

# Methods Overview

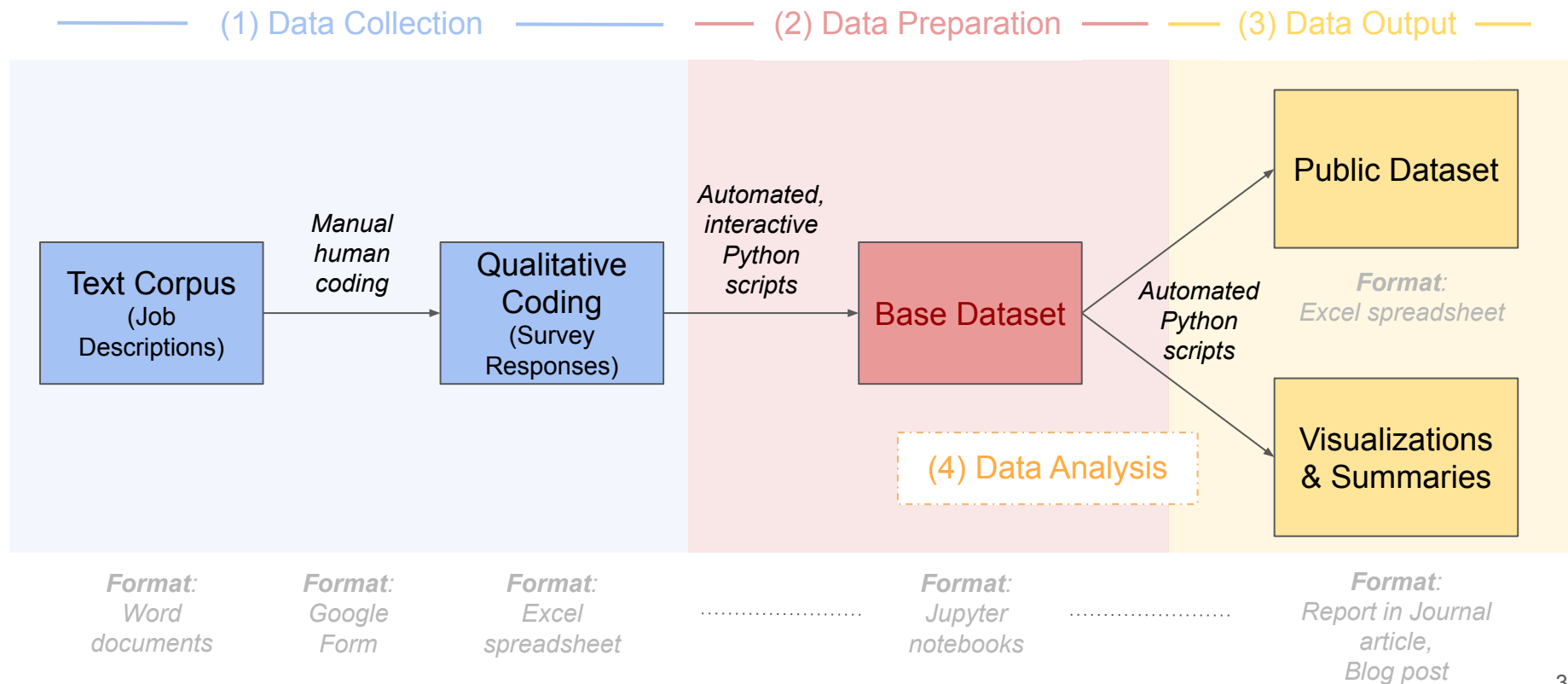
Publishing Job Descriptions Dataset

September 26, 2023

# Roadmap

1. The Workflow
2. The Data
3. The Procedure
4. Dataset Summary
5. Discussion Questions

# The Workflow



# The Data

## A. Text Corpus (Job Descriptions)

- a. 1325 scholarly publishing job description texts
  - i. Includes job ads & internal descriptions across non-profit, commercial, embedded, & independent positions
- b. Collected via:
  - i. Anonymous individual submissions through a Qualtrics survey (e.g., PDF of single text)
  - ii. Bulk submissions from organizations (e.g., zip file of many texts)

## B. Qualitative Coding (Survey Responses)

- a. Information systematically extracted from texts into a standardized format
  - i. Includes importance ratings for Work Skills, Knowledge Areas, Work Activities, Work Styles, & Work Context (based on [O\\*NET \(Occupational Information Network\)](#) questionnaires)
- b. Collected via:
  - i. Submissions on a Google Form survey by trained coders with publishing industry experience

# The Procedure

## 1. Get data (~Collection)

- a. Download new job description texts from Qualtrics ( .docx)
- b. Download new coding survey data from Google Form (.xlsx)

## 2. Clean and check data (~Preparation)

- a. **Preprocess data**
  - i. Interactively check for errors, then clean data (e.g., typos, duplicates, categorizing free responses)
  - ii. From *raw data* → Get *base dataset* + *list of data errors* → Go back to check data
- b. **Check for respondent consistency**
  - i. Automatically screen for inconsistent coding via machine vs. human response comparison
  - ii. From *base data* → Get *list of inconsistent data* → Go back to check data

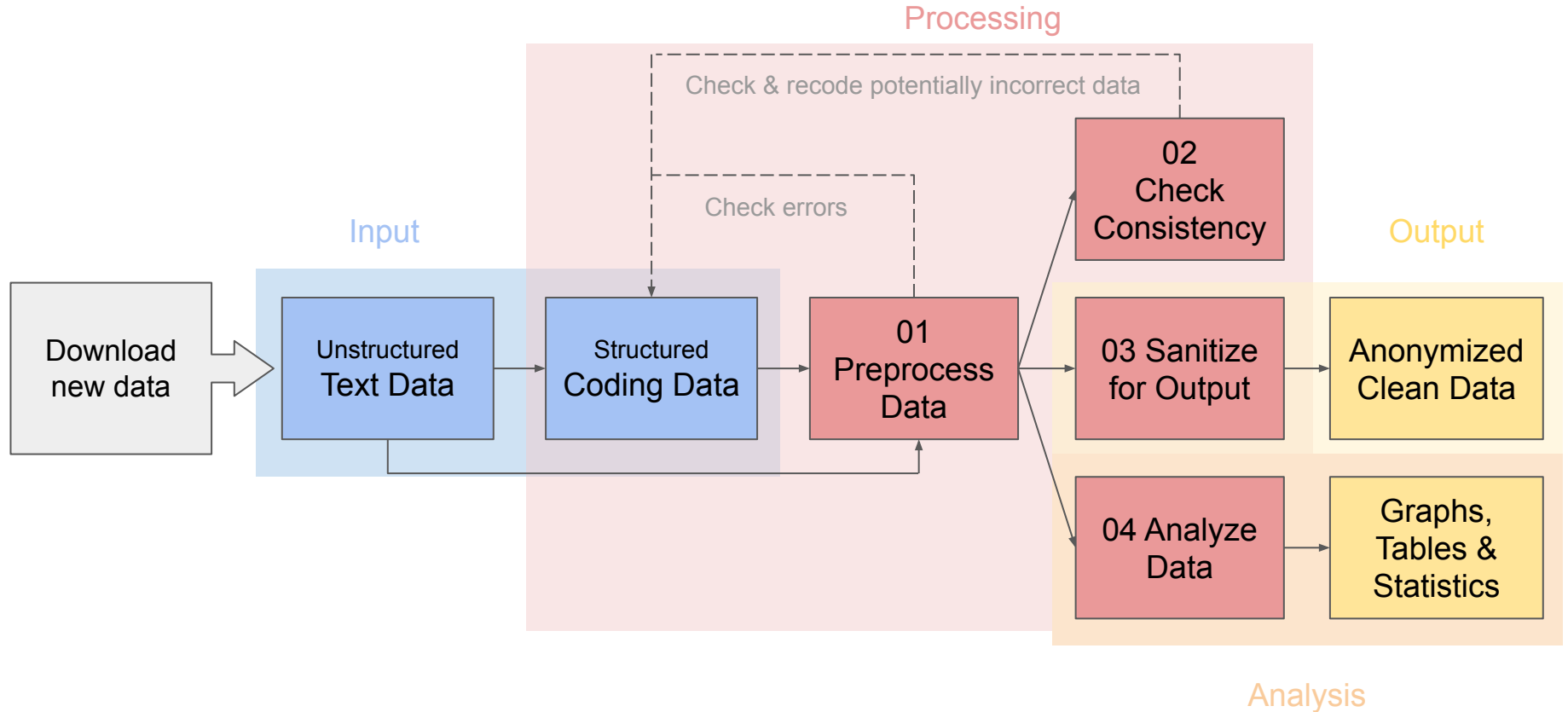
## 3. Finalize and summarize data (~Output)

