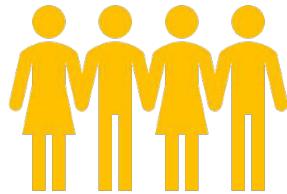


# **CDO Council - Summer 2023 Survey**

**Neil Tseng,  
Program Analyst (Data Scientist)  
U.S. Department of Transportation  
OST, DCIO, Office of Chief Data Officer**

# Survey Response Statistics 2023 vs 2022



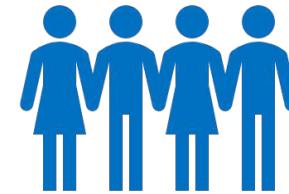
## 2023 Survey

**35 Responses**

20 from large agencies

9 from medium agencies

6 from small agencies



## 2022 Survey

**38 Responses**

23 from large agencies

9 from medium agencies

6 from small agencies

# Overview- Key Takeaways 1

## **Chief Data Officer (Background)**

- Identified your primary role as Chief Data Officer (CDO) of your agency
- Senior Executive Service (SES) or career General Schedule (GS-15) with over 10 years in public sector and focused on data and analytics (majority)
- Demographics: Distribution is demographically changing, with education range: bachelor's degree to PHD, no professional data and analytics certifications (most likely none existed at the time)

# Overview- Key Takeaways 2

## **Chief Data Officer (Role)**

- From 2022 to 2023, continued to identify CDO role as your primary responsibility (58% vs 57% respectively).
- Those of you that mentioned “Other” roles in 2022 also showed a decrease in “Other” roles in 2023
- From 2022 to 2023, ~14% overall increase from one-person CDO Office to Central Data Team (More Data Teams, 50% vs 36%)
- In 2023, number of resources increased on each Data Team
  - ~26% of the Central Data Teams had up to 5 FTEs in 2023 (compared to ~9% in 2022)

# Overview- Key Takeaways 3

## **Chief Data Officer (Responsibility)**

- In 2023, continued in Primary Roles in Data Governance, Data Strategy, Data Skills Development and Data evangelism / Ambassador
- Role changed from Primary Accountable Official to Partner in 2023 from 2022 in the following: Data Analytics, Information Collection/ Paperwork Reduction Act
- In 2023, from 2022, in the following areas there was a shift (> 10%) in roles from No Practical Responsibility to Partner : Data Integration, Research, Info Security, Operations Research, FOIA and AI

# Overview- Key Takeaways 4

## Chief Data Officer (Resources)

- From 2022 to 2023, ~14% overall increase from one-person CDO Office to Central Data Team (More Data Teams, 50% vs 36%)
- In 2023, number of resources increased on each Data Team
  - ~26% of the Central Data Teams had up to 5 FTEs in 2023 (compared to ~9% in 2022)
- Large Size Agencies had greater “personnel” resources than both Medium / Small Sized Agencies
  - Large Agencies, ~56% had 5-15 FTEs, 69% had 5-25 Contractors reporting to the CDO
  - Across Medium Agencies, ~43% had upwards of 5 FTEs, 57% had 0 Contractors
  - Small Agencies, 100% had one-person CDO Offices(0 FTEs and 0 Contractors)

# Overview- Key Takeaways 4 (Continued)

## Chief Data Officer (Resources)

### CDO Offices: Business and Technical people

- Large/ Medium Size Agencies reported CDO Office containing business and technical people (65% / 78% respectively)
- Small Size Agencies: ~83% of CDO Offices reported no additional business and technical people

# **Overview- Key Takeaways 5**

## **Chief Data Officer (Performance)**

### **-Greatest Obstacles to using Data to support Agency Mission (2023)**

- Data Culture is #1 for large and medium agencies
- Staff Skills is #2 for large and #1 for medium and small agencies
- Data Sharing is #3 for large and medium agencies
- Direct Funding is in the top 3 for agencies of all sizes
- Data Governance is #3 for large and #1 for medium agencies

# **Overview- Key Takeaways 5 (Continued)**

## **Chief Data Officer (Performance)**

### **CDO role / Data Team Needs to be Successful (2023)**

#### **Large / Medium / Small Size Agencies**

- Additional Staff
- Additional Direct Funding
- Organizational Support
- Additional Training (Small Size Agencies in addition to above)

# **Overview- Key Takeaways 6**

## **CDO Enterprise Analytics**

### **CDO and Oversight of Enterprise Analytics (EA):**

#### **Large Size Agencies (Characteristics)**

- Partner / Manager Responsibility in oversight of Enterprise Analytics
- Pilot implementation in EA platform across various components/ silos
- Pilot Integration of mission supported data (e.g. HR, finance, IT)
- Pilot Integration of mission specific data across divisions or component agencies at enterprise level.
- Pilot / Mature Implementation of enterprise-wide analytics and data dashboards

# **Overview- Key Takeaways 6 (Continued)**

## **CDO Enterprise Analytics**

### **CDO and Oversight of Enterprise Analytics (EA):**

#### **Medium Size Agencies (Characteristics)**

- Mature implementation in EA platform
- Range from No Plans, Pilot – Planned – Mature Integration of mission supported data
- Mature integration of mission specific data across divisions or component agencies at enterprise level.
- Pilot / Mature Implementation of enterprise-wide analytics and data dashboards

# **Overview- Key Takeaways 6 (Continued)**

## **CDO Enterprise Analytics**

### **CDO and Oversight of Enterprise Analytics (EA):**

#### **Small Size Agencies**

- Primary Accountable Official in oversight of EA
- Planned implementation in EA platforms for integrating/ analyzing data
- No Current Plans for Integration of mission supported data
- No Current Plans/ Pilot Integration of mission specific data across divisions or component agencies at enterprise level.
- No Current Plans / Planning Implementation of enterprise-wide analytics and data dashboards

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## CDO Council - Summer 2023 Survey



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# **Chief Data Officer (CDO) + Additional Roles**

Overall, all identified as Chief Data Officer of your agency

From 2022 to 2023, majority also identified this as your primary role (58% vs 57% respectively).

## **Large Sized Agencies**

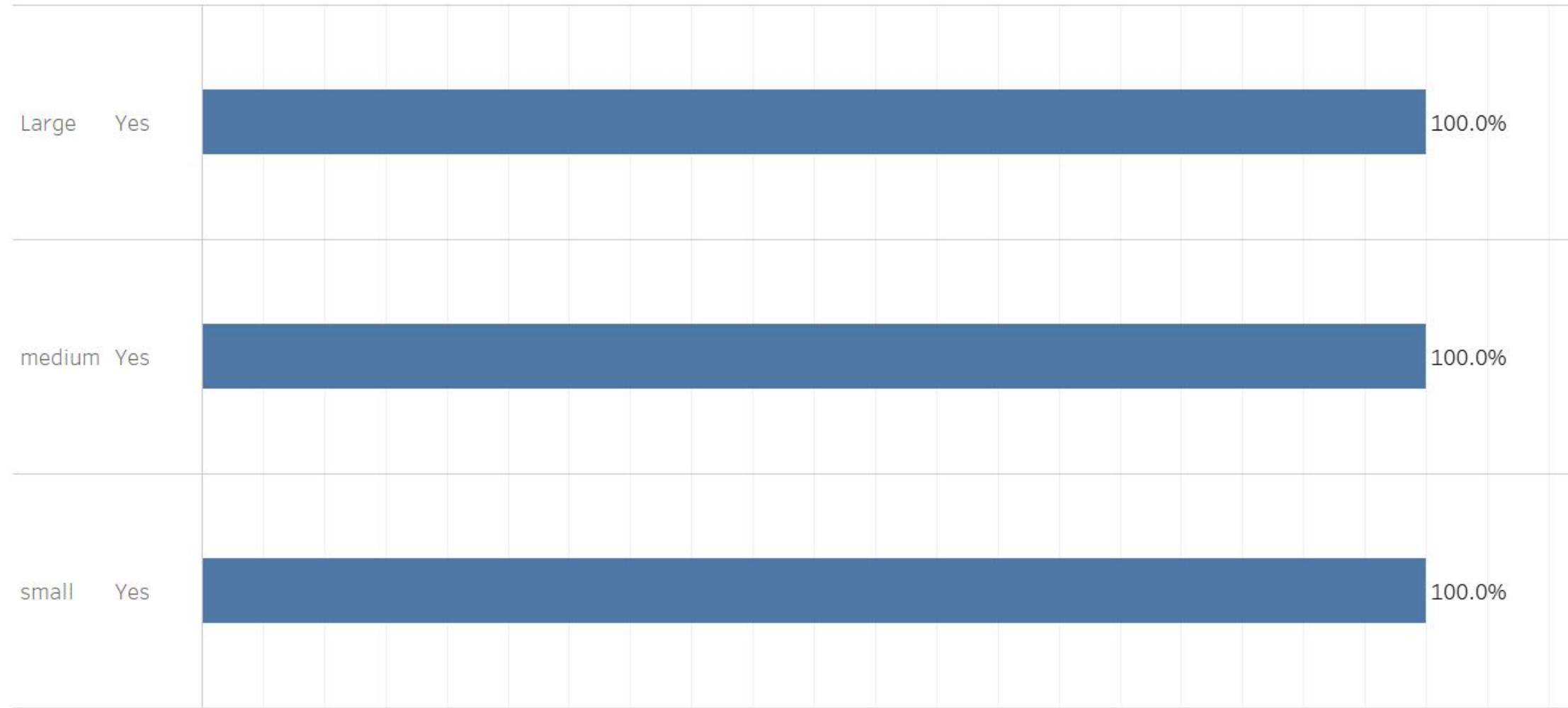
- While some did have additional roles, for the majority, this was your only role

## **Medium/ Small Agencies:**

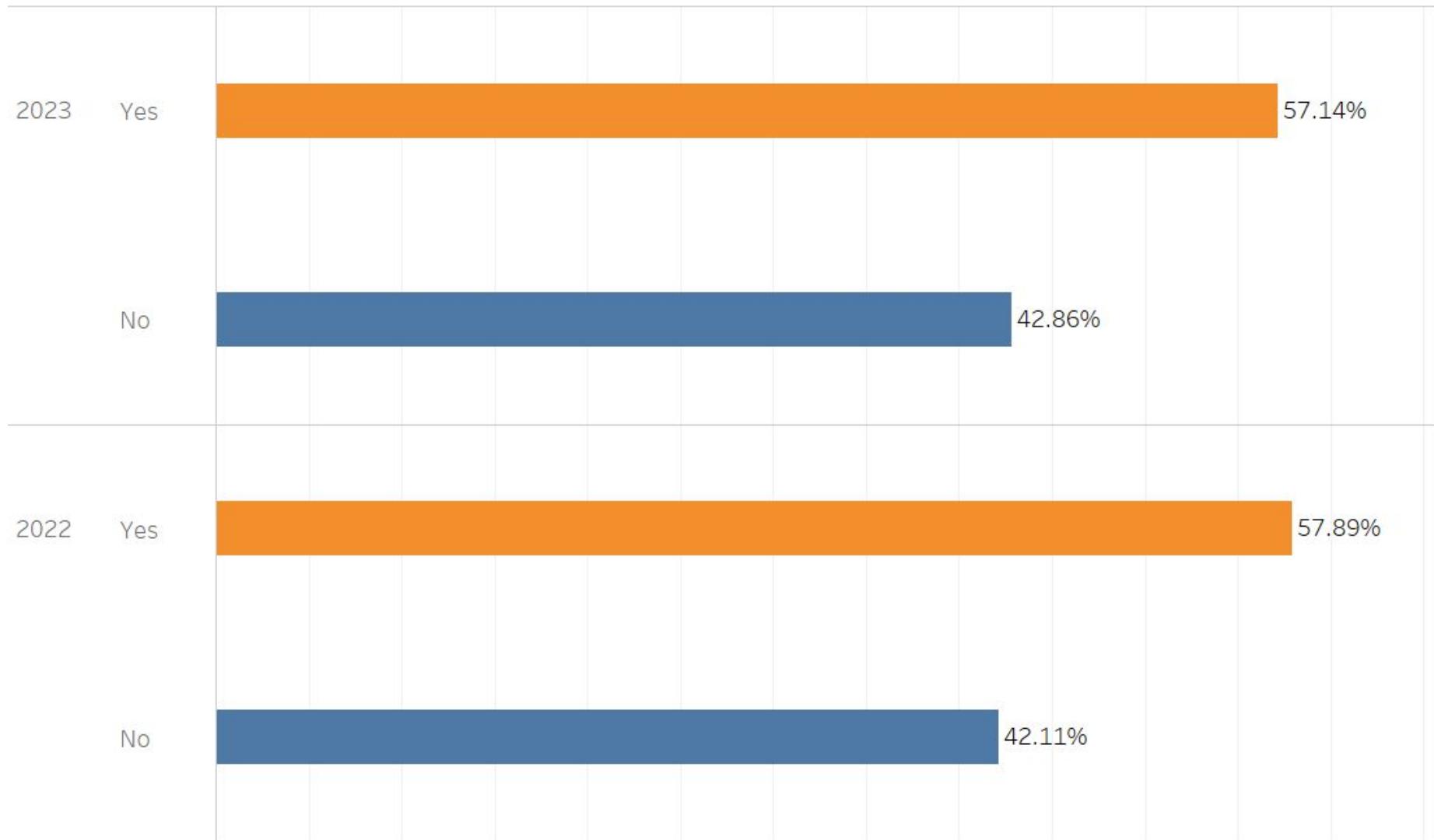
- Other roles including overseeing Artificial Intelligence, Evaluation Officer, Chief Info Officer, Agency Official overseeing records management, Geographic Info Officer

#### Q4. Are you the Chief Data Officer for your agency?

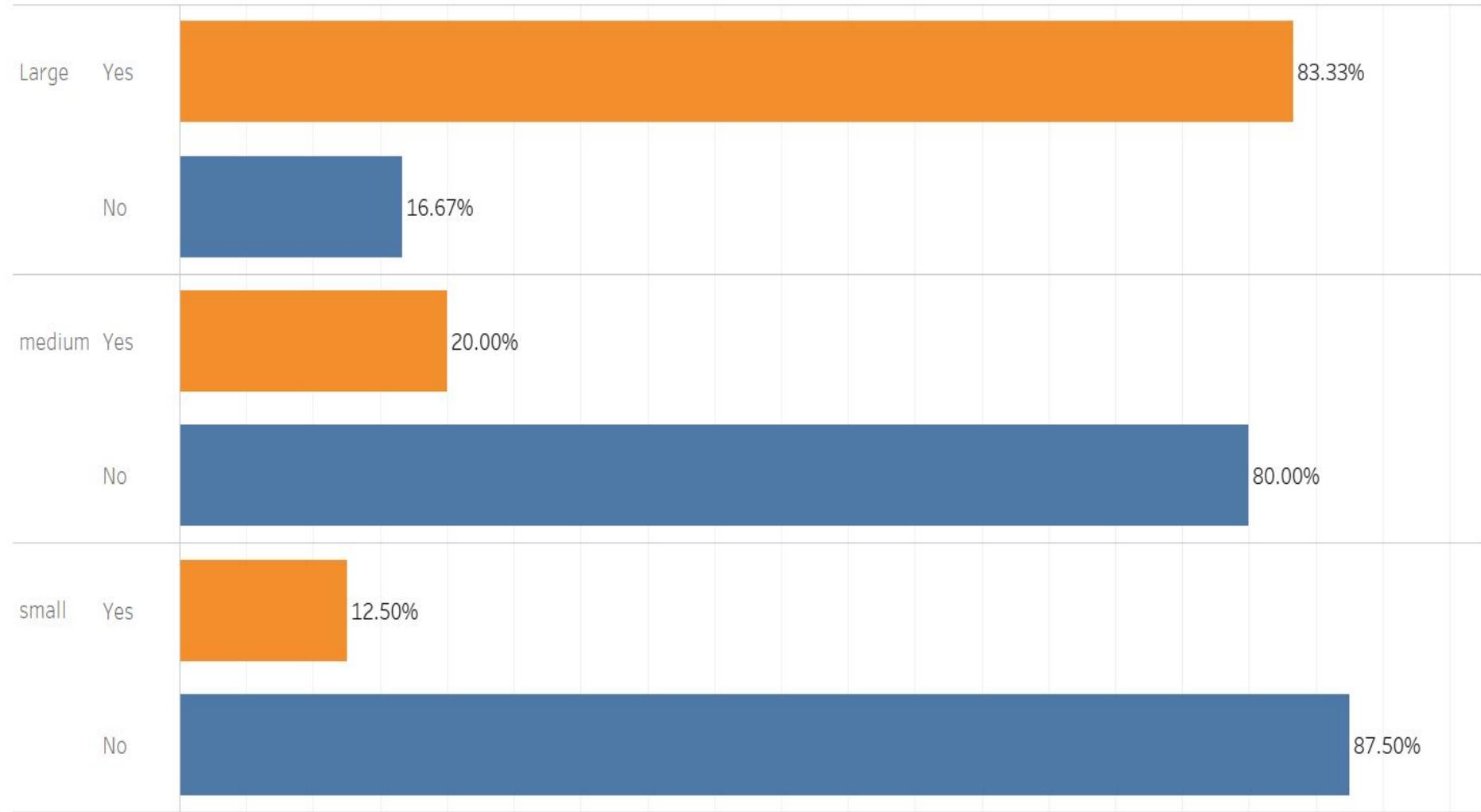
(N = 33)



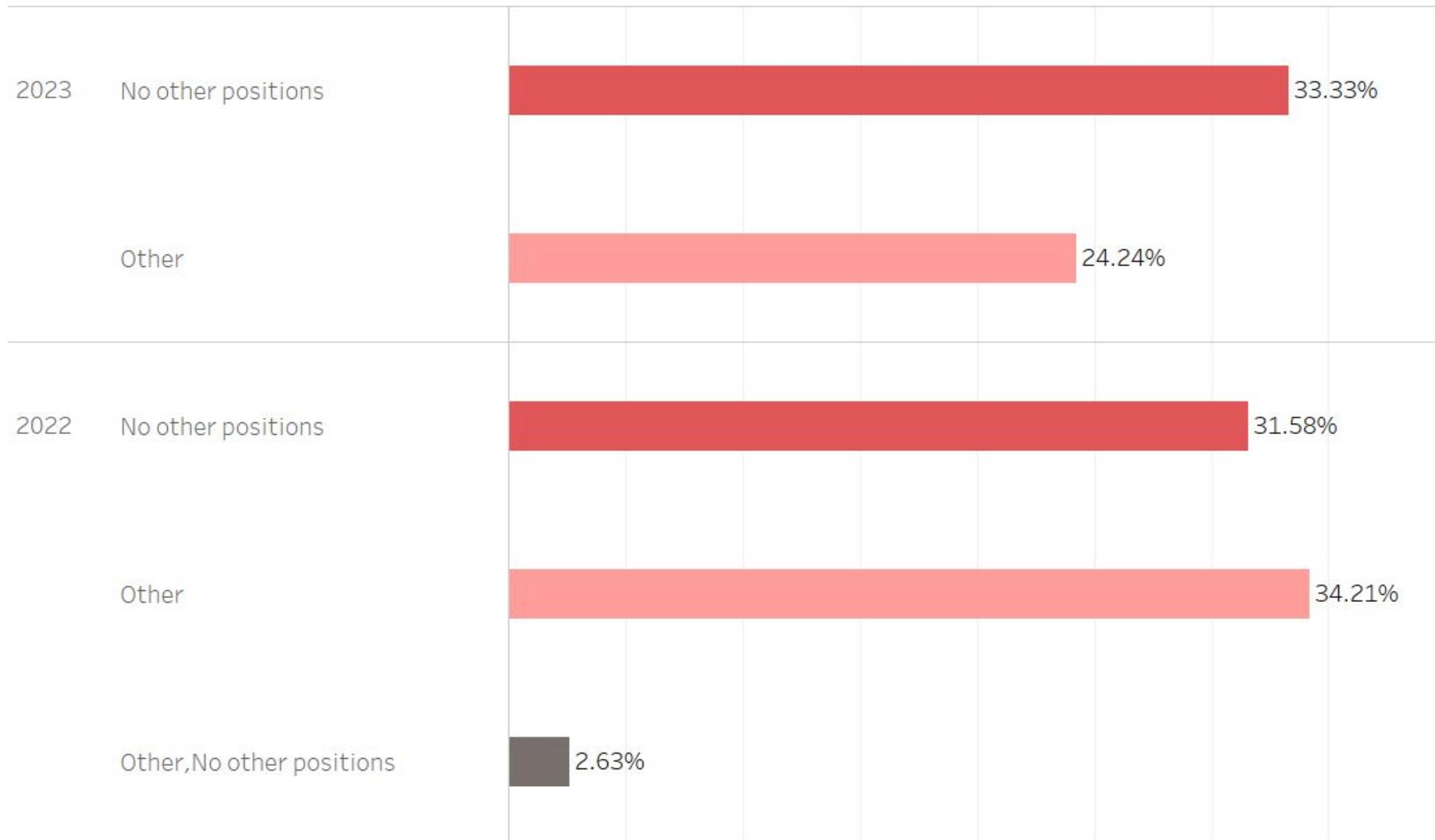
## 2023 vs 2022 Q6. Is the CDO role your primary responsibility? (N = 73 )



