



# CDO Council Survey Results 2024

Keya Gemechu (Data Scientist), Austin Bazydlo, PhD (Chief,  
Data Science and AI Application Branch), National  
Institutes of Health (NIH)/OD/ORF/DTR

# Overview Observations:

- In the "Governmentwide Management Report: Results from the 2020 OPM Federal Employee Viewpoint Survey," agencies are categorized by size based on their employee population as of March 2020. Appendix A of the report defines these categories as follows:
- **Small Agencies:** Fewer than 1,000 employees
- **Medium Agencies:** 1,000 to 9,999 employees
- **Large Agencies:** 10,000 or more employees

These definitions are used to group agencies for comparative analysis within the report.

# Overview Observations (Year 2023 vs. 2024):

## **Demographic Trends:**

- Education levels remained consistent, but 2024 saw slight increases in advanced degrees in small agencies (more PhDs reported).
- Experience trends continued, with most CDOs reporting over 10 years in the public sector.

## **Small Agencies' Responsibilities:**

- Small agencies in 2024 reported more diversified roles compared to 2023, reflecting an increasing focus on AI and statistical functions.

## **Primary Role Responsibilities:**

- Greater emphasis in 2024 on AI integration and data governance compared to 2023.

# Overview Observations:

## Year 2024 Responses

### **Demographics:**

- Over 80% identified as Chief Data Officers (CDOs) across all organization sizes.

### **Education levels:**

- Large agencies: 50% hold master's degrees, 21.4% PhDs.
- Medium agencies: 75% hold master's degrees, 25% PhDs.
- Small agencies: 33.3% master's degrees, 41.7% PhDs.

### **Experience:**

- Large agencies: 92.9% have over 10 years in the public sector.
- Medium agencies: 71.4% have 10+ years in the public sector.
- Small agencies: 83.3% have 10+ years in the public sector.

# Overview Observations:

## **Small Agencies' Responsibilities:**

- 50% identified CDO as their primary role.
- Common additional roles include Statistical Official and Chief Artificial Intelligence Officer (CAIO).

## **Unfilled Positions:**

- Small agencies reported a more unfilled roles compared to larger agencies.

## **Training participation:**

- Small agencies lead in training (66.7% reported "yes").
- Technical and business staff presence:
- Small agencies show lower incorporation of business and technical expertise in their CDO teams.

## **Obstacles in 2024:**

- Cultural barriers remain the top obstacle.
- Small agencies also face challenges in organizational design, resources, and knowledge management.
- Limited workforce skills and funding are persistent across agency sizes.

"There are tremendous resources available for BI, visualization, ML, AI, dashboarding, etc., but no money at all is set aside for data quality or validation, so most analytical work underperforms relative to expectations, which ultimately becomes a feedback loop to not use data to support mission." - Survey Responder Comment

# Overview Observations:

## **Unfilled Positions:**

- Both years reported challenges with unfilled roles, but 2024 highlighted a slight improvement in large and medium agencies.

## **Resources (Technical and Business Staff):**

- Small agencies in 2024 continued to struggle with staffing technical and business personnel, showing no significant improvement in 2024.

## **Obstacles remained consistent:**

- 2023 and 2024 both cited cultural barriers, workforce skills, and funding as primary challenges.
- Technological barriers and organizational design were highlighted more for small agencies in 2024.

# Overview Observations:

## **Budget Changes and Resource Allocation**

- Large and medium agencies show slight improvement in budget allocation from 2023 to 2024.
- Contractors are increasingly used across all agency sizes, especially in small agencies with staffing gaps.

## **Size of Staff:**

- Persistent unfilled positions, particularly in technical roles (data engineers, AI specialists).
- Large agencies maintain larger teams, while small agencies rely on smaller, often cross-functional staff.

## **Reporting Structures:**

- Survey results indicate that 50% of CDOs from large agencies, 33.3% from medium agencies, and 33.3% from small agencies report to the CIO. These figures remain consistent with last year's data, showing no significant year-over-year changes.
- Small agencies show higher uncertainty (~40%) about potential reporting structure changes, compared to larger agencies.

# Overview Observations:

- **Participation in Training (CDOs)**

- 50% of large agencies, 53.8% of medium agencies, and 58.3% of small agencies reported participating in training.
- Popular programs include:
  - **Gartner Data & Analytics Summit** (multi-day conference).
  - **DAMA** (Data Management Association) courses.
  - **CDOIQ Certification (MIT)**.
- Participation is increasing compared to prior years, especially in medium and small agencies.

## **Federal Staff Training:**

- Large agencies: 64.3% provided federal staff with training opportunities. Medium agencies: 61.5% participation rate. Small agencies lead in staff training provision at 66.7%.
  - Data governance and management (multi-day workshops).
  - **AI Federal Leadership Program** (1 year, provided by the Partnership for Public Service).
  - **Dataversity: DGIQ Conference** (multi-day conference).

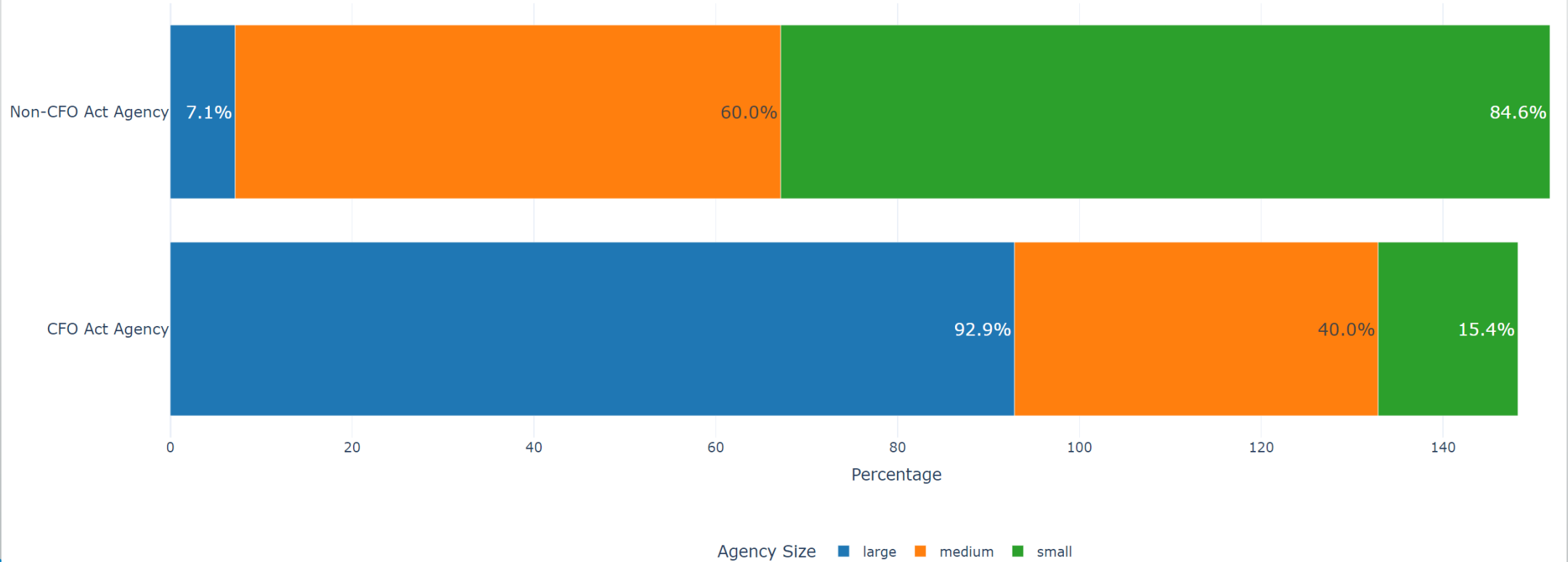


# Survey Response Statistics 2024 & Previous years

Survey Year	2024	2023	2022
<b>Total Responses</b>	<b>42</b>	<b>35</b>	<b>38</b>
Large agencies	14	35	23
Medium agencies	15	9	9
Small agencies	13	6	6

# Survey Participants

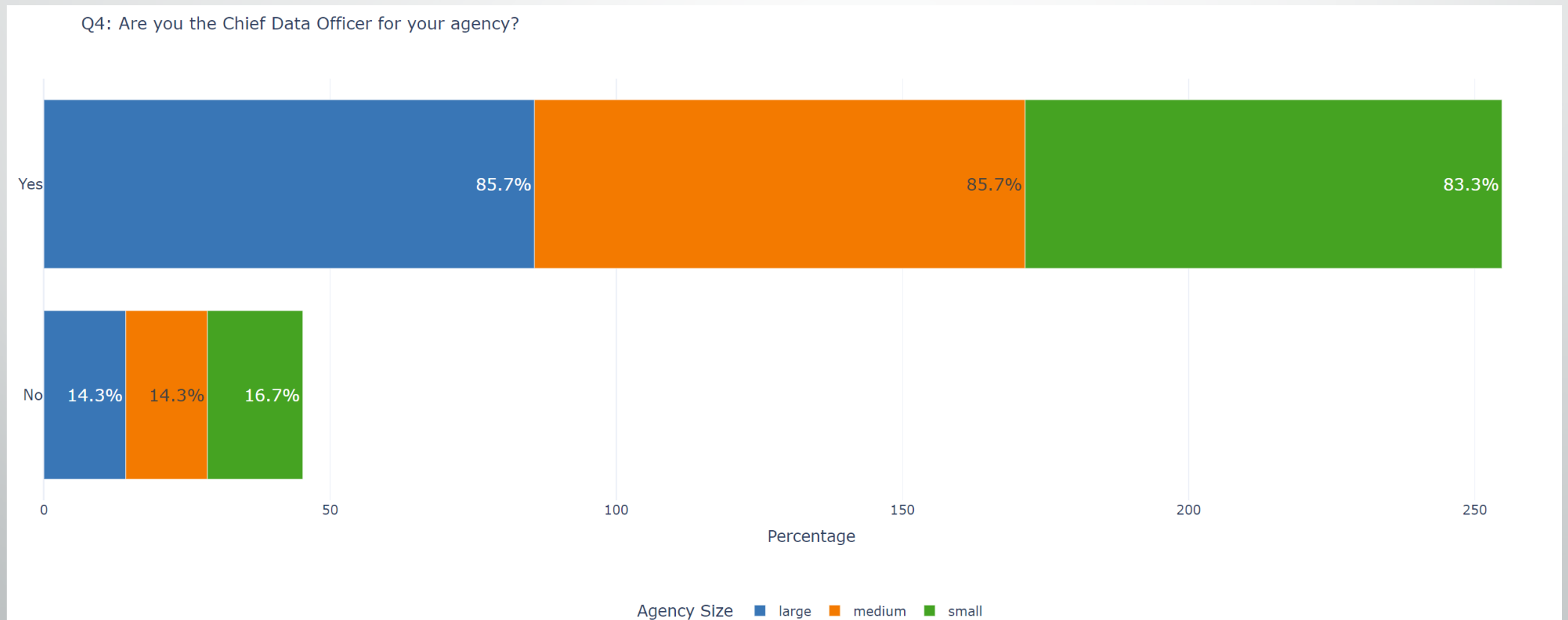
Q2: Are you in a CFO Act Agency?



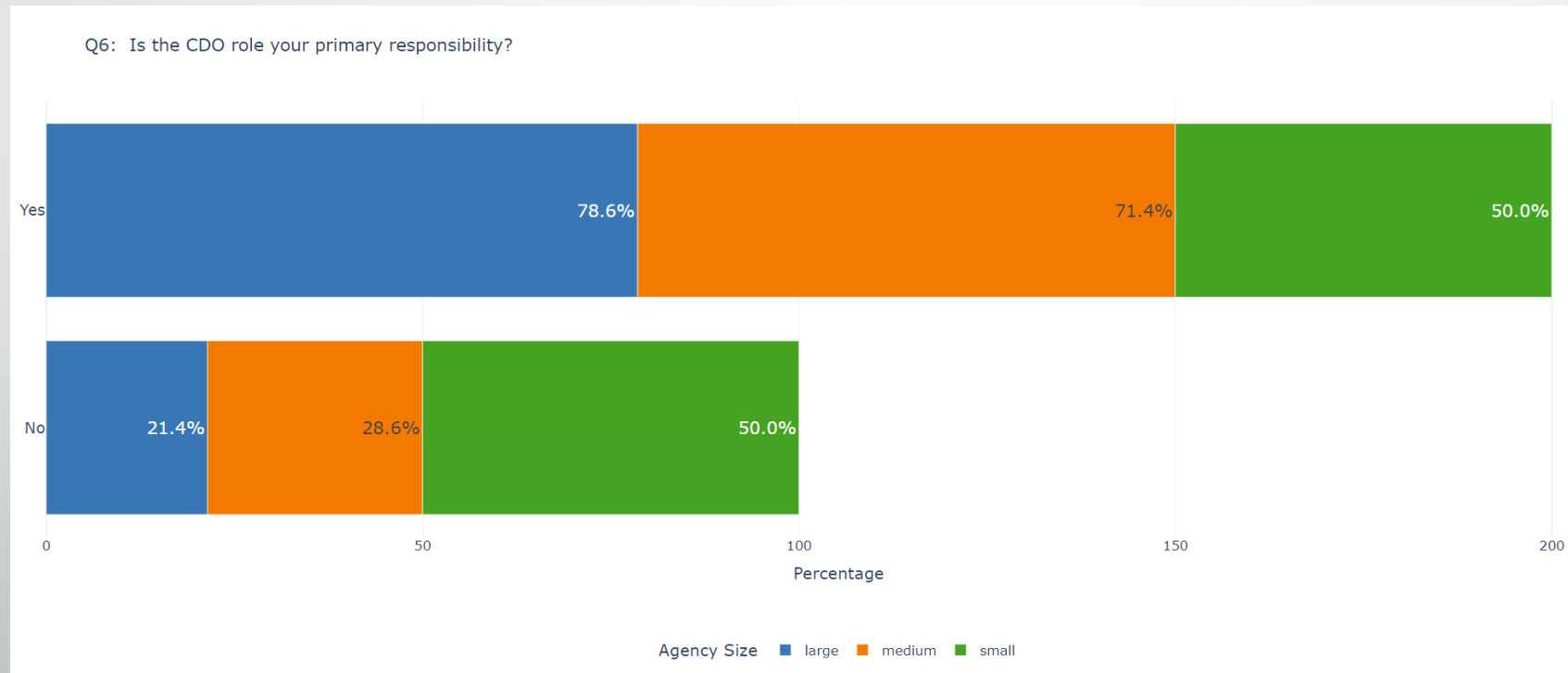
# Chief Data Officer Background

- Above 80% of responders across organizations of all sizes identified themselves as the Chief Data Officer (CDO) for their respective agencies. Of these, 92.9% of responders from large agencies, 100% from medium agencies, and 83.3% from small agencies indicated that they are not serving in an interim or acting capacity.
- From Large agency (78.6%), Medium agencies (71.4), and Small agencies (50%) stated CDO as their primary responsibility.

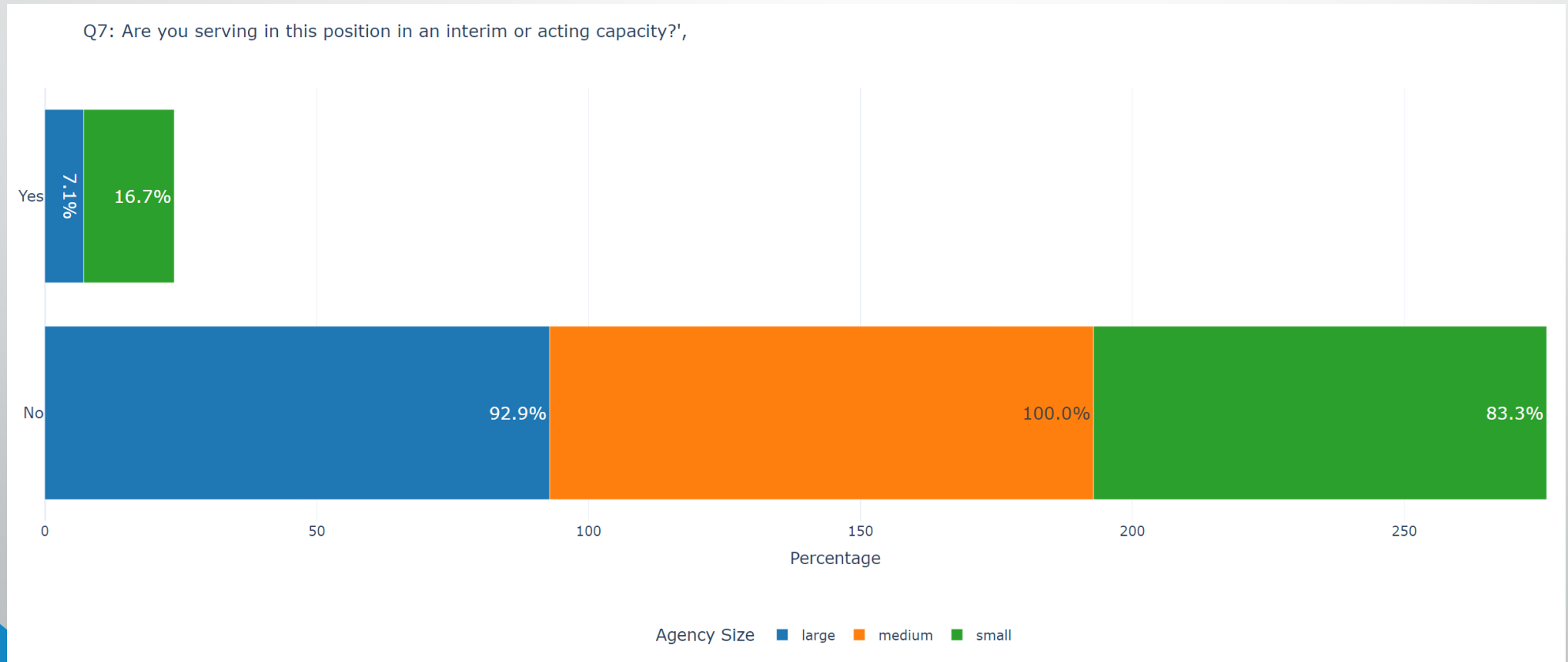
# Chief Data Officer Background



# Chief Data Officer Background

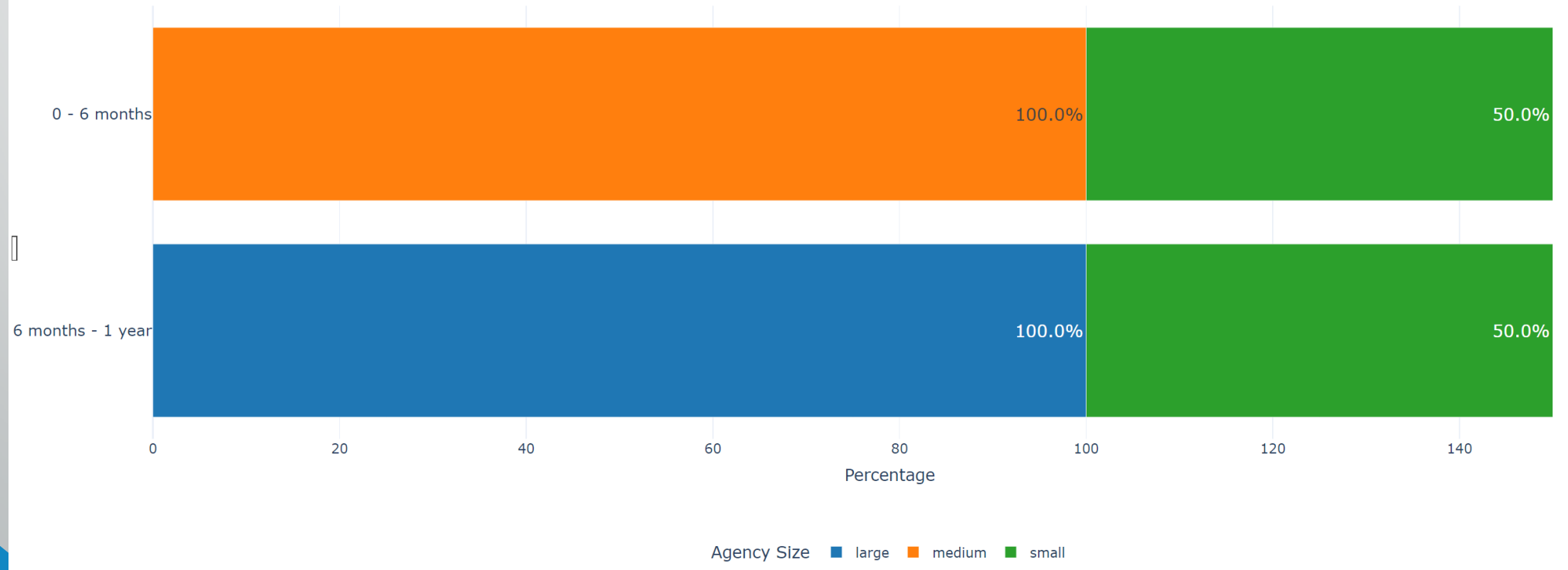


# Chief Data Officer Background



# Chief Data Officer Background

Q7A: if so, how long have you served in an interim or acting capacity?