- a. **Output sanitized dataset**
  - i. From *base data* → Get *anonymized dataset* (= Excel spreadsheet that can be shared publicly)
- b. **Output for data analysis**
  - i. From *base data* → Get *summary tables, graphs, and statistical modelling results*

## 4. Interpret data (~Analysis)

- a. Review tables, graphs, and modelling results to identify patterns in the data (= exploratory data analysis)

# Data Pipeline

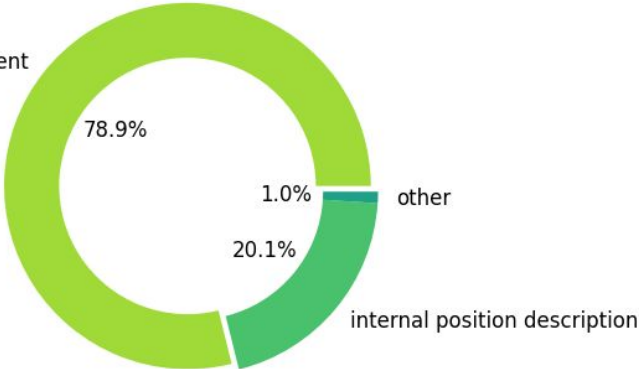


# Dataset Summary

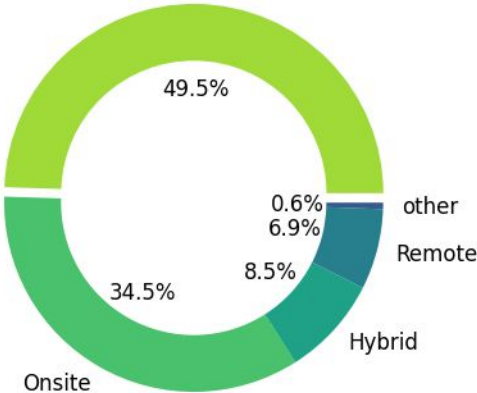
- **1089** coded positions
- Coding variables include:
  - **15 Position Attributes** (= basic info like job title, org., employment type)
    - Decision-making Authority (DMA)
      - 6 job level tiers
    - Functional Area (FA)
      - 10 job area categories (+ “other” + *a temporary “review” category*)
  - **118 Work Attributes** (= ratings of importance for skills, knowledge areas, etc.)
    - Work Skill: Speaking
    - Work Style: Leadership
    - Work Context: Knowledge of specific niches