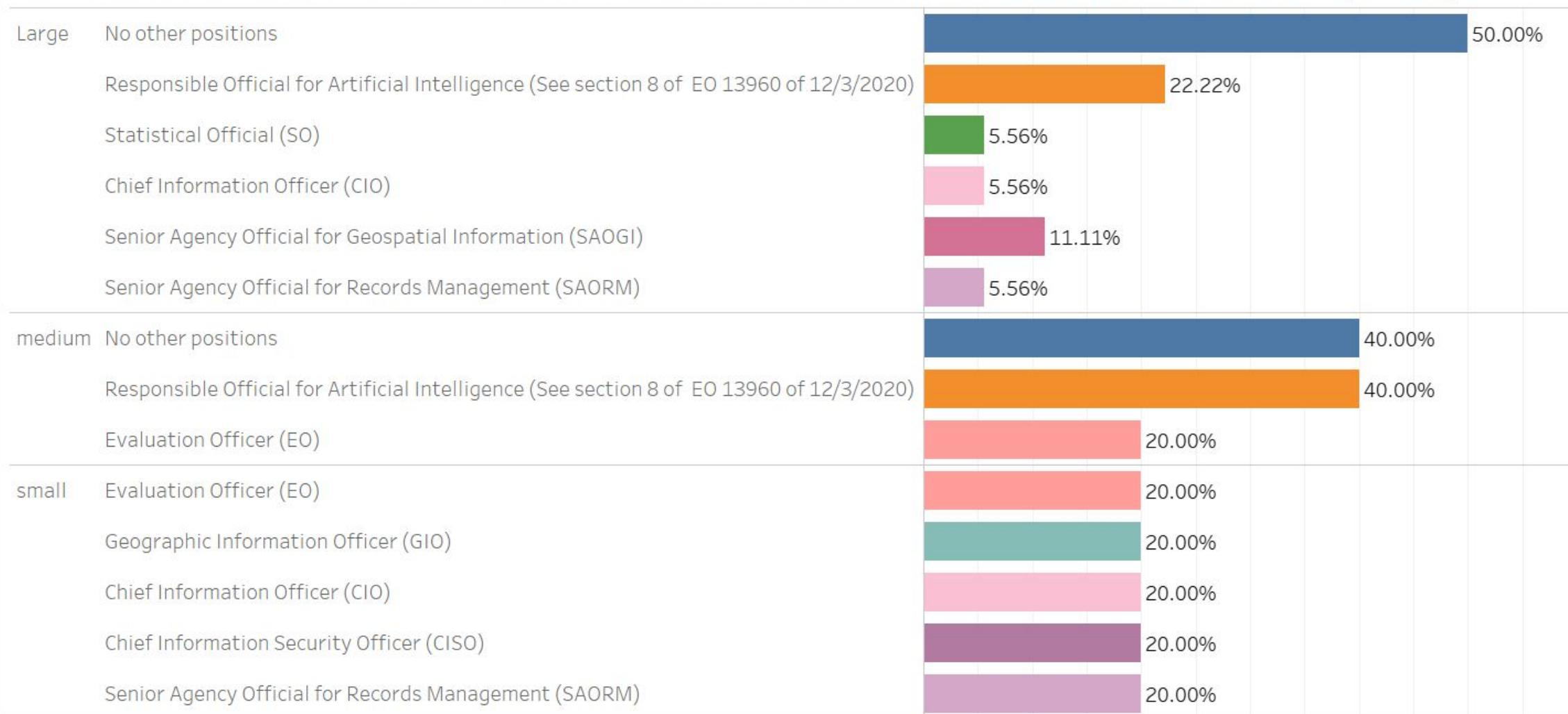
## Q6. Is the CDO role your primary responsibility ? (N = 42)



## 2023 vs 2022 Q9. Other Official Roles (besides CDO) that you have (N = 71 )



## Q9. In addition to your CDO role, please select the other official titles that you have ? (N = 28)



# **Chief Data Officers: Professionally as a Group**

Overall: SES or GS-15 with over 10 years in public sector and focused on data and analytics

## **Large Size Agencies:**

- Been with your agency 5-10 years
- Majority: 1-5 years as CDO

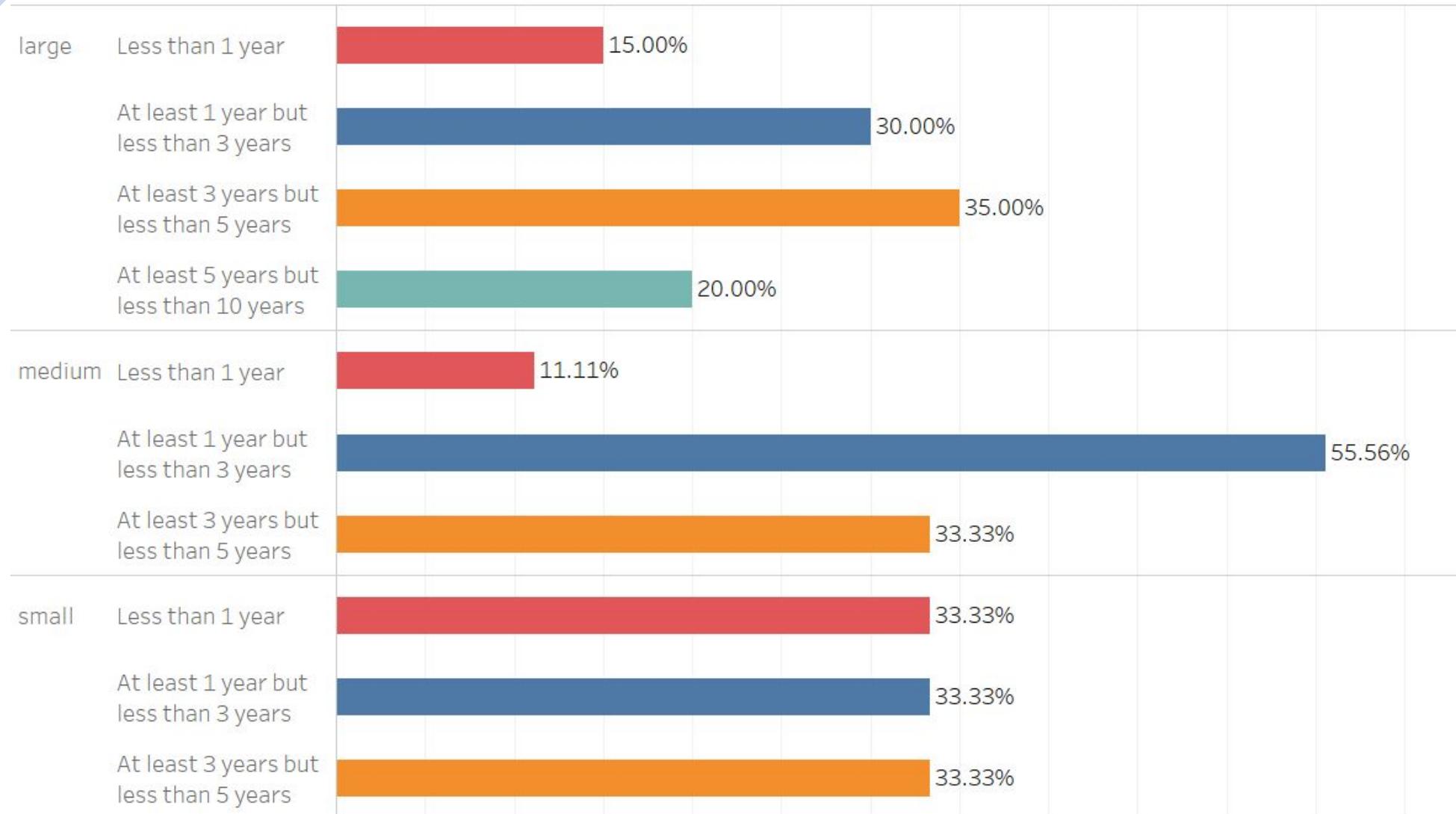
## **Medium Size Agencies:**

- Been with your agency: majority: less than a year and over 10 years
- Majority 1-3 years as CDO

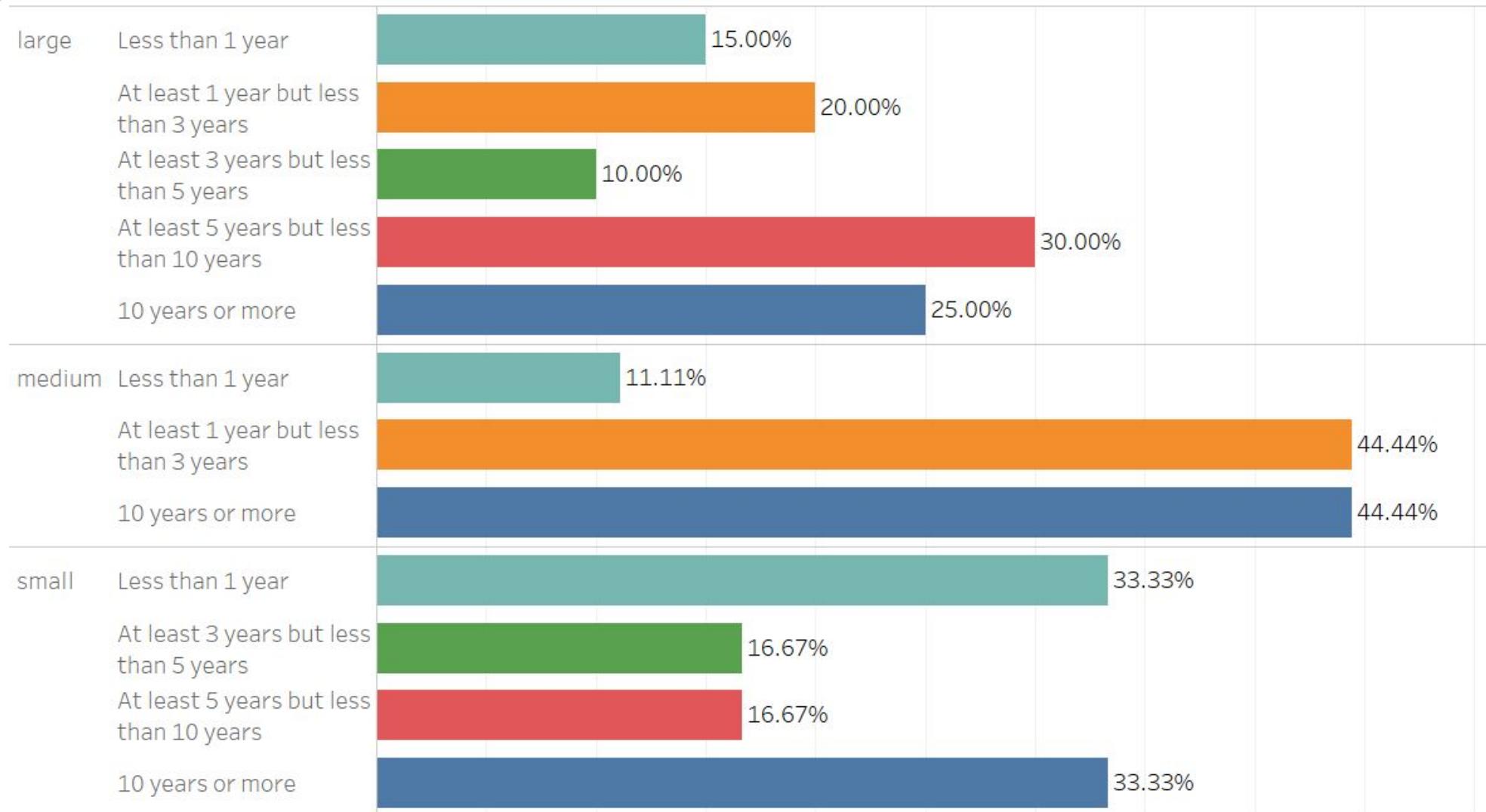
## **Small Size agencies:**

- Been with your agency: majority: less than a year and over 10 years
- Ranged from less than a year to up to 4 years as CDO

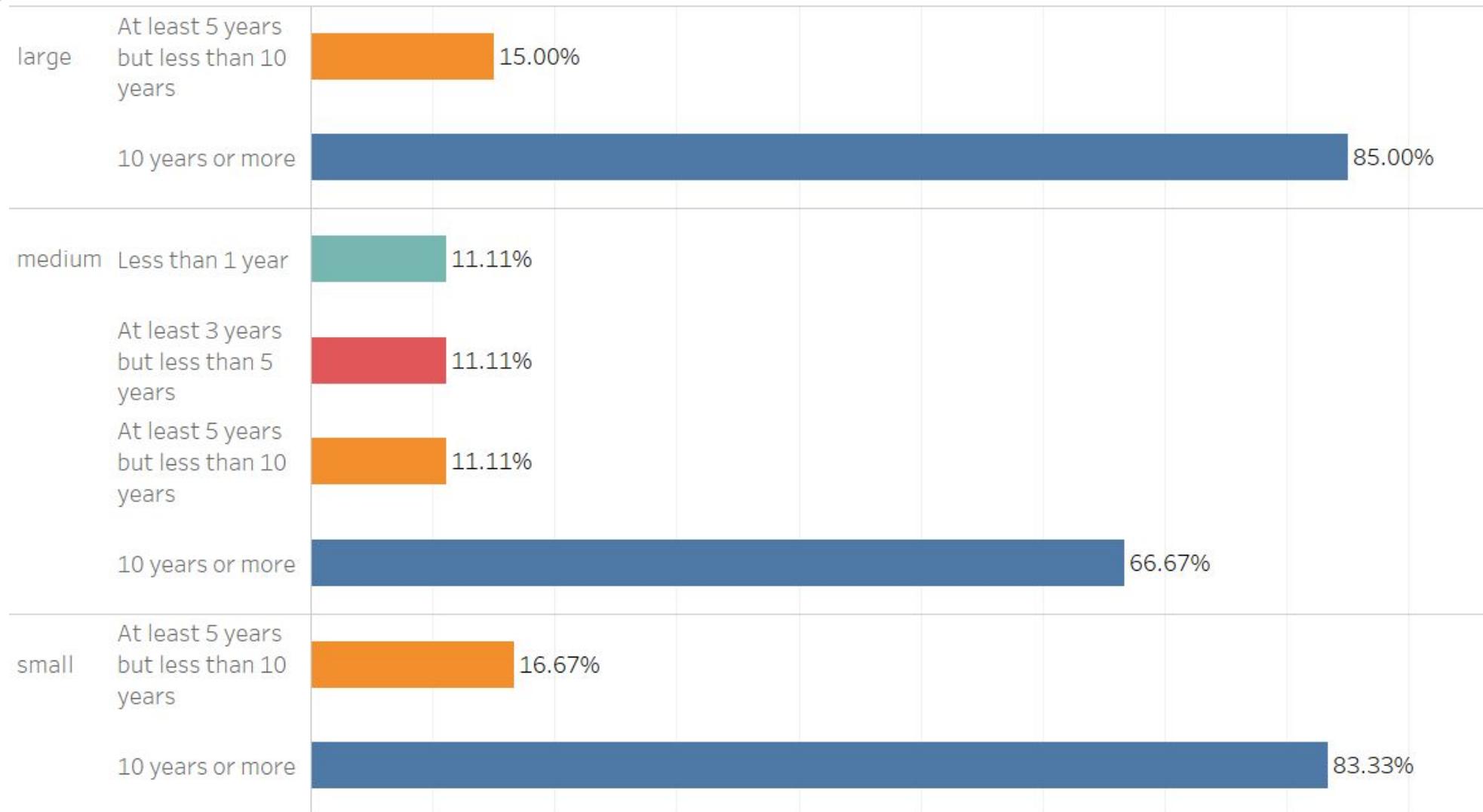
#### Q14: About how many total years of your career have been in the role of a CDO? (N = 35)



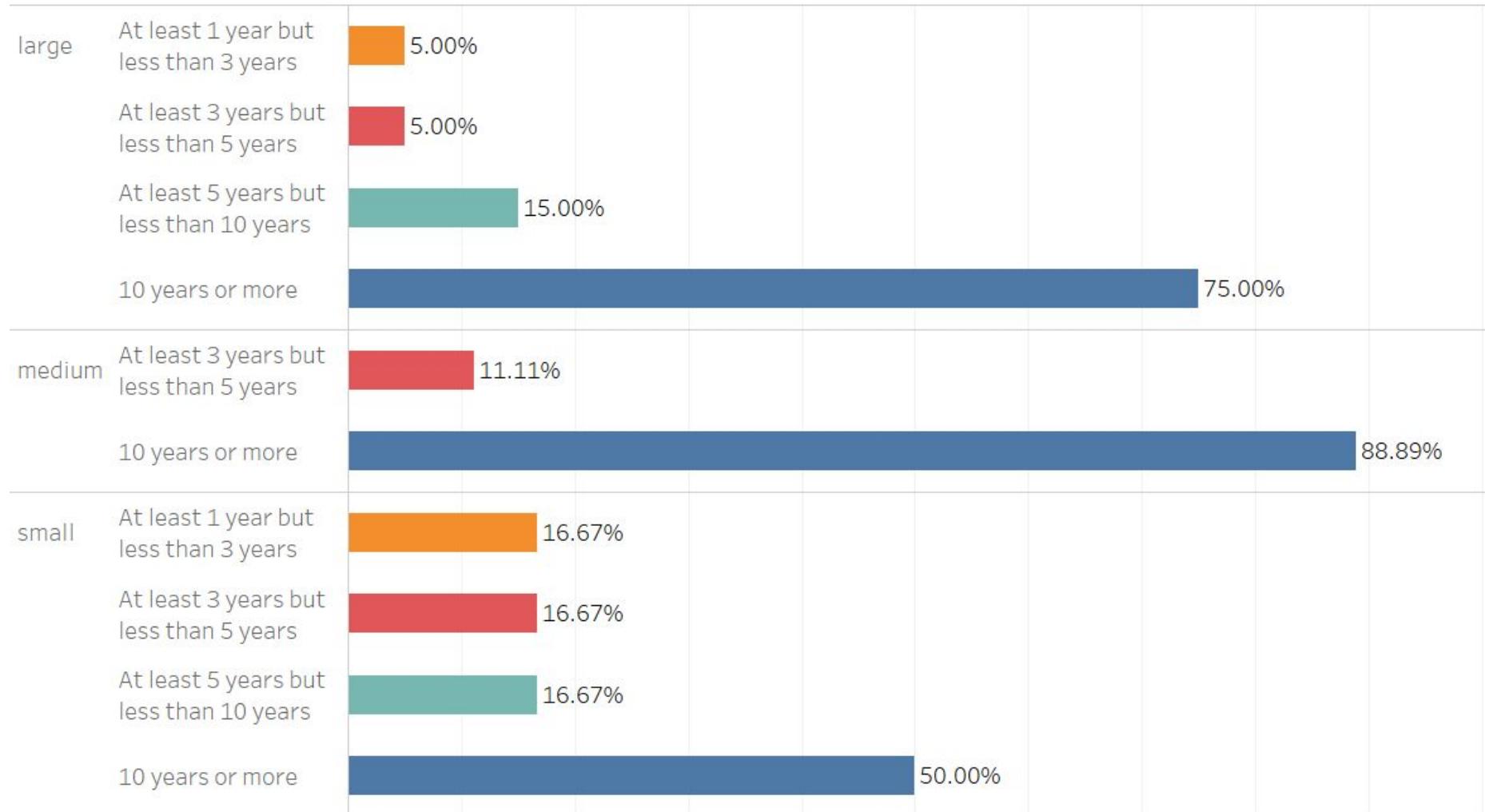
## Q12: About how many years have you been with this organization? (N = 35)