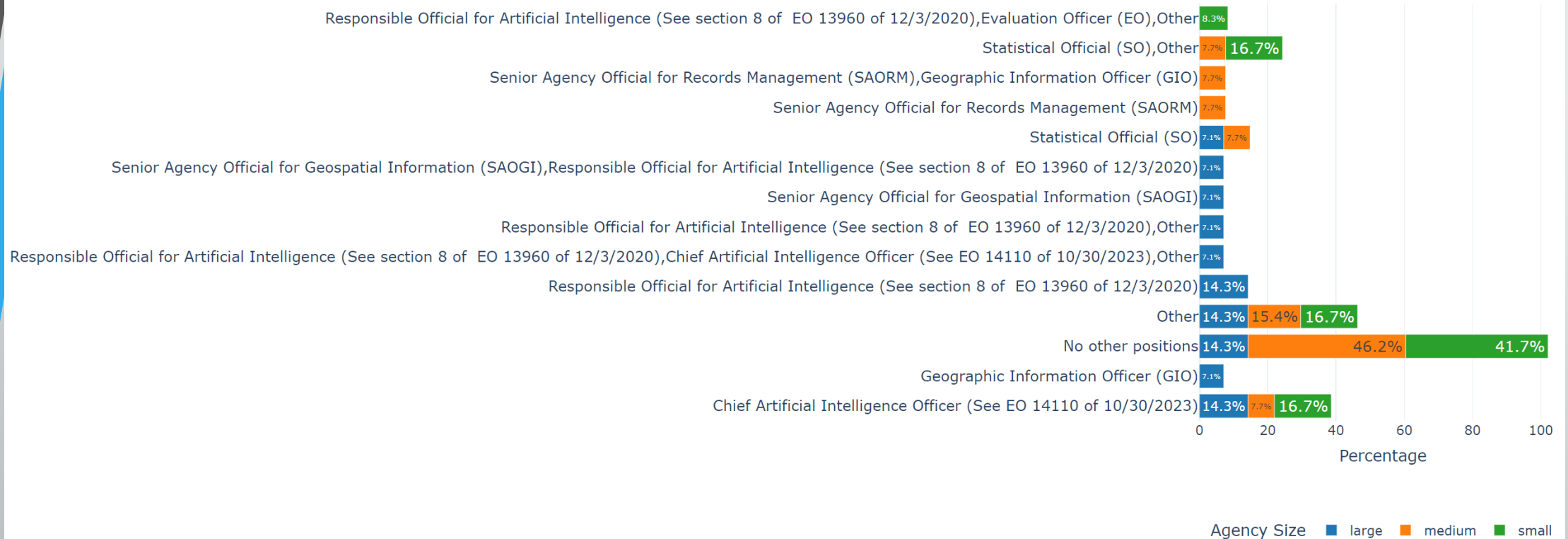
# Chief Data Officer Responsibility:

- In addition to CDO role, other common roles held by responders include:
  - Statistical Official (SO)
  - Chief Artificial Intelligence Officer (CAIO)
  - Deputy Performance Improvement Officer
  - Accountable Official



# Chief Data Officer Responsibility:

Q8: In addition to your CDO role, please select the other official titles that you have:

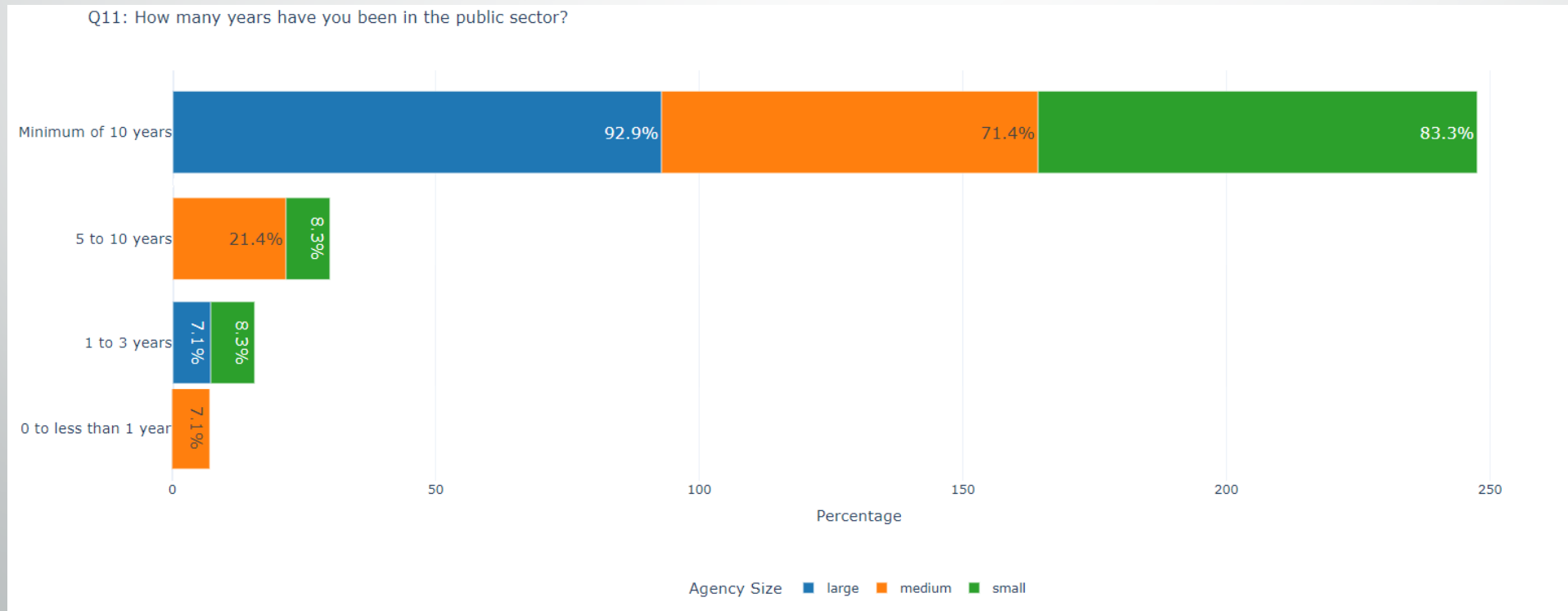


\*Executive Order (EO) 14110 of 2023: Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence: <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/>

# Chief Data Officer Experience

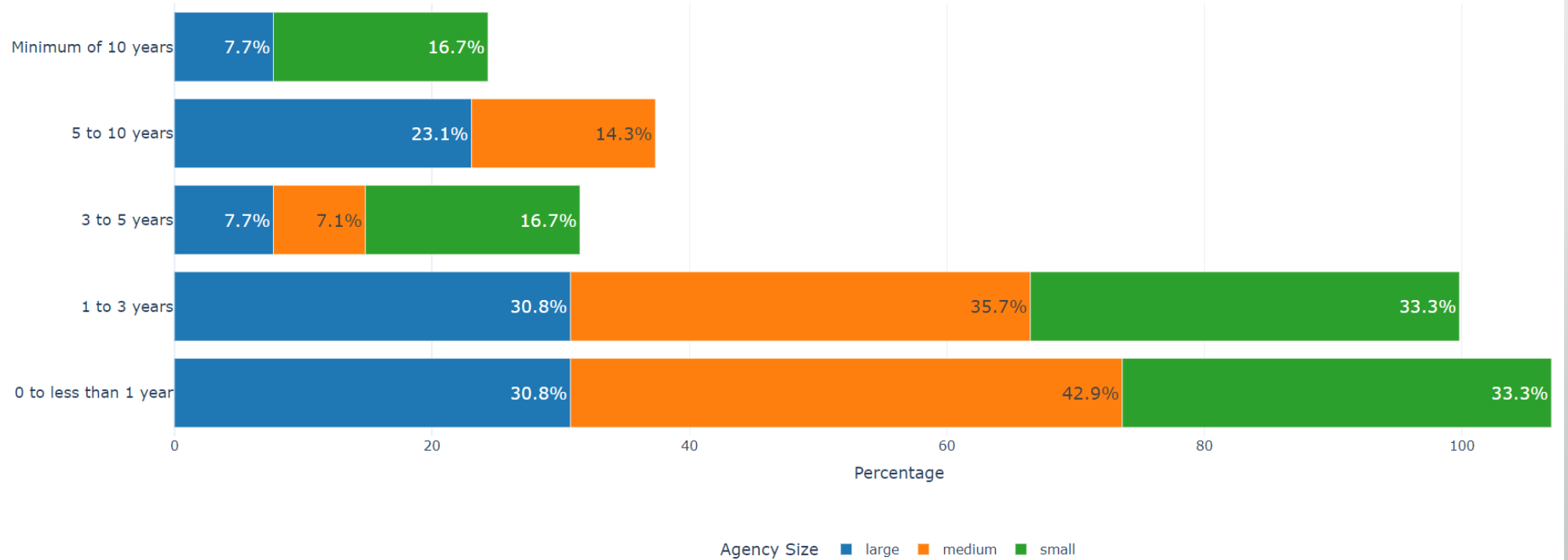
- Large size agencies:
  - 92.9% of responders stated they have been in the public sector for 10 years or more.
  - Approximately 43% responders have been with their current organizations for 10 years or more. Nearly 42.9 % responders have been with their current organization for at least 3 years, but less than 5 years.
  - Only 7.7% of responders have been in their current positions for 10 years or more. 30.8% of responders have been in their current position for at least 3 years but less than 10. 61.6% responders have been in current position for at least 1 year, but less than 3.
- Medium size agencies:
  - 71.4% of responders stated they have been in the public sector for 10 years or more.
  - Nearly 43% of responders from medium agencies have been with their current organization for 10 years or more. While the remaining 29% have been with their current organization for 5 years, but greater than 1 year.
  - 21.4% of responders reported they have been in their current position for at least 3 years but less than 10. 35.7 % reported current position for at least 1 year but less than 3. 42.9% reported to have been in current position for less than 1 year.
- Small size agencies:
  - 83.3% of responders from small agencies have been in the public sector for 10 years or more
  - For small agencies about 25% responders have been with their current organization for 10 years or more while 50% have been with their organization for more than 1 year, but less than 5.
  - 16.7% of responders have been in their current positions for 10 years or more. 50% reported to have been in current position for at least 1 year but less than 5.

# Chief Data Officer Experience

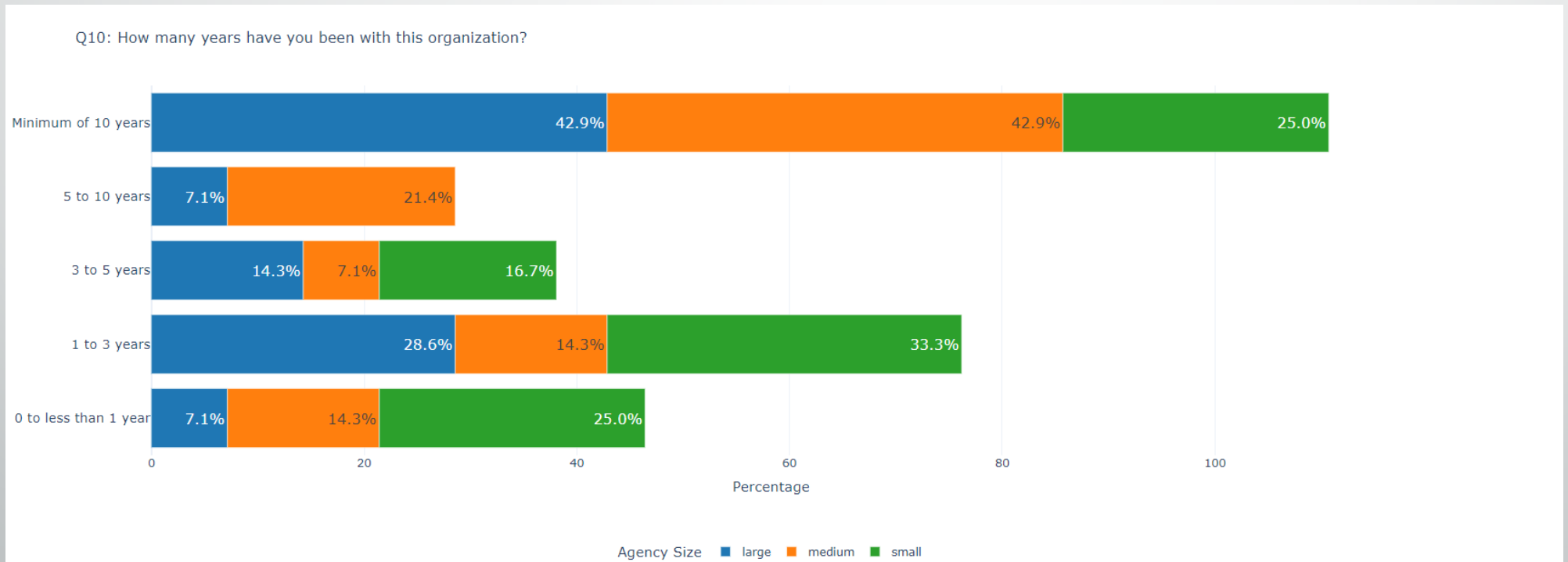


# Chief Data Officer Experience

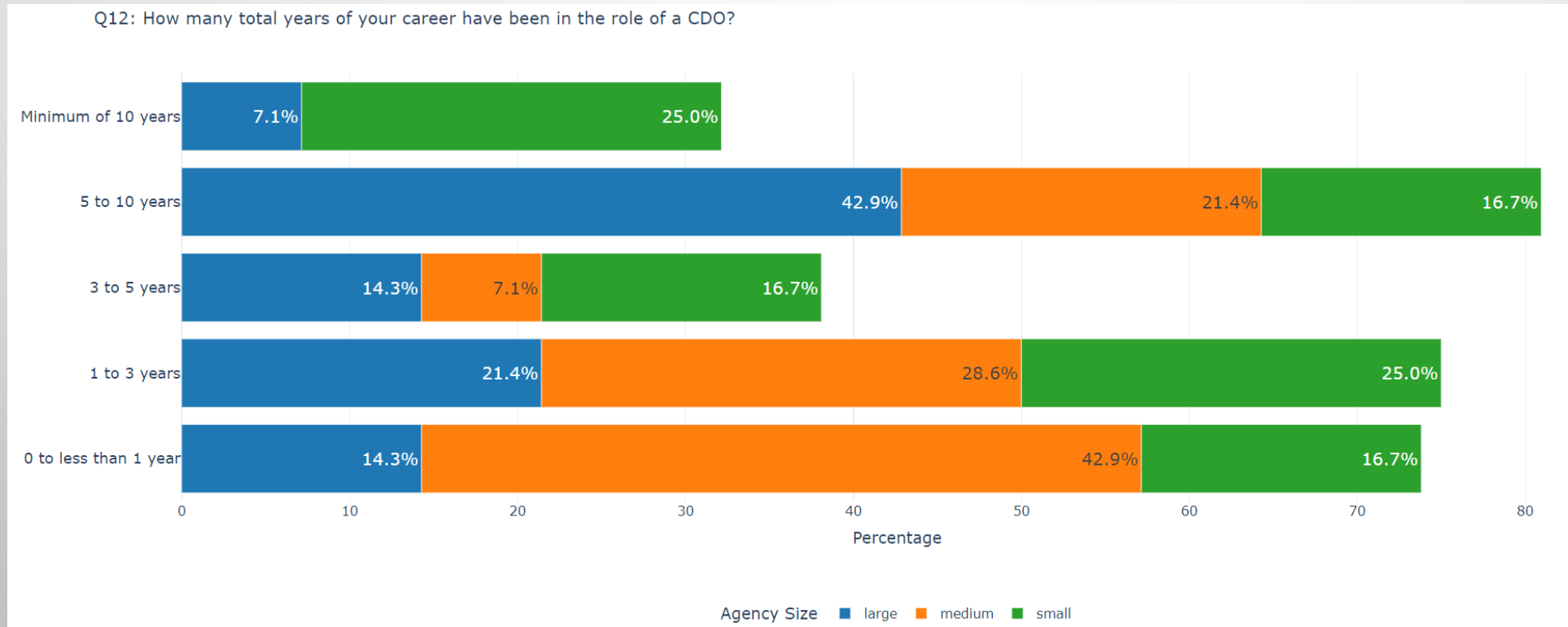
Q9: How many years have you been in your current position?



# Chief Data Officer Experience

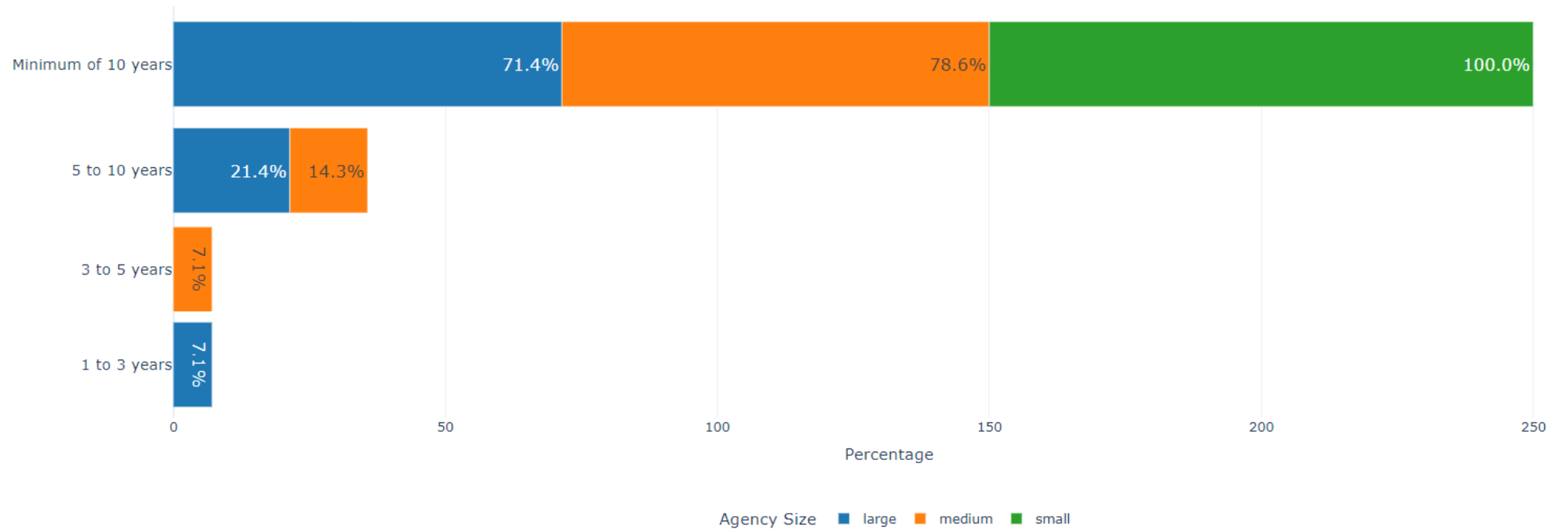


# Chief Data Officer Experience



# Chief Data Officer Experience

Q13: How many total years of your career have been focused on data and analytics?



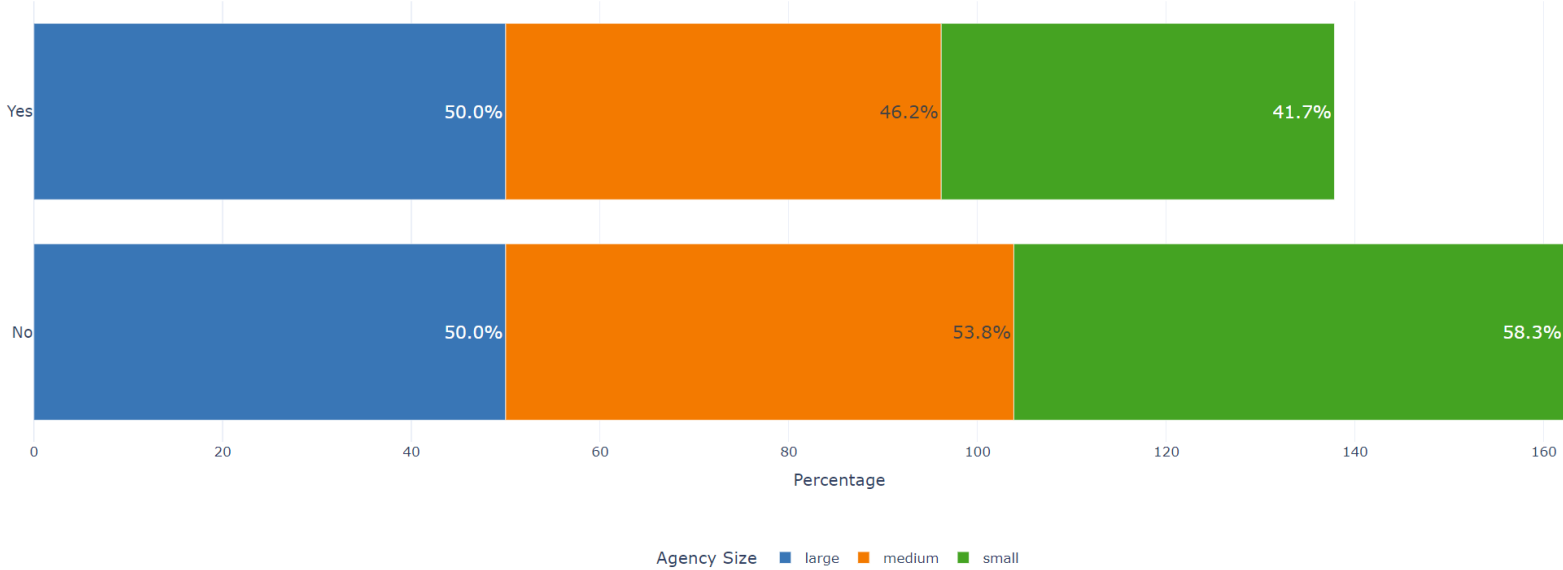
# Chief Data Officer Training

- Training opportunities around data governance / management:
  - In response to participation in training opportunities around data governance / data management in their 'current positions', the following trend is observed:
    - 'YES'
      - 50% responders from Large agencies
      - 53.8% from Medium size agencies
      - 58.3 % from Small size agencies
- The following training opportunities are the most common among survey responders:
  - Gartner Data & Analytics Summit
  - The Data Management Association (aka Data Administration Management Association) (DAMA Interational ), Data Lodge
  - AI Federal Leadership Program (1 year, provided by the Partnerships for Public Service)
  - Dataversity – 2023 Data Governance & Information Quality Conference (DGIQ) West
  - CDOIQ Conference;
  - CDO Certification, MIT-CDOIQ



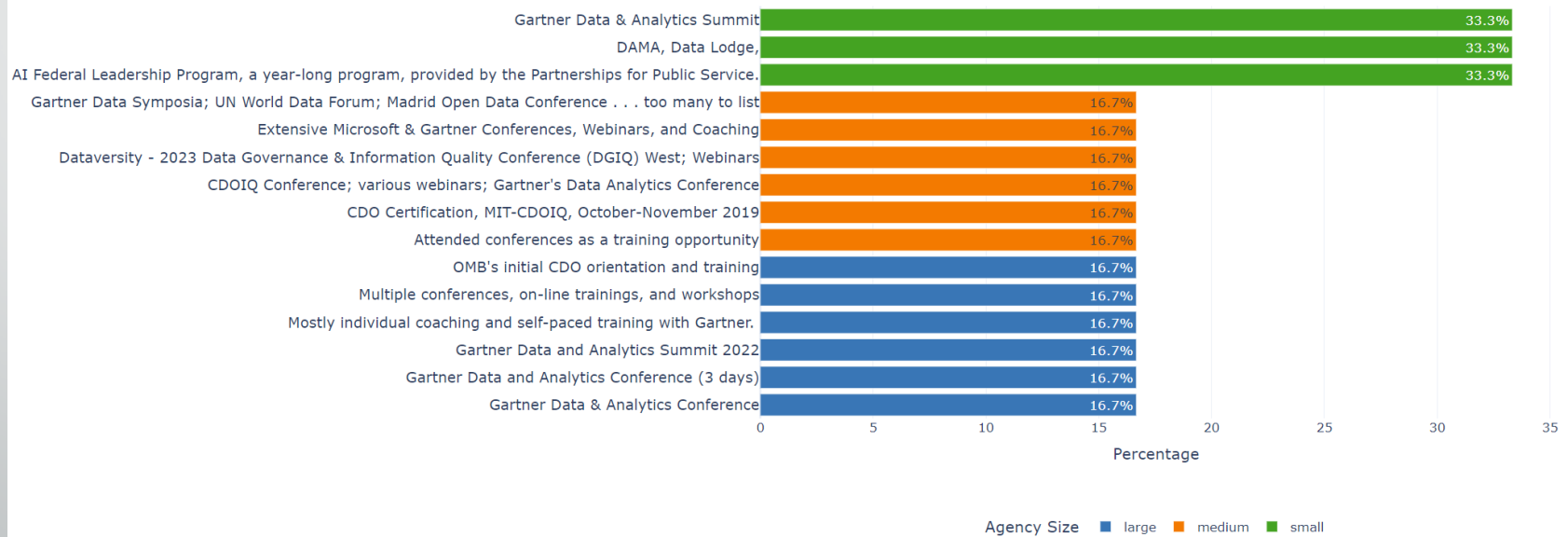
# Chief Data Officer Training

Q14: In your current position, have you participated in any training opportunities around data governance or data management?