# Description: Types of Positions

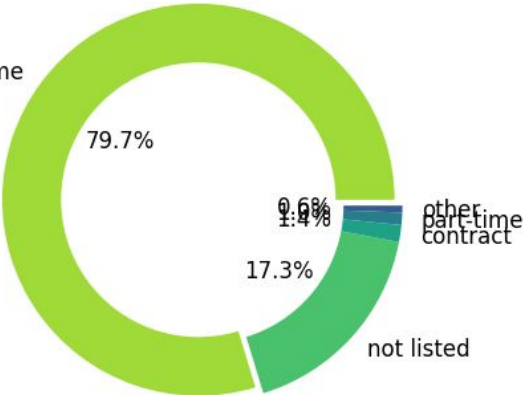
job advertisement



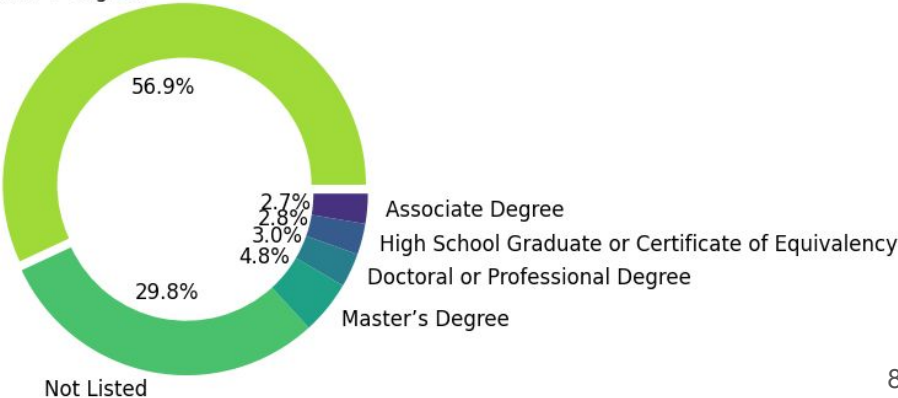
Not Listed



full-time

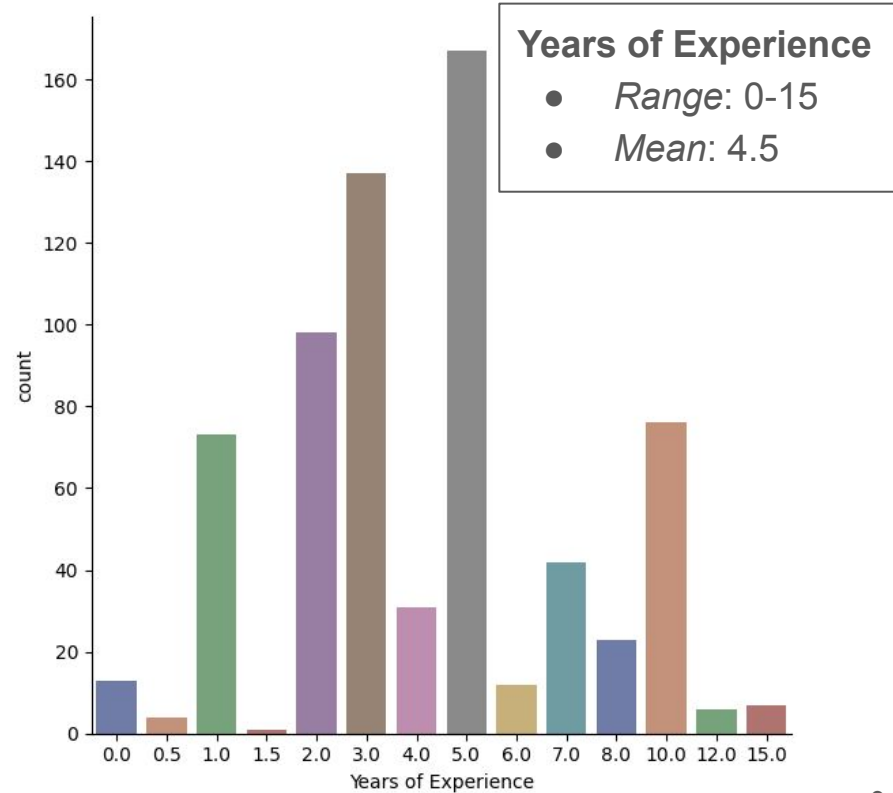
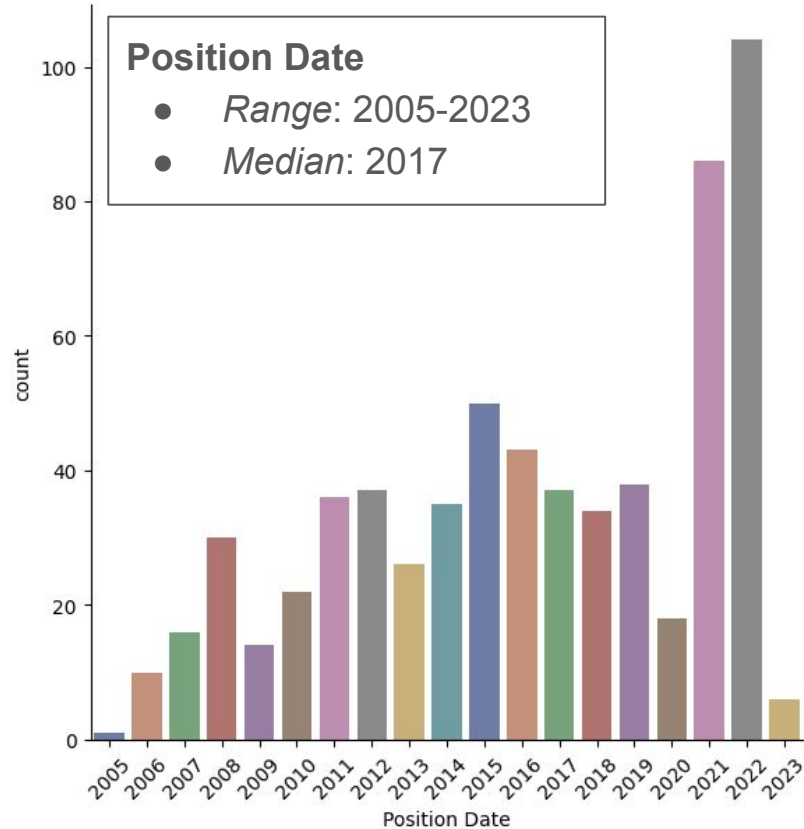


Bachelor's Degree

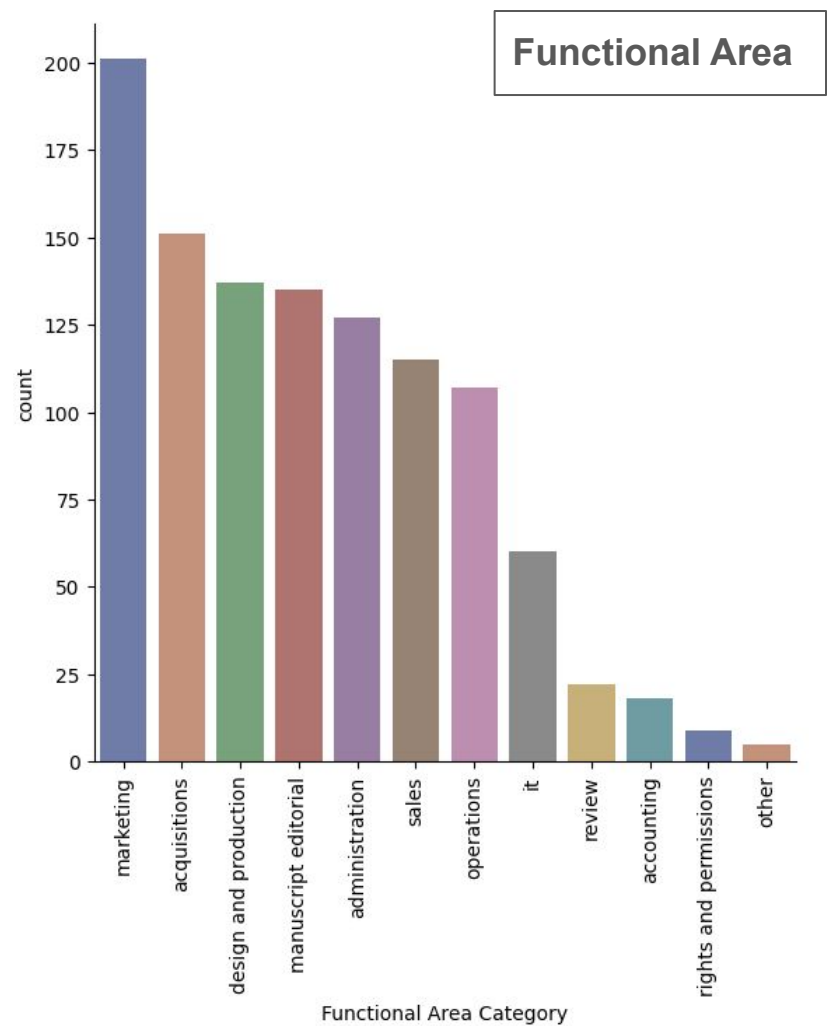
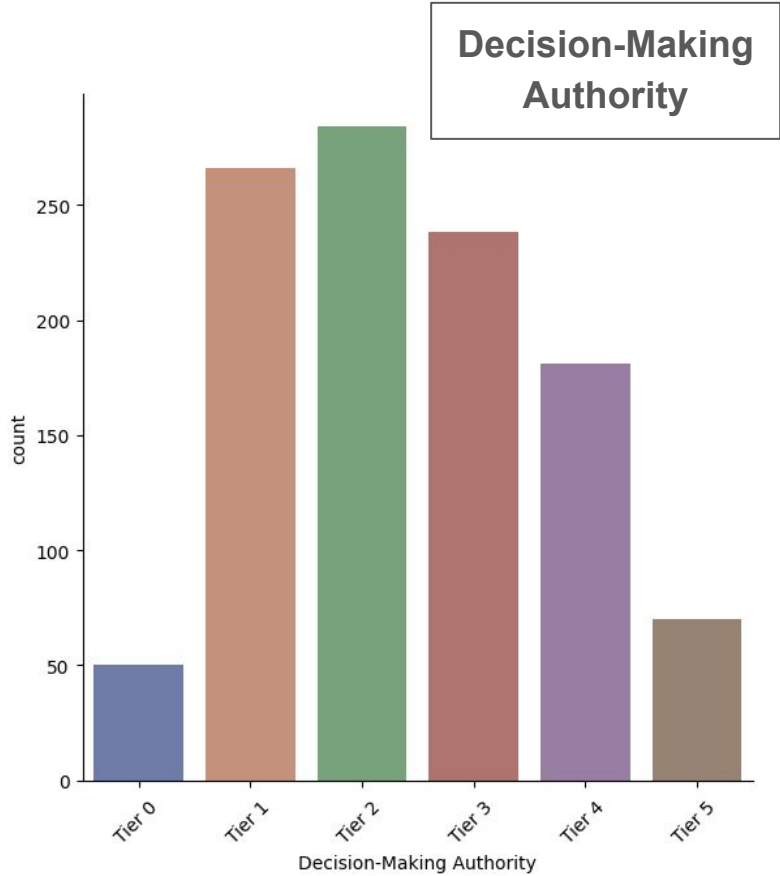