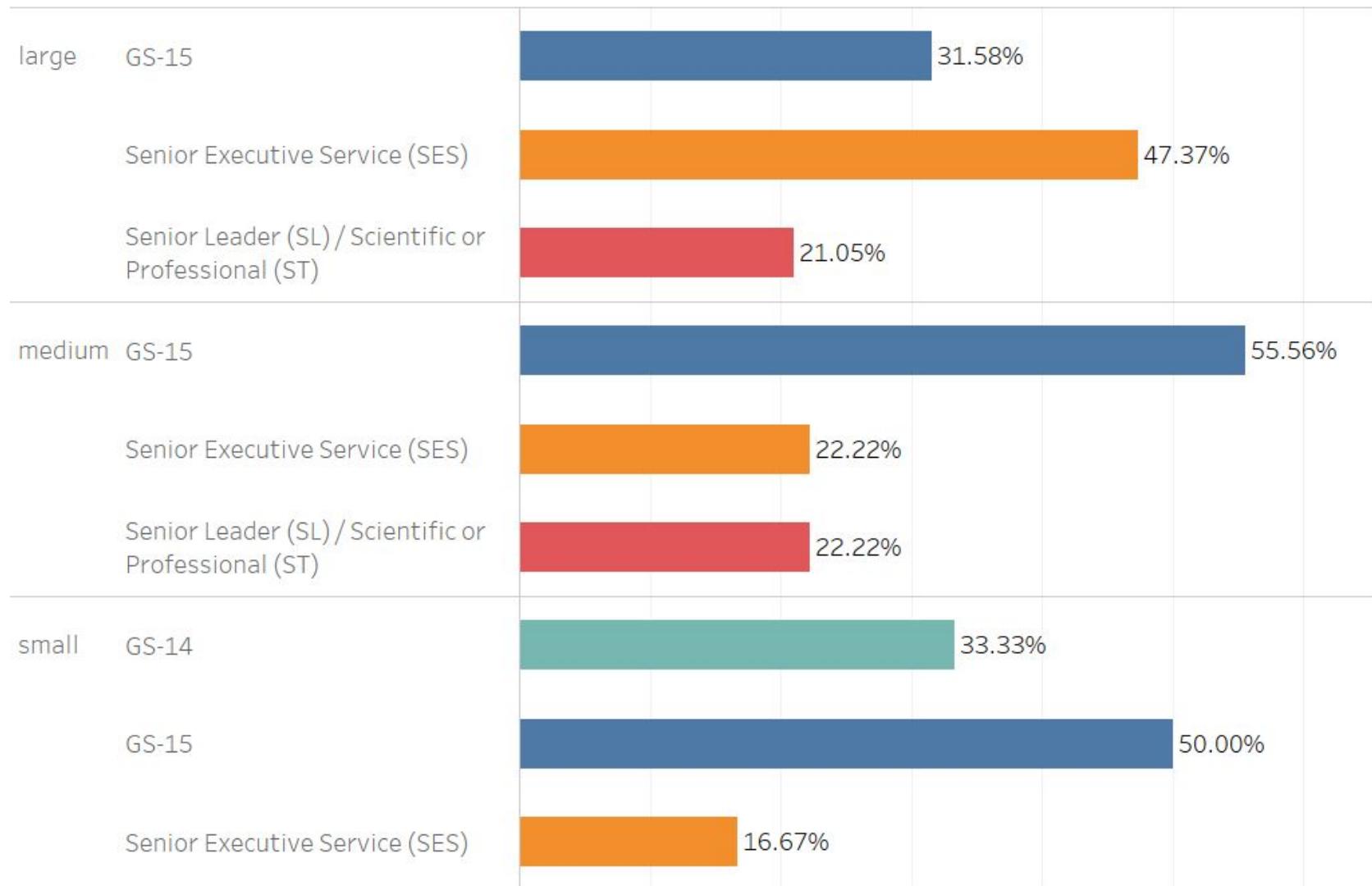
### Q13: About how many years have you been in the public sector? (N = 35)



## Q15. About how many total years of your career have been focused on data and analytics? (N = 35)



## Q24: What is your current GS-level or equivalent? (N = 34)



# Chief Data Officers: Demographics

Overall: Distribution is demographically changing, no professional data and analytics certifications (most likely did not exist at the time)

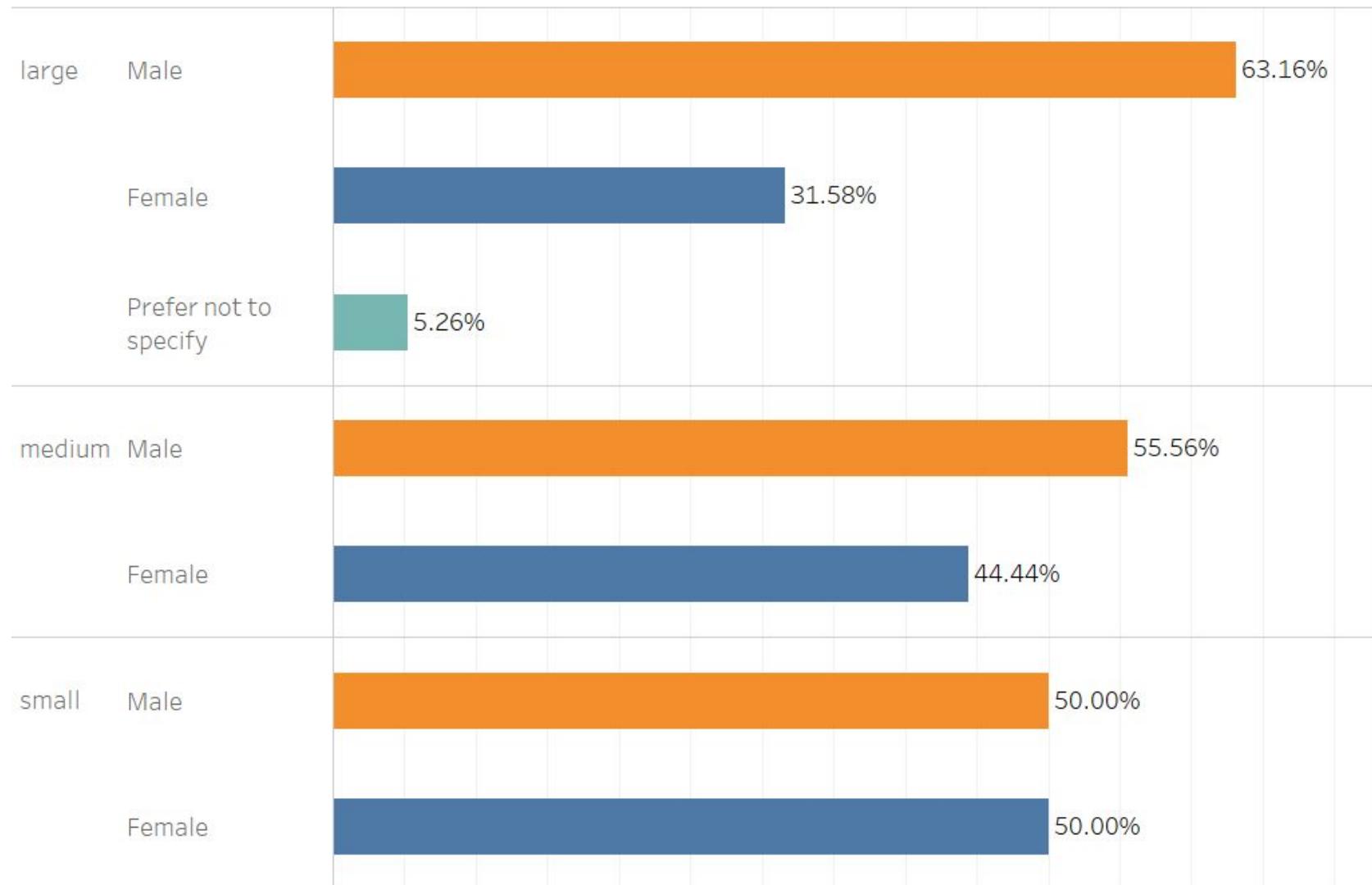
## **Large / Medium Size Agencies:**

- Majority have Masters degree or Higher, degrees from Biological Sciences to Social Sciences, Law and Computer Science

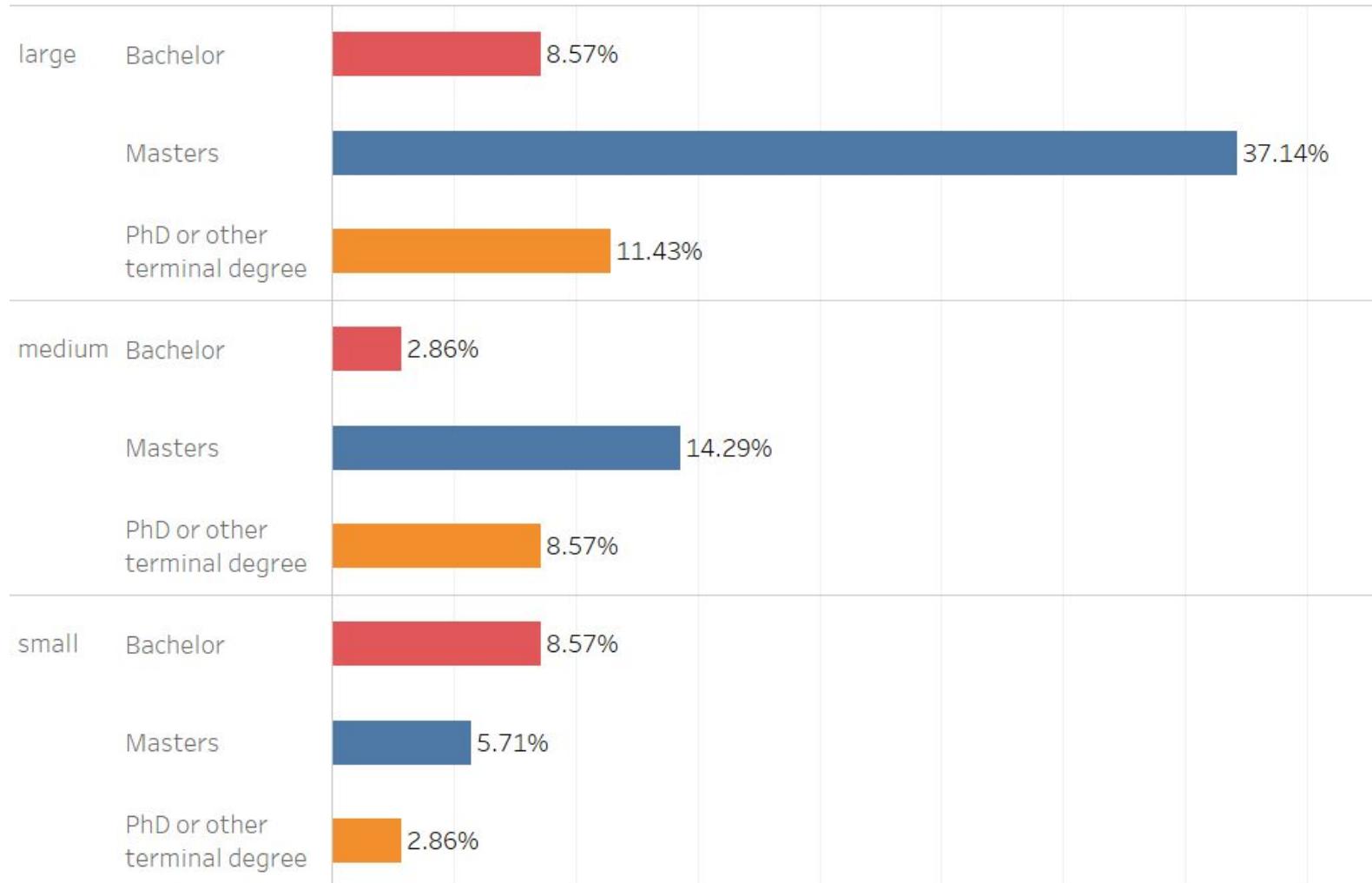
## **Small Size agencies:**

- Majority have a Bachelor's degree
- Small agencies: degrees range from political science, engineering to International Development and MBA

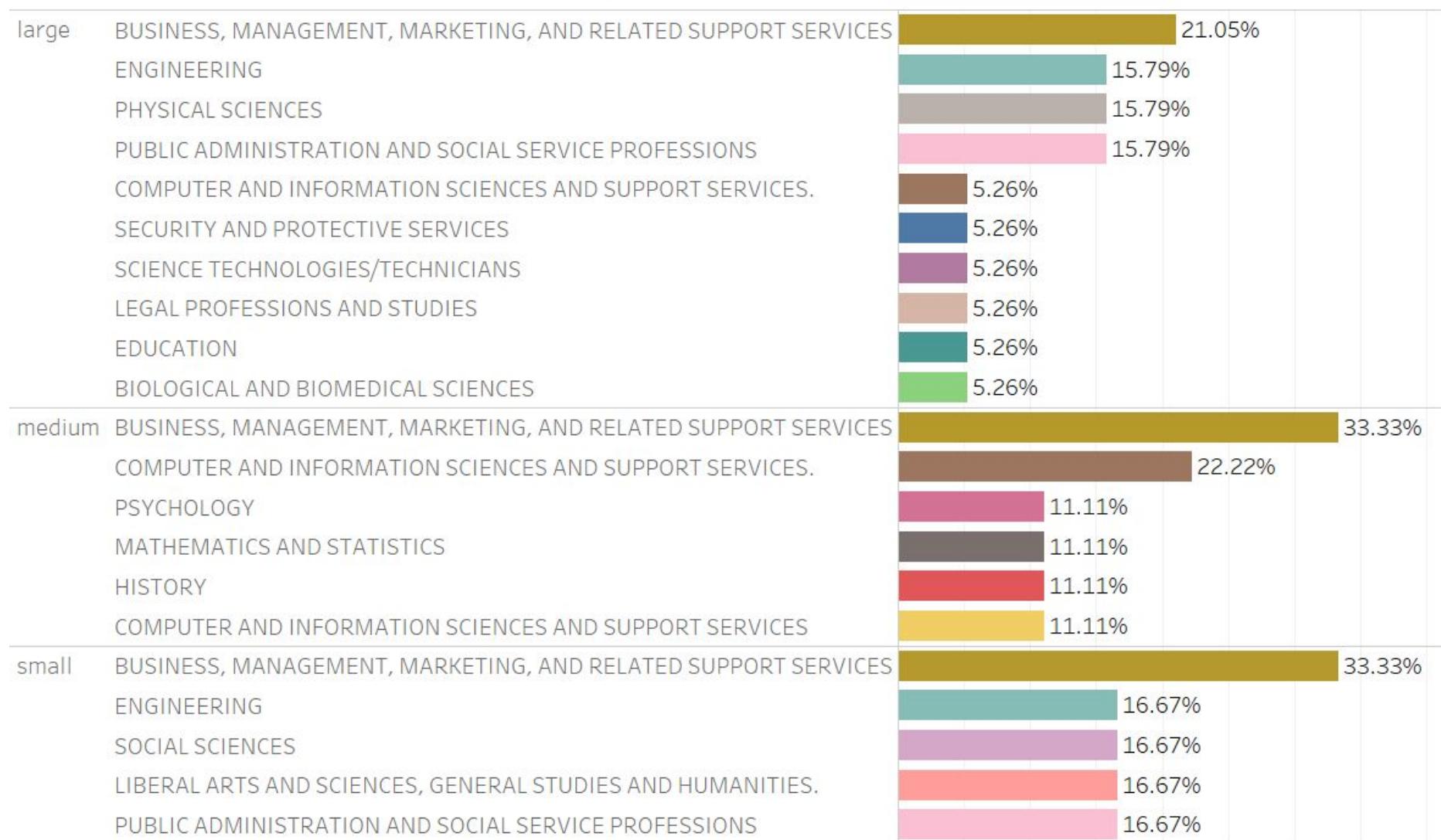
## Q16: How would you describe your gender? (N = 34)



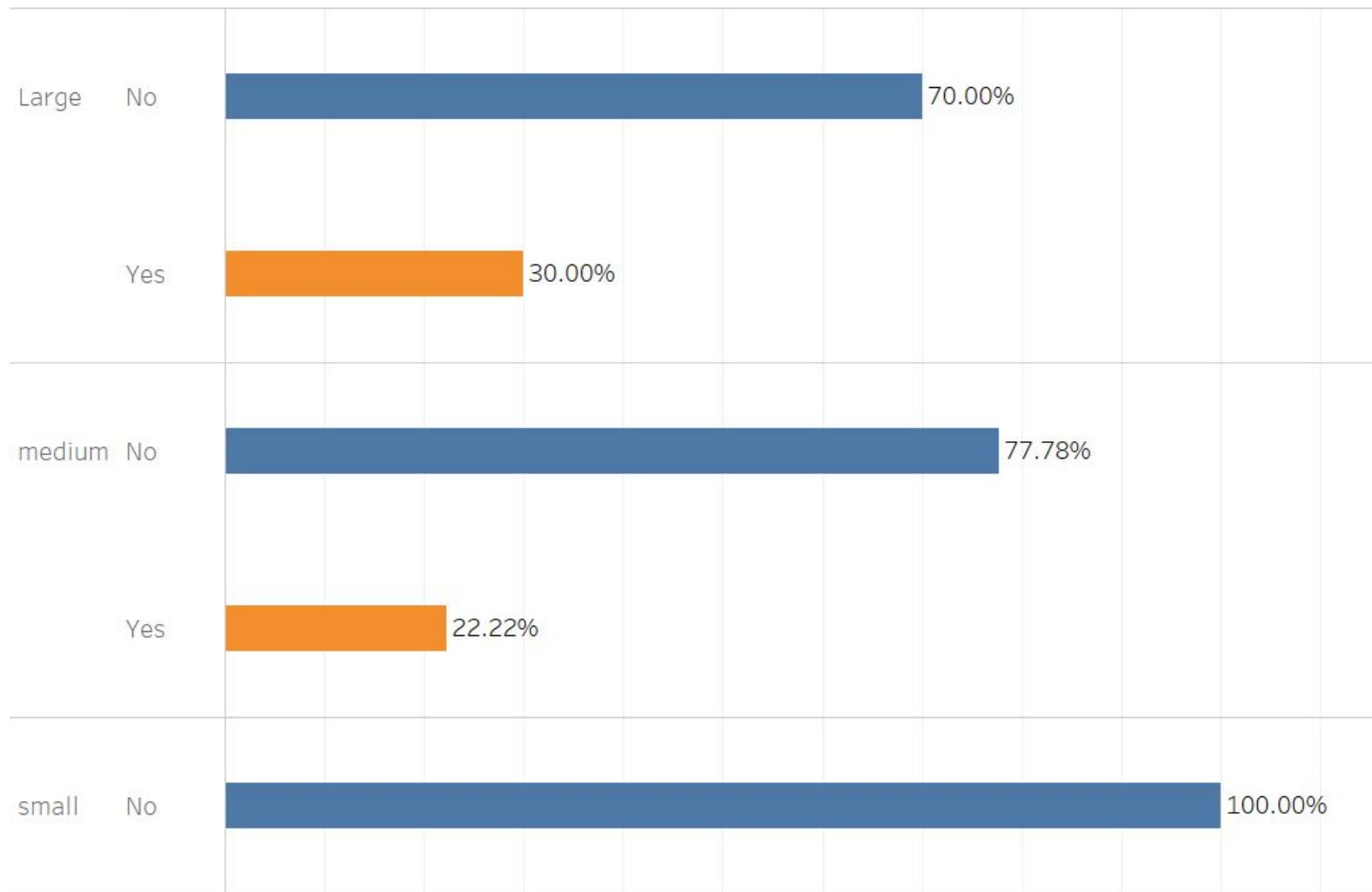
## Q17: What is the highest level of education that you have completed? (N = 35)



## Q18. What was your field of study(CIP Categories)? (N = 34)



**Q19. Do you have other professional data and analytics certifications?  
(N = 35)**



# CDO in Agency Structure

Overall: No subcomponent CDOs at the agency, no separate Chief Analytics Officer (CAO) nor Chief Artificial Intelligence Officer (CAIO)

## **Large Size Agencies:**

-Majority: CDO Office operates as a Central data team reporting to the Chief Info Officer (CIO)