# Chief Data Officer Training

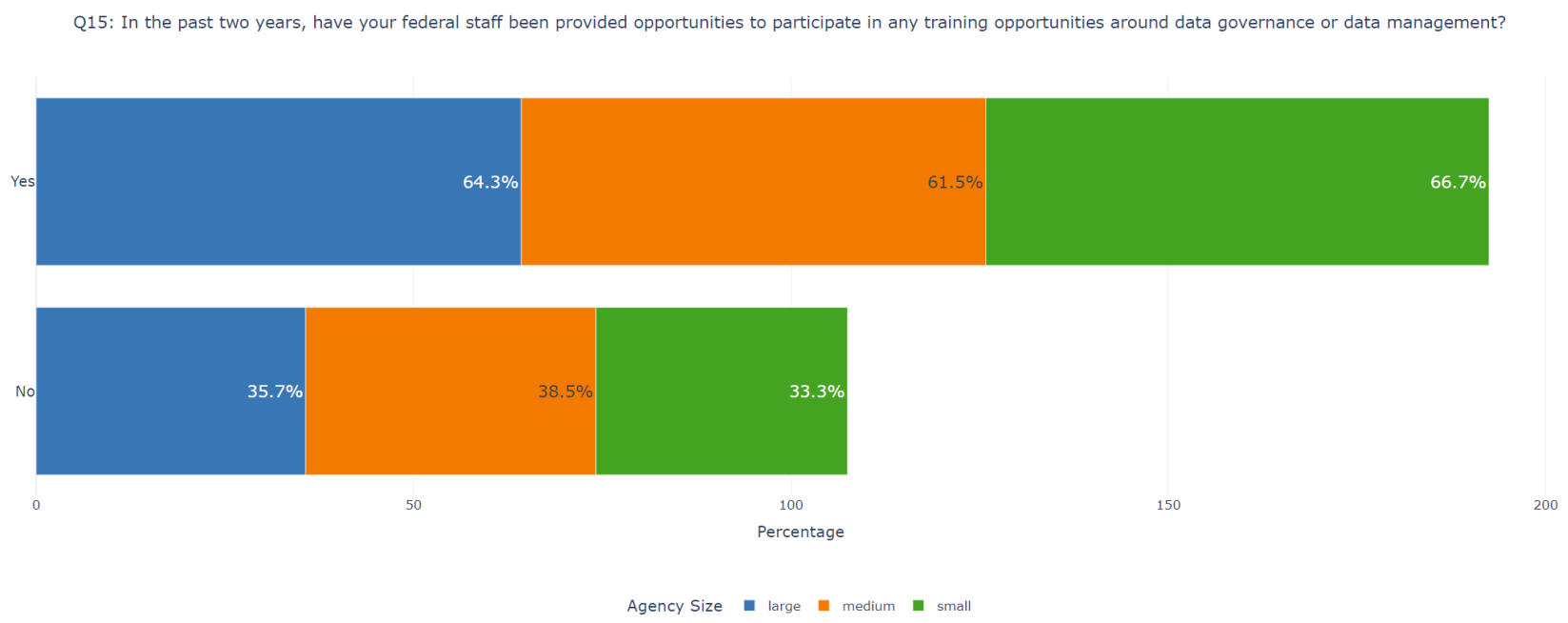
Q14A: Please list the name, organization and duration (length of time) of your training?



# Chief Data Officer Training

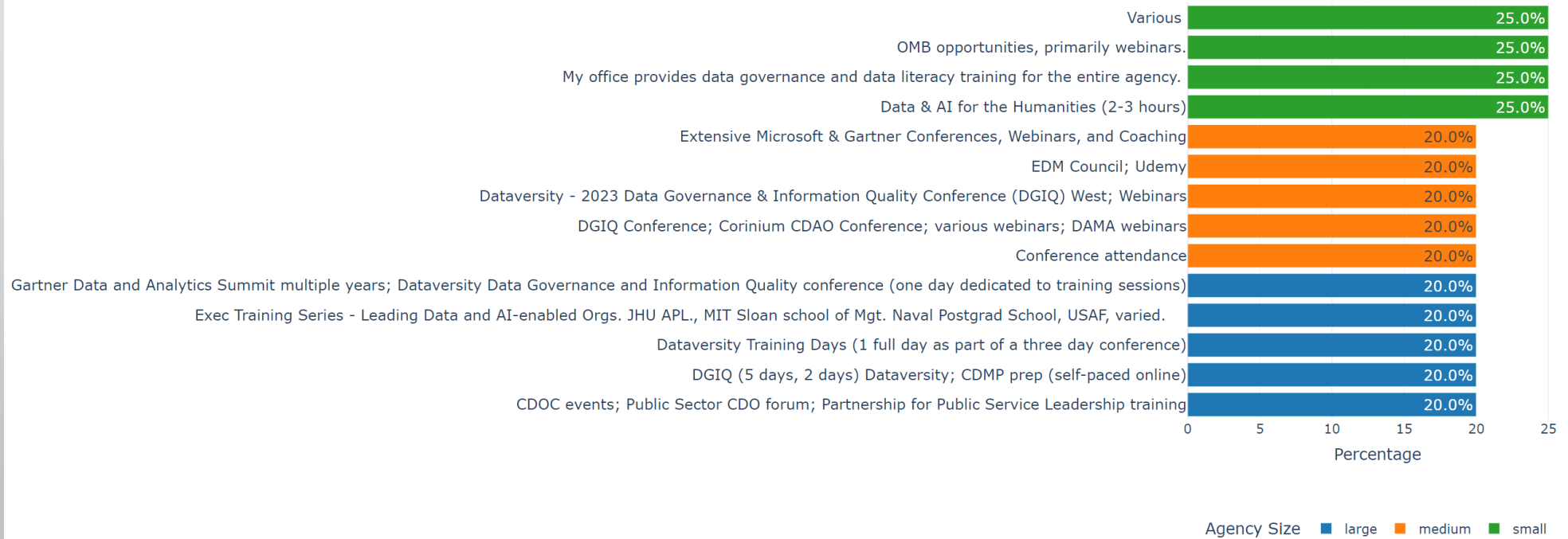
- Training opportunities around data governance / management:
  - In response to participation in training opportunities around data governance / data management for 'federal staff' the following trend is observed:
    - 'YES'
      - 64.3% responders from Large agencies
      - 61.5% from Medium size agencies
      - 66.7% from Small size agencies

# Chief Data Officer Training



# Chief Data Officer Training

Q15A: Please list the name, organization and duration (length of time) of your training?

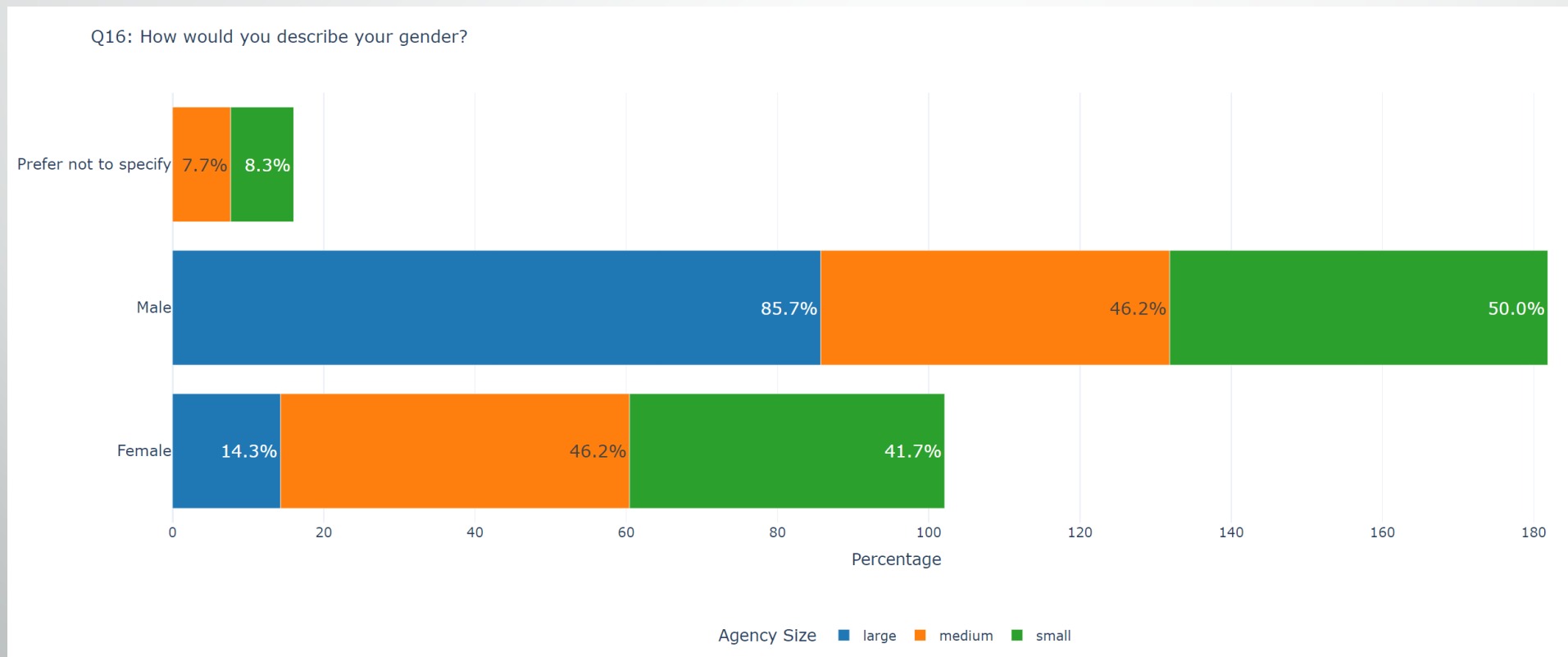


# Chief Data Officer Background

- Large Agencies:
  - 85.7% identified as Male, 14.3 % identified as Female
  - 85.7% are White
  - 28.6 % have at least Bachelor's, 50% have Masters and 21.4% have PhD or other terminal degree
- Medium Size Agencies:
  - 46.2 % identified as Male, 46.2% identified as Female, and 7.7% preferred not to specify
  - 90.9 % identified as White, 9.1% identified as Asian
  - 75% reported having at least Masters degree and 25% have PhD or other terminal degree
- Small Size Agencies:
  - 50% identified as Male, 41.7 % identified as Female, 8.3% preferred not to specify
  - 66.7% are White, 16.7% reported as Asian
  - 25 % have at least Bachelor's, 33.3% have Masters and 41.7% have PhD or other terminal degree

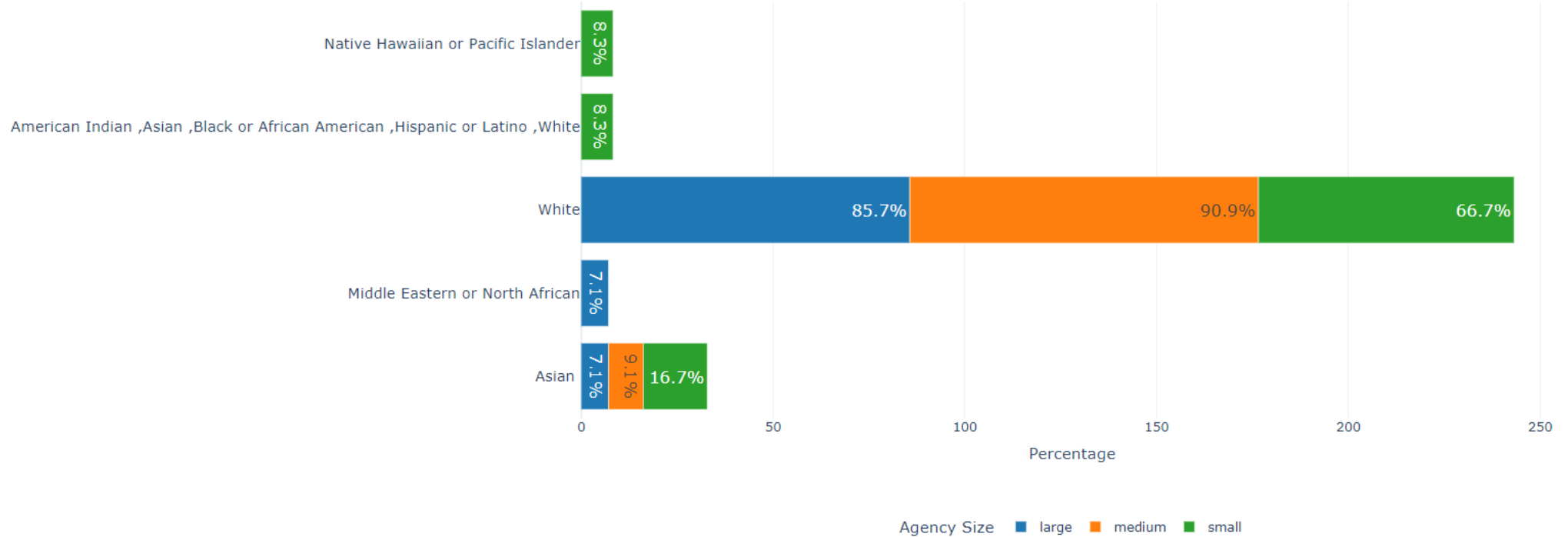
Education background trend is consistent with previous years results. Most common field of study stated are Engineering and Technology, Computer Science, and Data science. In response having other professional data and analytics certifications, 85.7% from Large Agencies 76.9 % from Medium Size Agencies, and 66.7% from Small Size Agencies reported "**No**".

# Chief Data Officer Background



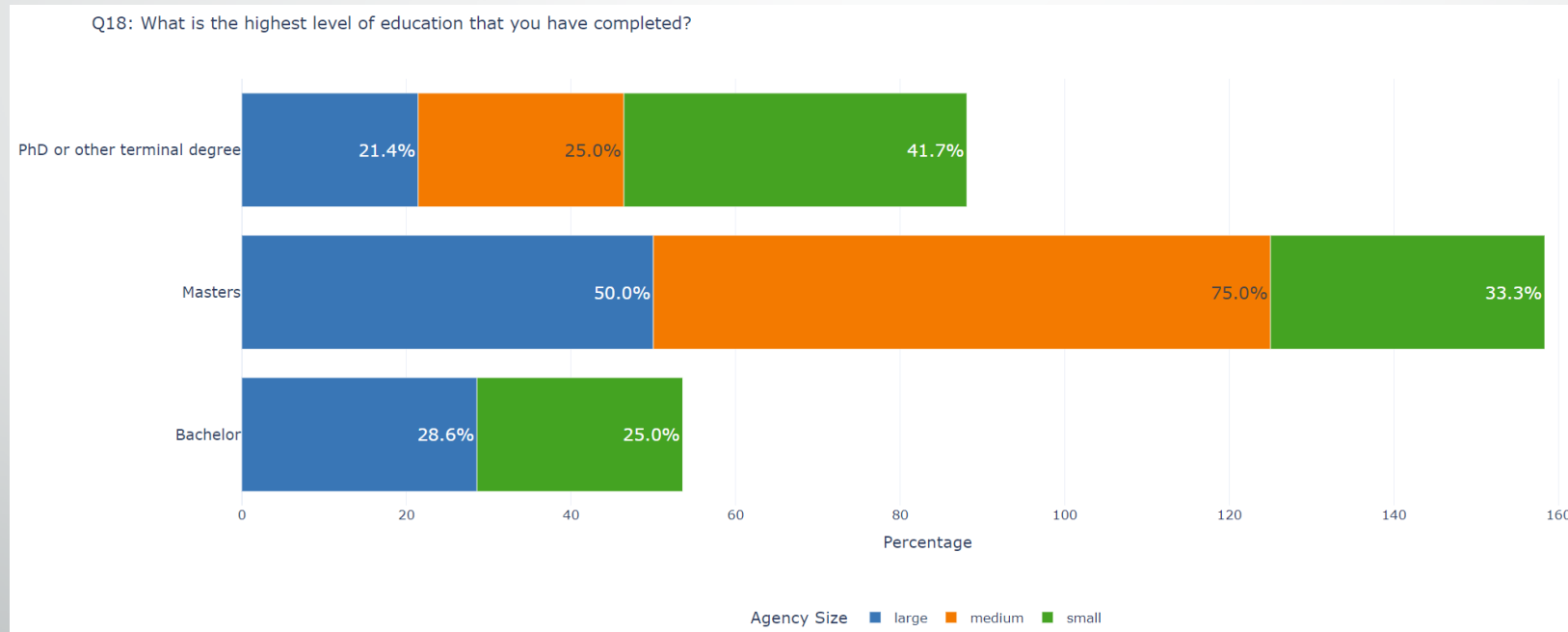
# Chief Data Officer Background

Q17: How would you describe your race?

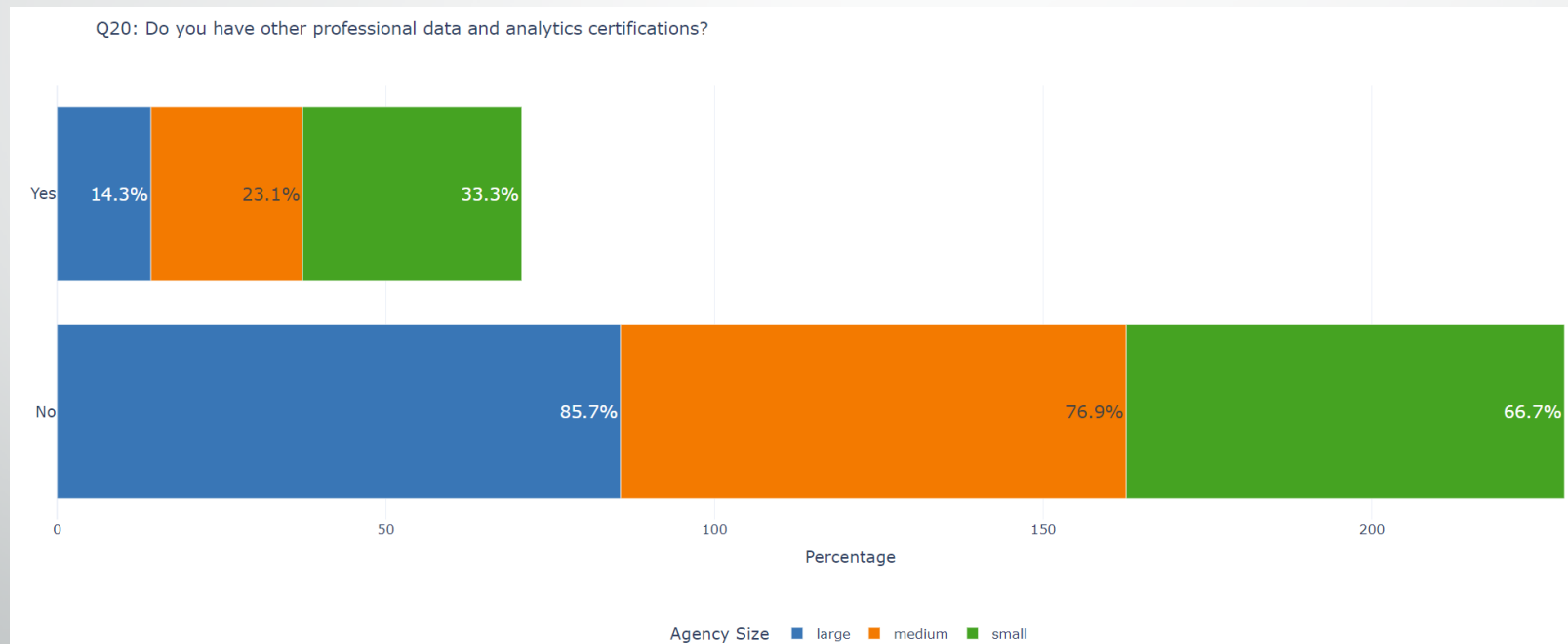




# Chief Data Officer Background



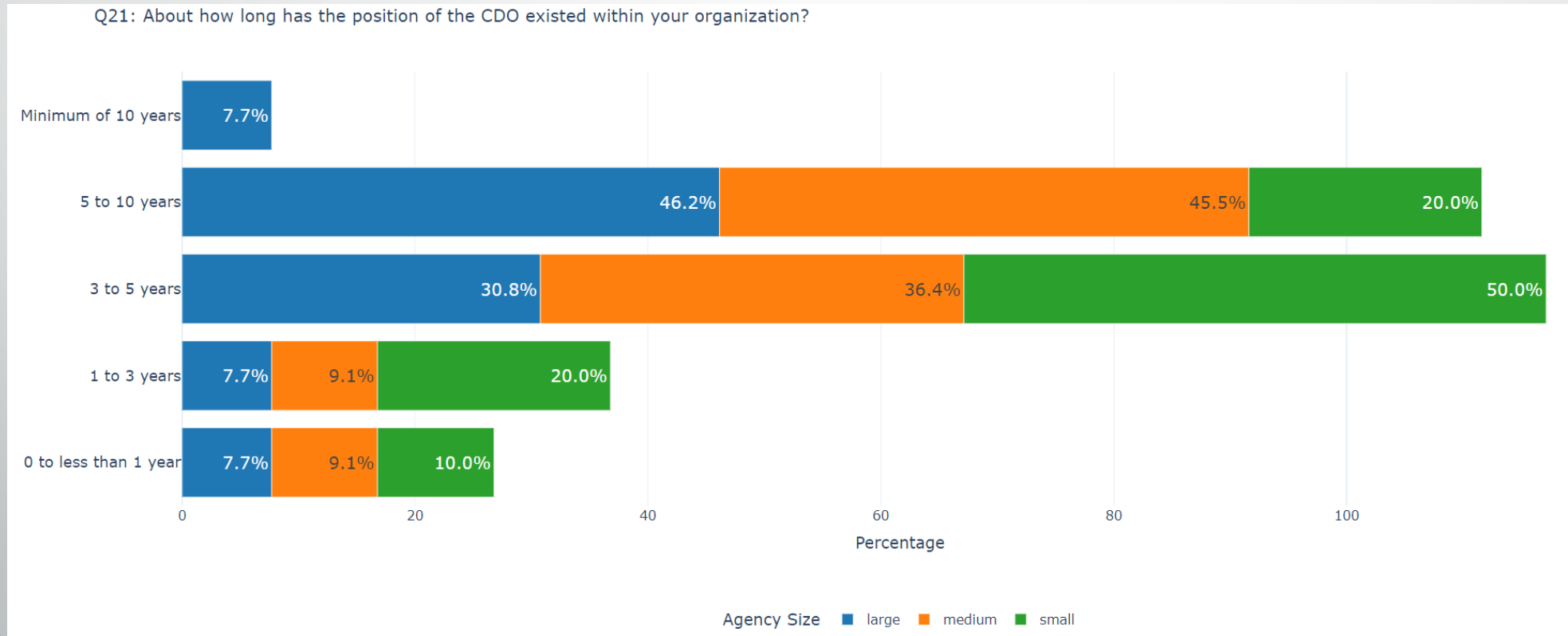
# Chief Data Officer Education Background



# CDO Agency Structure

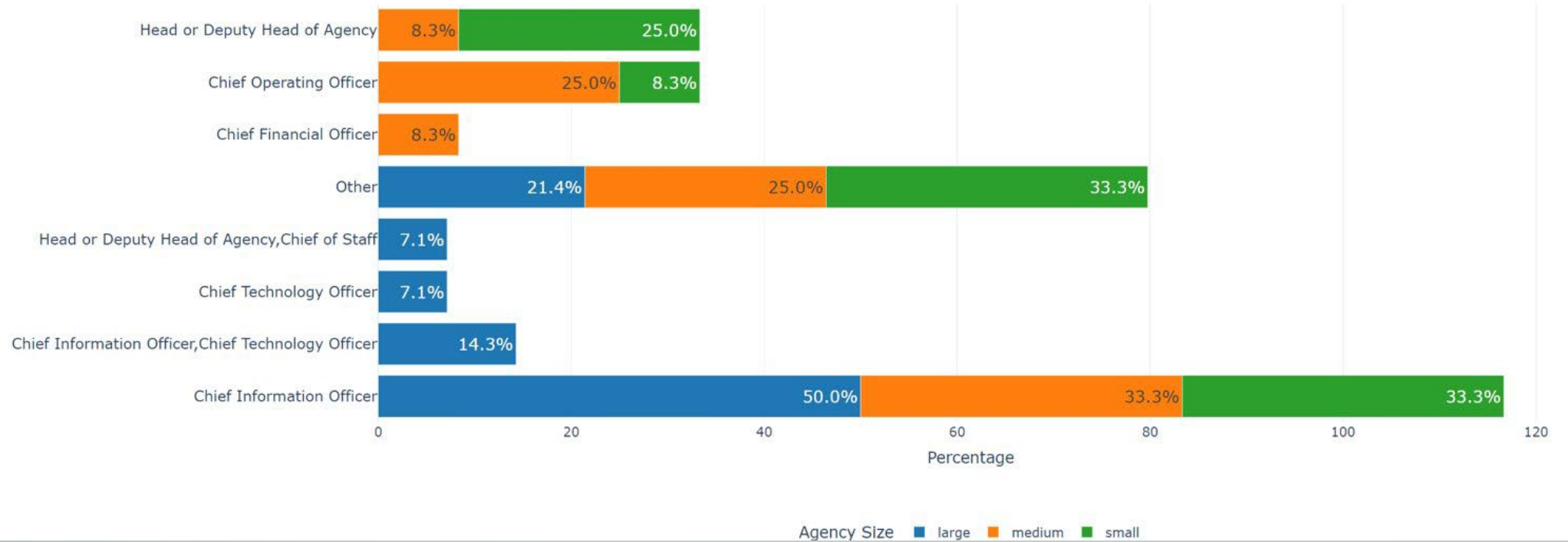
- The reporting structure for Chief Data Officers (CDOs) remains consistent across agencies, with no clear evidence of planned changes. Approximately 42% of responders from small agencies reported being 'Unsure' about future to adjust this structure. The following slides provide a detailed breakdown.