# Description: Time-related Variables

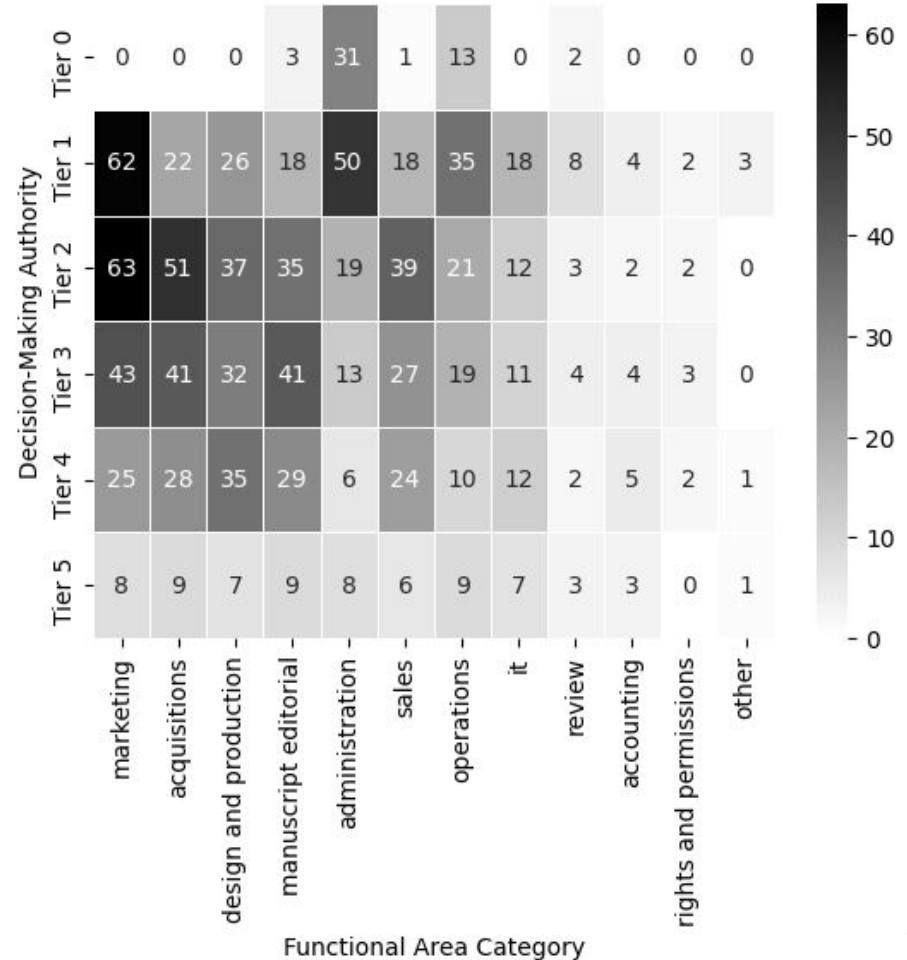


# Description: Key Variables



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- Cross-tabulation of DMA x FA
- Some cells are *underrepresented* ( $\leq 10$  data points)
  - Especially:
    - Tier 0 and Tier 5
    - the smaller FA categories (e.g., accounting, rights & permissions)
  - But also, some FA categories more “top-heavy” (e.g, admin, operations)



# Analysis: Examples

- Main goal: Compare the relationship between...

## Position type

(= *Key Position Attributes*)

- Position level (**Decision-Making Authority**)
- Position area (**Functional Area**)

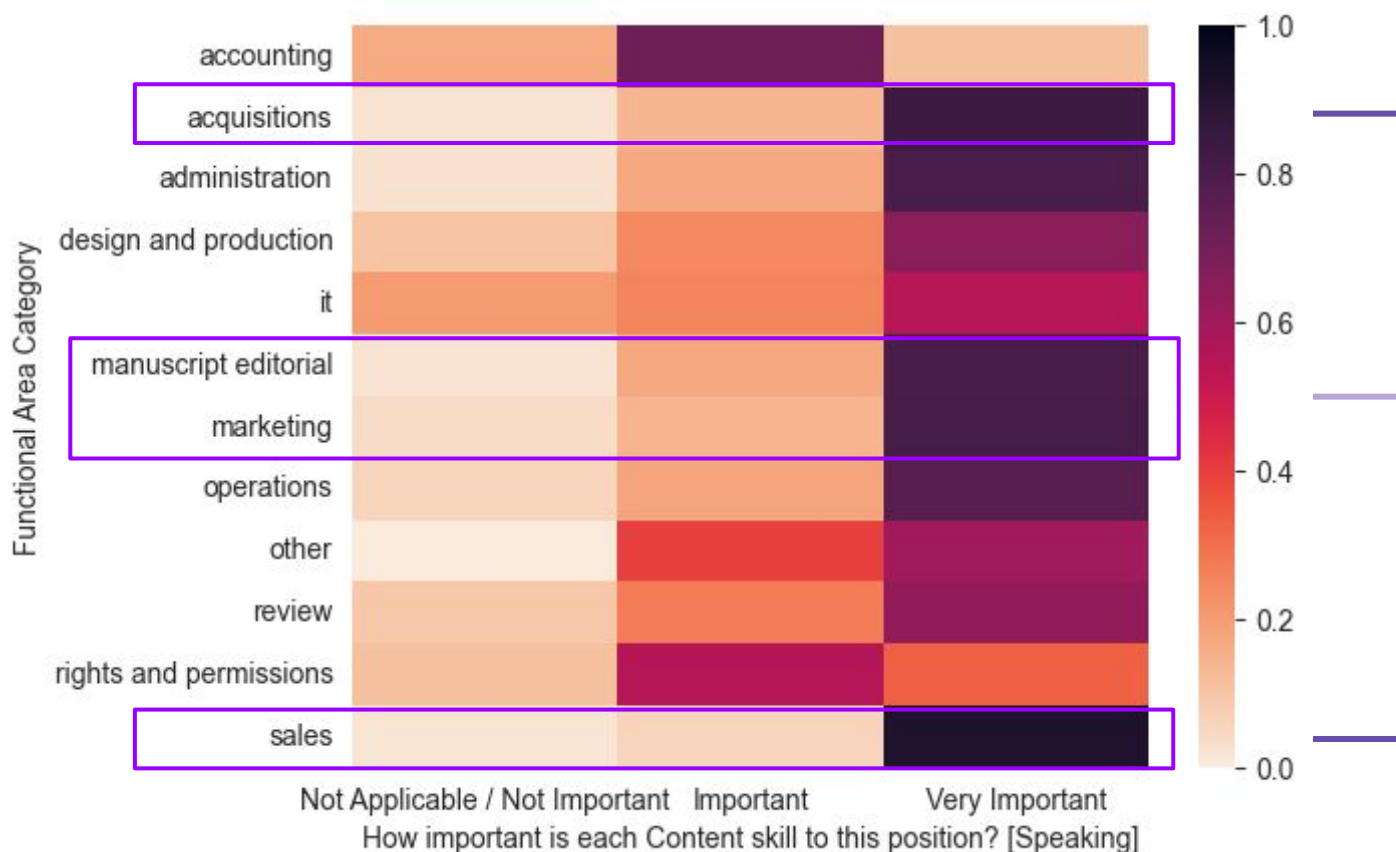
## Work skills & background

(= *Selected Work Attributes*)