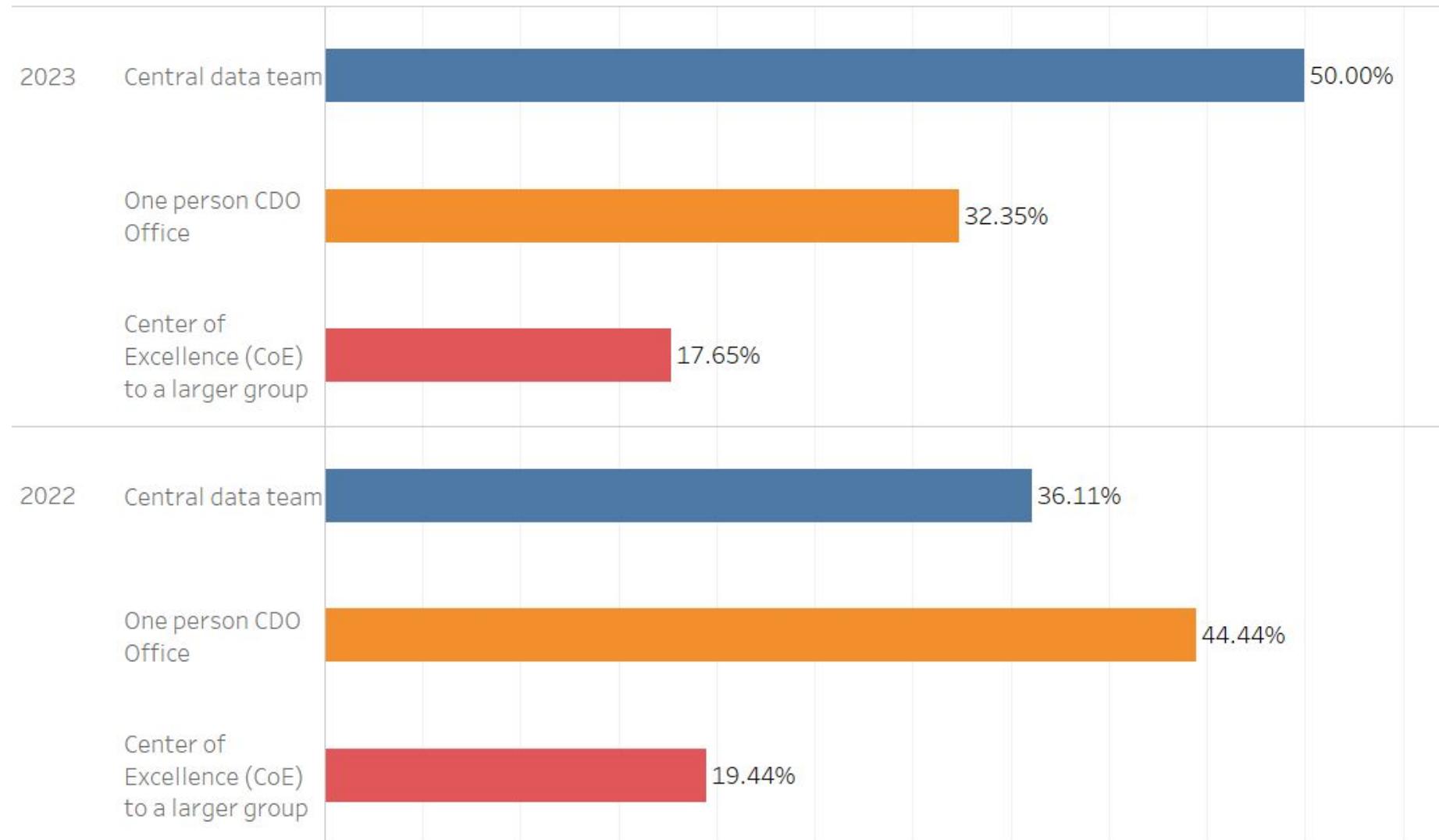
## **Medium Size Agencies:**

-Majority: either 1 person CDO Office or Central data team reporting to either CIO/ COO (Chief Operating Officer)

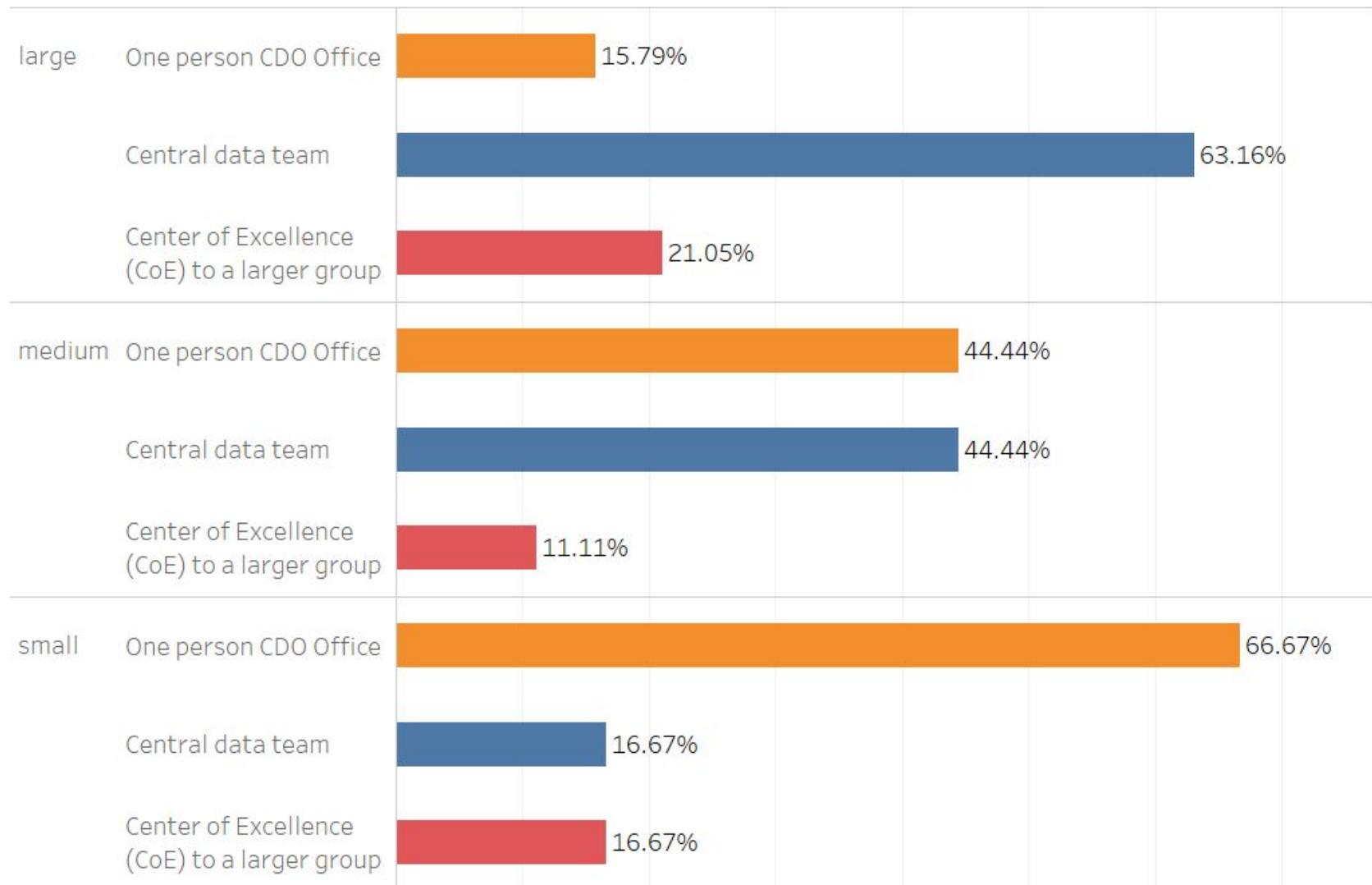
## **Small Size agencies:**

-Majority are a 1 person CDO Office reporting to the Head / Deputy Head of the Agency

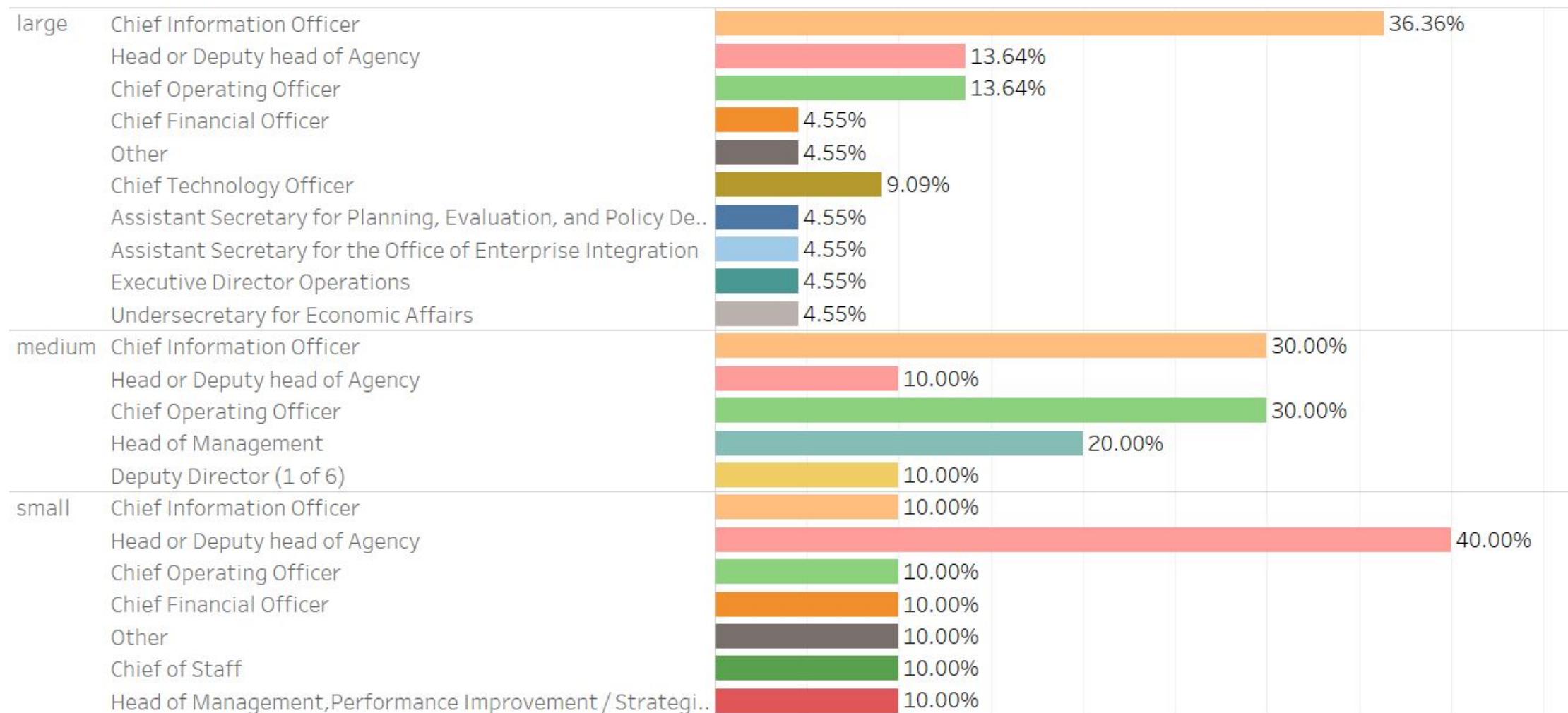
## 2023 vs 2022- 28. My CDO Office operates as a: (N = 70 )



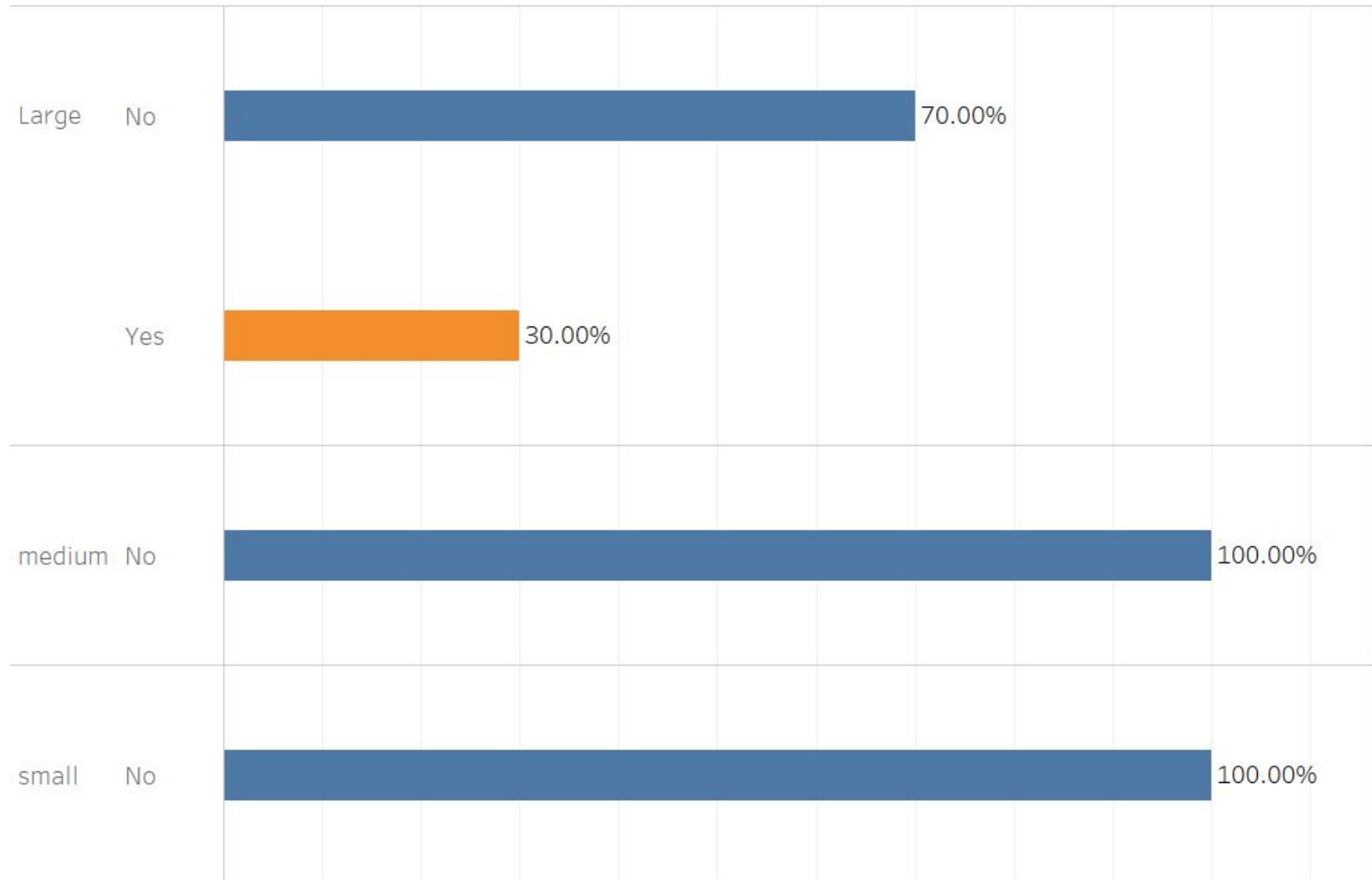
## Q28. My CDO Office operates as a (N = 34):



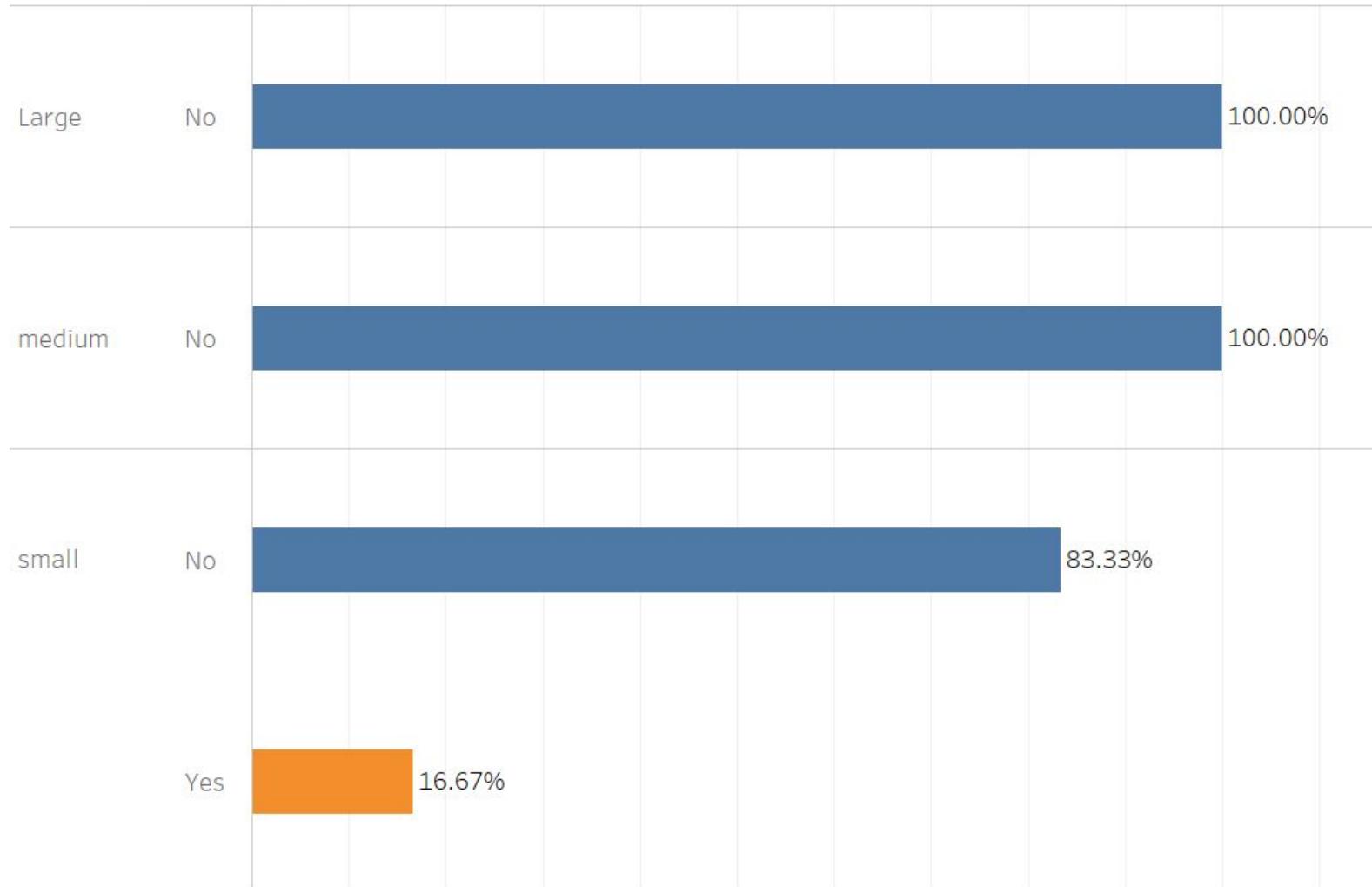
**21. Who do you report to as CDO in your current agency structure? (check all that apply) - Selected Choice (N = 42)**



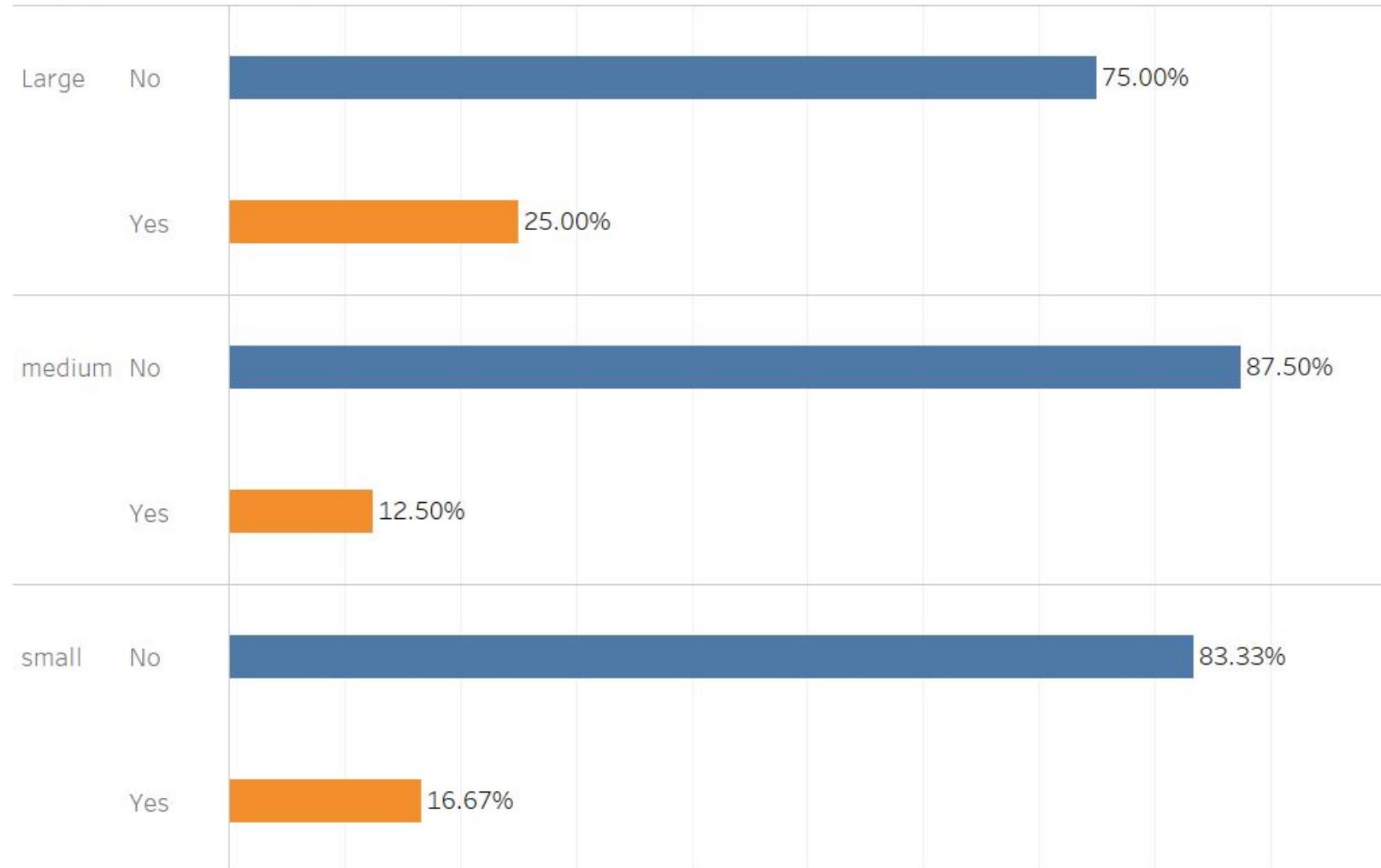
## Q27. Do you have subcomponent CDOs at your agency? (N = 35)