# Chief Data Officer Role Structure



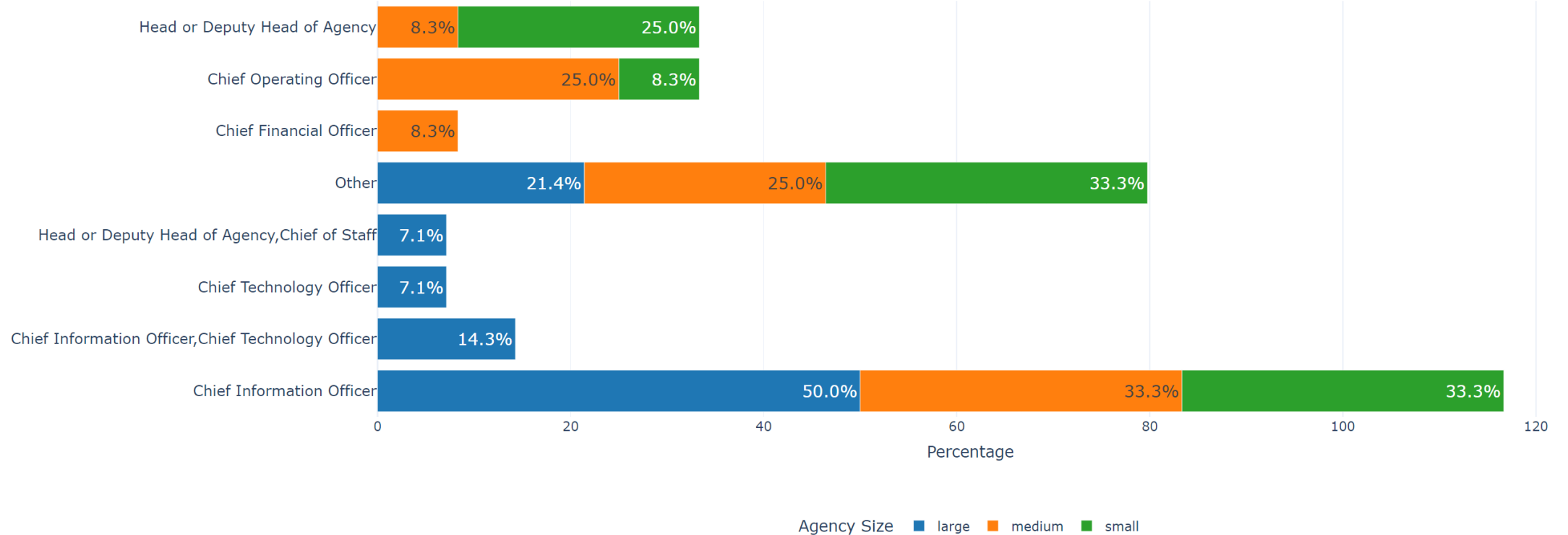
# CDO Agency Structure

Q22: Who do you report to as CDO in your current agency structure?



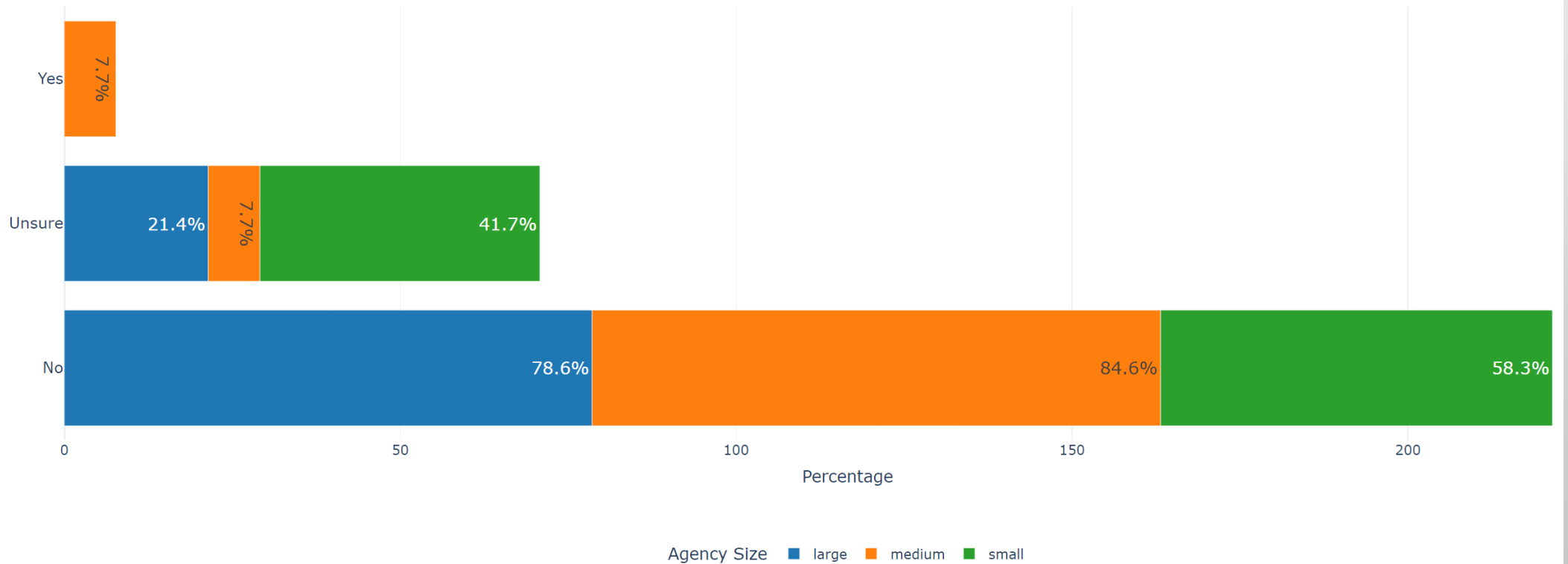
# CDO Agency Structure

Q22: Who do you report to as CDO in your current agency structure?

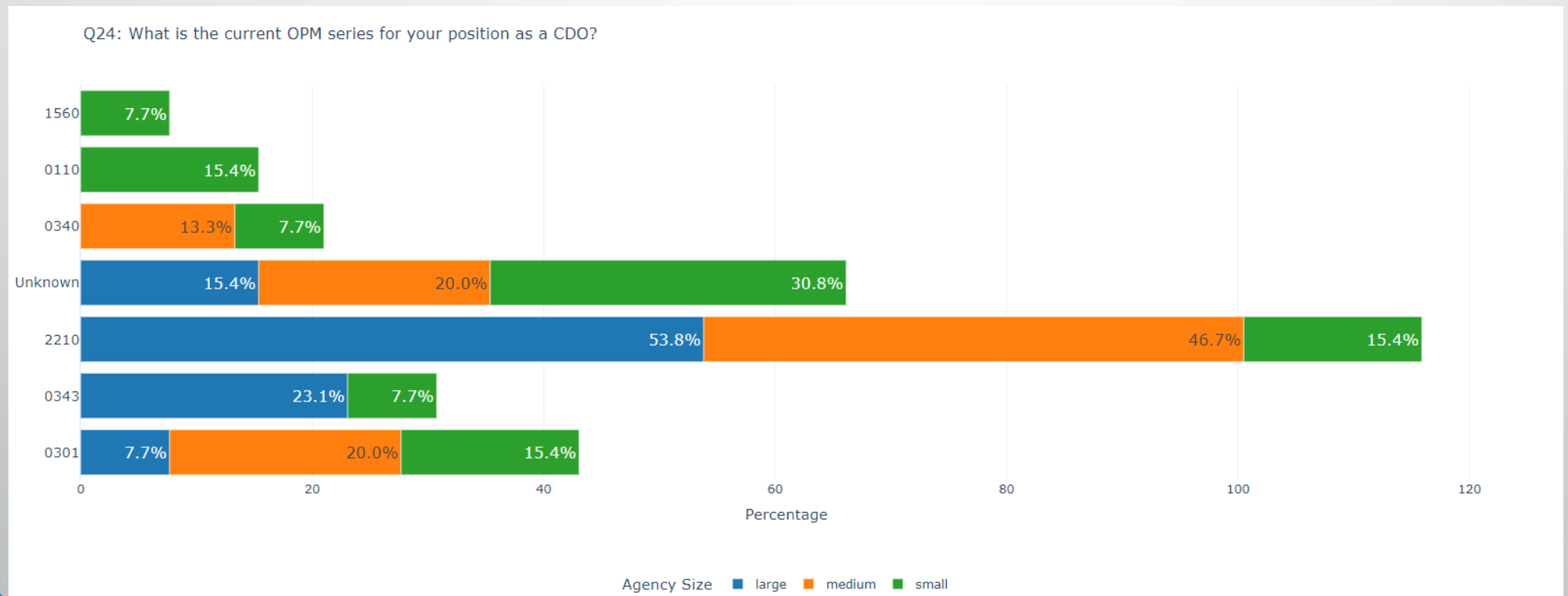


# CDO Agency Structure

Q23: Does your agency have plans to change the reporting structure for the CDO?



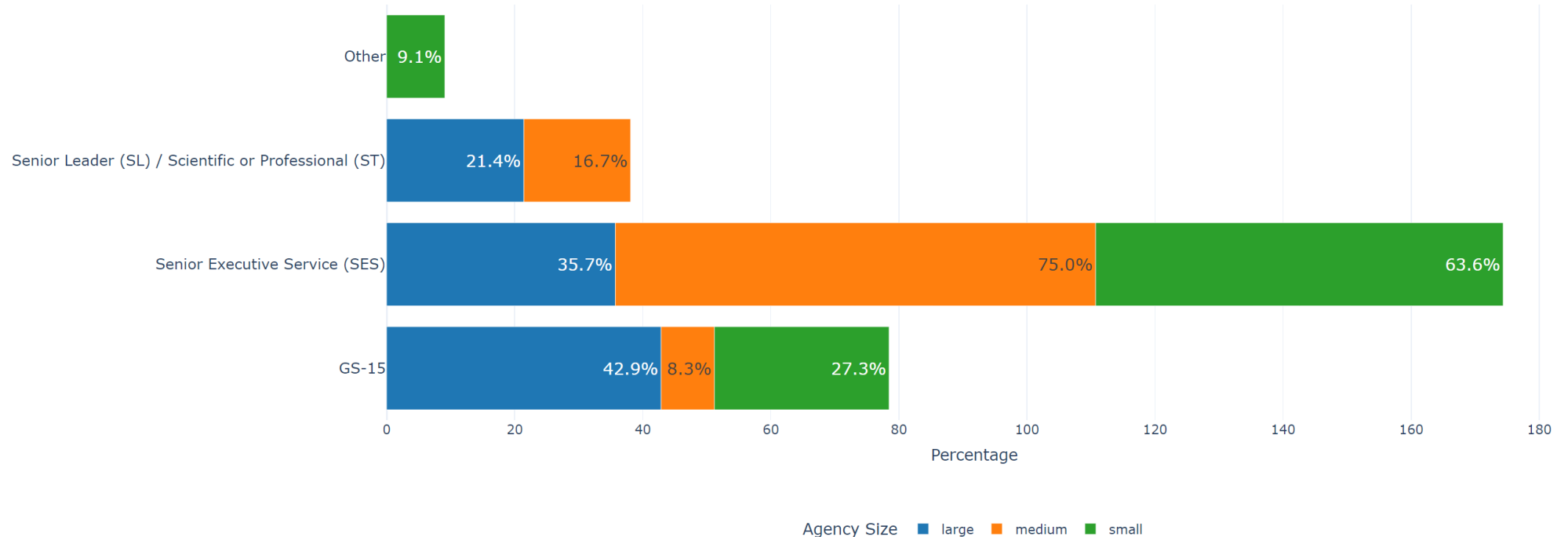
# CDO Agency Structure





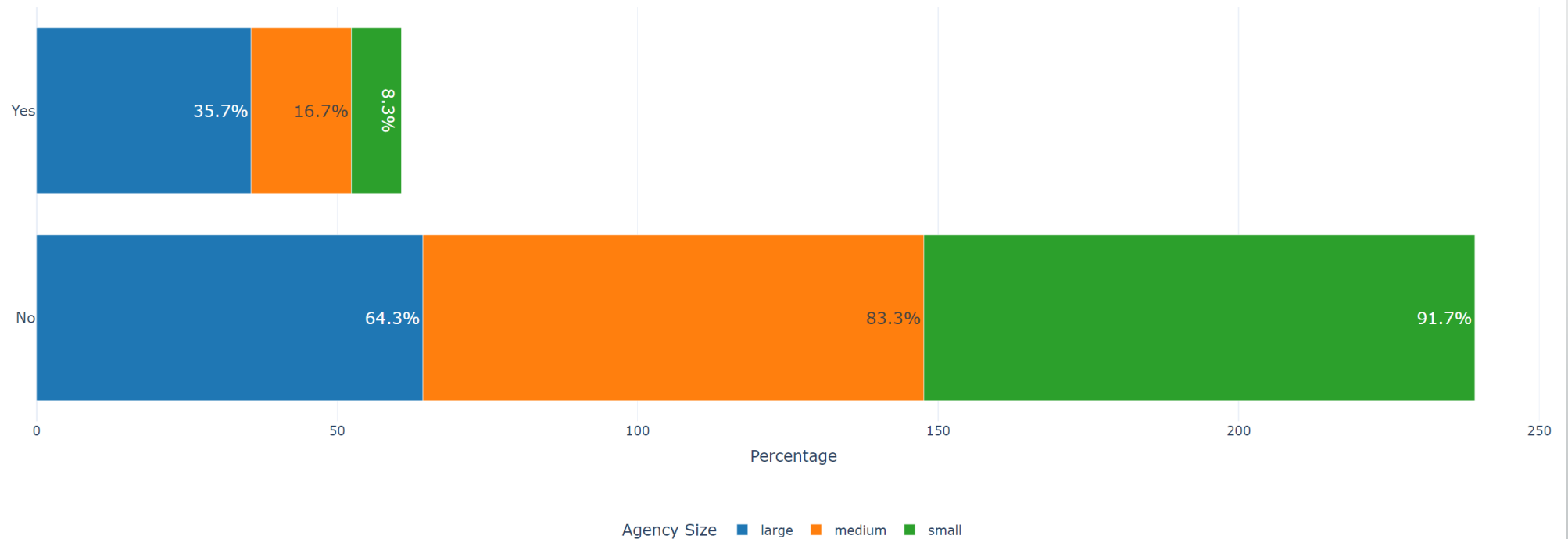
# CDO Agency Structure

Q25: What is your current GS-level or equivalent?



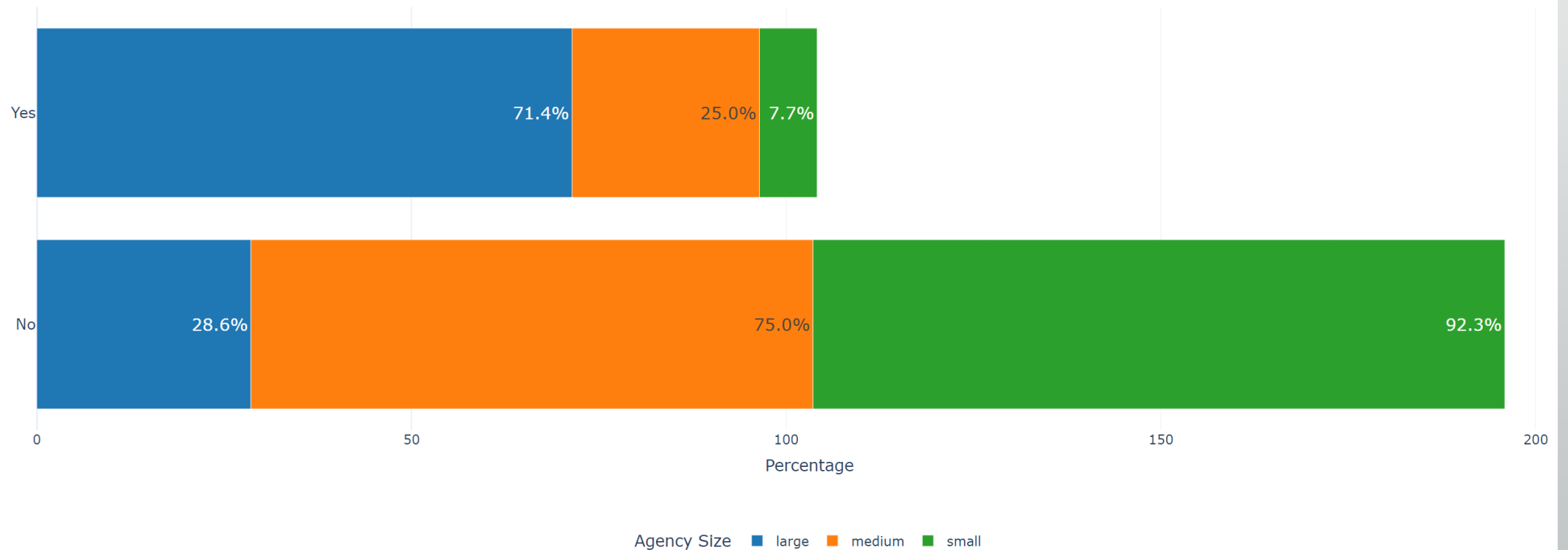
# CDO Agency Structure

Q26: Is there a separate Chief Analytics Officer / executive analytics role in your organization?



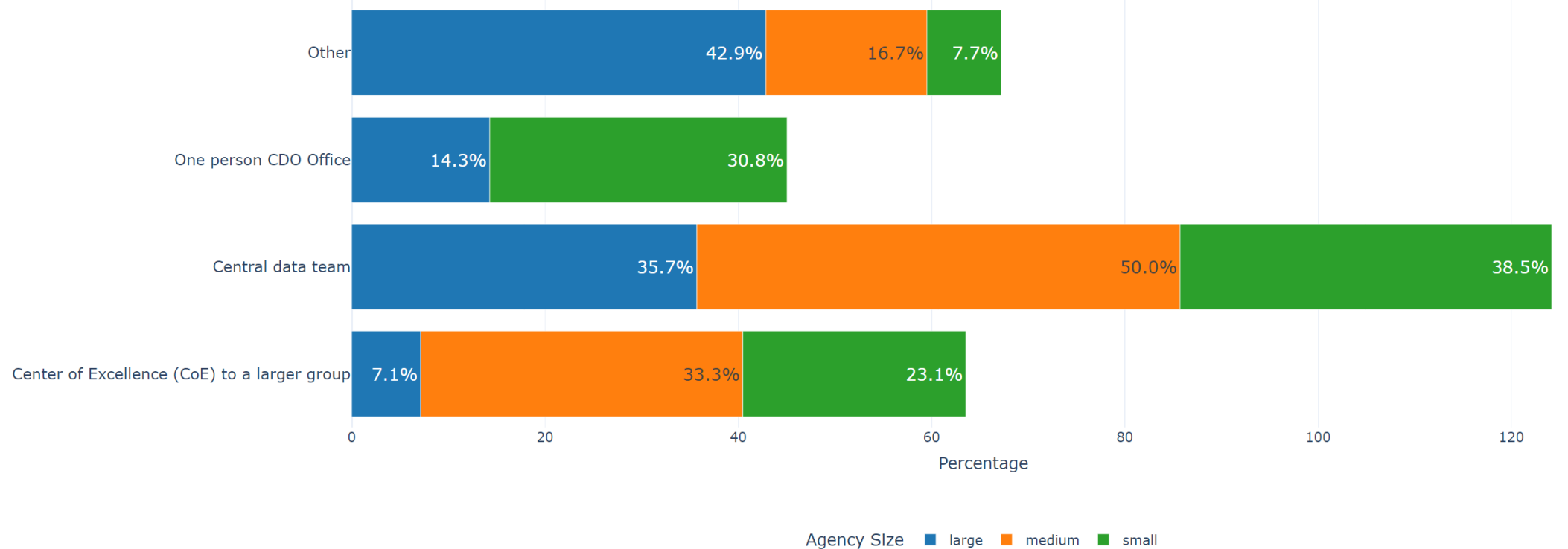
# CDO Agency Structure

Q27: Do you have subcomponent CDOs at your agency?