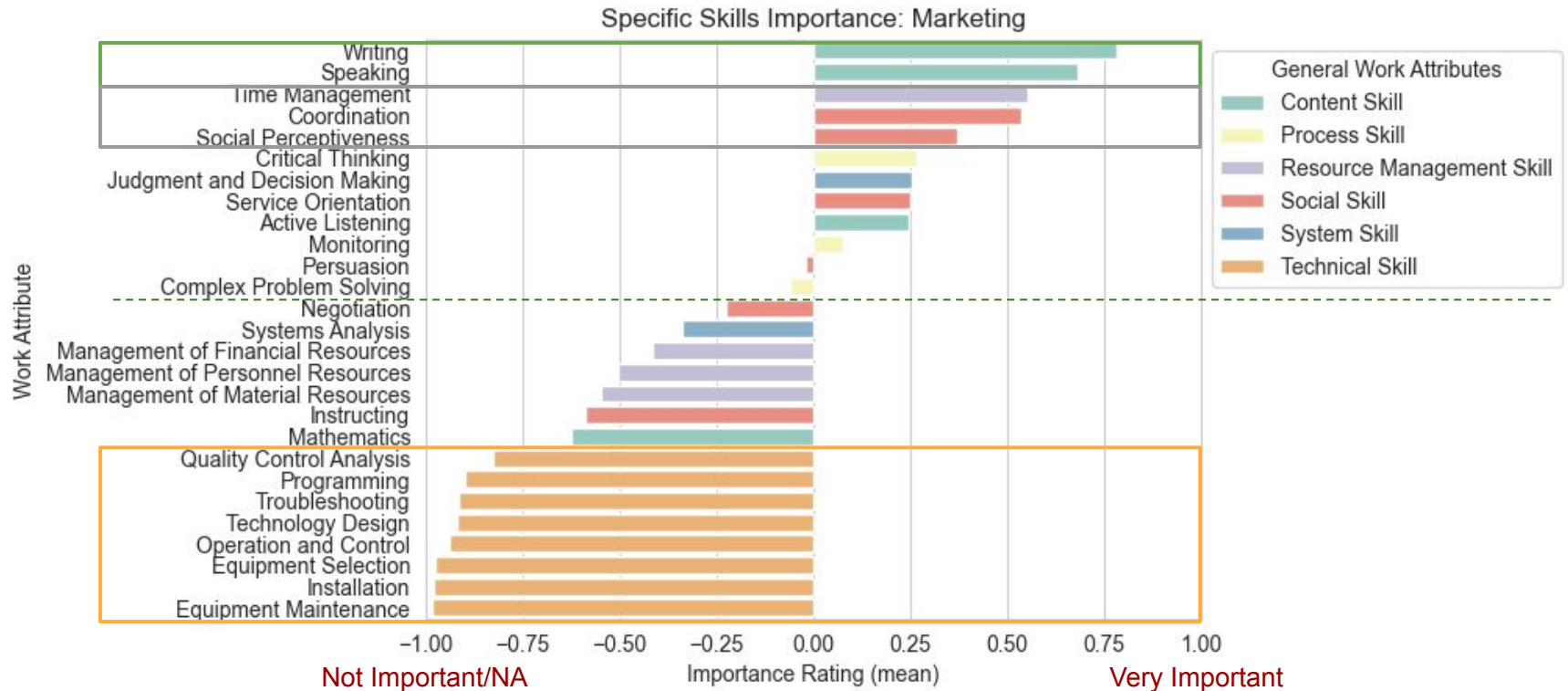
- E.g., **Speaking** skills
- E.g., **Coordination** skills

- Data can be used to answer questions like:
  - If I have good **Speaking** skills, what area should I work in?
  - If I want to work in **Marketing**, what skills should I have?
  - If I want to advance in **Marketing**, what skills do I need (to improve)?