**Q25. Is there a separate Chief Analytics Officer / executive analytics role in your organization? (N = 35)**



**Q26. Is there a separate Chief Artificial Intelligence Officer role in your organization? (N = 34)**

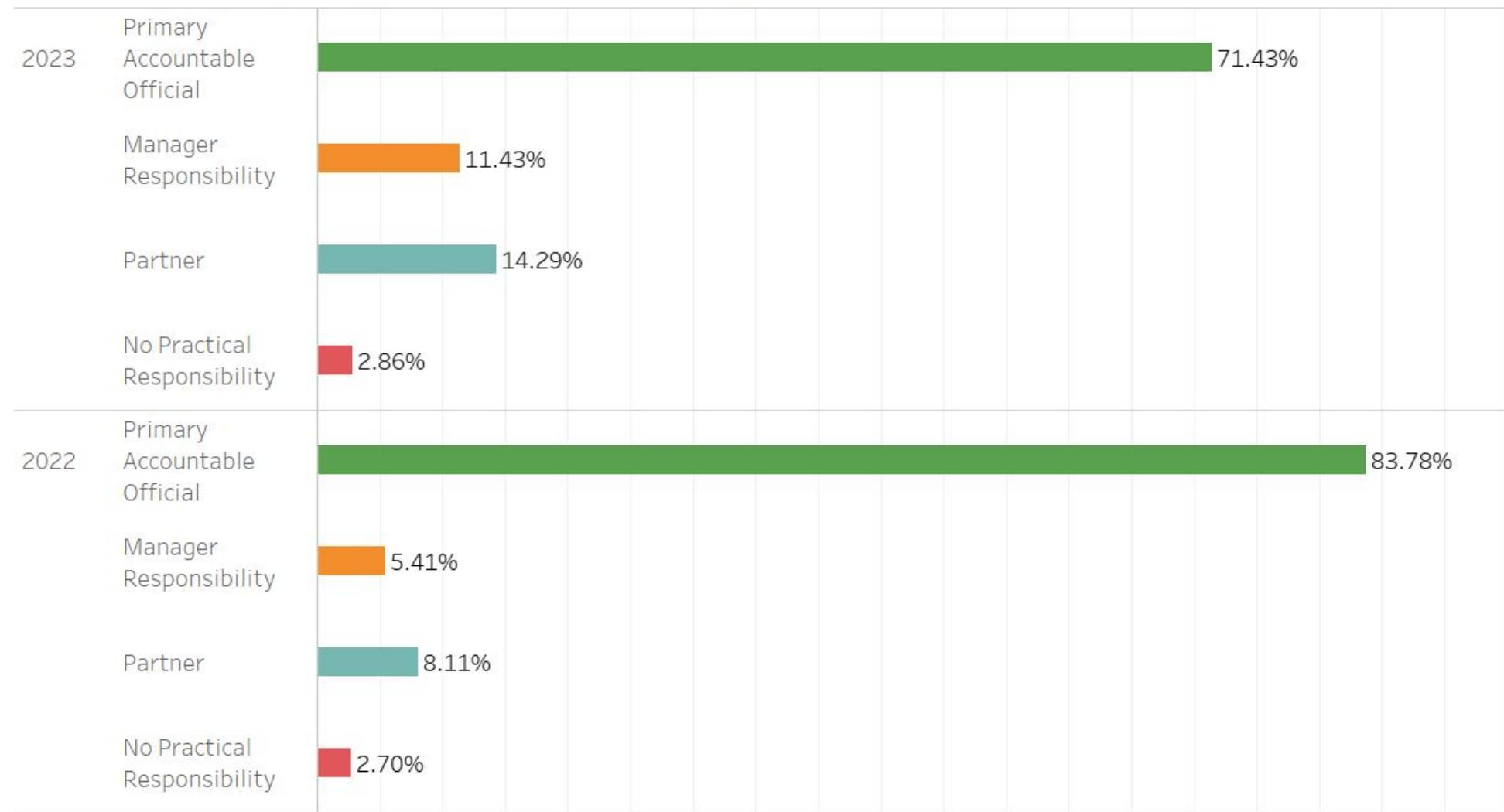


# CDO as Primary Accountable Official

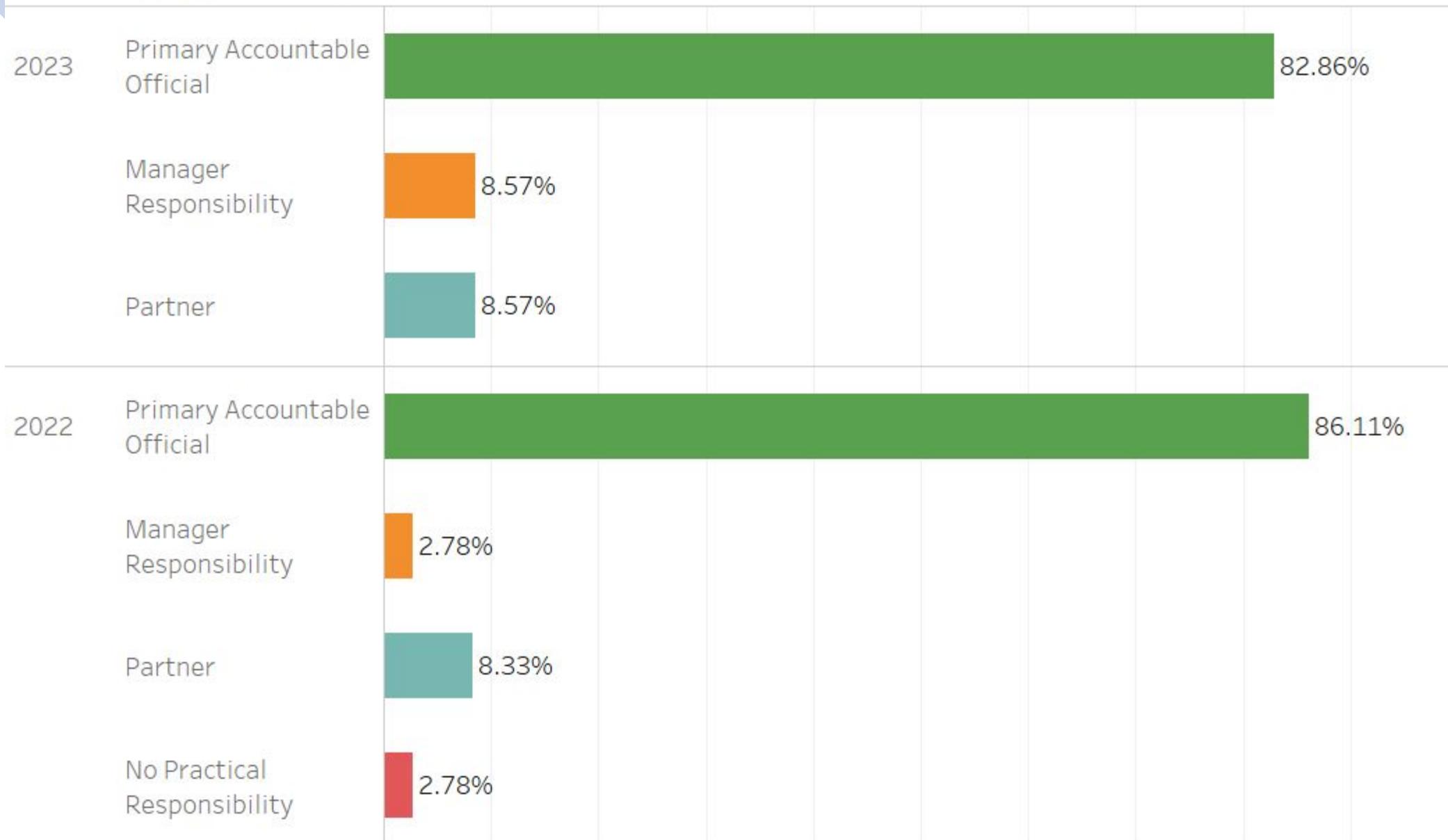
Continuing in 2023 (from 2022), across large, medium and small size agencies  
Majority served as Primary Accountable Official for the following:

- Data Governance
- Data Strategy
- Open Data
- Data Evangelism
- Ambassador (from Partner role)

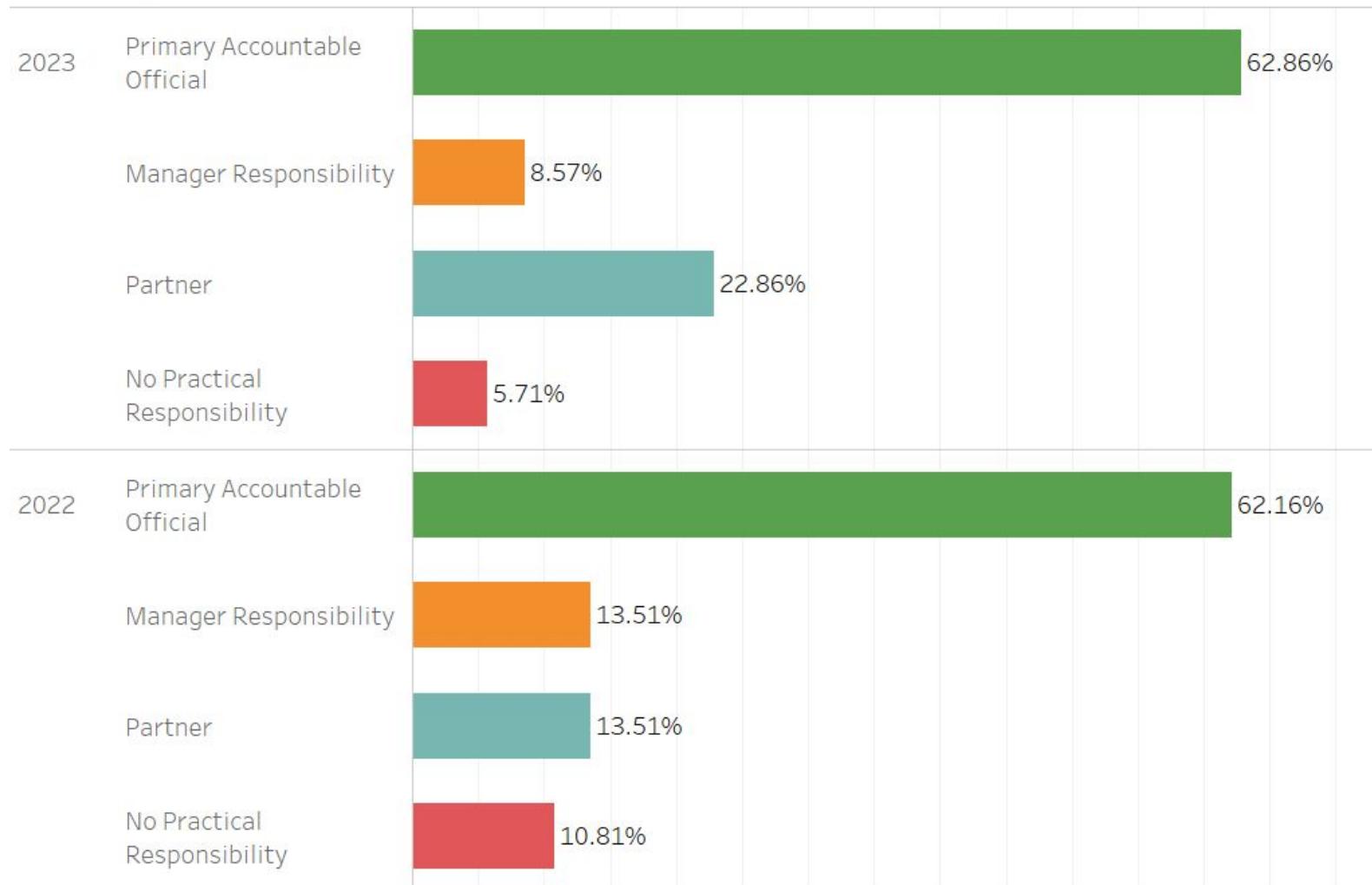
## 2023 vs 2022 Q29 (1): Data Governance (N = 72 )



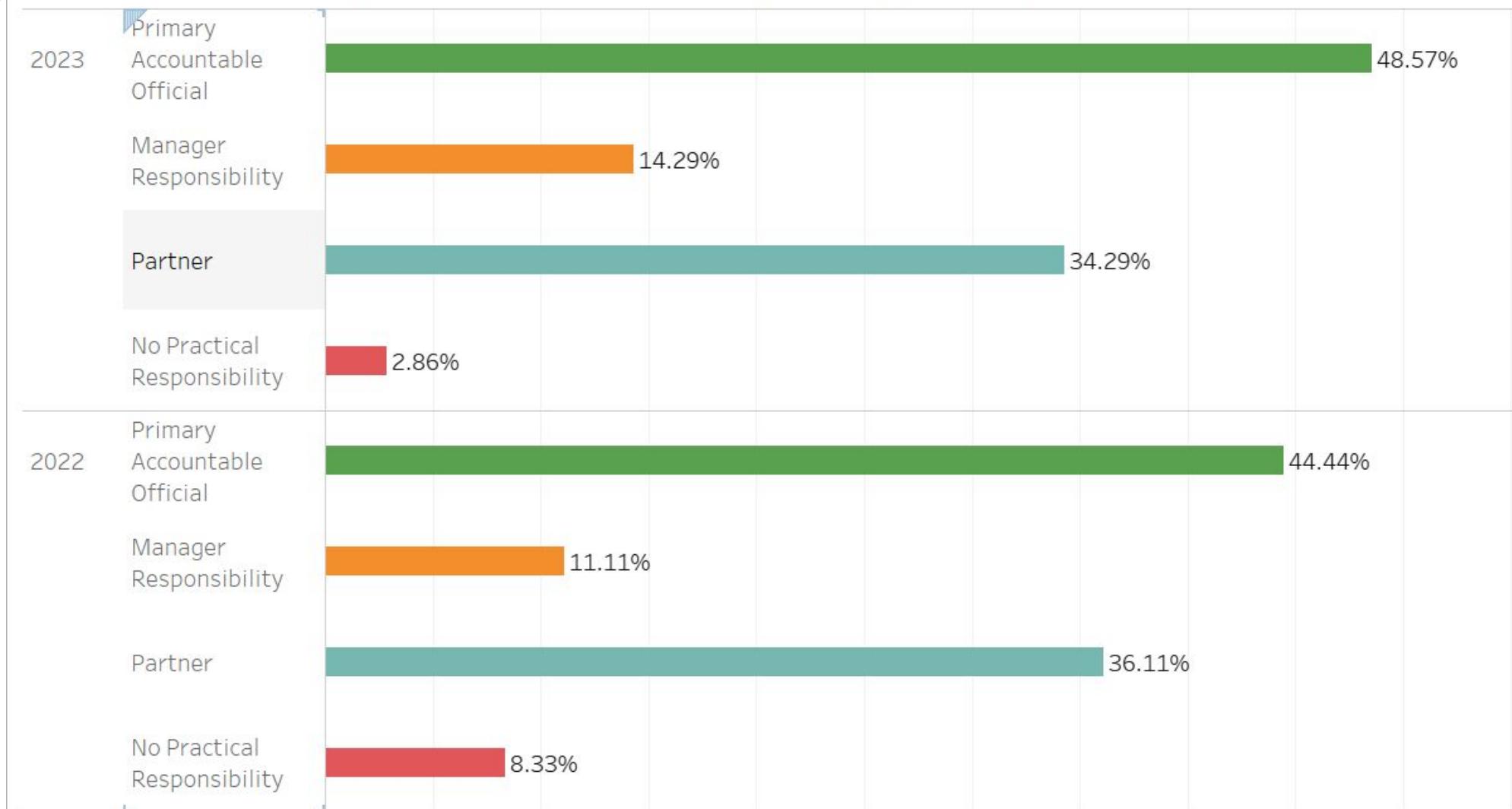
## 29a. What responsibility do you have in the following areas: - Data Strategy (N = 71)



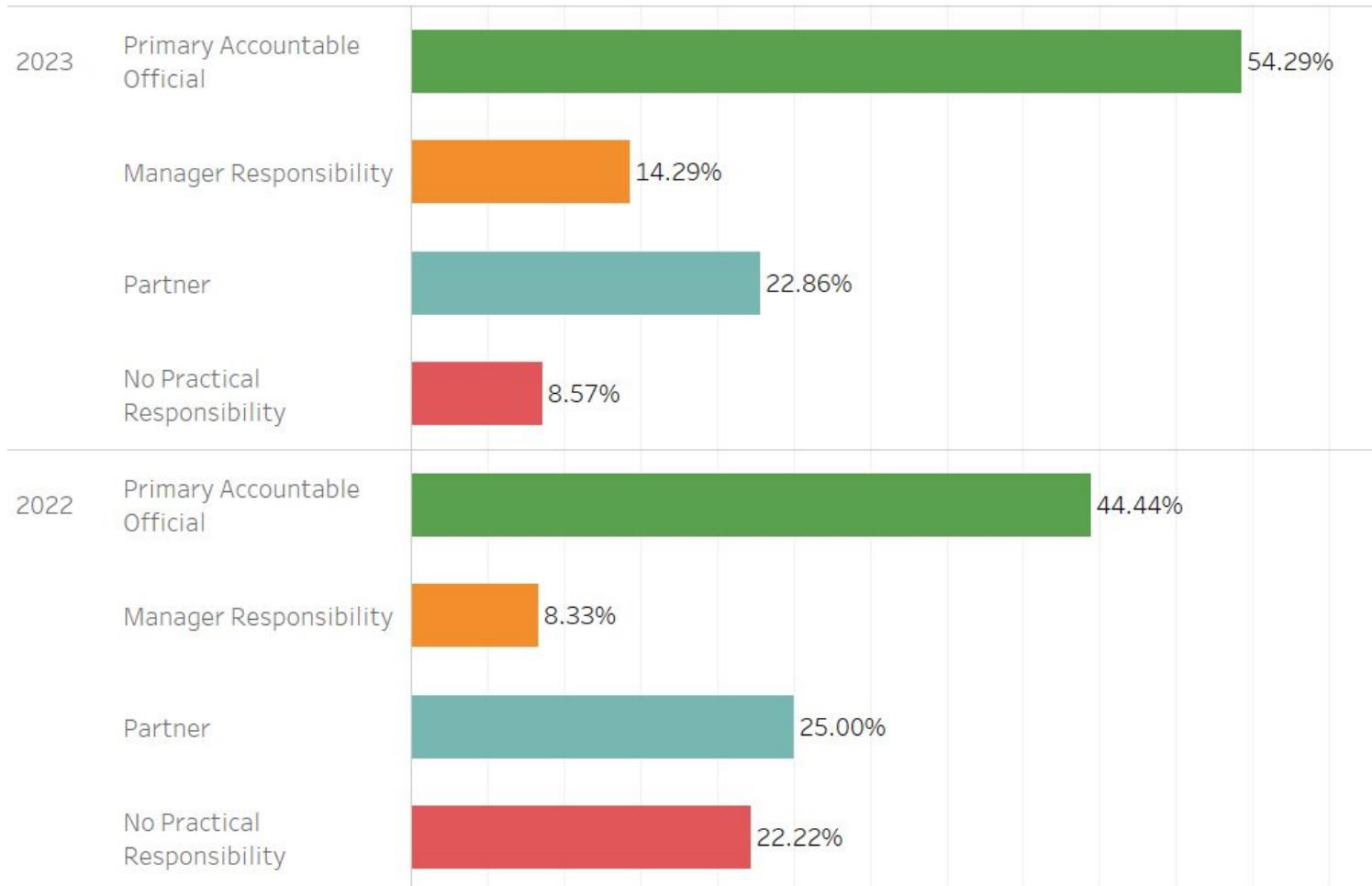
## 29a. What responsibility do you have in the following areas: - Open Data (N = 72)