# CDO Agency Structure:

Q28: My CDO Office operates as a:





# CDO Agency Structure:

- Medium and small agencies emphasize Data Modernization, reflecting efforts to improve legacy systems.
- Data Quality Management remains a priority for over 60% of large agencies

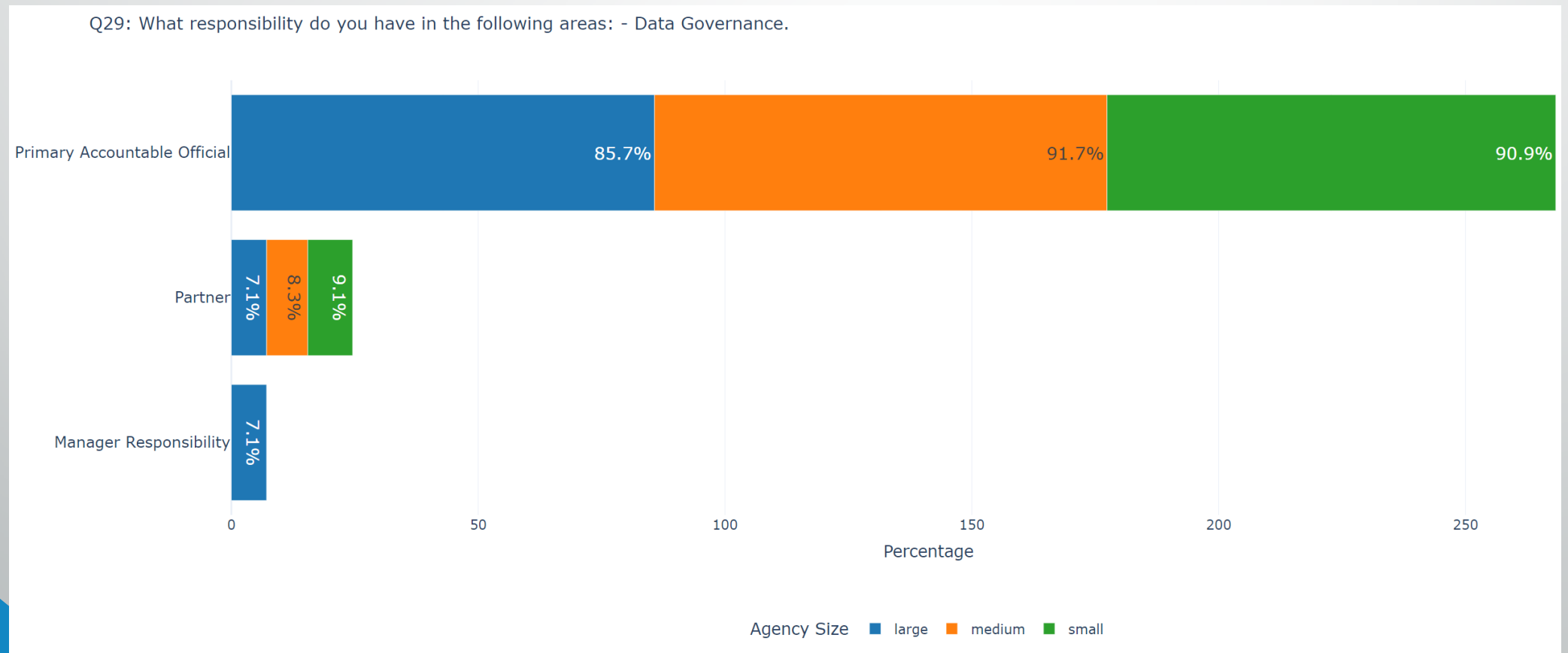
# Area of Responsibilities:

- The following areas of responsibilities were surveyed among responders. The responsibility tier include 'Primary Accountable Official', 'Partner', 'No Responsibility', and 'Manager Responsibility':

- Open Data
- Data Integration
- Data Governance
- Data Management
- Data Architecture
- Data Policy
- Data Strategy

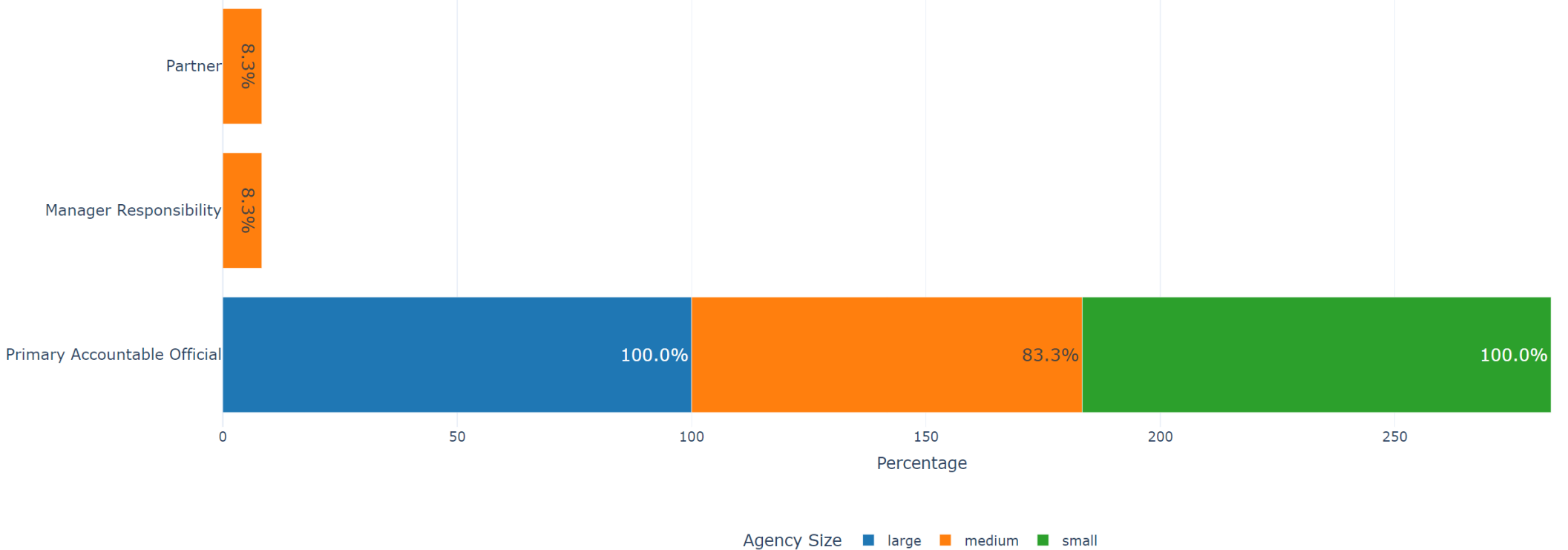
- Information Collections/ Paperwork Reduction Act
- FOIA
- Records Management
- eDiscovery
- Data Engineering
- Data Quality Management
- Data Manipulation / ETL
- Data Modernization

# CDO Responsibilities and Organizational Role:



# CDO Responsibilities and Organizational Role:

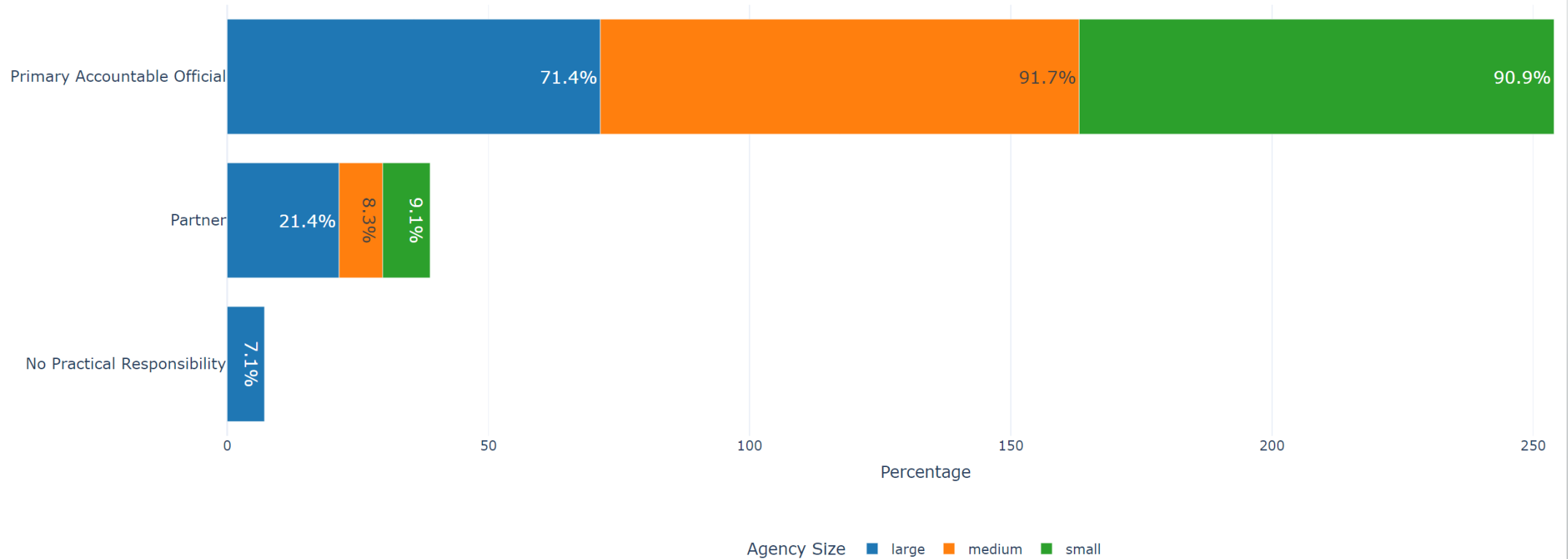
Q29A: What responsibility do you have in the following areas: - Data Strategy.



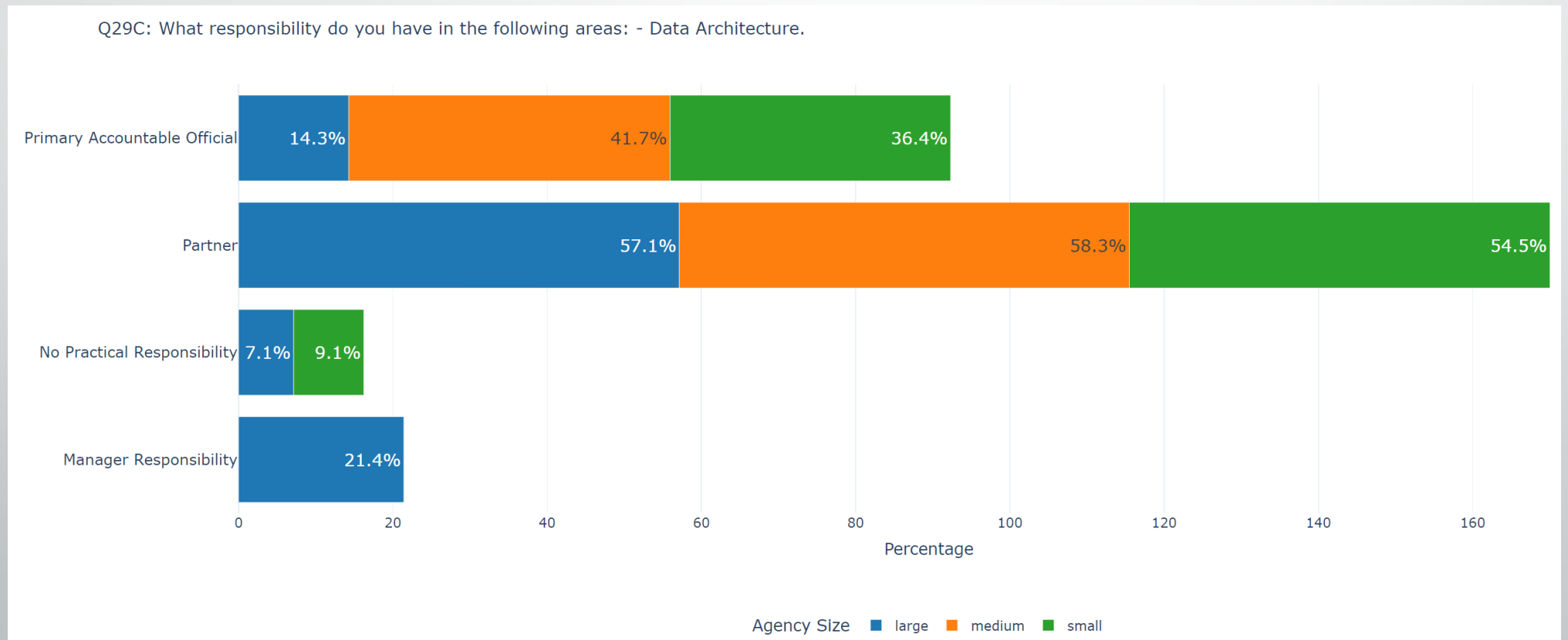


# CDO Responsibilities and Organizational Role:

Q29B: What responsibility do you have in the following areas: - Data Policy.

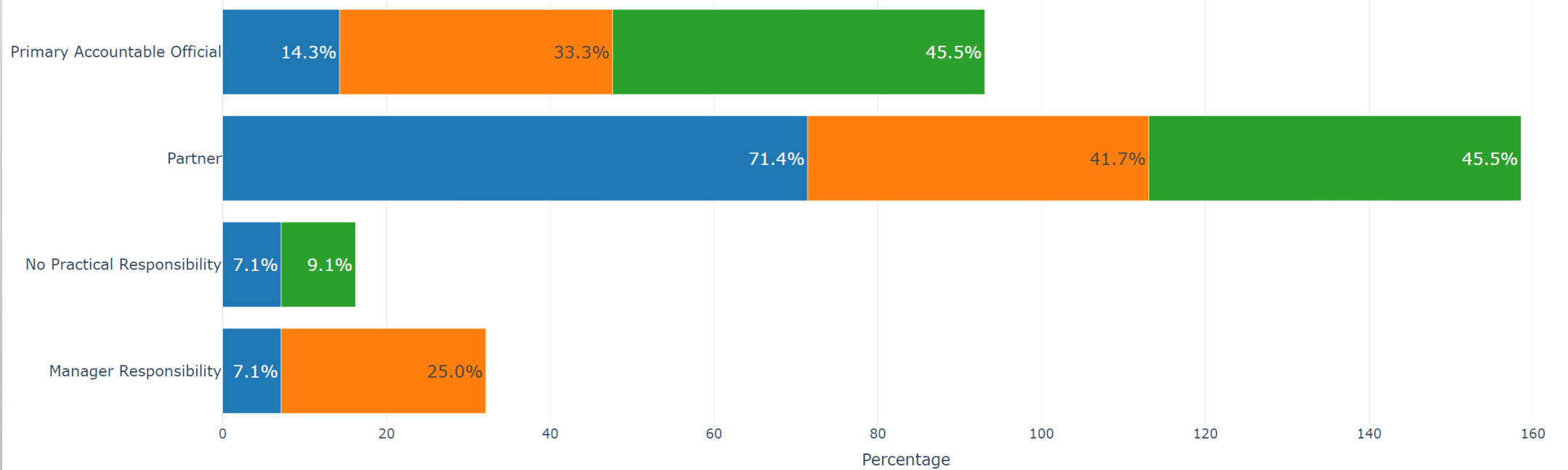


# CDO Responsibilities and Organizational Role:



# Area of Responsibilities:

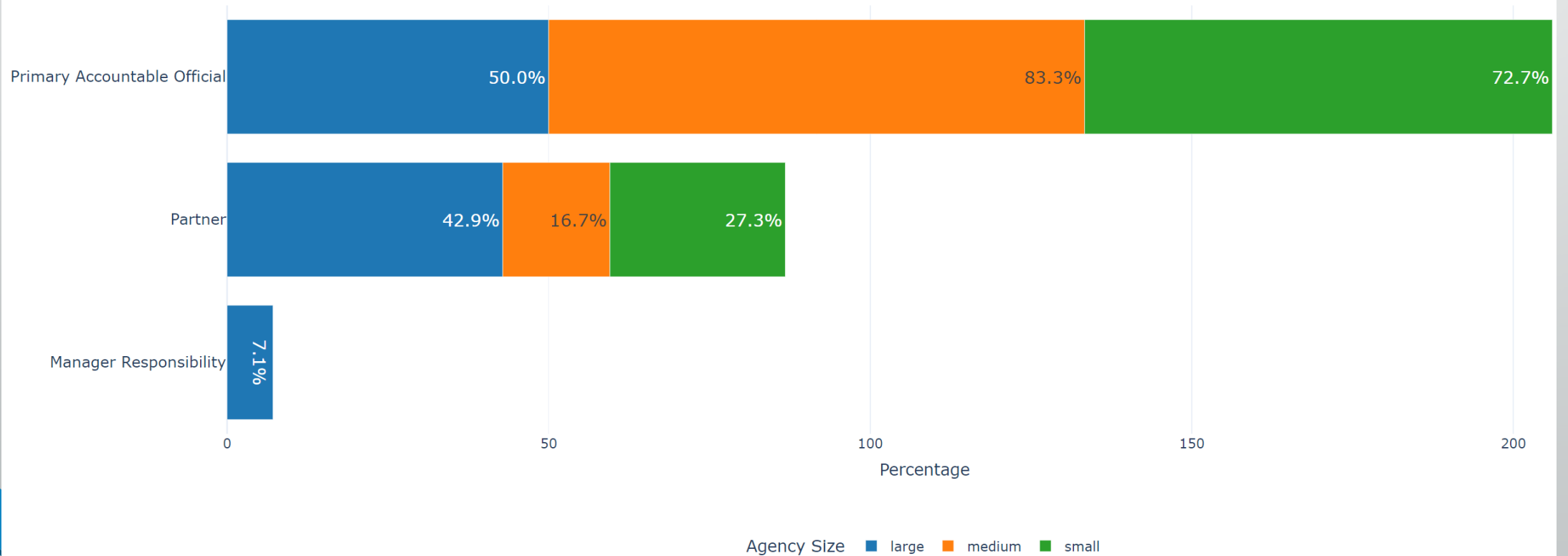
Q29D: What responsibility do you have in the following areas: - Data Integration



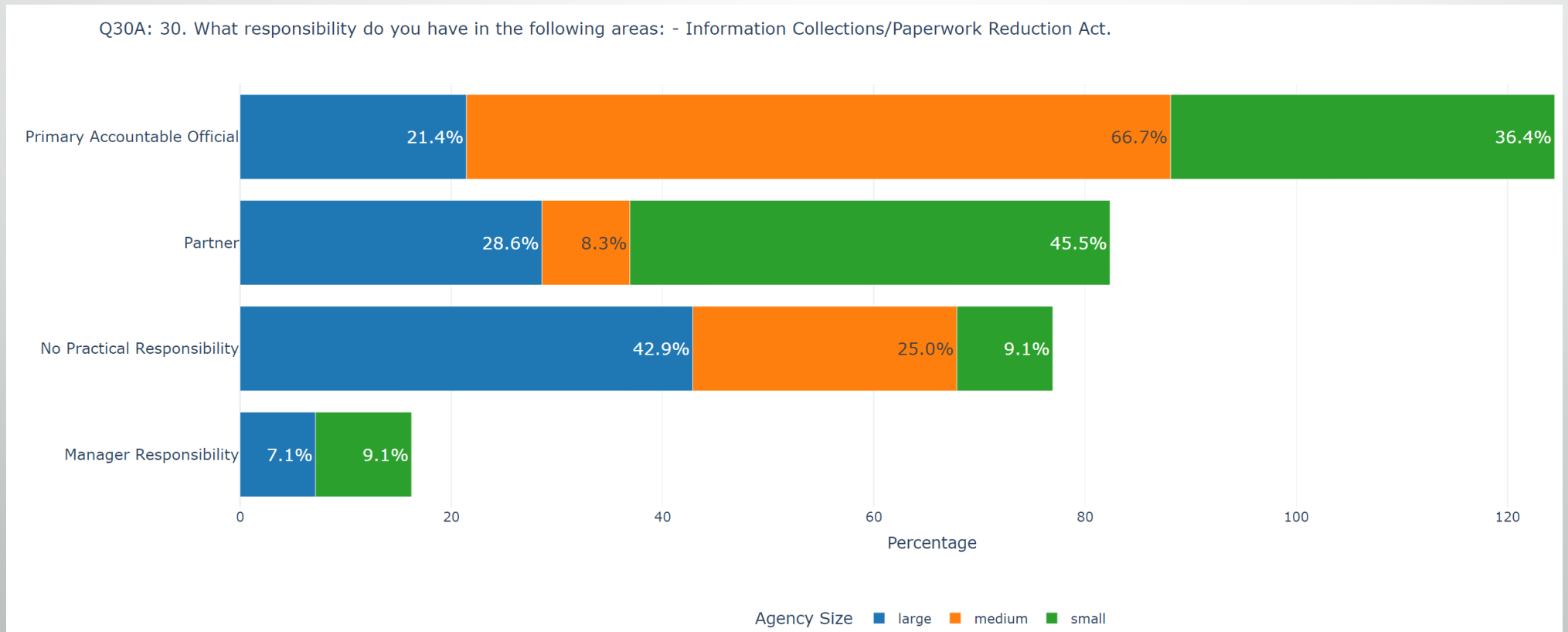
Agency Size ■ large ■ medium ■ small

# CDO Responsibilities and Organizational Role:

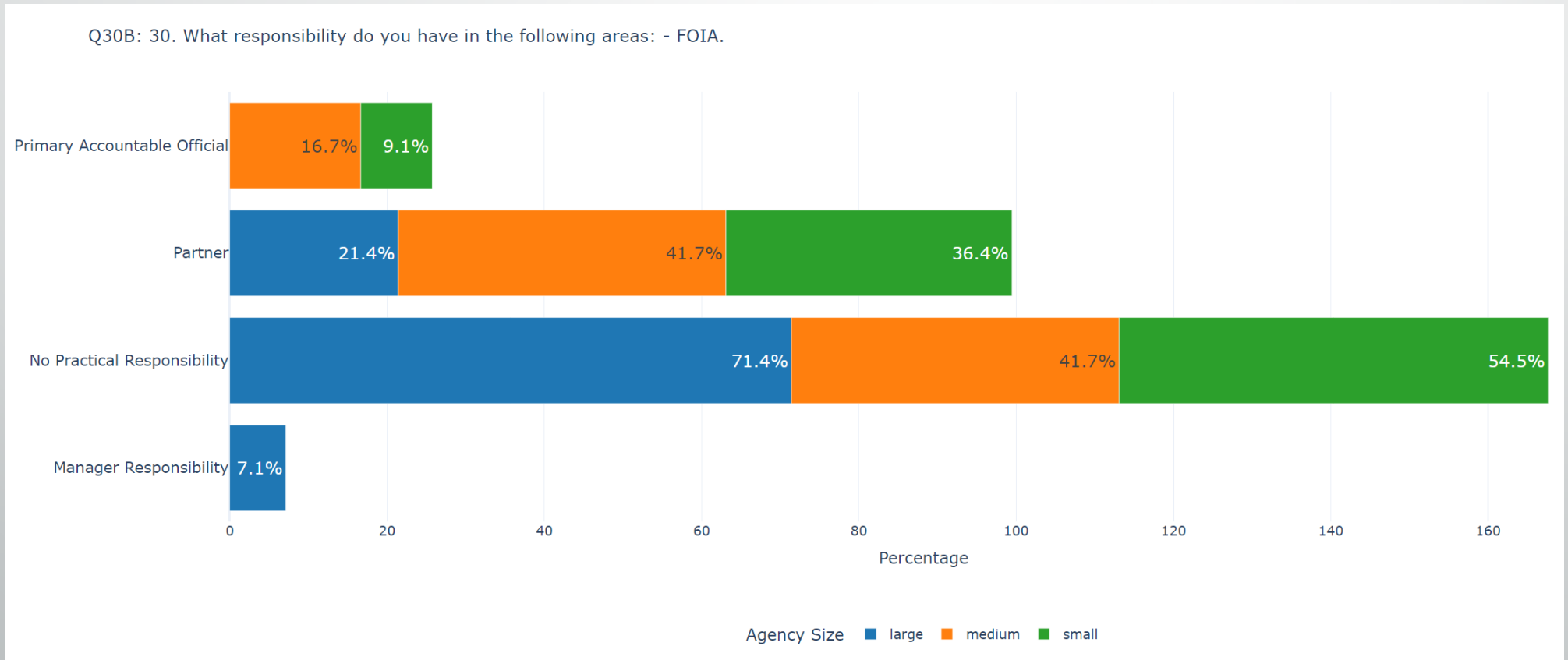
Q30: What responsibility do you have in the following areas: - Open Data.