# If I have good **Speaking** skills, what **area** should I work in?

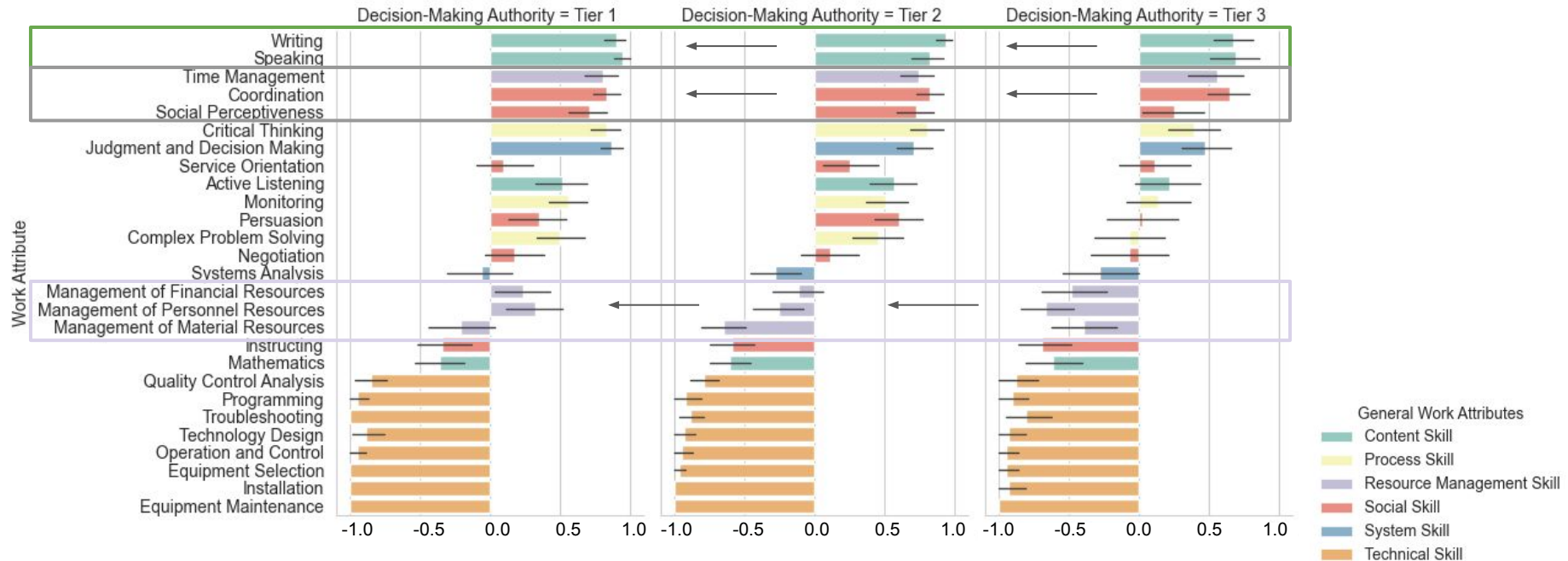


# If I want to **work in Marketing**, what skills should I have?

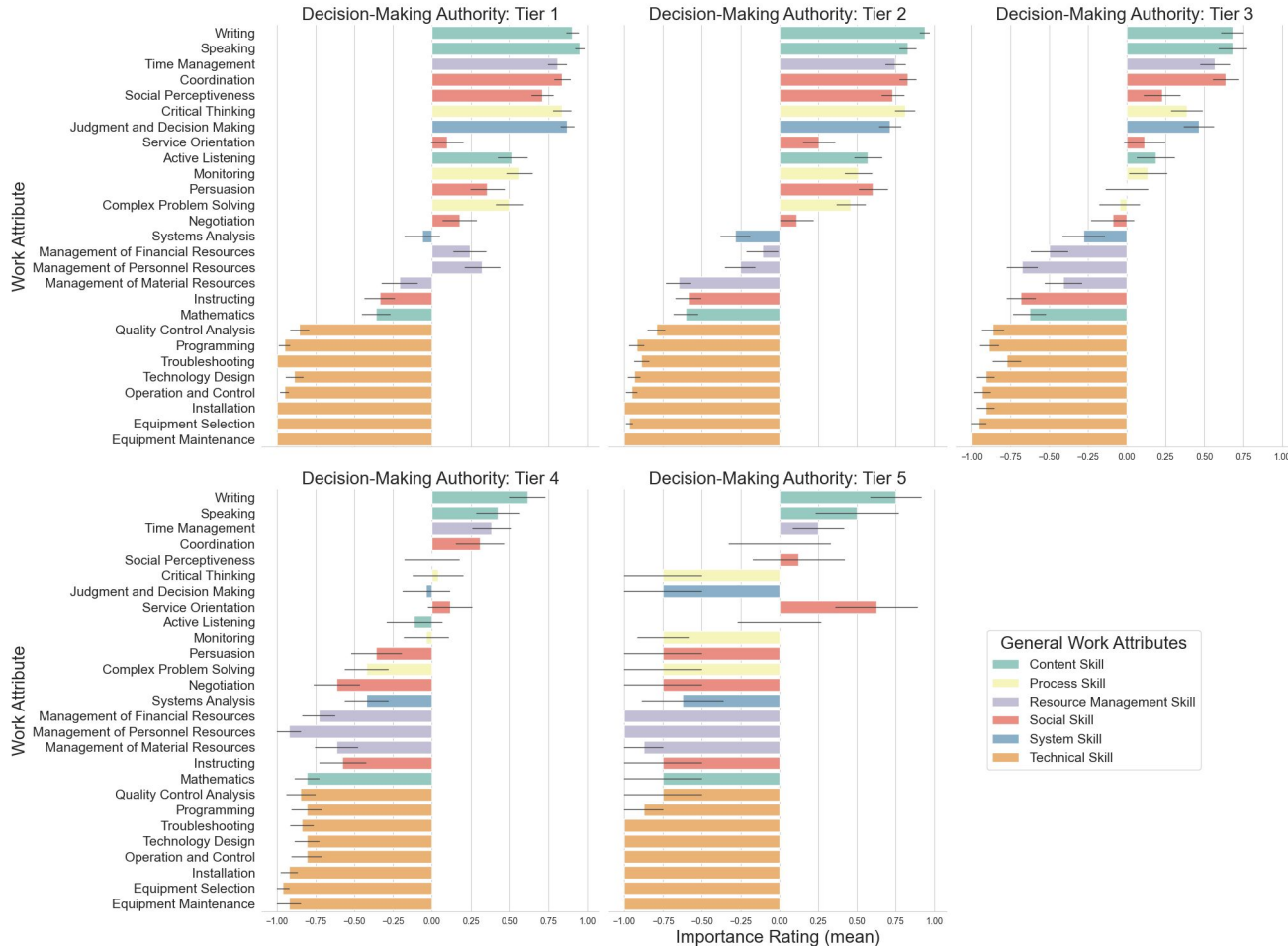


# If I want to **advance in Marketing**, what skills do I need?

Specific Skills Importance: Marketing by Decision-Making Authority



## Specific Skills Importance: Marketing



**Tier 1** Top position in the department

- Very critical

**Tier 2** Authority to make departmental or program decisions autonomously and/or in the absence of the department head

- Critical position