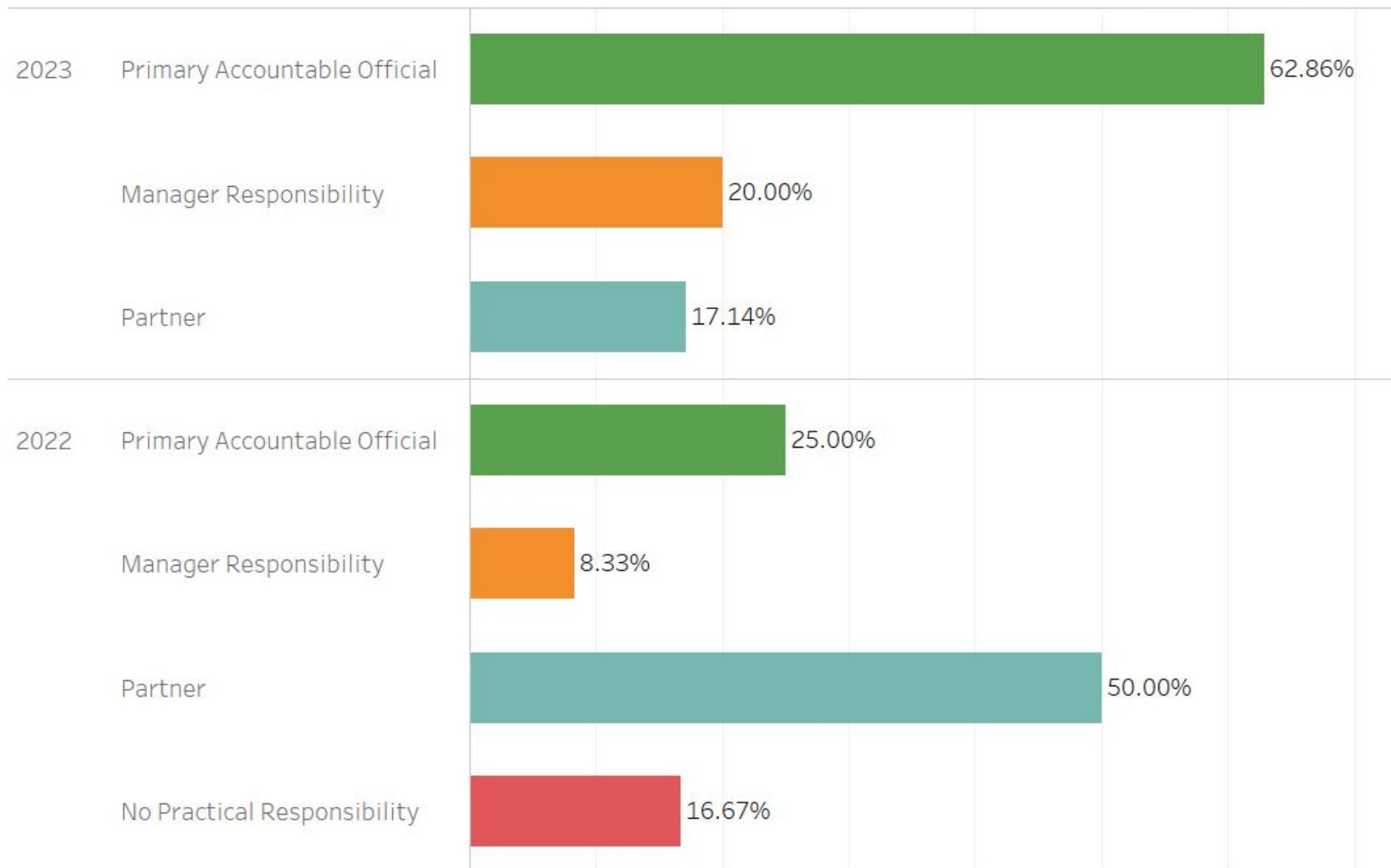
## 2023 vs 2022 Q29 (19): Data Skills Development (N = 71 )



29a. What responsibility do you have in the following areas: -Data Evangelism  
(N = 71)



**29f. What responsibility do you have in the following areas: - Ambassador  
(for data sharing, evidence based policy making, data culture) (N = 71)**

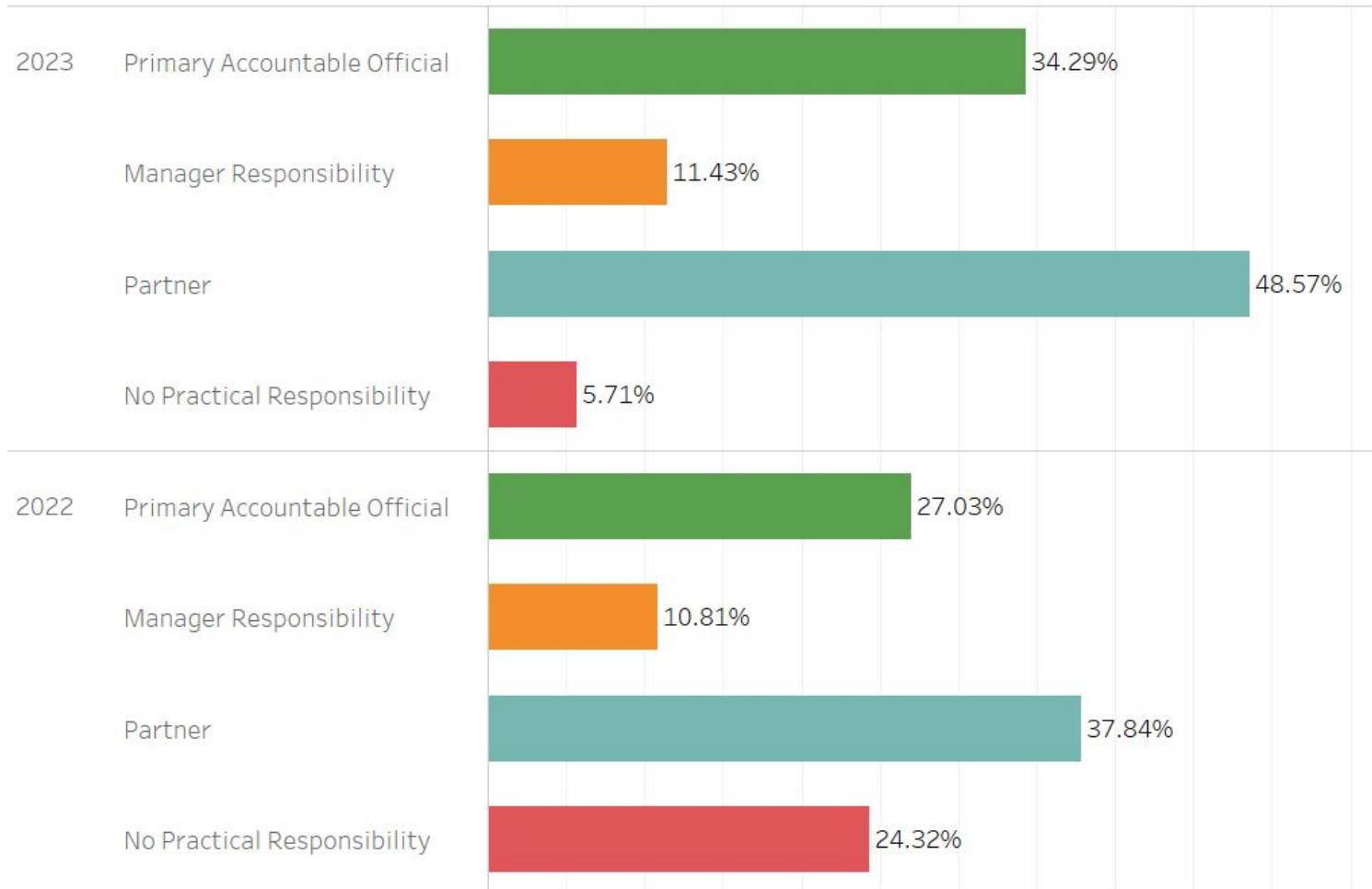


# CDO as Partner

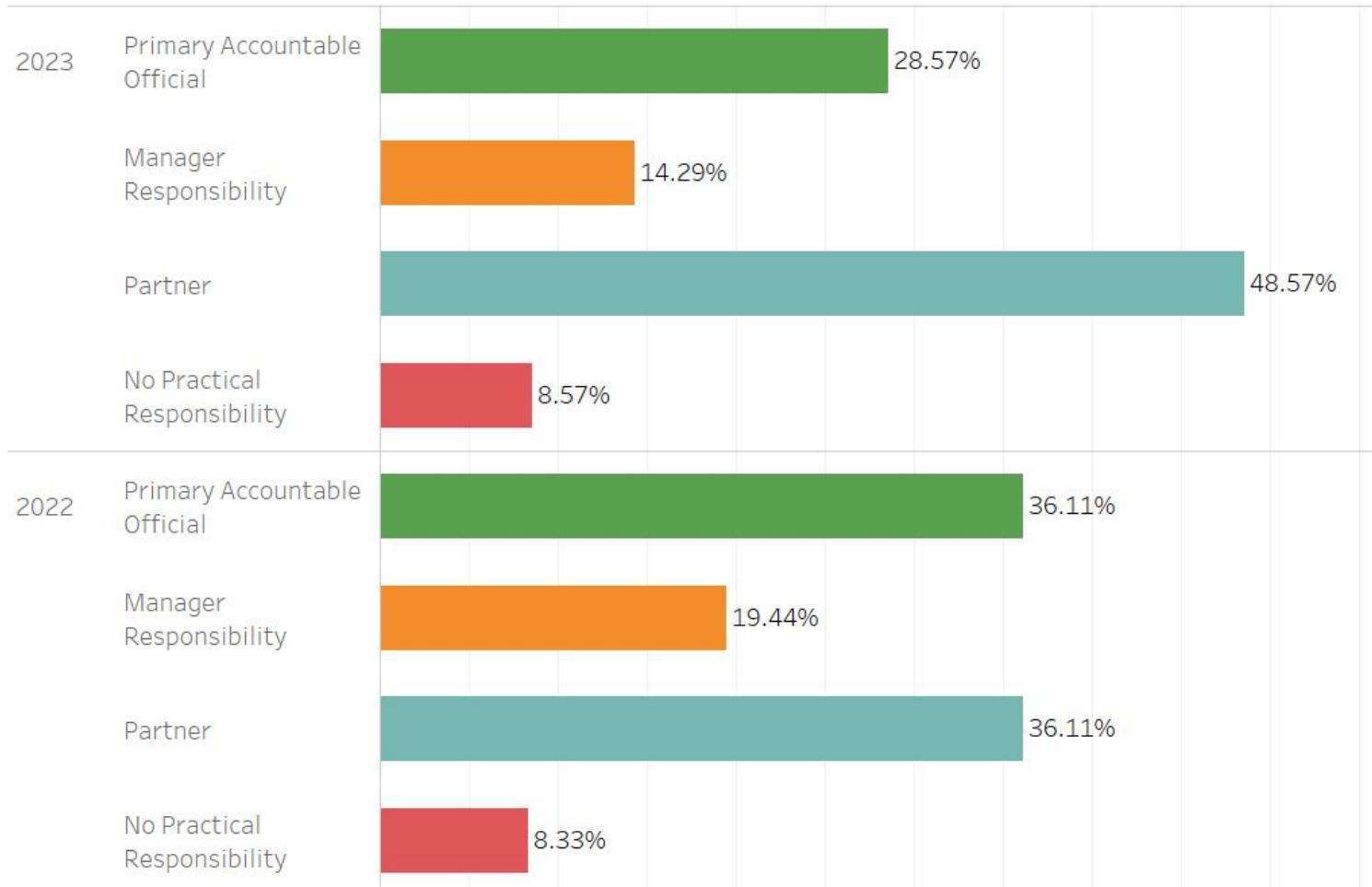
Continuing in 2023 (from 2022), across large, medium and small size agencies  
Majority served as Partner for the following:

- Data Architecture
- Data Analytics (from Primary Accountable Official/ Partner in 2022)
- Information Collections/ Paperwork Reduction Act (tied with Primary Accountable Official in 2023)
- Data Integration
- Data Engineering
- Records Management
- Data Quality Management (from Primary Accountable Official in 2022)
- Information Security
- Research
- Data Visualization
- Privacy
- FOIA
- Operations Research (from No Practical Responsibility in 2022)
- Artificial Intelligence (from No Practical Responsibility in 2022)

29a. What responsibility do you have in the following areas: - Data Architecture  
(N = 72)



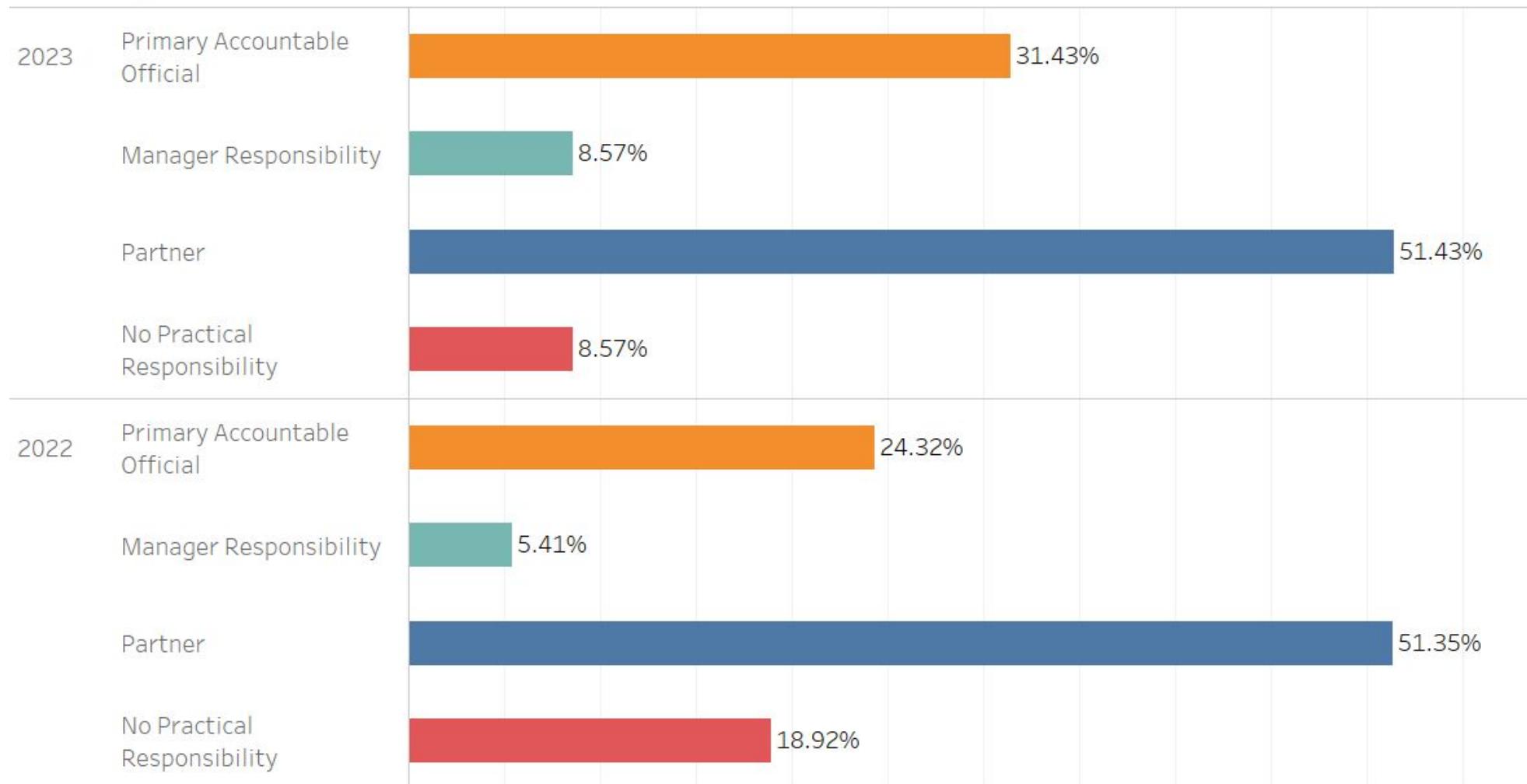
29d. What responsibility do you have in the following areas: - Data Analytics  
(N = 71)



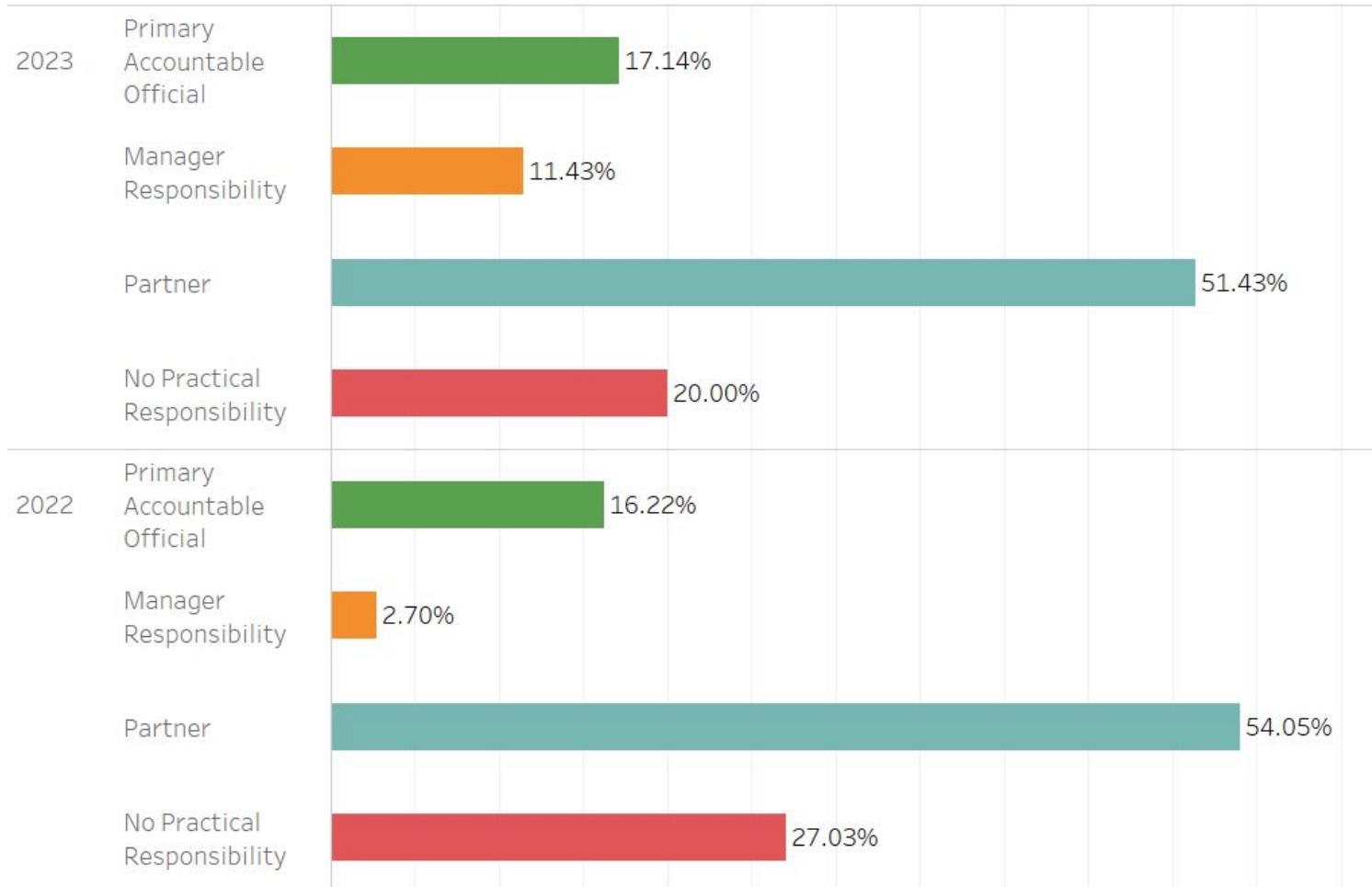
**29b. What responsibility do you have in the following areas:-  
Information Collections/ Paperwork Reduction Act (N = 72)**