# CDO Responsibilities and Organizational Role:

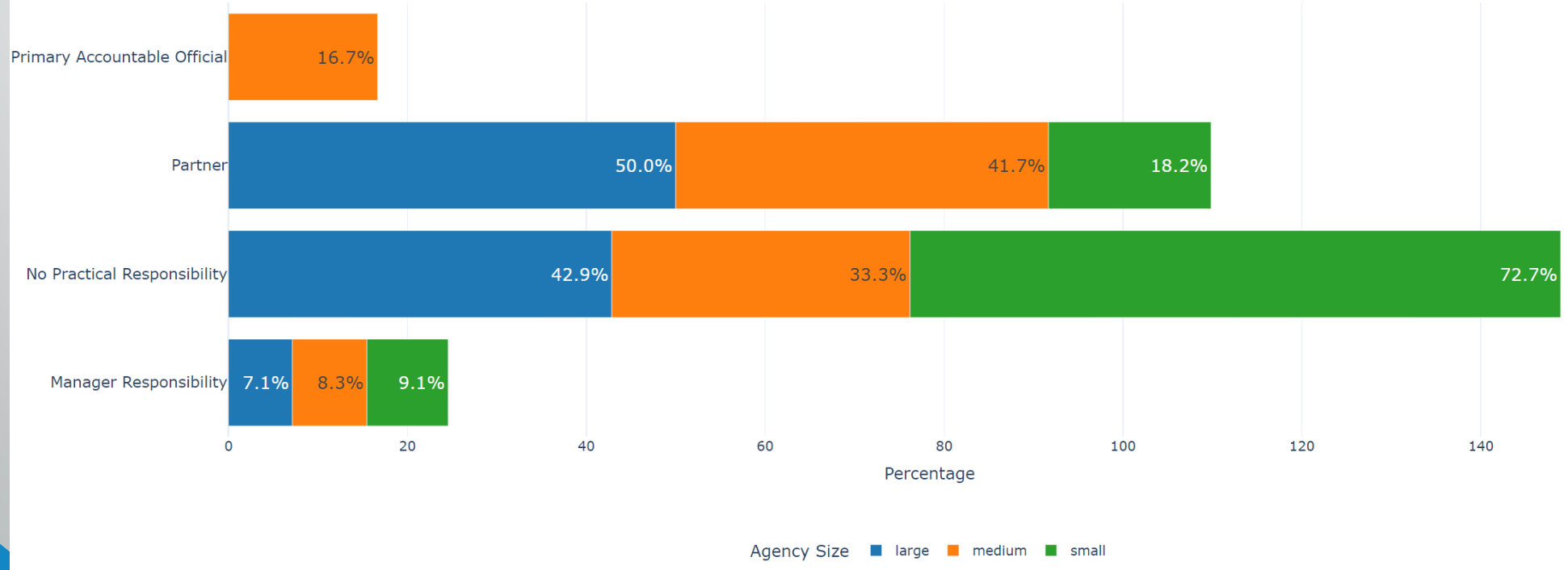


# CDO Responsibilities and Organizational Role:



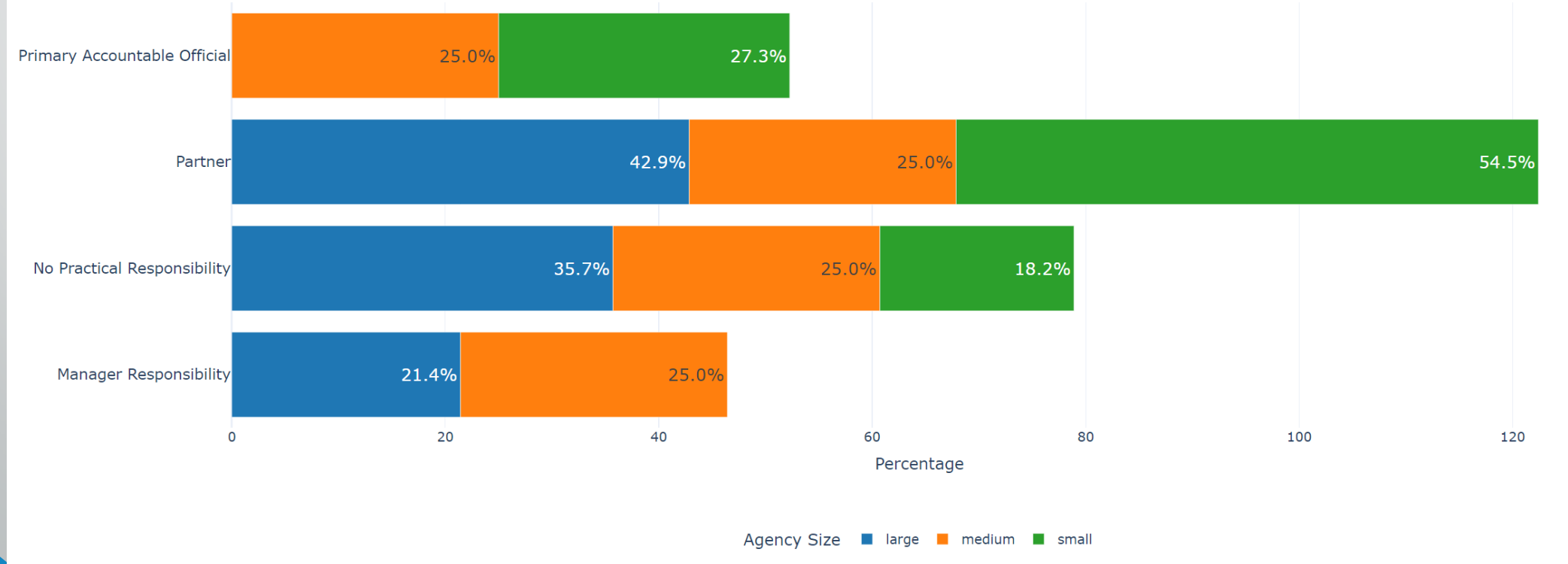
# CDO Responsibilities and Organizational Role:

Q30C: 30. What responsibility do you have in the following areas: - Records Management.



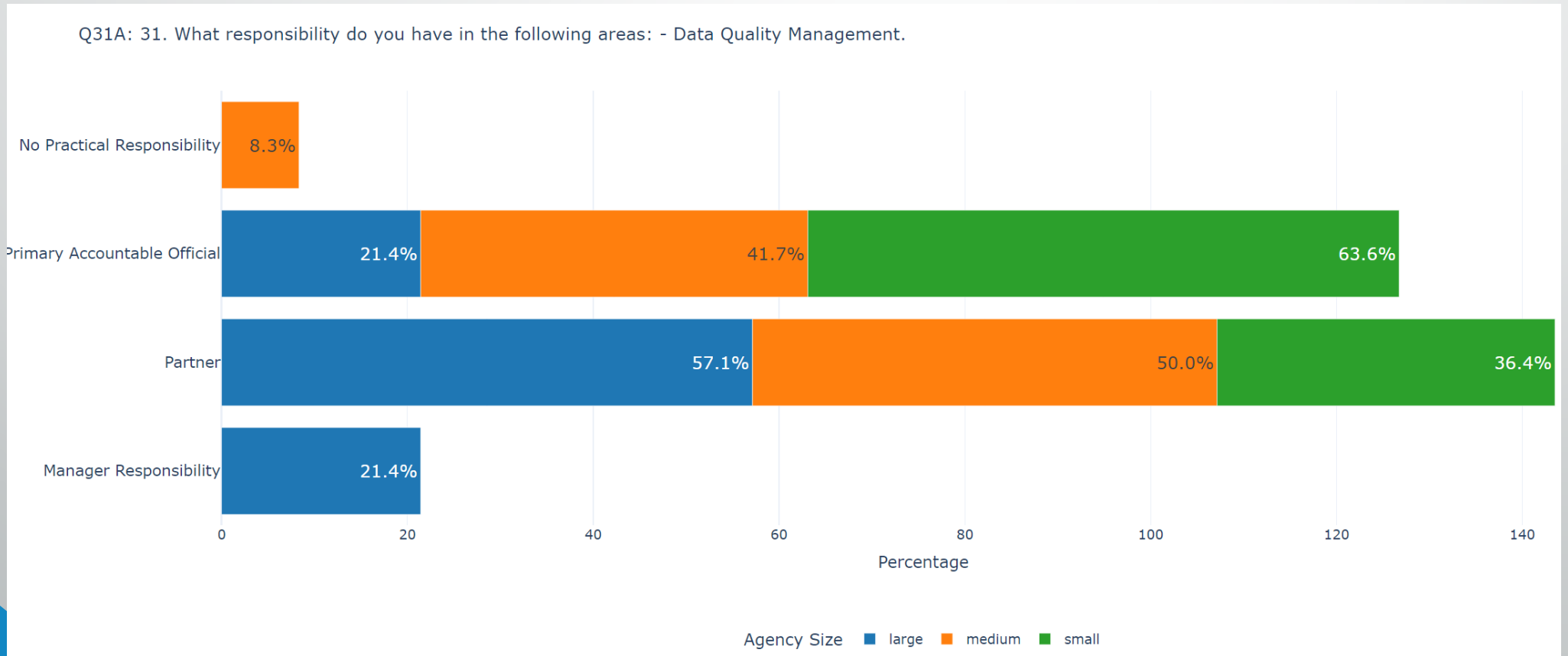
# CDO Responsibilities and Organizational Role:

Q31: What responsibility do you have in the following areas: - Data Engineering.



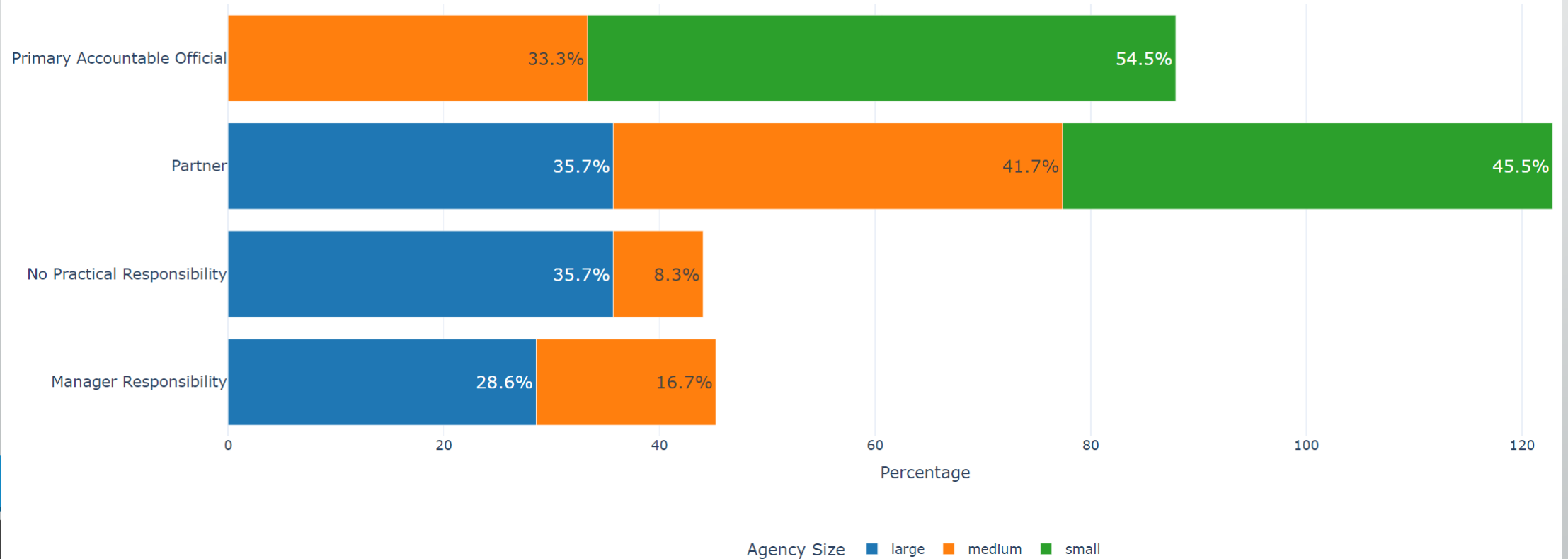


# CDO Responsibilities and Organizational Role:



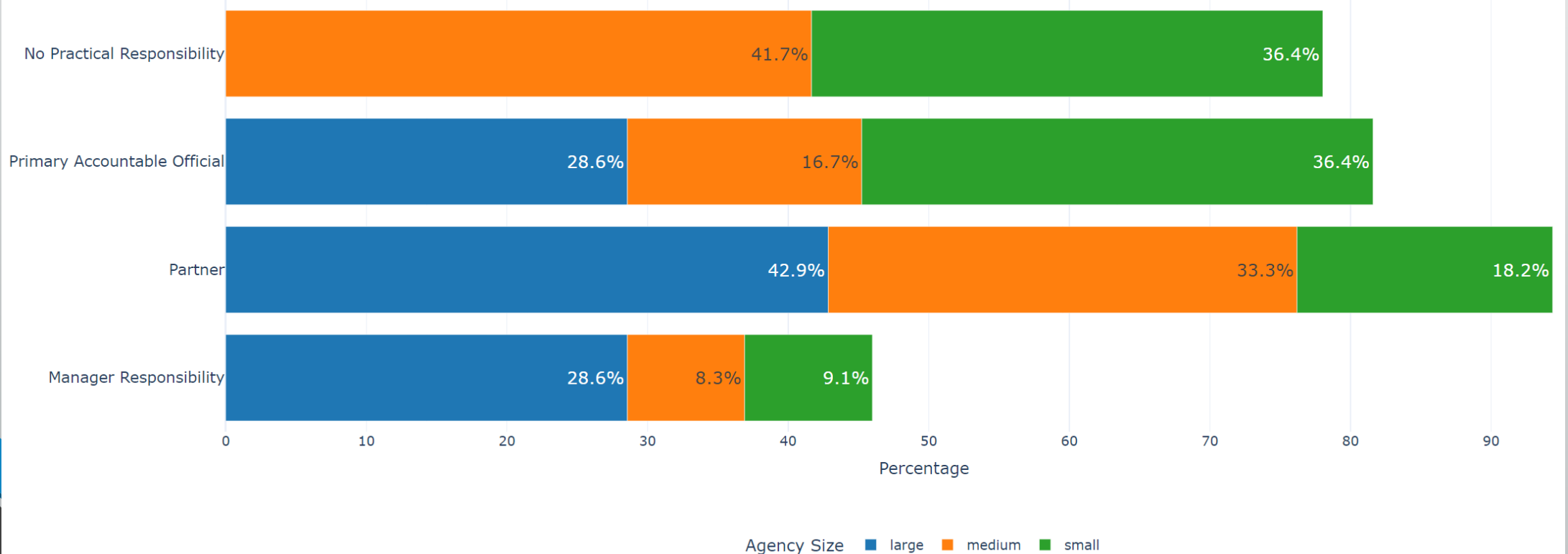
# CDO Responsibilities and Organizational Role:

Q31B: 31. What responsibility do you have in the following areas: - Data Manipulation/ETL.



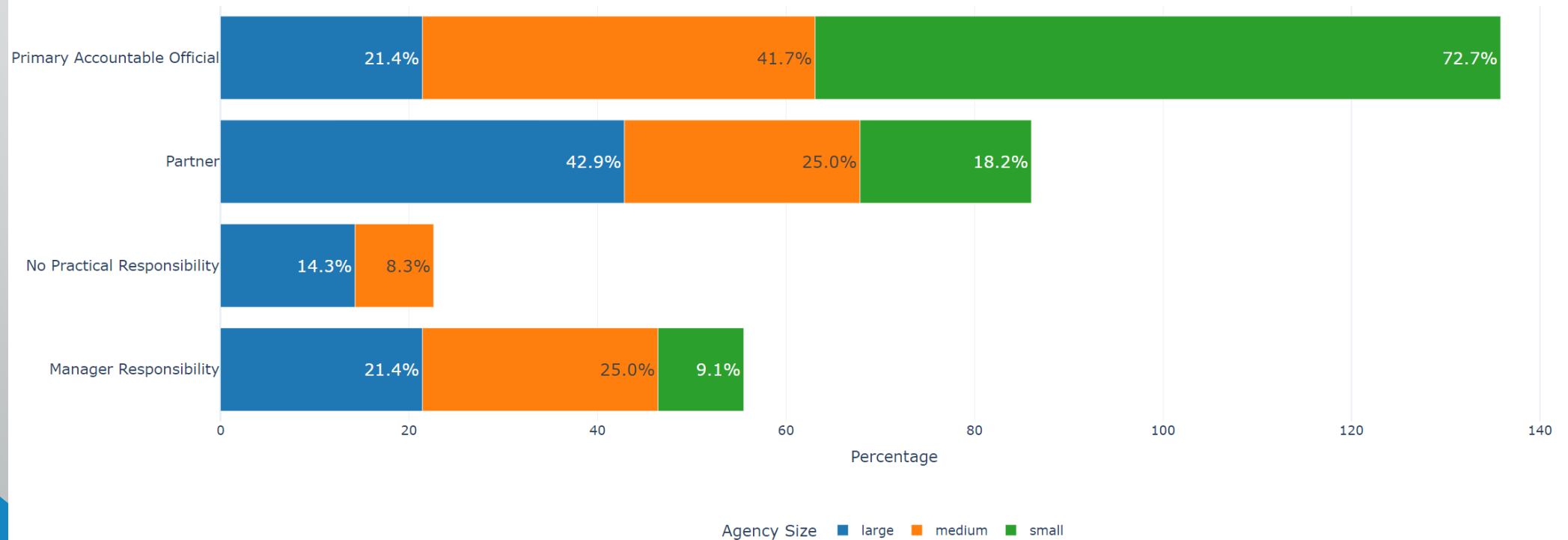
# CDO Responsibilities and Organizational Role:

Q32: What responsibility do you have in the following areas: - Geospatial Data.



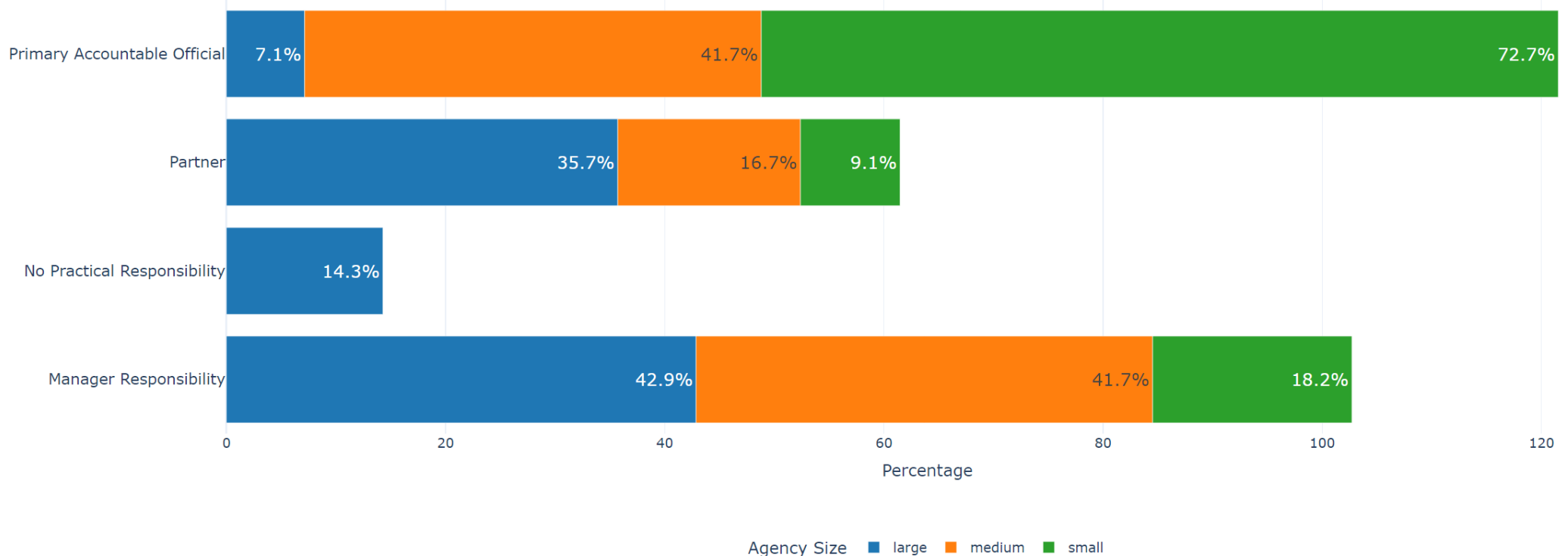
# CDO Responsibilities and Organizational Role:

Q32A: 32. What responsibility do you have in the following areas: - Data analytics.

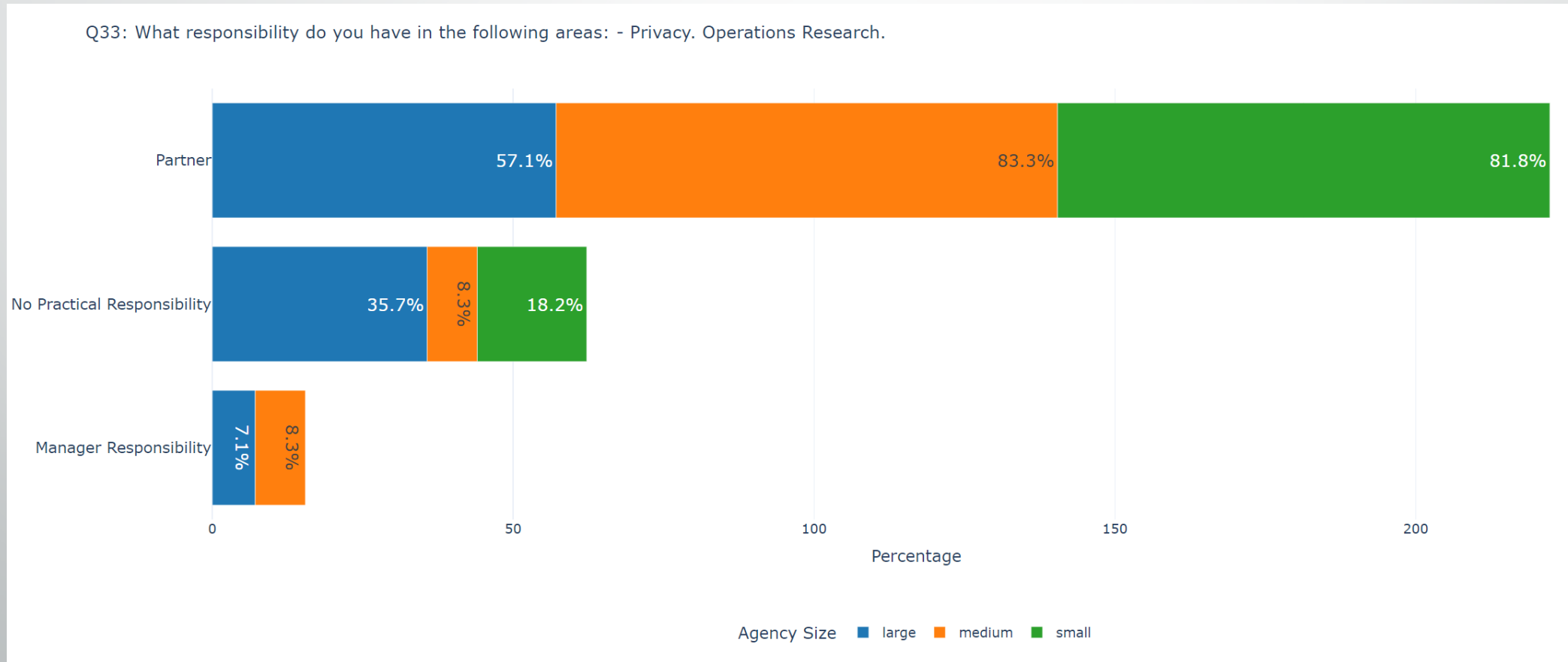


# CDO Responsibilities and Organizational Role:

Q32B: 32. What responsibility do you have in the following areas: - Data Visualization.