**Tier 3** Departmental or program decisions subject to higher approval before implementation

- Somewhat critical position

**Tier 4** Limited decision-making, e.g., product level

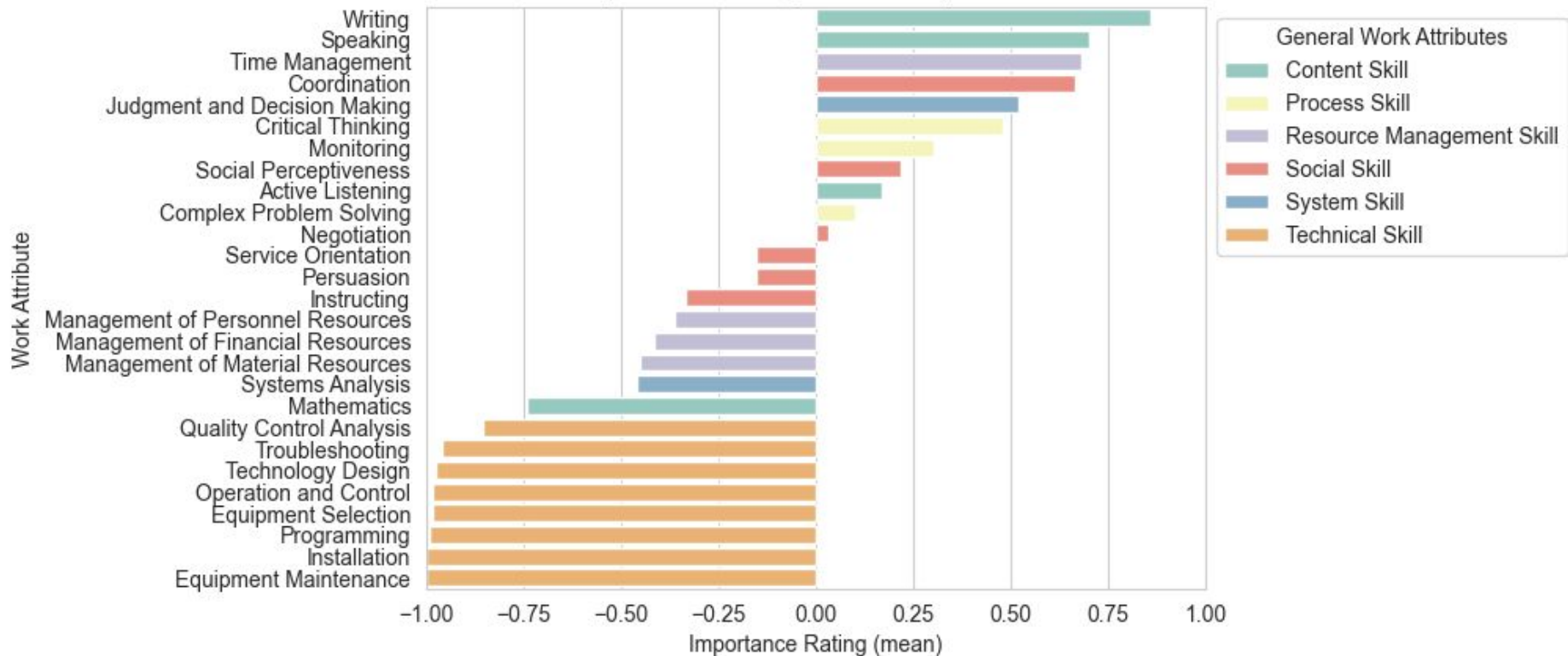
- Fairly critical position

**Tier 5** Clerical positions

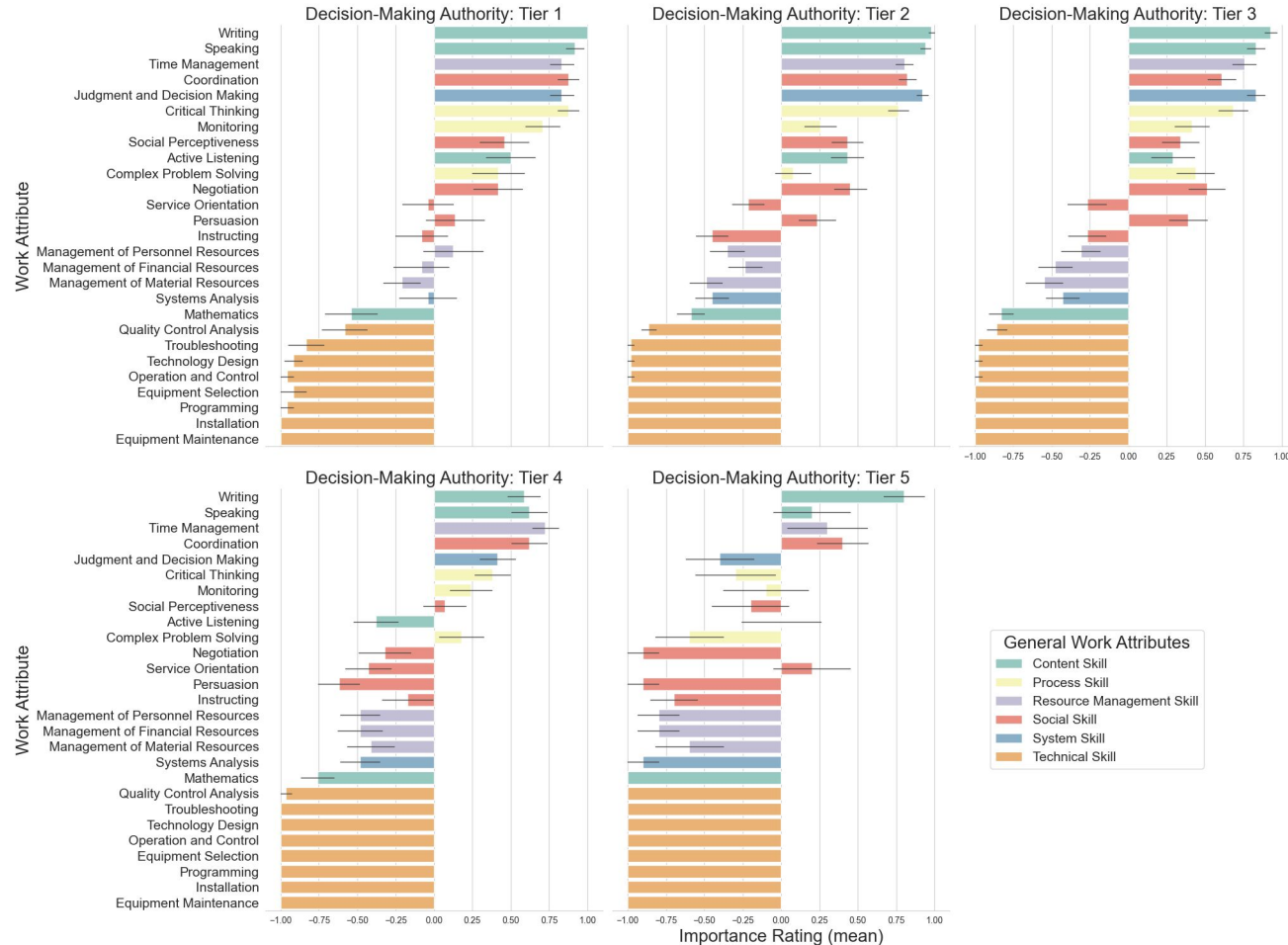
- Non-critical position



Specific Skills Importance: Acquisitions



## Specific Skills Importance: Acquisitions



**Tier 1** Top position in the department  
- Very critical

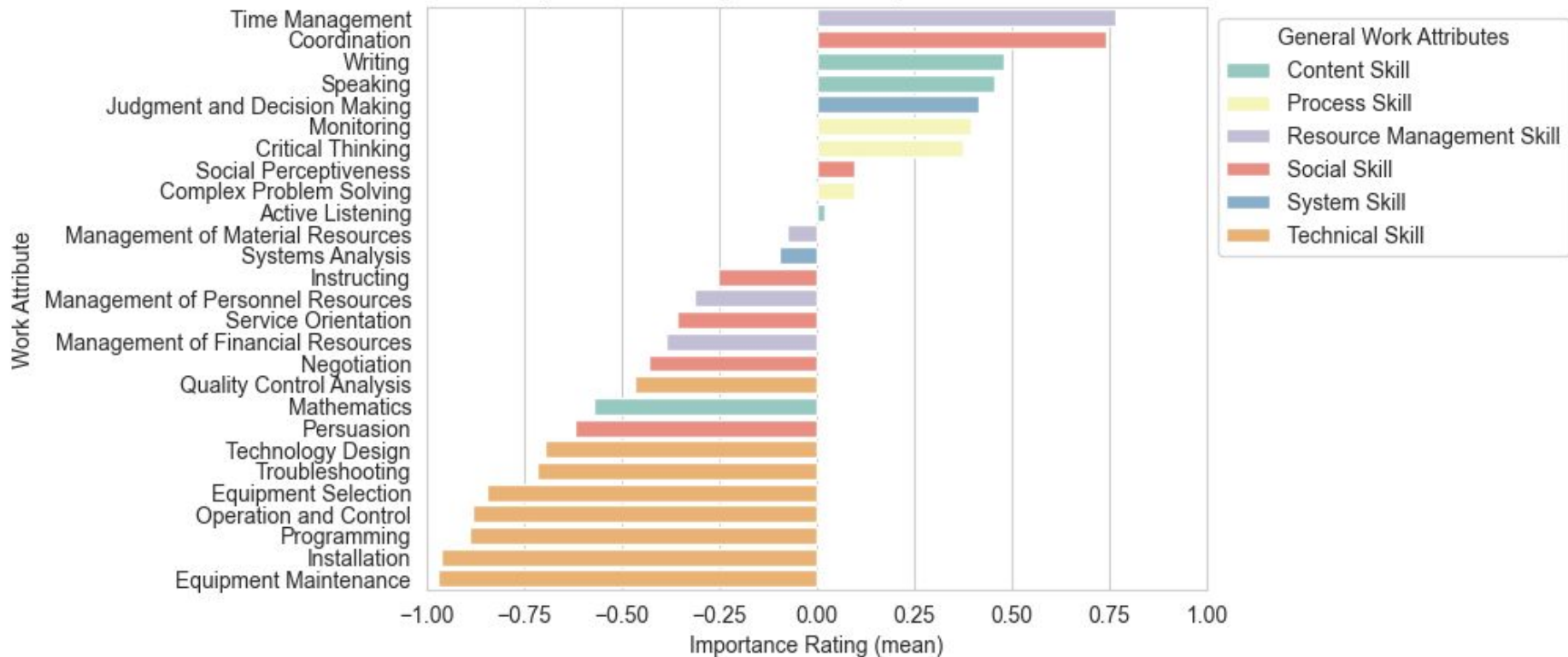
**Tier 2** Authority to make departmental or program decisions autonomously and/or in the absence of the department head  
- Critical position

