

Marketing & Data Analysis

Intro. Data & Marketing

Santiago Alonso-Díaz

Tecnológico de Monterrey
EGADE, Business School



Data & Business

Using data works for business

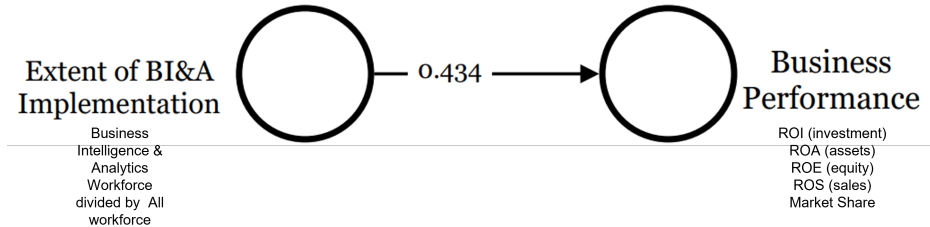


Figure: Daneshvar Kakhki and Palvia, 2016

Data & Business

Using data works for business. Even simple descriptives

Table 4

Meta-analytic results.

<i>n</i>	<i>N</i>	<i>k</i>	Est. eff.	CI 95 %
<i>Descriptive analytics → firm performance</i>				
14	3,133	20	0.422	0.317–0.517
Heterogeneity: Q-value = 147.078**, $df(Q) = 13$, $I^2 = 91\%$				
<i>Predictive analytics → firm performance</i>				
63	32,804	90	0.446	0.395–0.494
Heterogeneity: Q-value = 1311.202**, $df(Q) = 62$, $I^2 = 95\%$				
<i>Prescriptive and autonomous analytics → firm performance</i>				
8	1,833	10	0.504	0.359–0.625

Figure: Oesterreich et al., 2022

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Using data works for business. Needs structure.

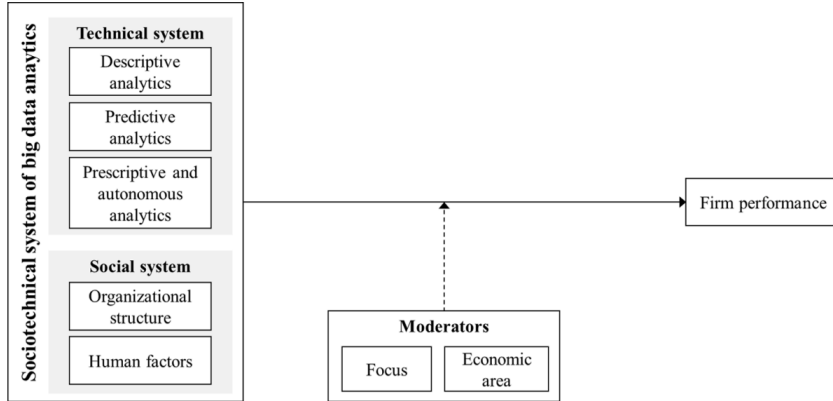


Figure: Oesterreich et al., 2022

Evidence based management

Discuss in class: evidence-based management and underdetermination of theory by data (UTD, ask an LLM or look in Google).

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First Principles and Analytics **(inspired by Palmatier et al., 2022)**

Customers produce data

- Data sources (internal, external, synthetic)
- Data types

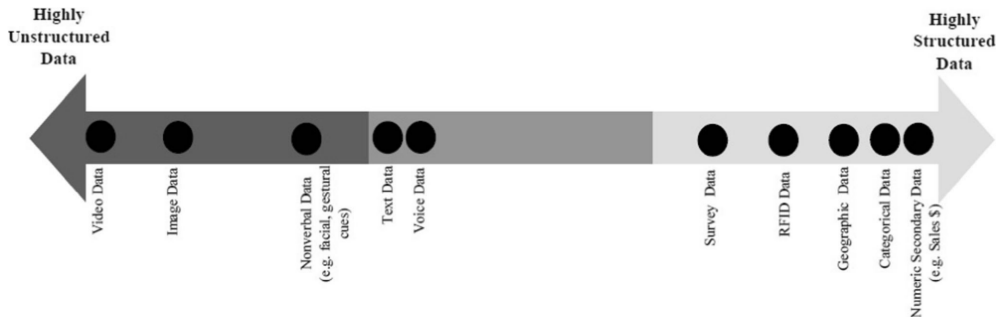
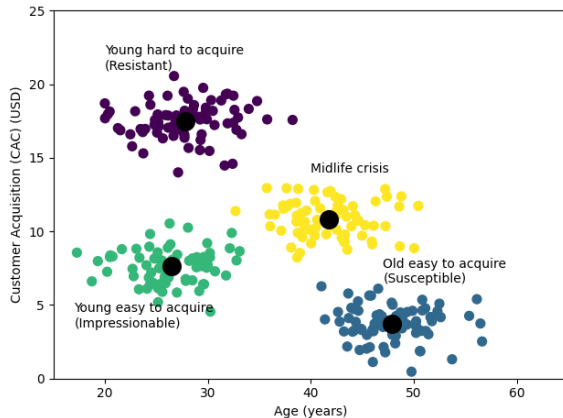


Figure: Balducci and Marinova, 2018

Patterns in customers' data

- Clustering
- Visualization



All/some customers differ

- Inference
- Experiments

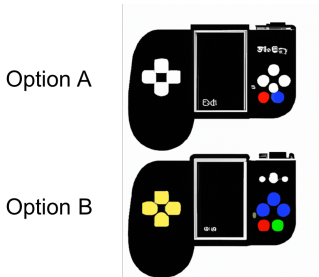


Figure: Which one sales more?

Statistical Software

Excel? Power-Bi?

Why Excel / Power - Bi?

- Intuitive
- Fast to use
- Widely used

Why not Excel / Power - Bi?

- Reproducibility of point and click
- Arbitrary transformation of cells
- Prone to errors ([Excel problems](#), [Excel Horror Stories](#))

Python / R

Why Python / R?

- Reproducibility
- Widely used
- Up-to-date techniques

Why not Python / R?

- Steep learning curve

Jupyter Notebooks

Let's go to Google Collab for Jupyter Notebooks

References



Balducci, B., & Marinova, D. (2018).Unstructured data in marketing. *Journal of the Academy of Marketing Science*, 46, 557–590.



Daneshvar Kakhki, M., & Palvia, P. (2016).Effect of business intelligence and analytics on business performance.



Oesterreich, T. D., Anton, E., Teuteberg, F., & Dwivedi, Y. K. (2022).The role of the social and technical factors in creating business value from big data analytics: A meta-analysis. *Journal of Business Research*, 153, 128–149.



Palmatier, R. W., Petersen, J. A., & Germann, F. (2022). *Marketing analytics: Based on first principles*. Bloomsbury Publishing.