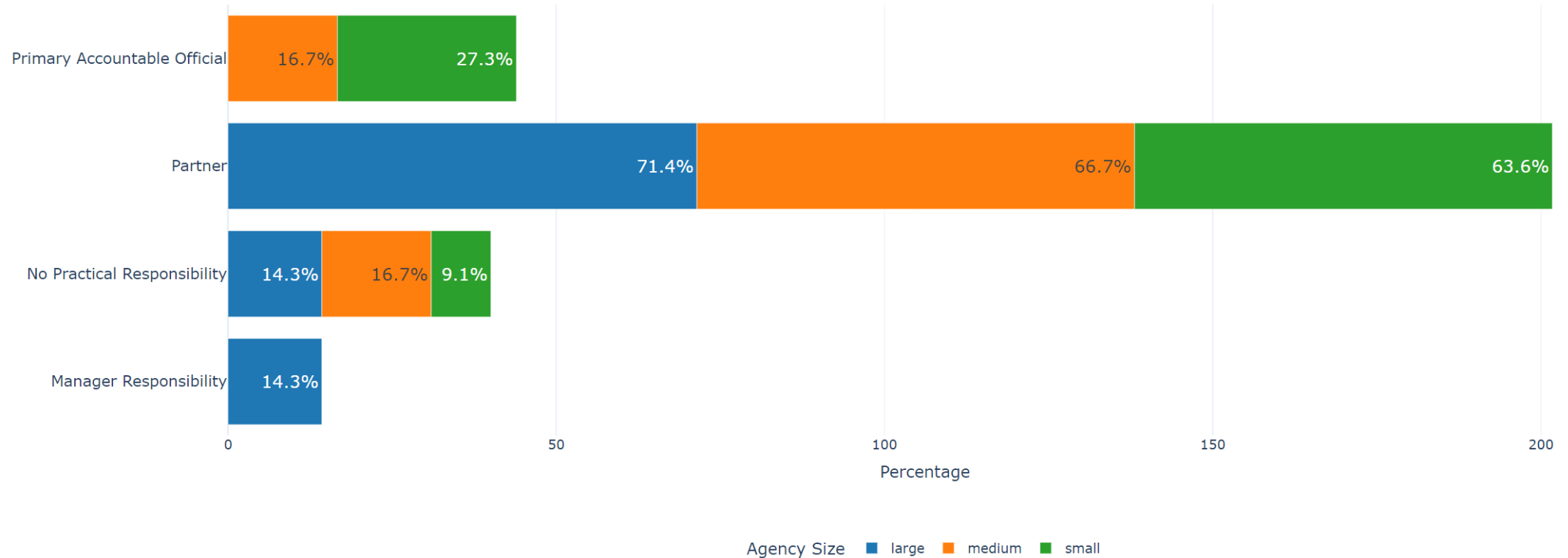


# CDO Responsibilities and Organizational Role:



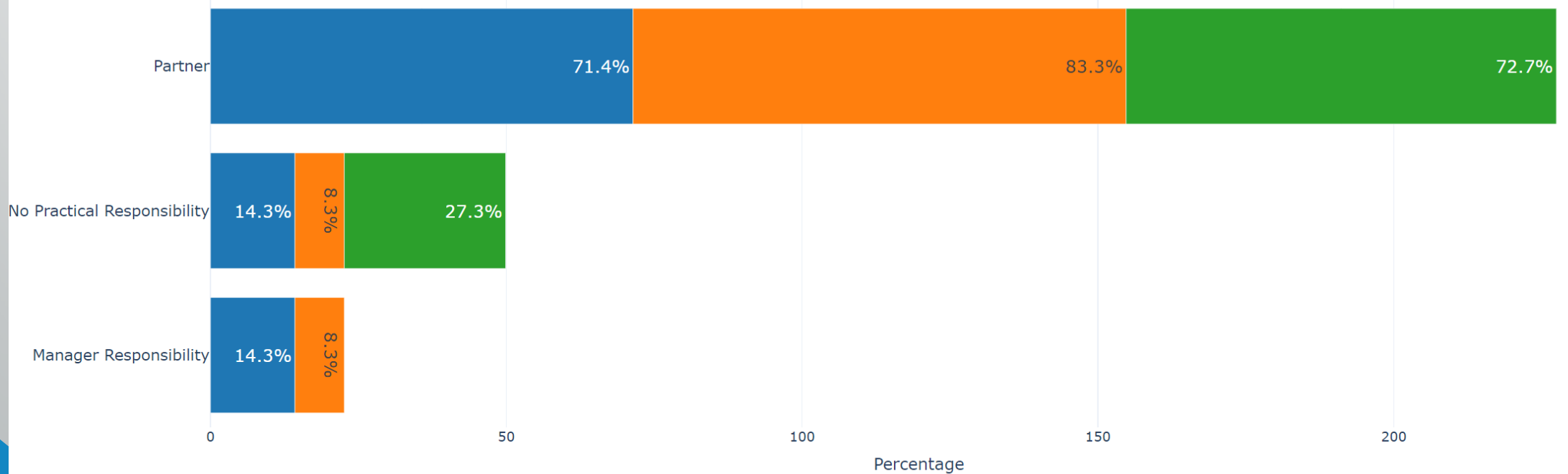
# CDO Responsibilities and Organizational Role:

Q33A: 33. What responsibility do you have in the following areas: - Evaluation.



# CDO Responsibilities and Organizational Role:

Q33B: 33. What responsibility do you have in the following areas: - Information Security.

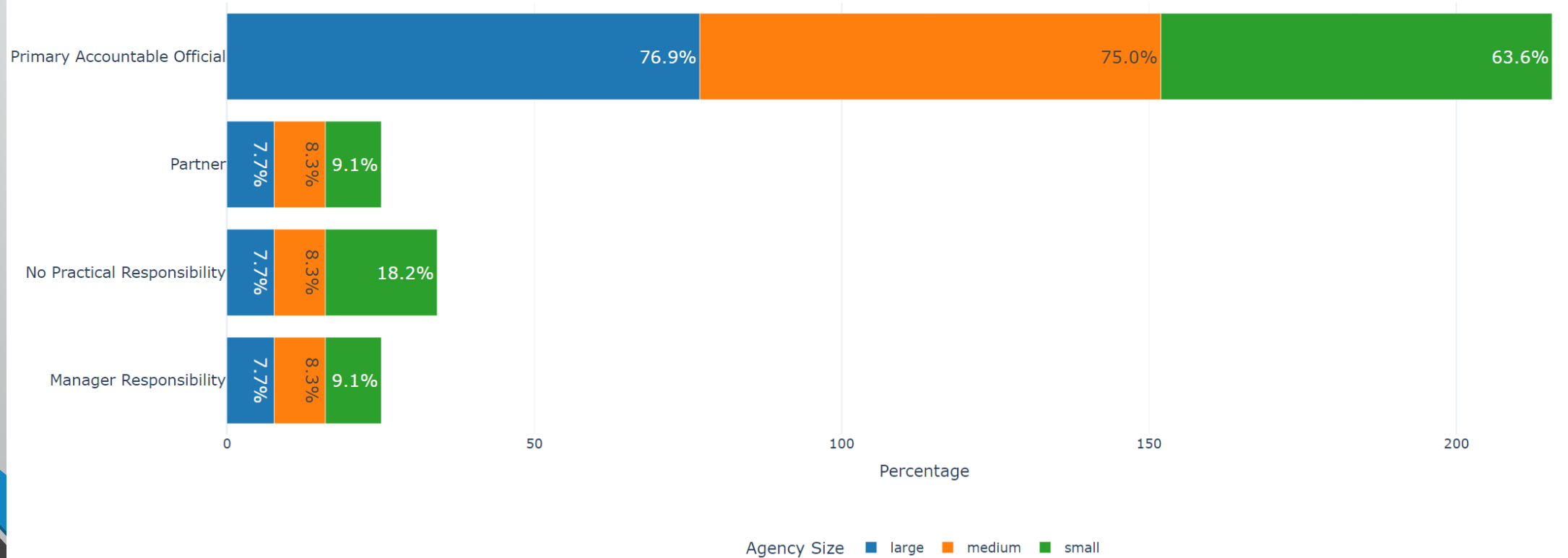


Agency Size ■ large ■ medium ■ small

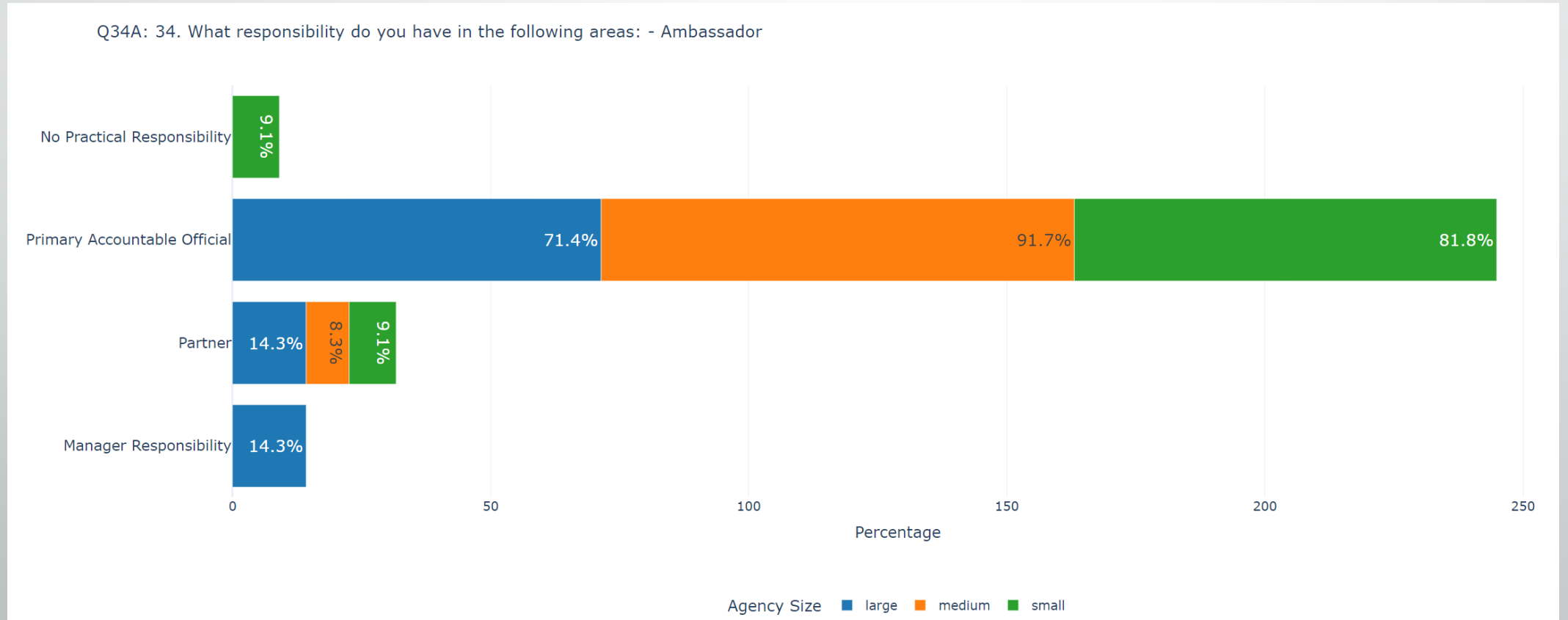


# CDO Responsibilities and Organizational Role:

Q34: 34. What responsibility do you have in the following areas: - Data Evangelism

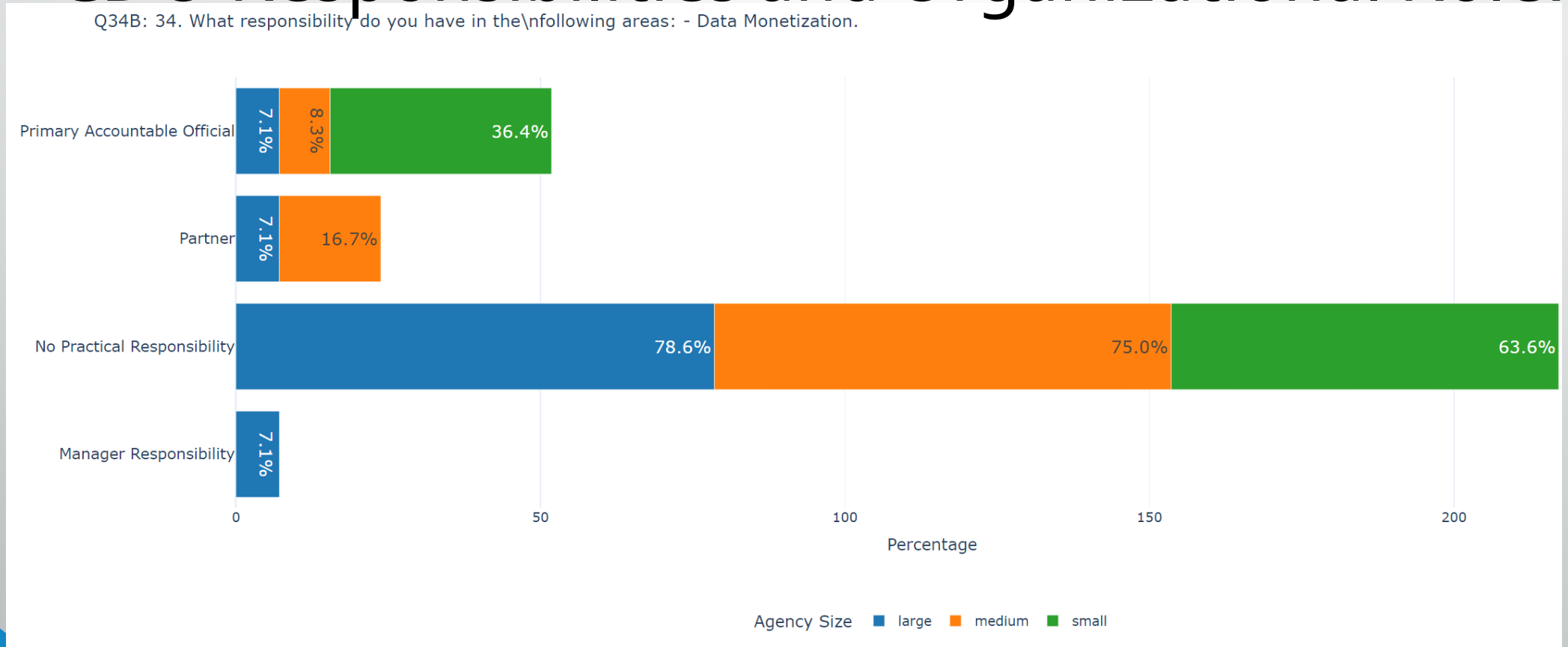


# CDO Responsibilities and Organizational Role:



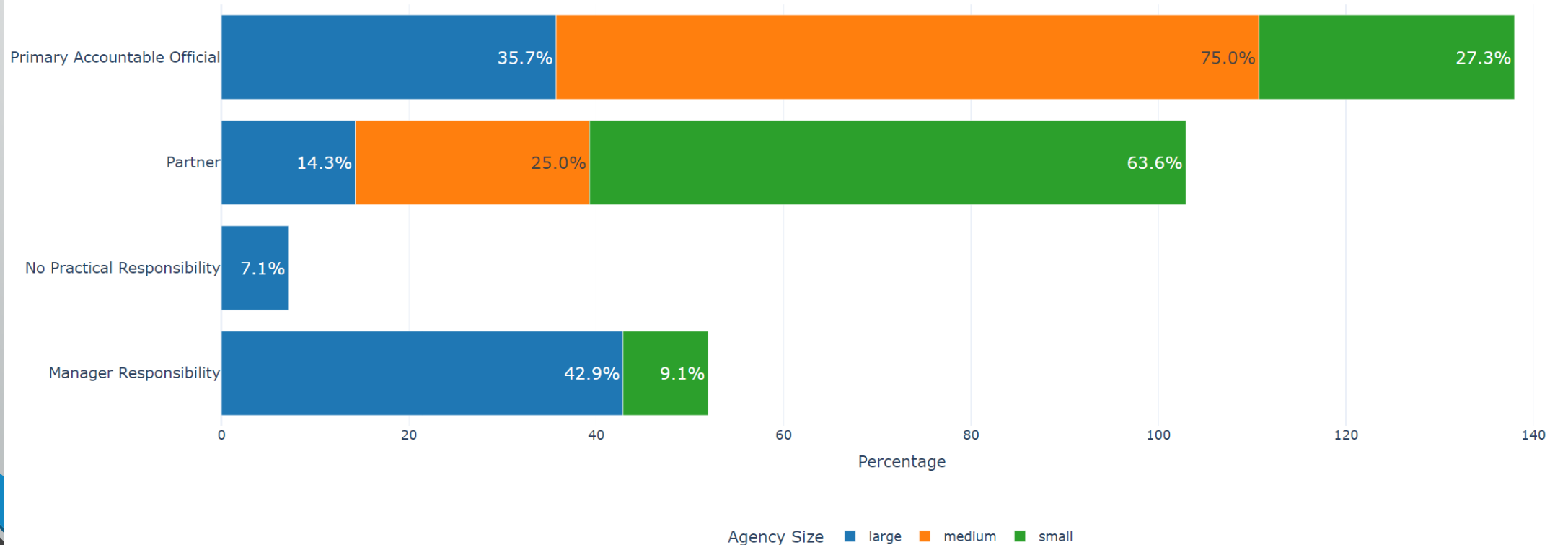
# CDO Responsibilities and Organizational Role:

Q34B: 34. What responsibility do you have in the following areas: - Data Monetization.



# CDO Responsibilities and Organizational Role:

Q34C: 34. What responsibility do you have in the following areas: - Data Skills Development



# Workforce and Resource Challenges:

- Across all agency sizes, a significant portion of responders reported having Key Performance Indicators (KPIs) or other performance measures for their CDO offices, with 64.3% of large agencies, 58.3% of medium agencies, and 83.3% of small agencies indicating the presence of such measures.
- Responders from large agencies (60%), medium agencies (40%), and small agencies (50%) are willing to share Key Performance Indicators (KPI) with CDOC.
- Large agencies leverage more internal resources, while small agencies rely heavily on external contractors.
- Small agencies report frequent shortages in both technical and administrative staff.

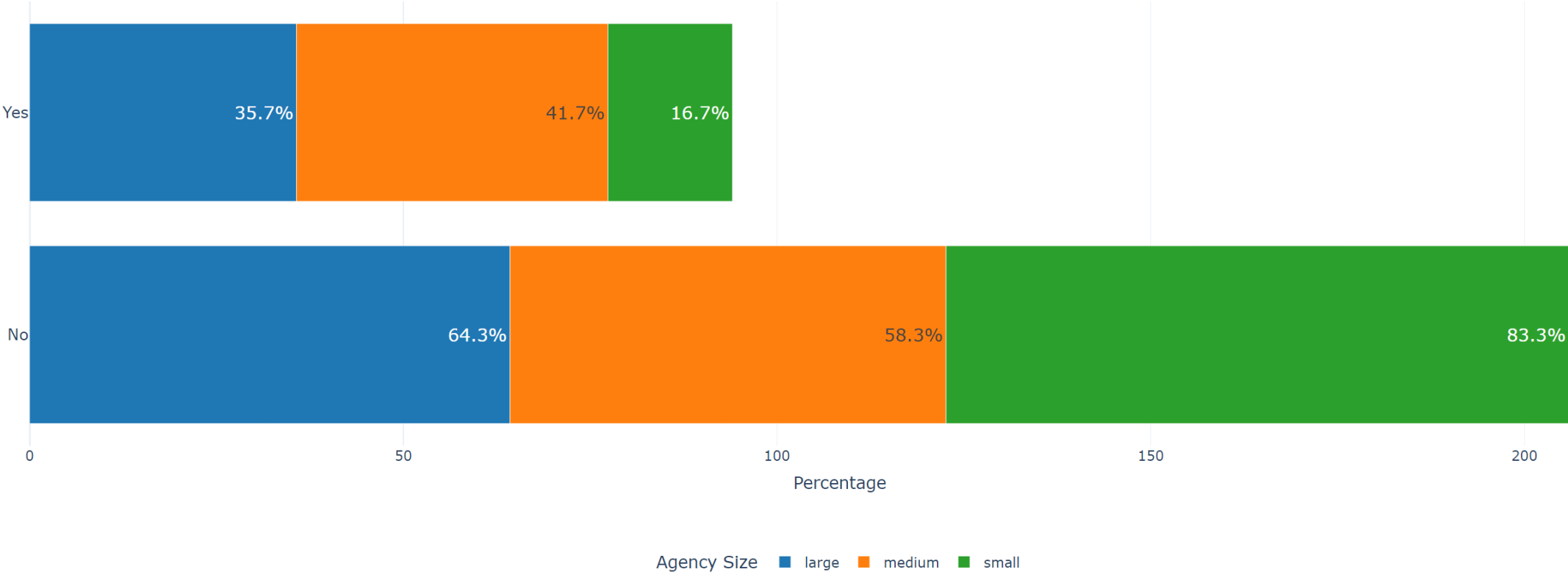


# Workforce and Resource Challenges:

- Consultants are widely used for data maturity assessments, strategy development, and analytics.
- Small agencies rely on external help for foundational data tasks.
- Large agencies lead in enterprise analytics initiatives, aligning them with strategic goals.
- Medium and small agencies prioritize foundational tools and workforce capabilities.