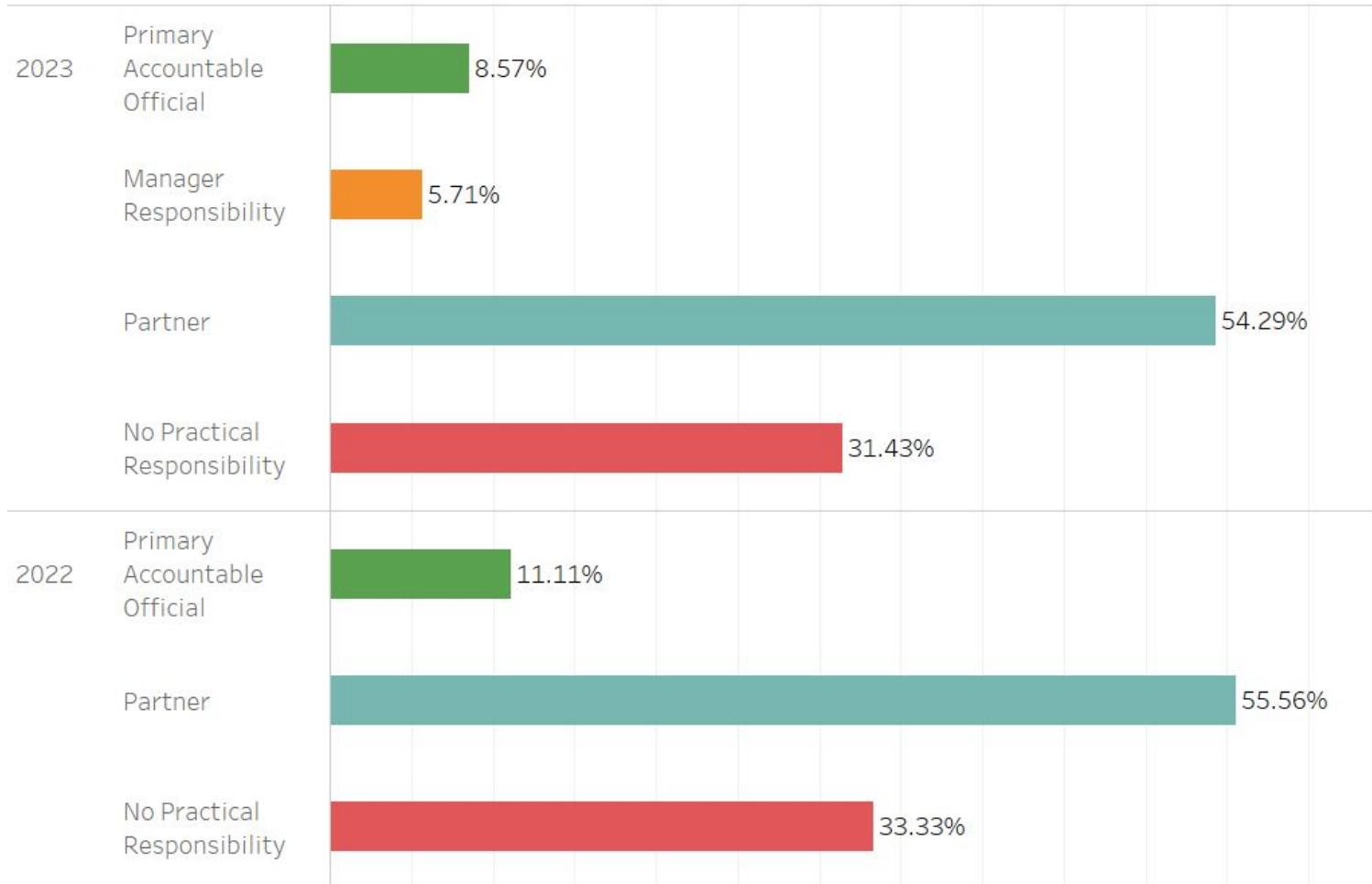
## 29a. What responsibility do you have in the following areas: - Data Integration (N = 72)



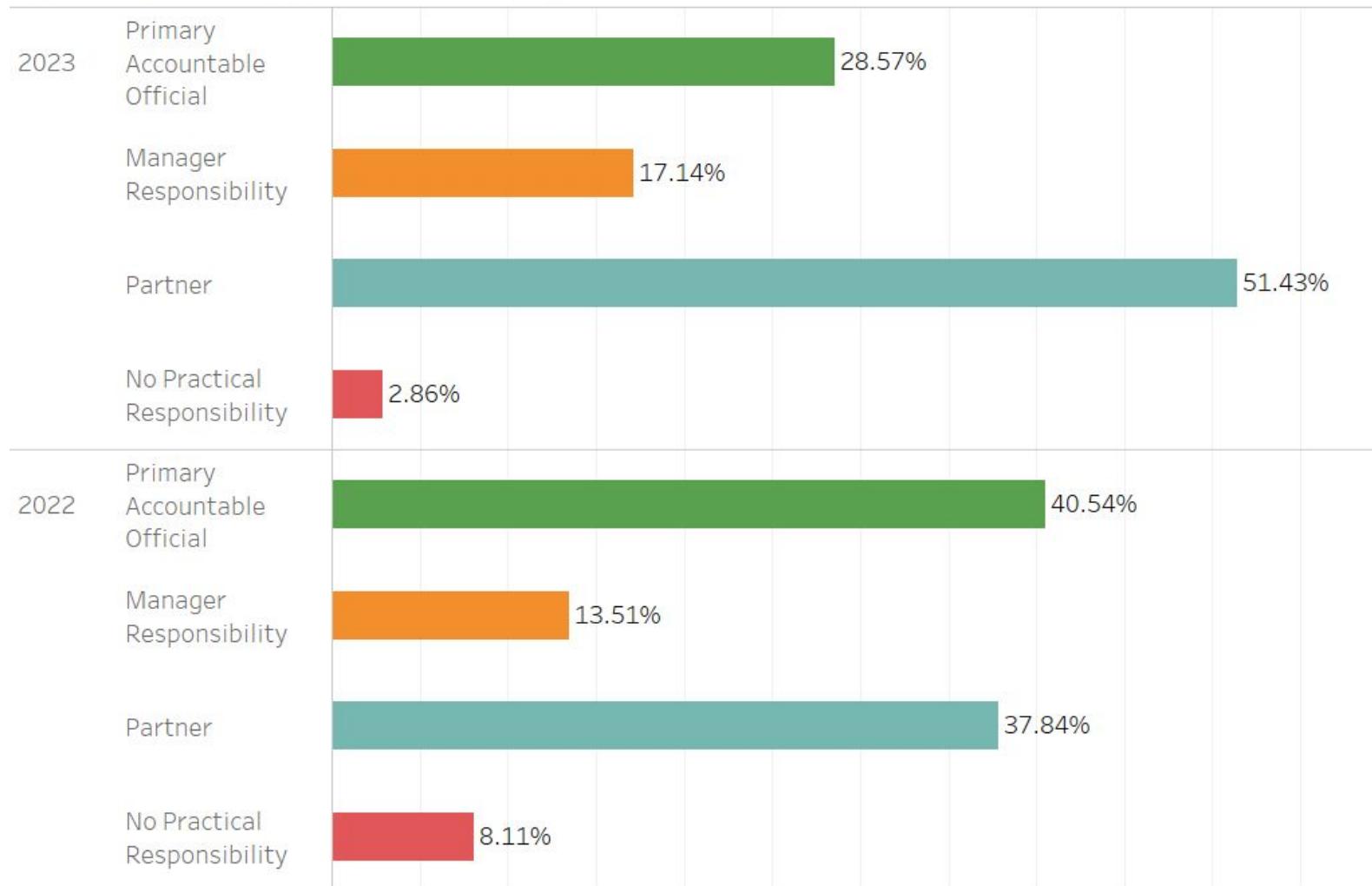
29c. What responsibility do you have in the following areas: - Data Engineering  
(N = 72)



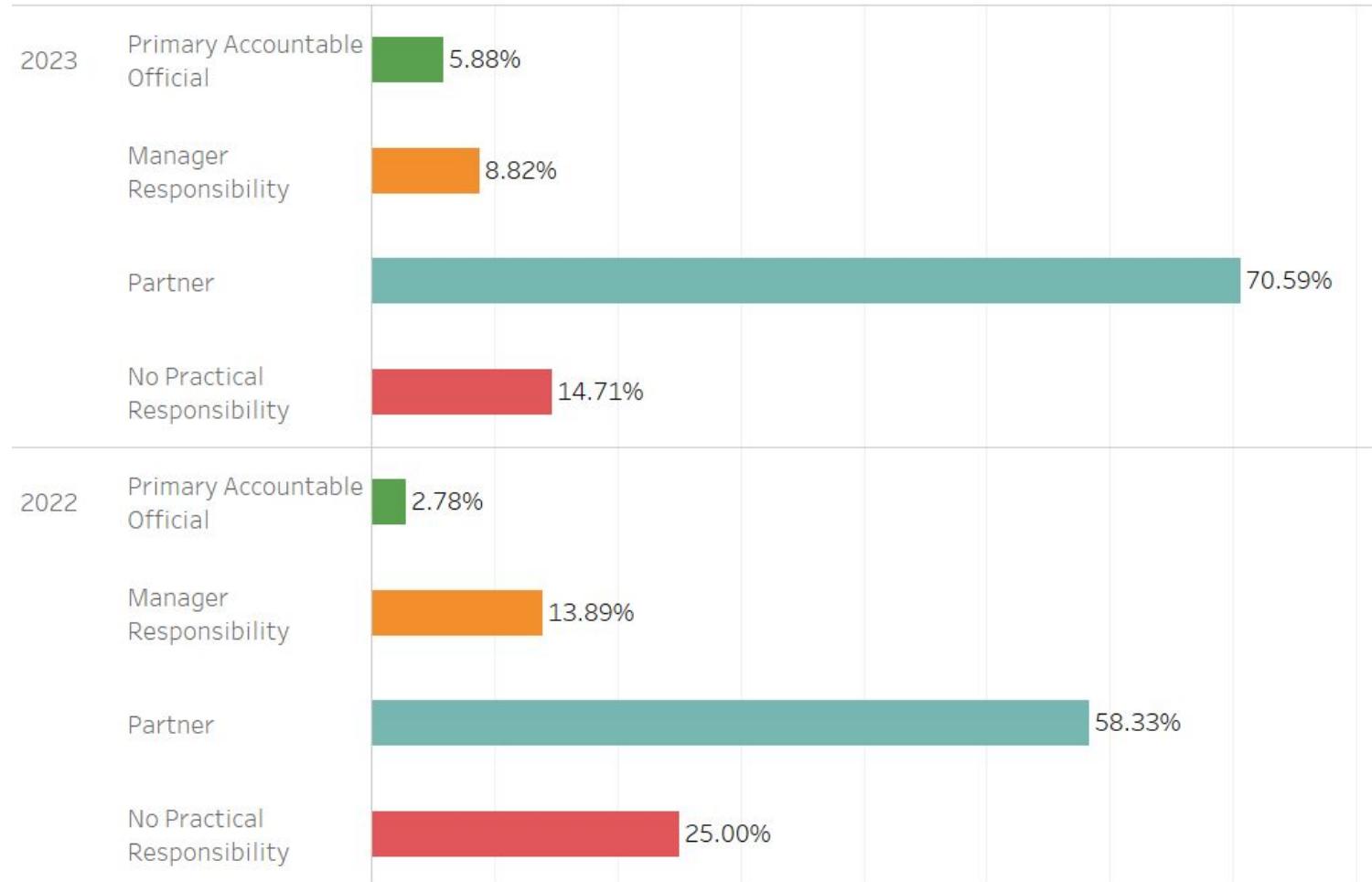
29b. What responsibility do you have in the following areas: - Records Management  
(N = 71)



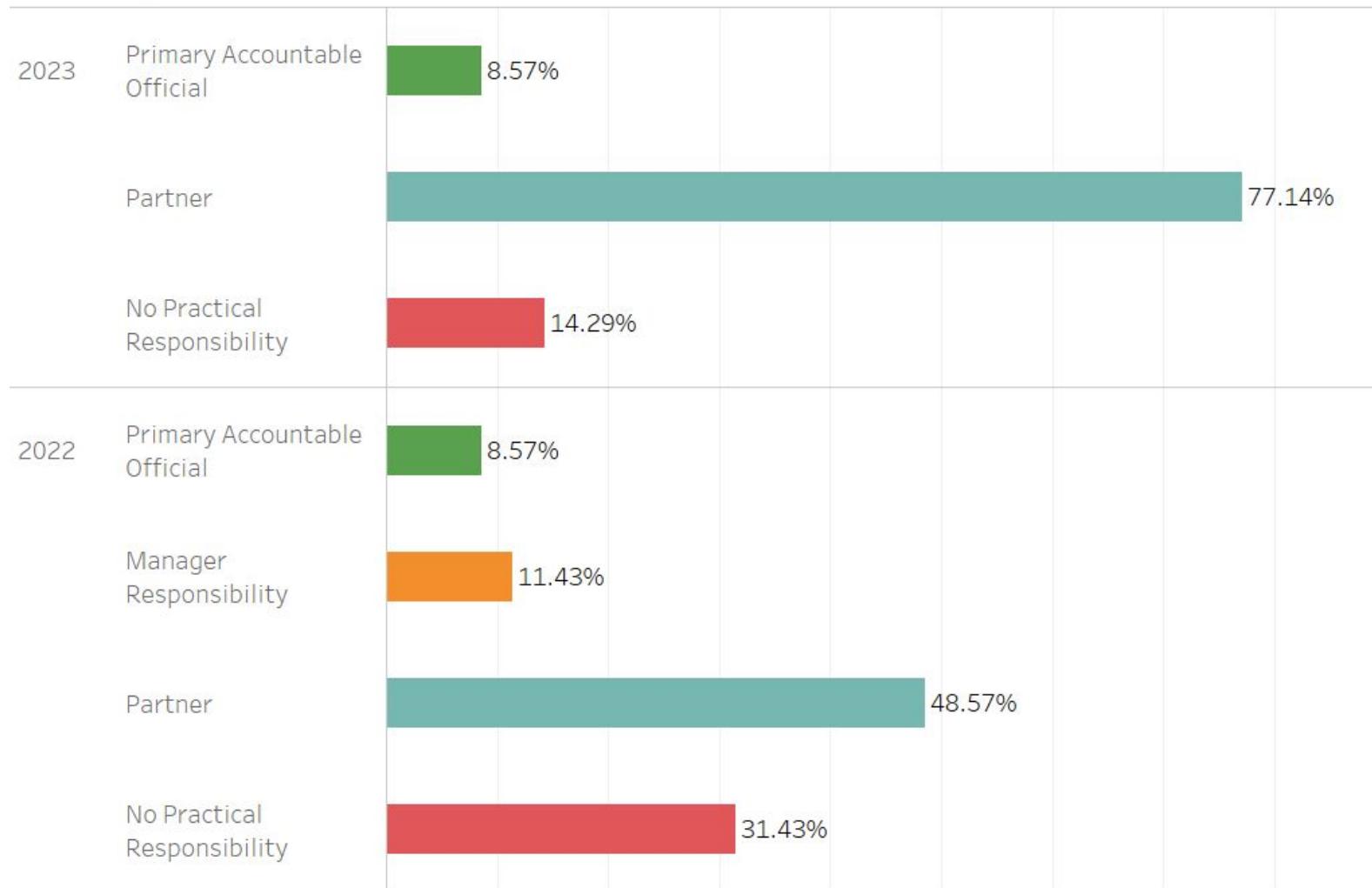
**29c. What responsibility do you have in the following areas: - Data Quality Management (N = 72)**



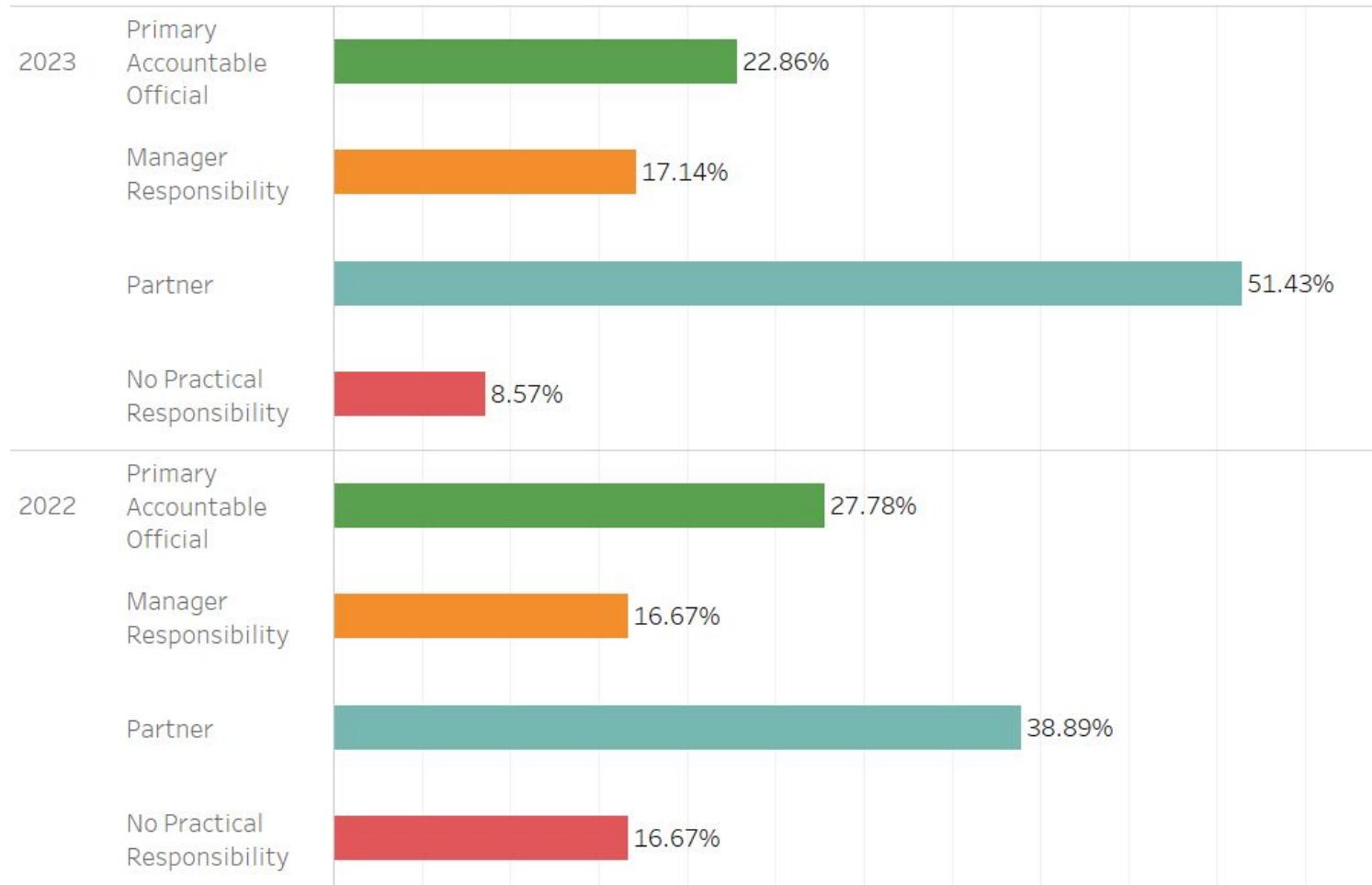
29e. What responsibility do you have in the following areas: -  
Information Security  
(N = 70)



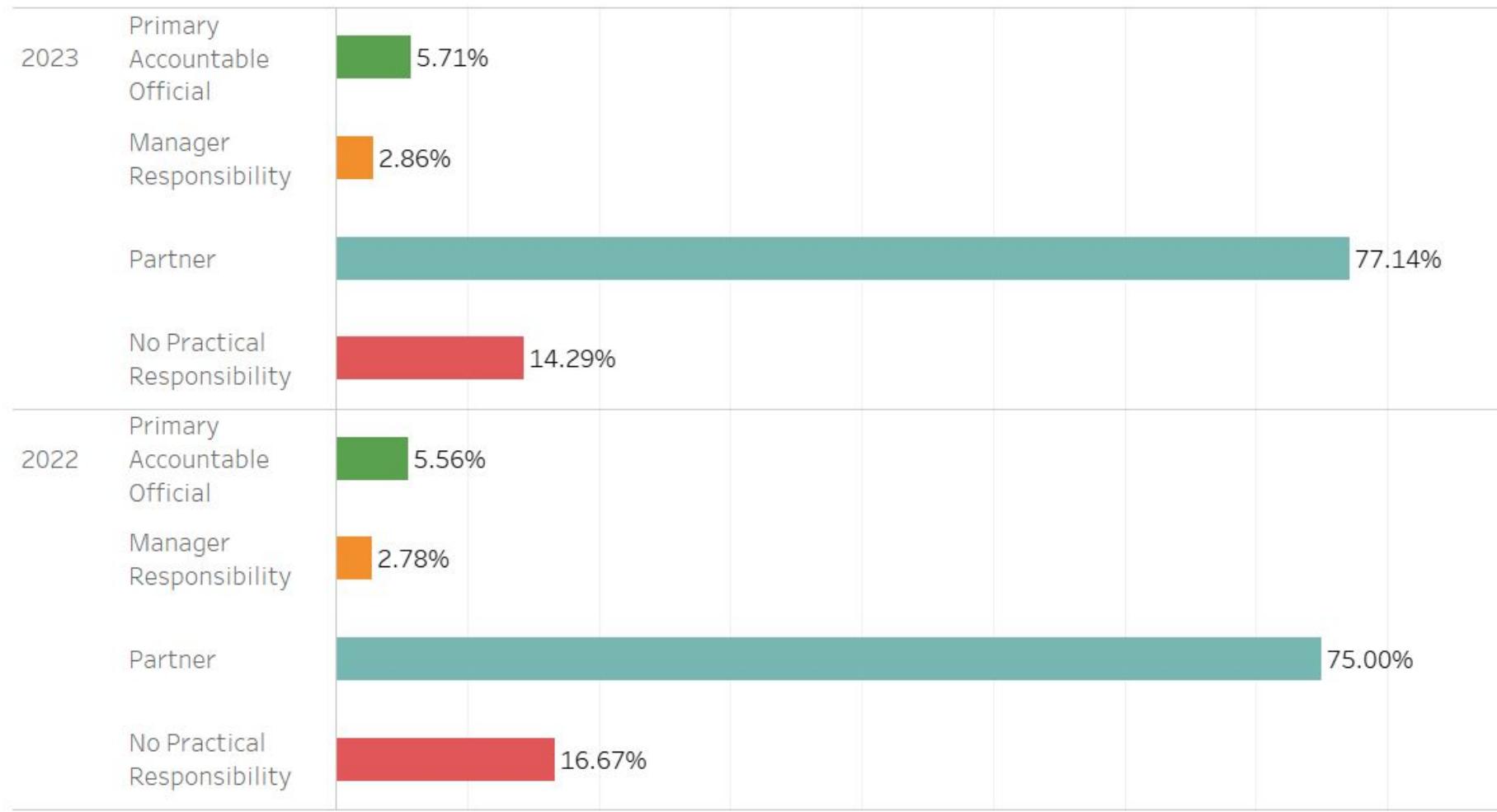
## 29e. What responsibility do you have in the following areas: - Research (N = 70)



