Disseminating Results

Telling Stories Through Data

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Don't Choke!

Missed Shots at the Free-Throw Line: Analyzing the Determinants of Choking Under Pressure

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Article information

Altmetric 6

Abstract

Choking under pressure represents a phenomenon in which individuals faced with a high-pressure situation do not perform as well as would be expected were they performing under normal conditions. In this article, I identify determinants that predict a basketball player's susceptibility to choking under pressure. Identification of these determinants adds to our understanding of players' psychology at pivotal points in the game. My analysis draws on play-by-play data from ESPN.com that feature over 2 million free-throw attempts in women's and men's college and professional basketball games from the 2002-2013 seasons. Using regression analysis, I explore the impact of both gender and level of professionalism on performance in high-pressure situations. I find that in the final 30 seconds of a tight game, Women's National Basketball Association and National Basketball Association players are 5.81 and 3.11 percentage points, respectively, less likely to make a free throw, while female and male college players are 2.25 and 2.09 percentage points, respectively, less likely to make a free throw, though statistical significance cannot be established among National Collegiate Athletic Association women. The discrepancy in choking between college and professional players is pronounced when comparing male college players who do and do not make it to the professional level; the free-throw performance of those destined to go pro falls 6 percentage points more in high-pressure situations. Finally, I find that women and men do not differ significantly in their propensity to choke.

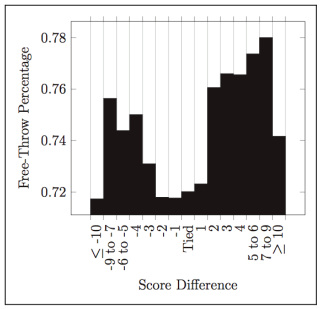


Figure 1. Choking in the Raw Data.
Note. The figure reports the free-throw percentage in the final thirty seconds of a game across all populations (NBA, WNBA, NCAA Men, NCAA Women) by how much the team at the free-throw line is ahead or behind when shooting the basket.

Revisiting the Objectives

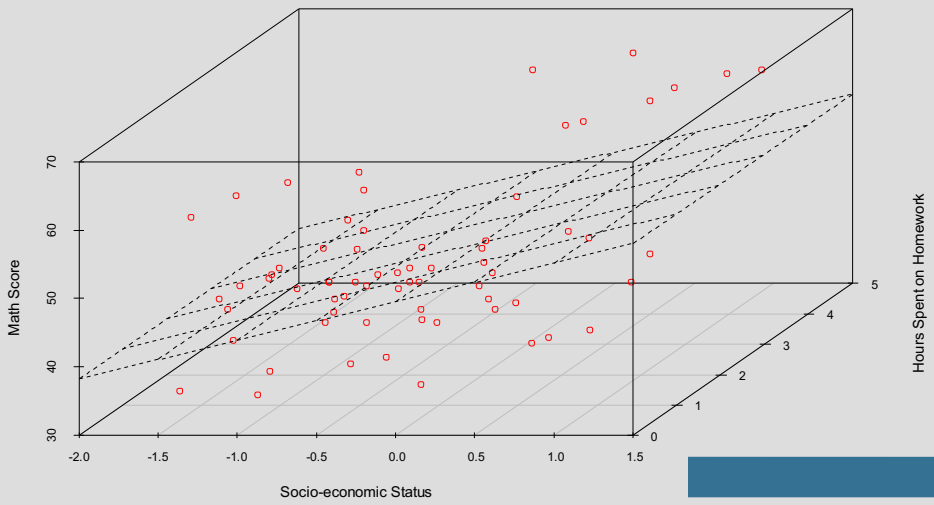
Why did you conduct the evaluation?

- *Assess needs*
- *Outcomes (formative v. summative)*

What type of story do you need to tell?

- *Exploratory*
- *Descriptive*
- *Explanatory*
- *Evaluative*

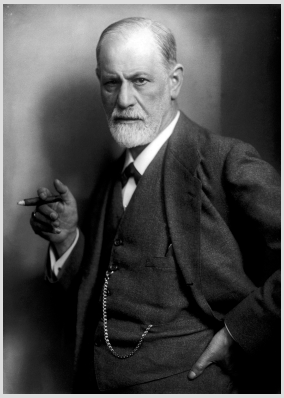
What is Explained?



Whose Explanation Matters?

Martin (2011):

1st person explanations v. 3rd person explanations



Structuring the Story

1. Executive Summary: Microcosm of #2-6
2. Introduction to the Problem
3. Background of the Evaluand & Literature Review
4. Data and Methods
5. Findings
6. Recommendations

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Structuring the Story

1. **Introduction to the Problem**

- What are you doing, who is involved, and why should anyone care?
- Frame the problem (e.g., childhood obesity, second-hand smoke, early childhood literacy)
- Introduce the evaluand as it relates to the problem
- Discuss the objectives and questions guiding the evaluation
- Provide a rationale – i.e., establish why this is important

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Structuring the Story

2. **Background of the Evaluand & Literature Review**

- Provide a more detailed introduction to the evaluand (history, structure, logic model [i.e., theory of action])
- Review prior research and/or evaluations related to the problem and program

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The Importance of the Literature

Process

1. Initial search as directed by questions

- Google scholar (who cites whom?)
- EBSCOhost
- Dissertation databases (e.g., Proquest)

  - *Translation of questions into keywords*

Process

1. Initial search as directed by questions
2. What are the key journals in which these conversations are taking place?
   - *General interest*
   - *Specialization/sub-field*
   - *Review/meta-analysis*
3. What is the point of saturation?

