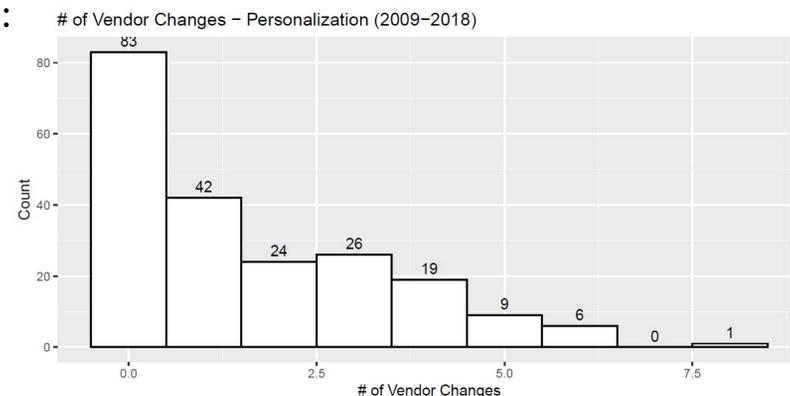
E-commerce technology adoption by internet retailers: An empirical study of E-commerce retail development

RESULTS

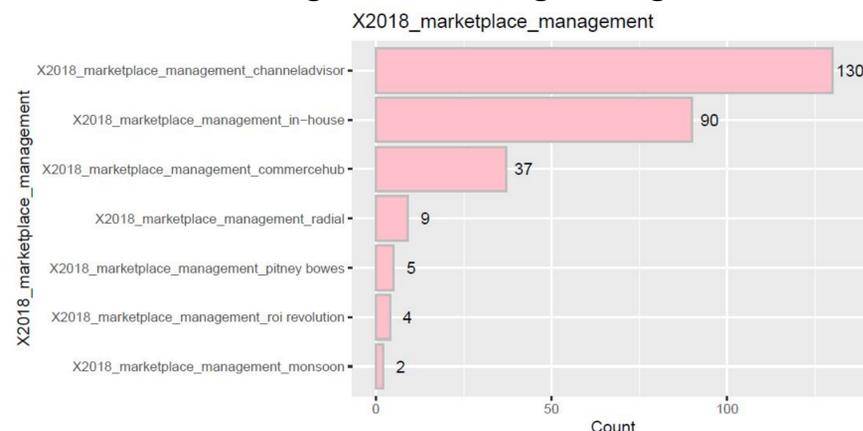
- Proportion of in-house vendors used by companies vs dataset year:



- # of vendor changes in personalization across companies (2009 - 2018):



- Distribution of vendors in digital marketing management (2018):



INTRODUCTION

We explore and compare the **presence, distribution, and usage of e-commerce technologies** and their vendors by **top internet retailers worldwide** during the digital revolution, in the context of **key online metrics**.

METHODS

- Cleaning, manipulation, analysis in Excel, R
- R Packages:** tidyverse, plyr, dplyr, hablar, stringr, splitstackshape, fBasics, janitor, ggplot2, ggcorrplot, reshape2, tidyr, stringdist, panelr

CONCLUSIONS

Despite the challenges we experienced in compiling and cleaning the data at first, these early findings show potential for further discoveries to be made. During our work, we detected both endogeneity and high variance across a large number of variables, and so our next steps will be to employ methods such as LASSO and Arellano-Bond to help guide our research.

DISCUSSION

- We observe that **companies retain about ~30% of core e-commerce functions in house year to year** despite relative industry-wide increases in potential e-commerce technology vendor opportunities.
- There is a **long tail distribution from 0** when observing the number of vendor changes over time within a given technology domain.
 - Once a company selects a vendor, they tend to stick with them for the long run.
 - This could be the product of **high switching cost**, especially for core e-commerce functions around which operations can be reliant on vendor-specific applications.
- There is also a **long tail distribution over which vendors companies select within a given e-commerce technology**.
 - This could be indicative of an **“industry standard”** when it comes to preferred vendors (Ex. Salesforce for CRM) or when it comes to taking a technology in house.

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Program: Penn Undergraduate Research Mentorship Program (PURM)

Datasets from Digital Commerce 360