**Tier 3** Departmental or program decisions subject to higher approval before implementation  
- Somewhat critical position

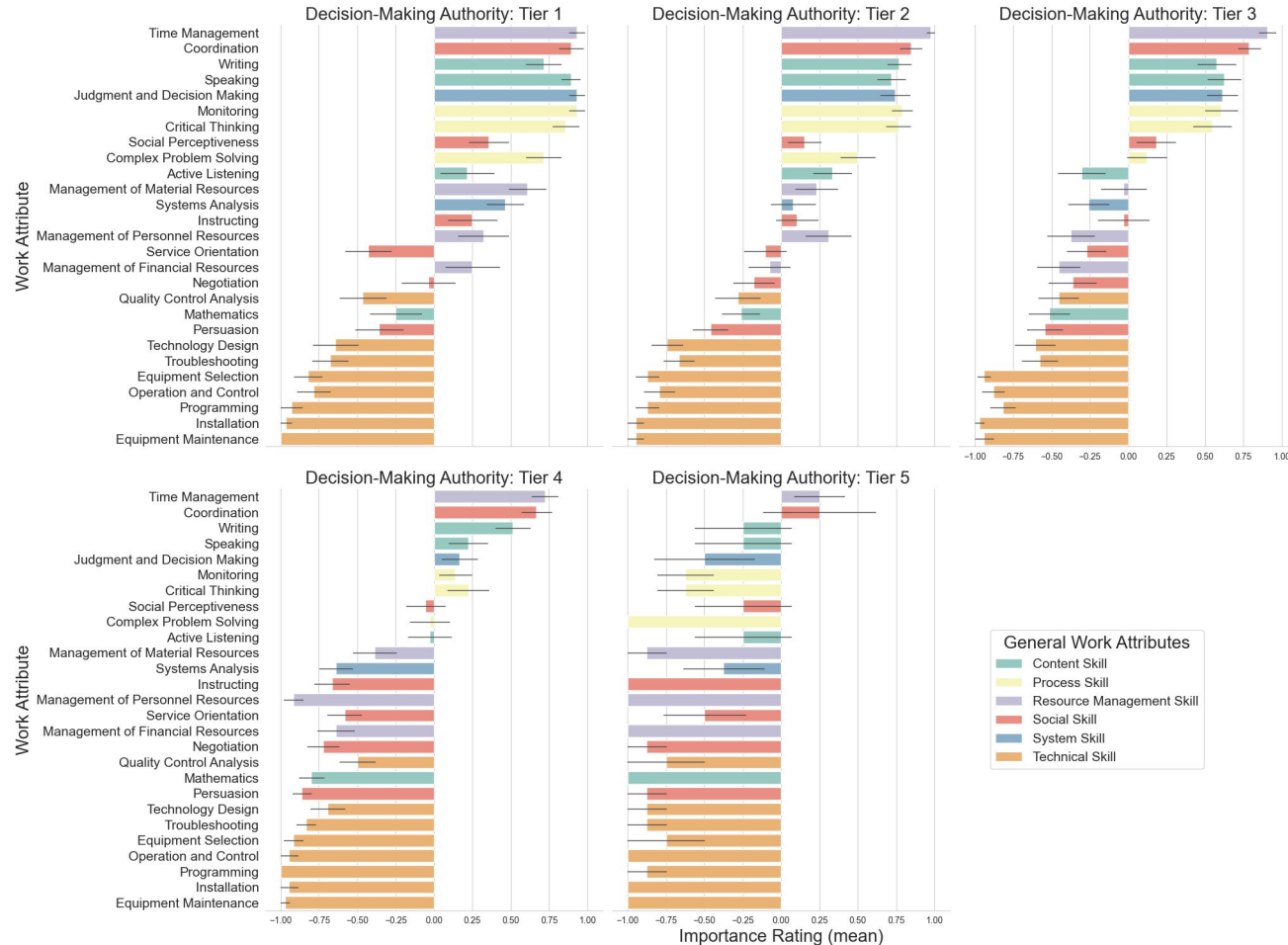
**Tier 4** Limited decision-making, e.g., product level  
- Fairly critical position

**Tier 5** Clerical positions  
- Non-critical position

Specific Skills Importance: Design And Production



## Specific Skills Importance: Design And Production



**Tier 1** Top position in the department  
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**Tier 3** Departmental or program decisions subject to higher approval before implementation  
- Somewhat critical position

**Tier 4** Limited decision-making, e.g., product level  
- Fairly critical position

**Tier 5** Clerical positions  
- Non-critical position

# Some Questions for Interactive Dashboard

1. What skills do I need to enter this job function?
2. What skills do I need to improve to advance in this job function?
3. I have these skills, what position would fit me best?

# Additional Slides

# Full List: Position Attributes

*\* = removed from anonymized (public) dataset,  
along with full description text*

1. Position Title
2. *\*Organization*
3. Is this a position with multifunctional responsibilities?
4. *\*What is the position compensation?*
5. What kind of entry is this?
6. Position Date
7. *\*Short Position Description*
8. Functional Area → Functional Area Category
9. Product Area
10. Decision-Making Authority
11. Years of Experience
12. Education Credentials
13. Employment Type
14. Employment Location
15. If Hybrid or Onsite, enter the location.

# Examples: Work Attributes (for full list, see [Code Book](#))

- Work Skills
  - How important is each Content skill to this position? [**Speaking**]
  - How important is each Social skill to this position? [**Service Orientation**]
- Knowledge Areas
  - How important is each Business and Management knowledge area to this position? [**Administrative**]
  - How important is each Mathematics and Science knowledge area to this position? [**Psychology**]
- Work Activities
  - How important are Mental Processes to this position? [**Processing Information**]
  - How important is Interacting With Others to this position? [**Communicating with People Outside the Organization**]
- Work Styles
  - How important is Influence to this position? [**Leadership**]
  - How important is Interpersonal Orientation to this position? [**Concern for Others**]
- Work Context
  - How important is **knowledge of specific niches** for this position?
  - How important are **people skills** for this position?