Deeper Considerations

1. What are the theoretical perspectives?
2. What are the methodological tools?
3. How does your topic fit into the existing conversation?
4. What questions remain?
   - *Content specific*
   - *Context specific*
   - *Process specific*

Structuring the Story

3. Data and Methods

- What are the sources of data used in the evaluation?
- How were those sources collected?
- What techniques were used to analyze the data?

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Structuring the Story

4. Findings

- What did you learn through the evaluation?
- Respond directly to the questions guiding the project
- Identify and tell a compelling story (considering stakeholders)

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Structuring the Story

5. Recommendations

- What decisions or actions should stakeholders pursue given the findings?
- What additional work needs to be done to inform those decisions and actions?
- To what extent do the findings offer different stakeholders competing visions of how to move forward?

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Final Paper & Presentation

Paper: 10 – 12 pages (presentation should include 1-4)

1. **Introduction**: problem and program identification; identification of stakeholders; summary of evaluation objectives and why this is important (and to whom – i.e., identify stakeholders)
2. **Background & Literature review**: Say more about the program, including the logic model (i.e., theory of action). Review prior research/evaluation and discuss what is already known about the problem and how your work fits into this conversation.
3. **Evaluation Design**: State questions guiding the evaluation; describe the general approach to your evaluation (e.g., quasi-experimental, mixed-methods) and the overarching paradigm that informs it; discuss why this design is appropriate given the objectives of the program/evaluand; describe the data collection strategies you will use to address your questions
4. **Dissemination Plan**: Describe how you will communicate the findings of the evaluation to the various stakeholders identified in the introduction; what are the types of recommendations you expect to make and how might they inform stakeholder decision-making?
5. **Cover letter** addressed to me: how did you address my suggestions and otherwise revise?
6. **Group member contributions**: Each individual should submit a statement of their contribution to the project (including the presentation) that is initialed by each member of the group. The initials acknowledge that you agree with the statement.

Presentations: Plan on ~15 minutes

- ~10 – 12 minutes for presentation
- ~3 – 5 minutes for Q&A
- Presentation evaluation: Clarity and style, Organization, Use of time, Effective use of visual aids

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Cairo's Five Qualities of Great Viz

1. Truthful
2. Functional
3. Beautiful
4. Insightful
5. Enlightening

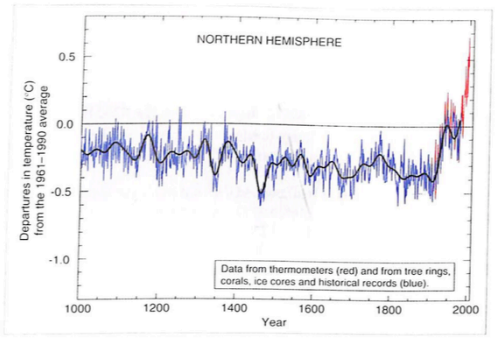

Figure 2.1 The hockey stick chart. Summary For Policymakers of the 2001 Third Assessment Report of the Intergovernmental Panel on Climate Change.

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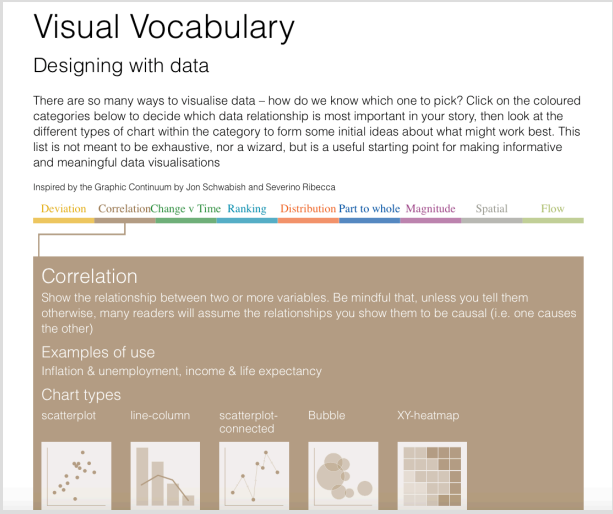
Developing a Visual Vocabulary



https://ft-interactive.github.io/visual-vocabulary/

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Examples of Dataviz

1. Shot Selection
2. Divorce Rates By Occupation
3. Geography of Race (Chicago)
4. Causes of Death

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