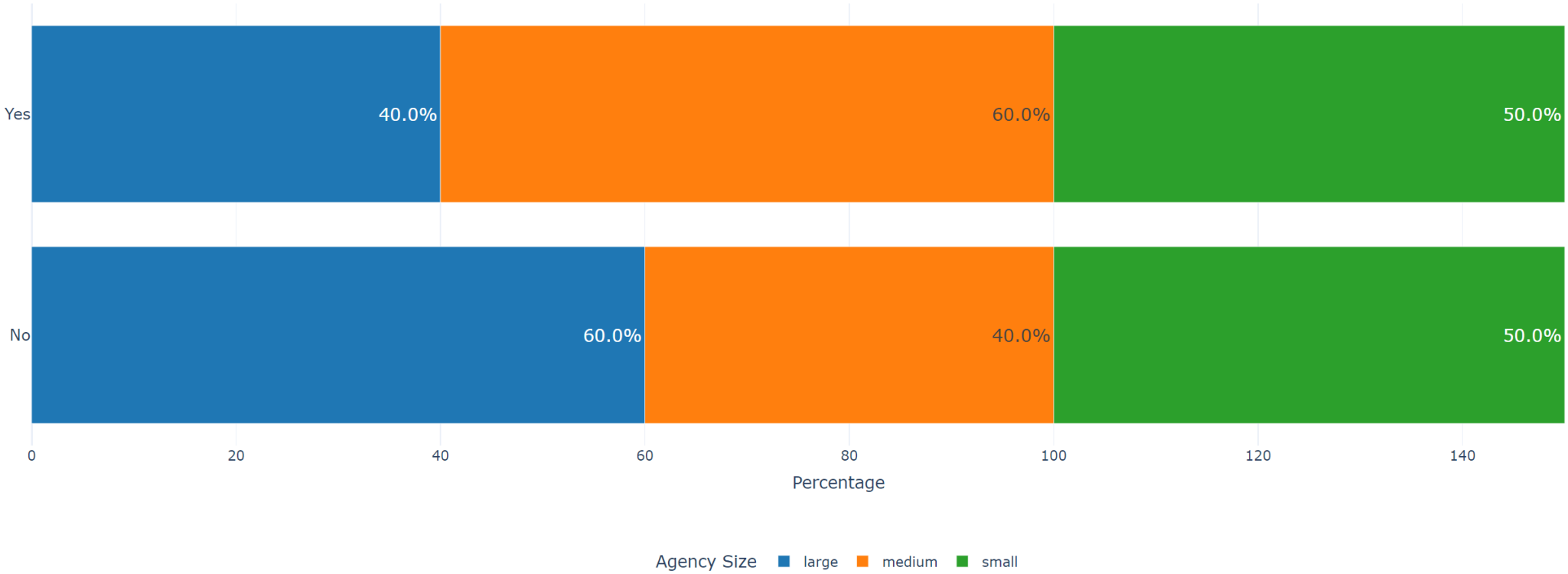
# Workforce and Resource Challenges:

Q35: Does the organization have Key Performance Indicators (KPI) or other Performance Measures for the CDO Office?'



# Workforce and Resource Challenges:

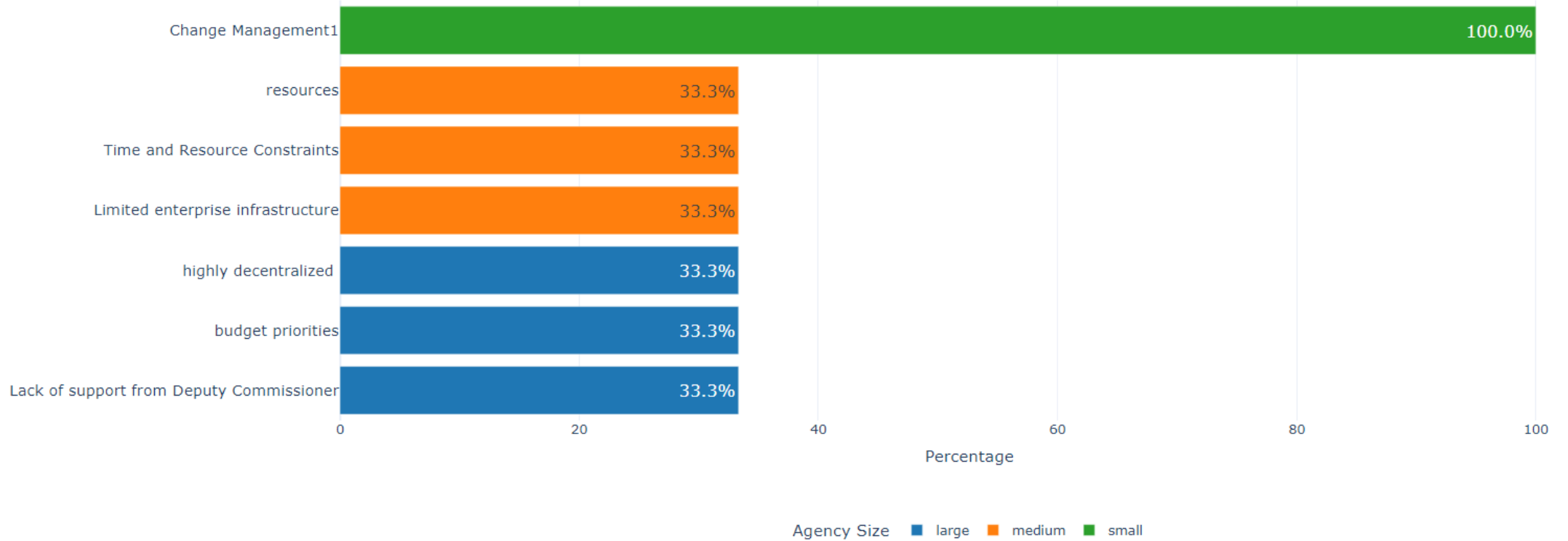
Q35A: Would you be willing to share your Key Performance Indicators (KPI) or other Performance Measures with the CDOC?.



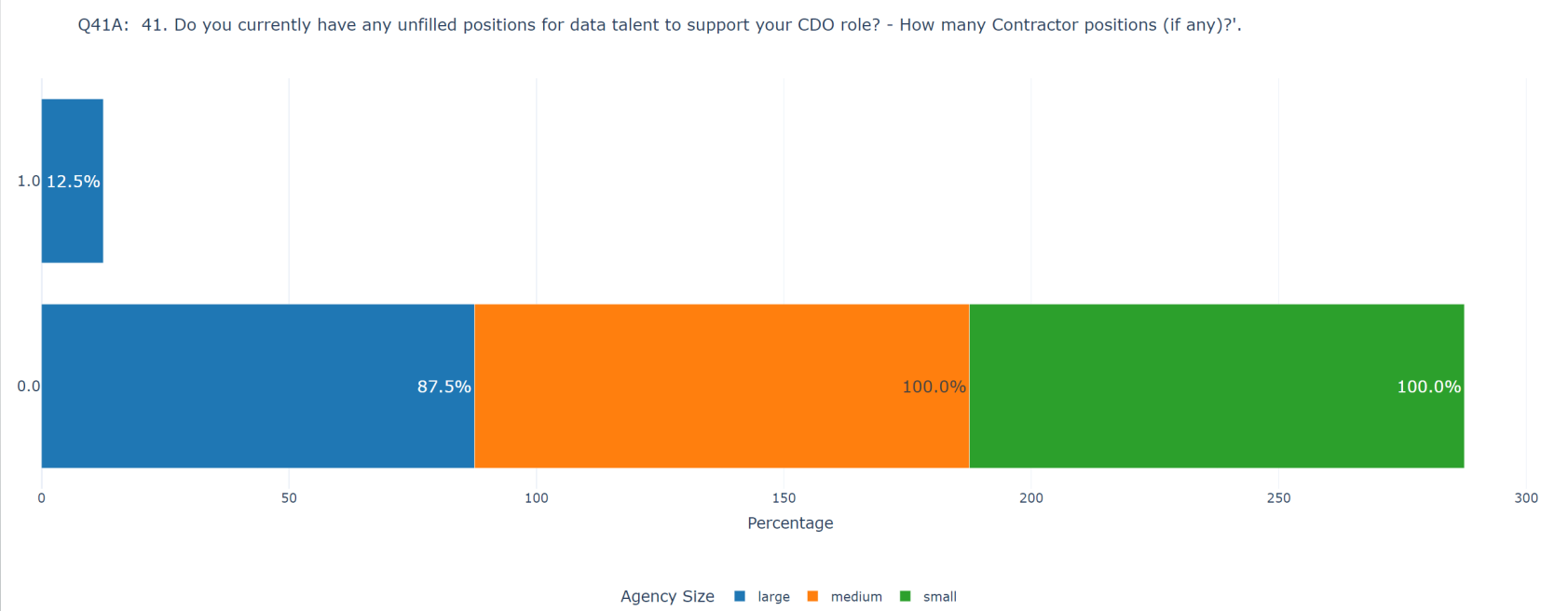


# Workforce and Resource Challenges:

Q36A: 36. What do you view as the greatest obstacle(s) to using data to support your agency's mission?



# Workforce and Resource Challenges:

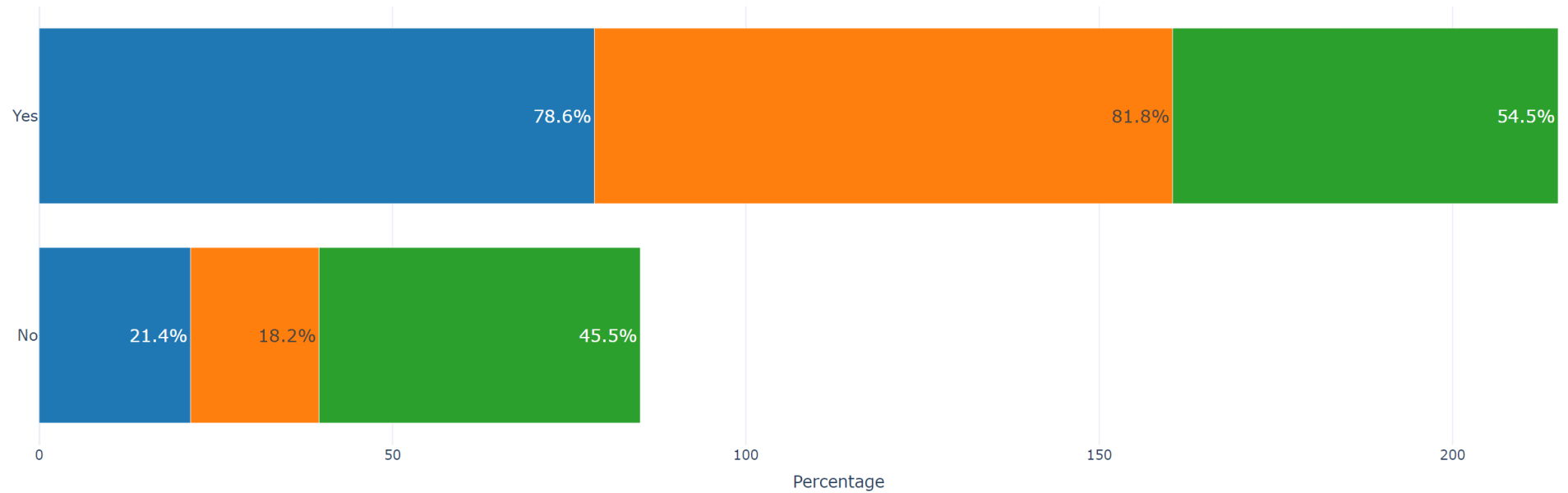


# Strategic Trends and Modernization:

- Collaboration is common in large (75%) and medium agencies, less so in small (50%).
- Key partners: academia, private sector, and federal data initiatives.
- Large agencies use structured governance (80%), small agencies rely on ad hoc processes (40%).
- Persistent gaps in validation frameworks.
- 90% of large agencies and 70% of medium agencies have active plans.
- Small agencies (~40%) face resource limitations, slowing progress.

# Data Practices and Integration:

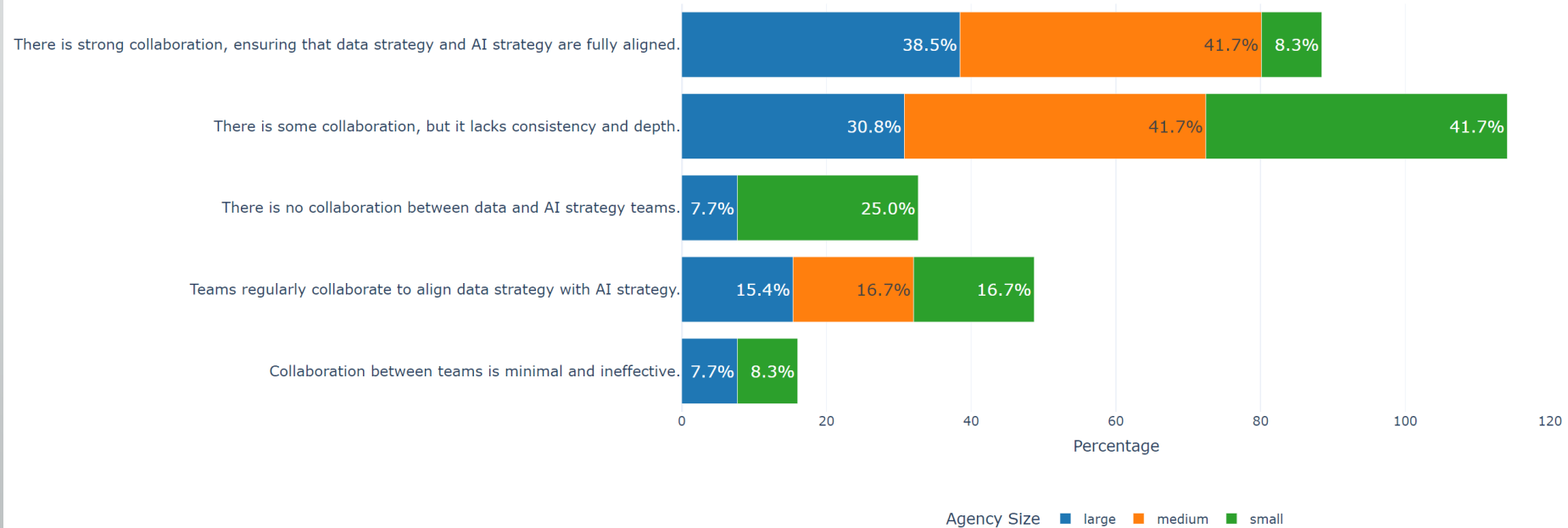
Q42: Does the CDO Office contain both business and technical people?'



Agency Size ■ large ■ medium ■ small

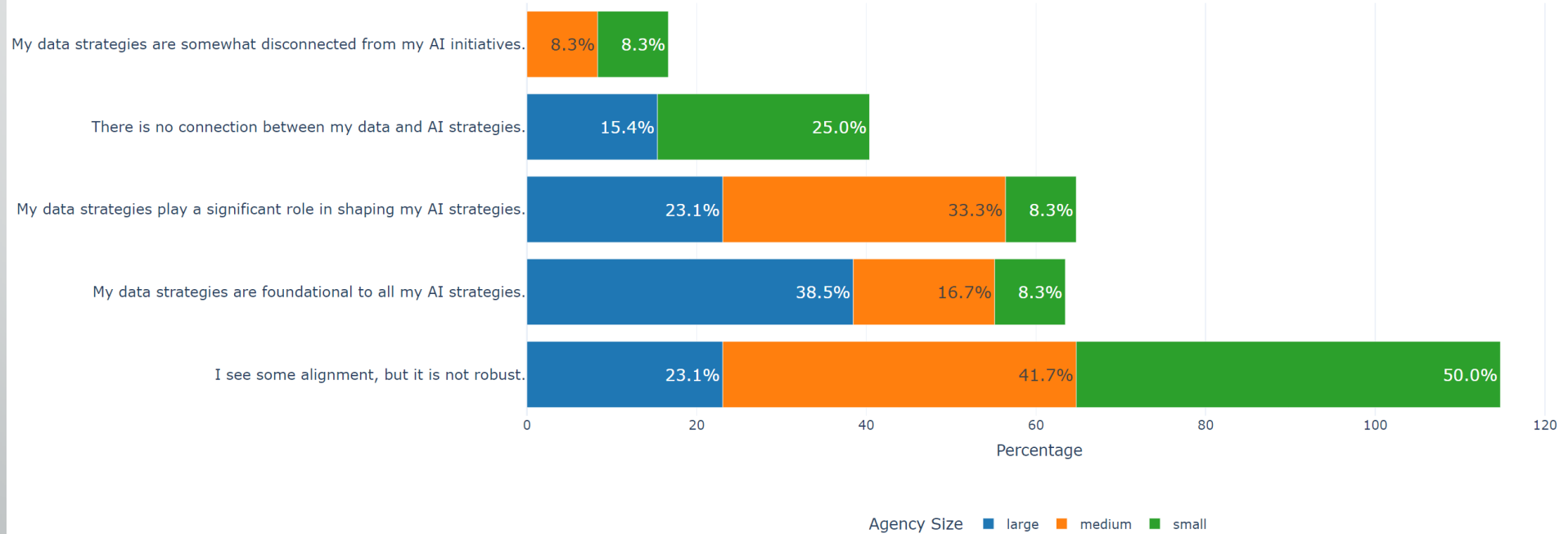
# Data Practices and Integration:

Q44: Which of the following options best describes your agency's approach to its data strategy in relation to an AI strategy?'



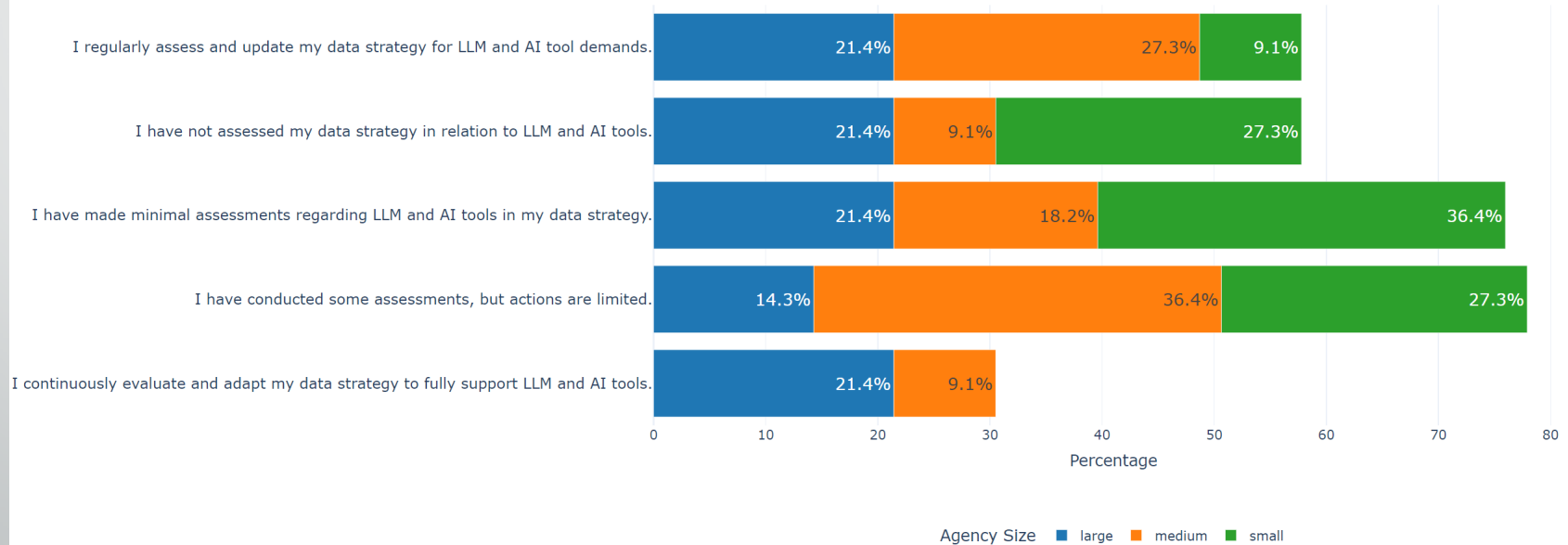
# Data Practices and Integration:

Q45: Which of the following options most closely reflects your Agency's approach to orchestrating data strategies into broader AI strategies?.



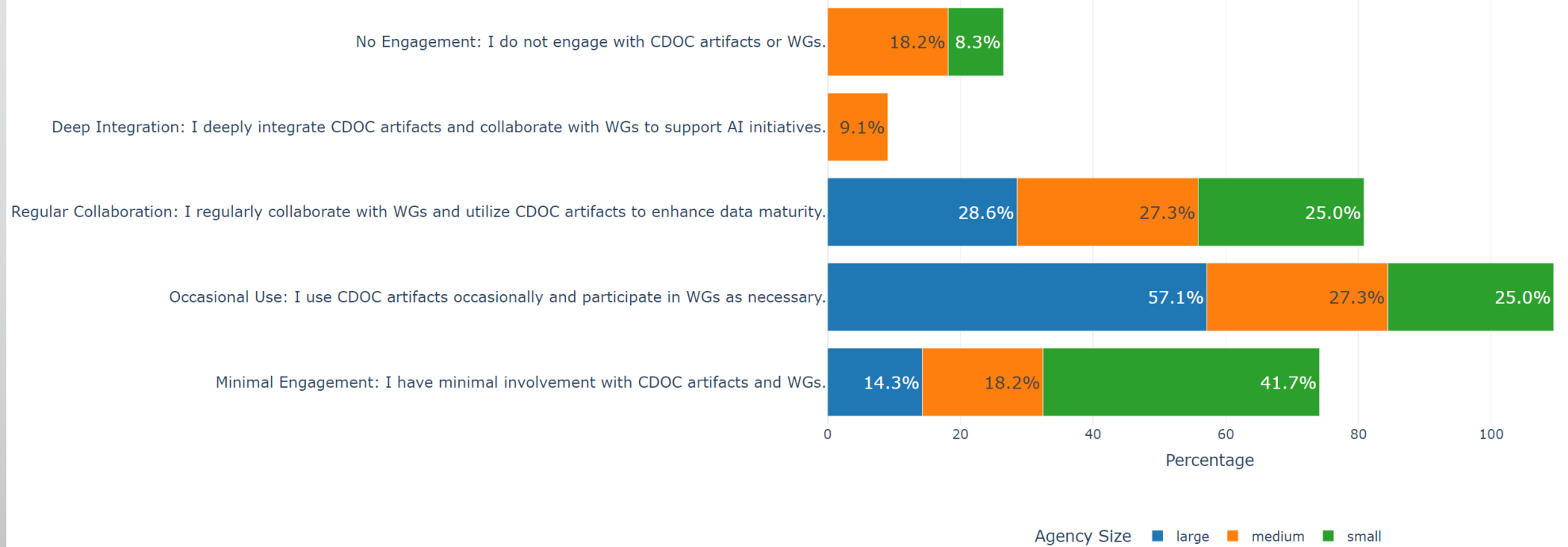
# Strategic Trends and Modernization:

Q46: Which of the following statements most closely aligns with your approach to ensuring your data strategy is postured to meet the demand of LLM and AI tools?



# Strategic Trends and Modernization:

Q48: How are you leveraging existing CDOC artifacts and WGs to ensure data maturity to support AI requirements?





# Q49: How can the CDOC better support your data efforts to meet the demands of AI?

- Issue guidance on what AI-readiness means
- Making things visible and encouraging sharing is a superpower, but agencies will need to choose their own adventure, too!
- foster cross-agency rotations
- work with agency leaders who are not the CDO to help them see the value
- The agency has not made AI a priority
- Continue to advocate for CDOs having a formal role within agency AI governance
- Pilot innovative approaches to common and or persistent pain points