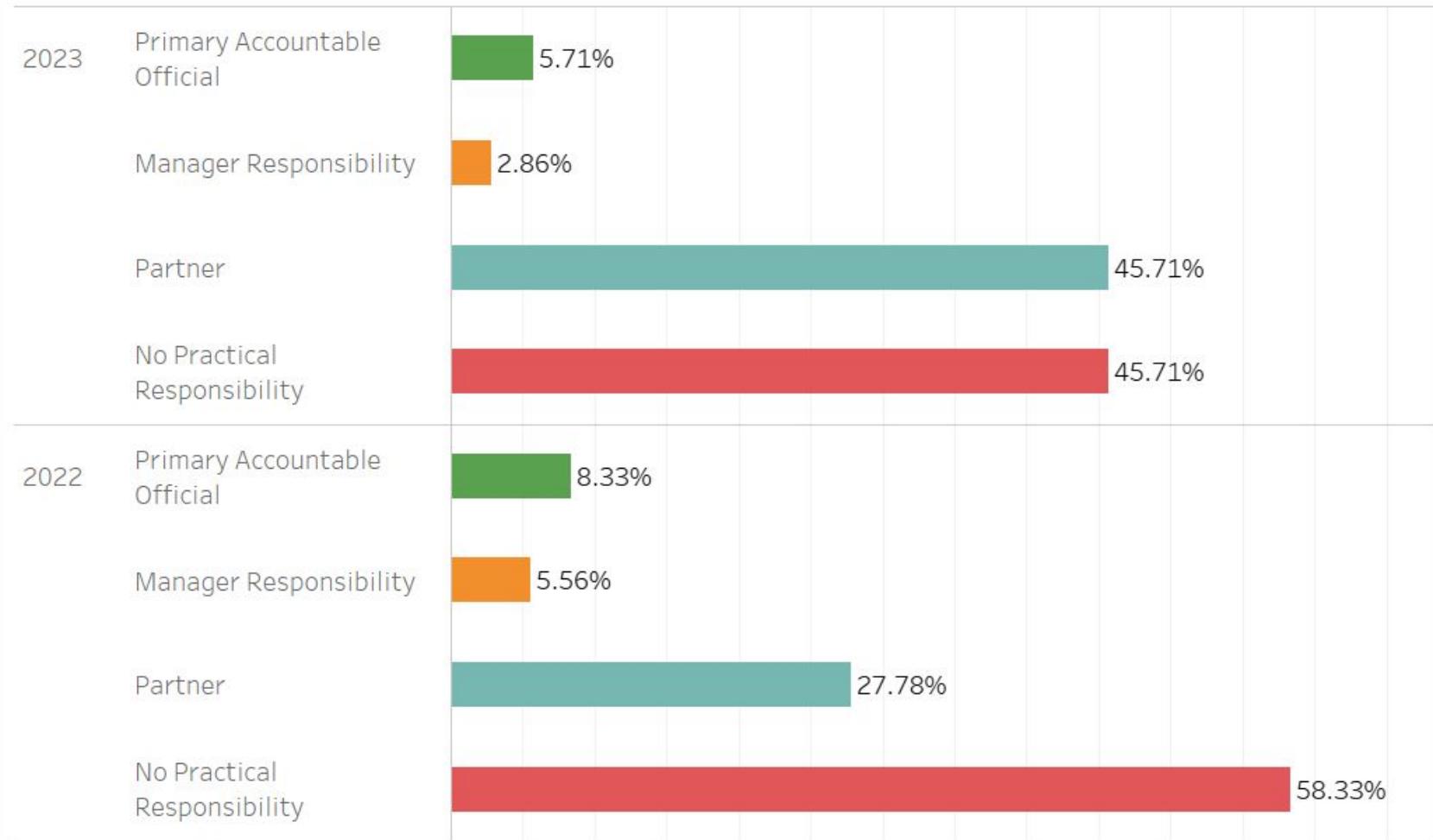
29d. What responsibility do you have in the following areas: - Data Visualization  
(N = 71)



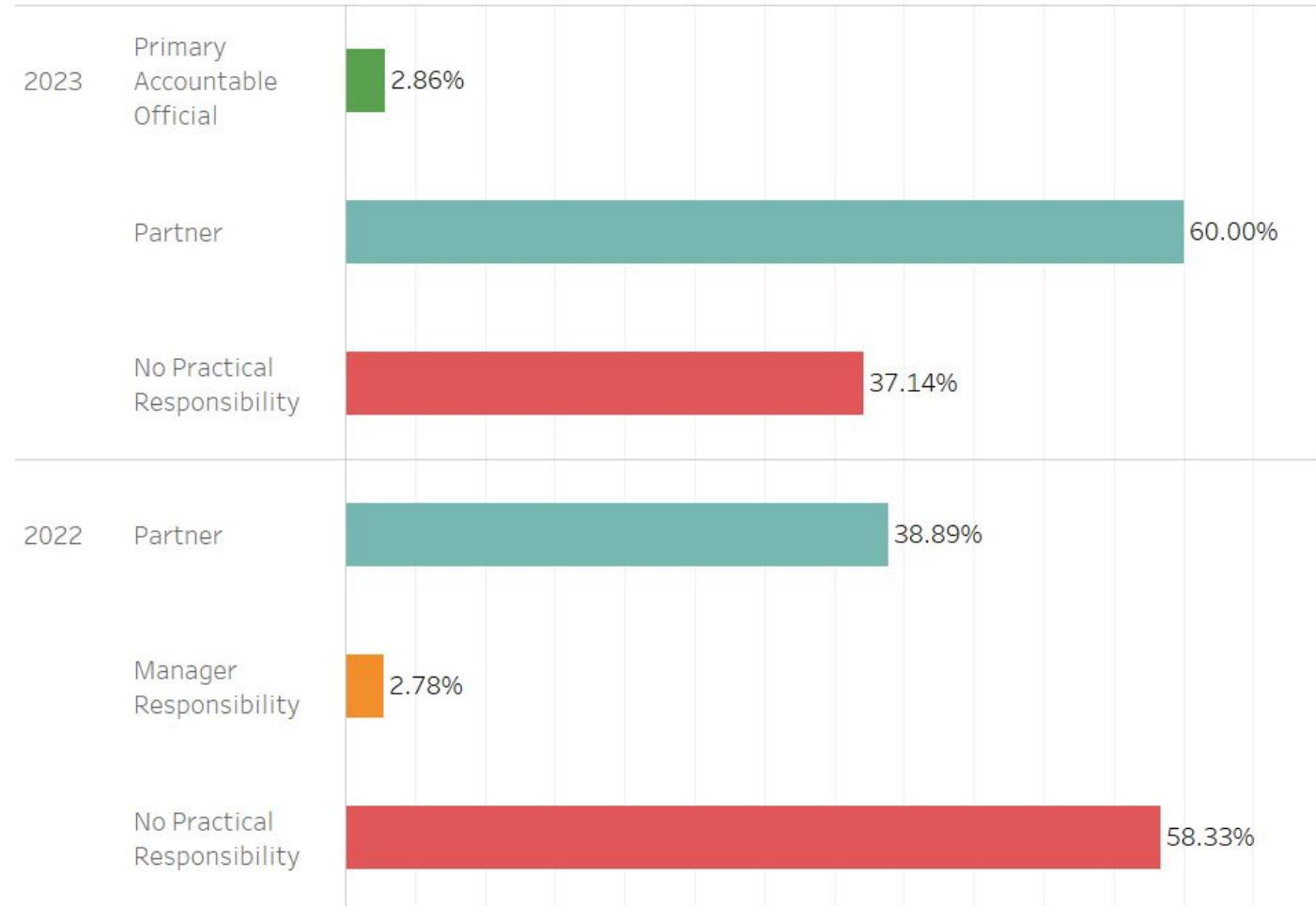
**29e. What responsibility do you have in the following areas: - Privacy  
(N = 71)**



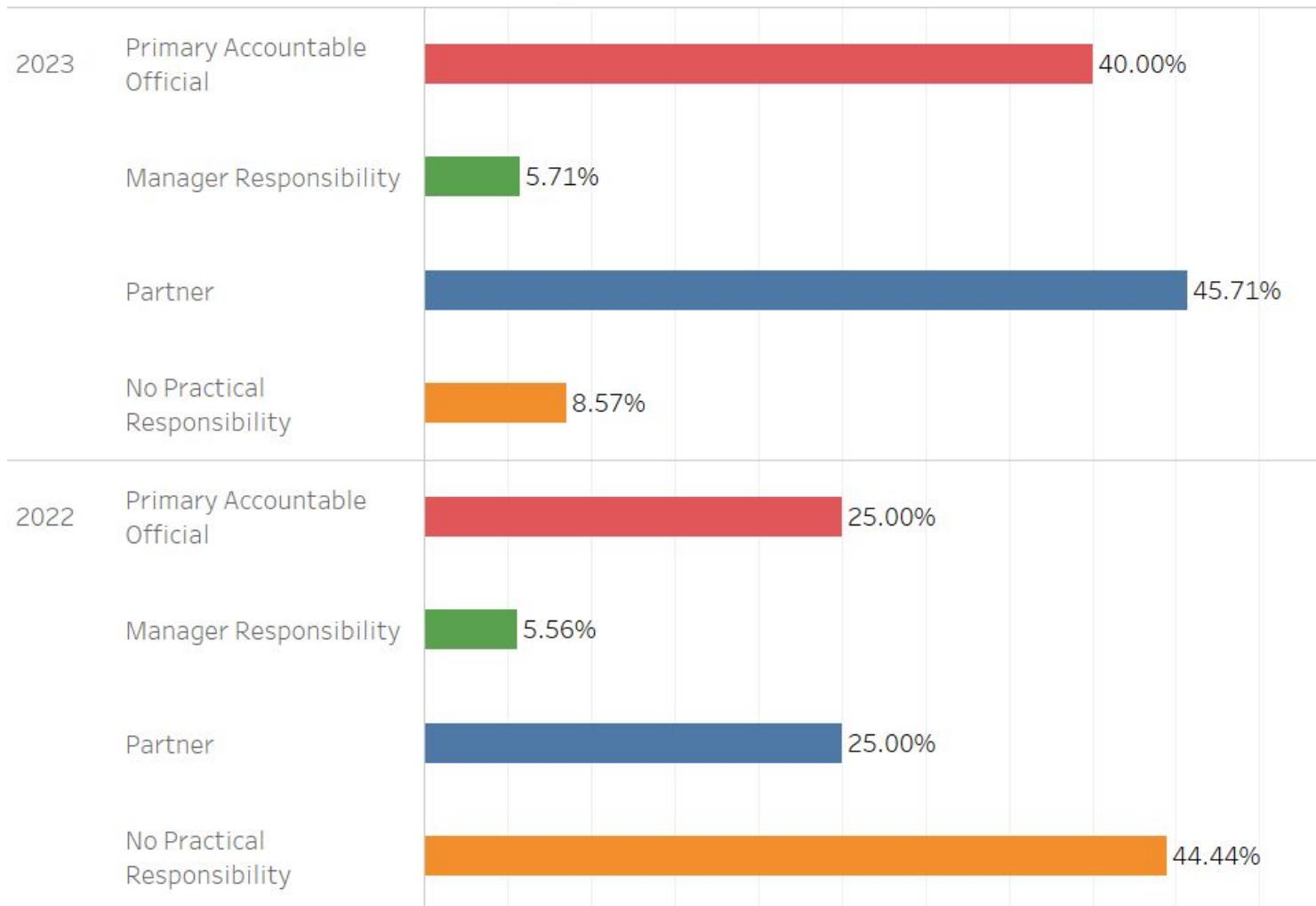
## 29b. What responsibility do you have in the following areas: - FOIA (N = 71)



29e. What responsibility do you have in the following areas: -  
**Operations Research**  
(N = 71)



**29d. What responsibility do you have in the following areas: -**  
**Artificial Intelligence (N = 71)**



## **CDO (No Practical Responsibility)**

Continuing in 2023 (from 2022), across large, medium and small size agencies

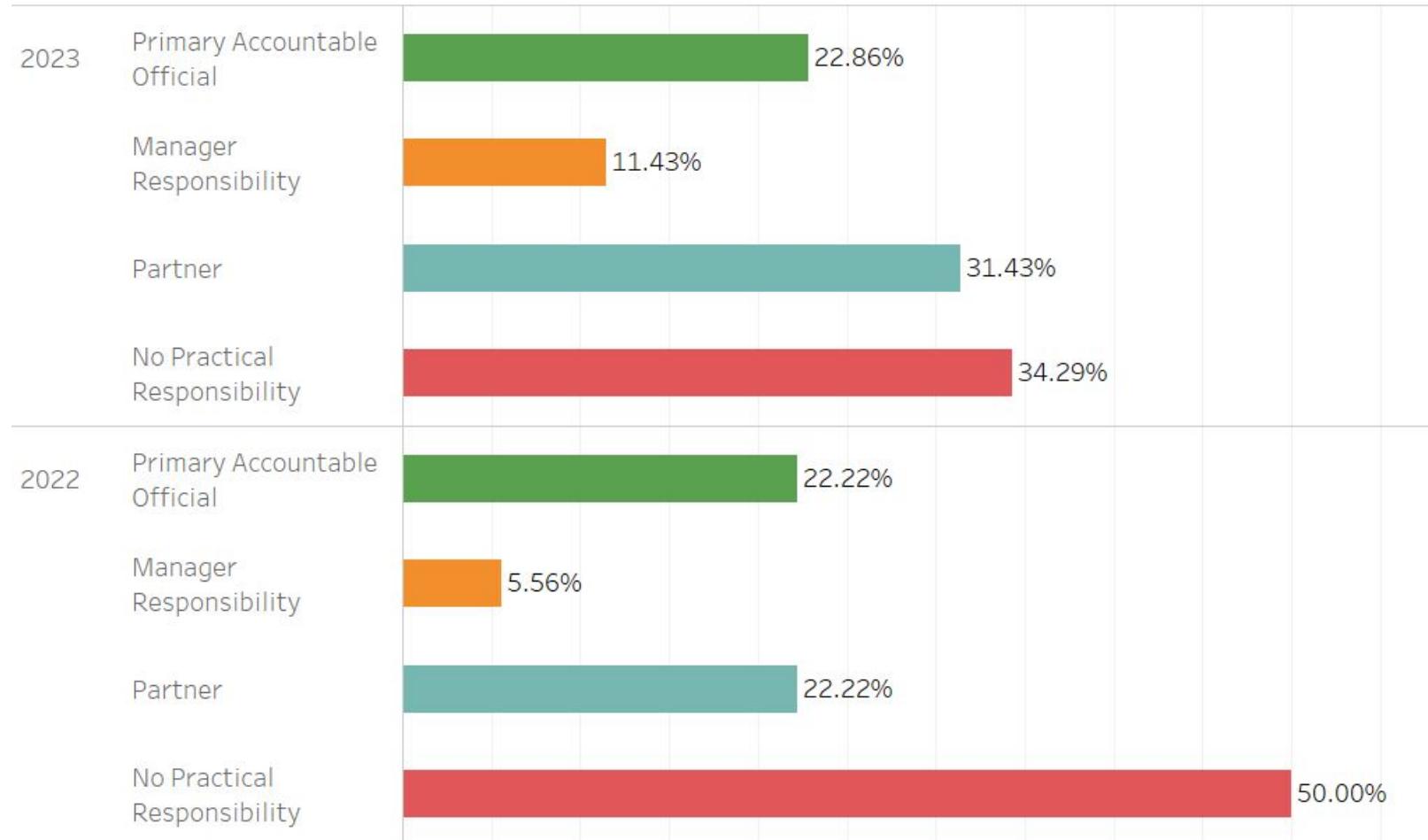
Majority served “No Practical Responsibility” for the following:

- Geospatial Data
- eDiscovery
- Data Monetization

29d. What responsibility do you have in the following areas: -

### Geospatial Data

(N = 71)

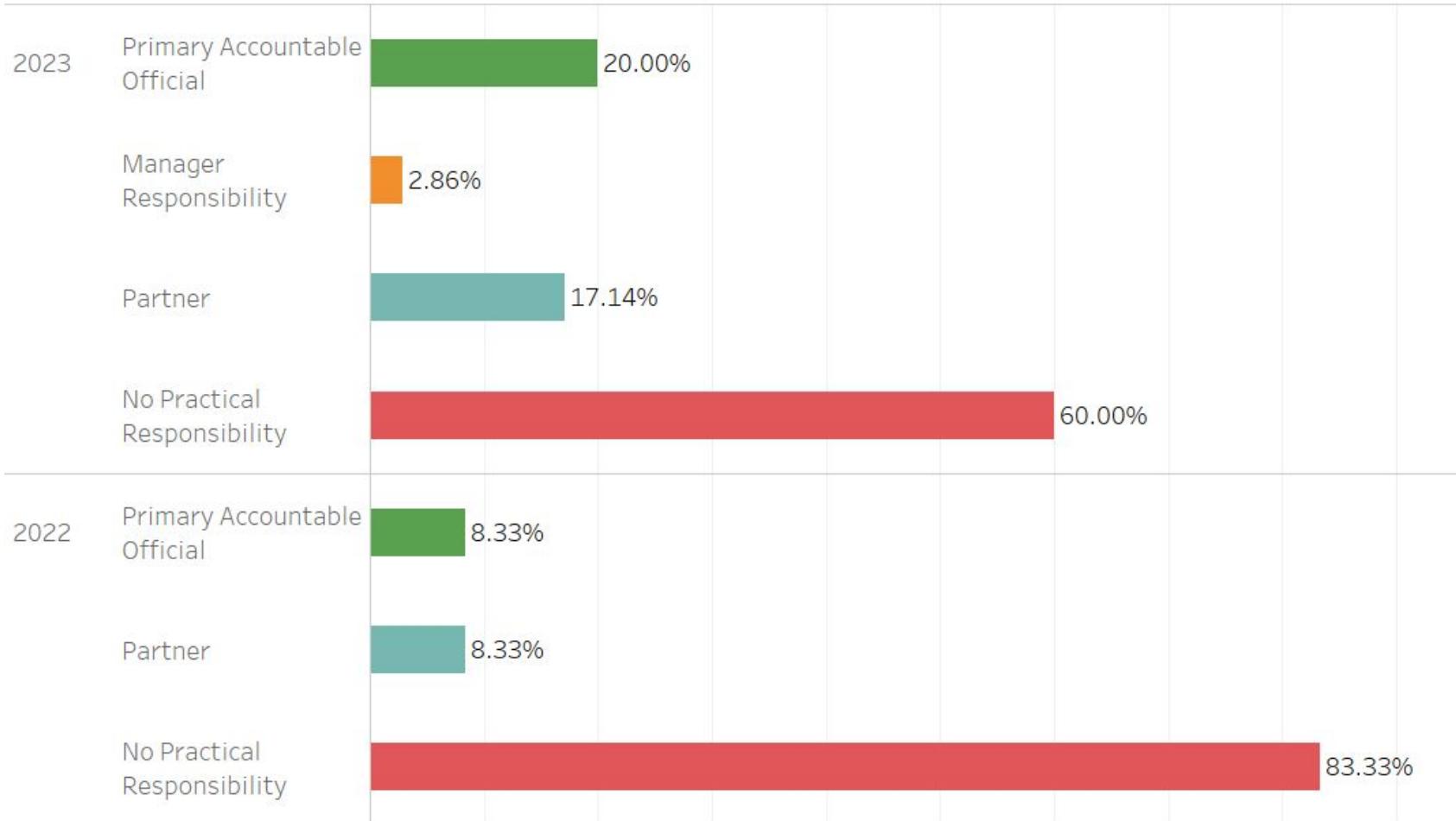


**29b. What responsibility do you have in the following areas: -**

**eDiscovery**  
**(N = 71)**



29a. What responsibility do you have in the following areas: - Data Monetization  
(N = 71)



# CDO Staffing Support (Office Makeup)

**FTEs Reporting to you / Contractors / Detailees / Stakeholders (Internal) (2023)**

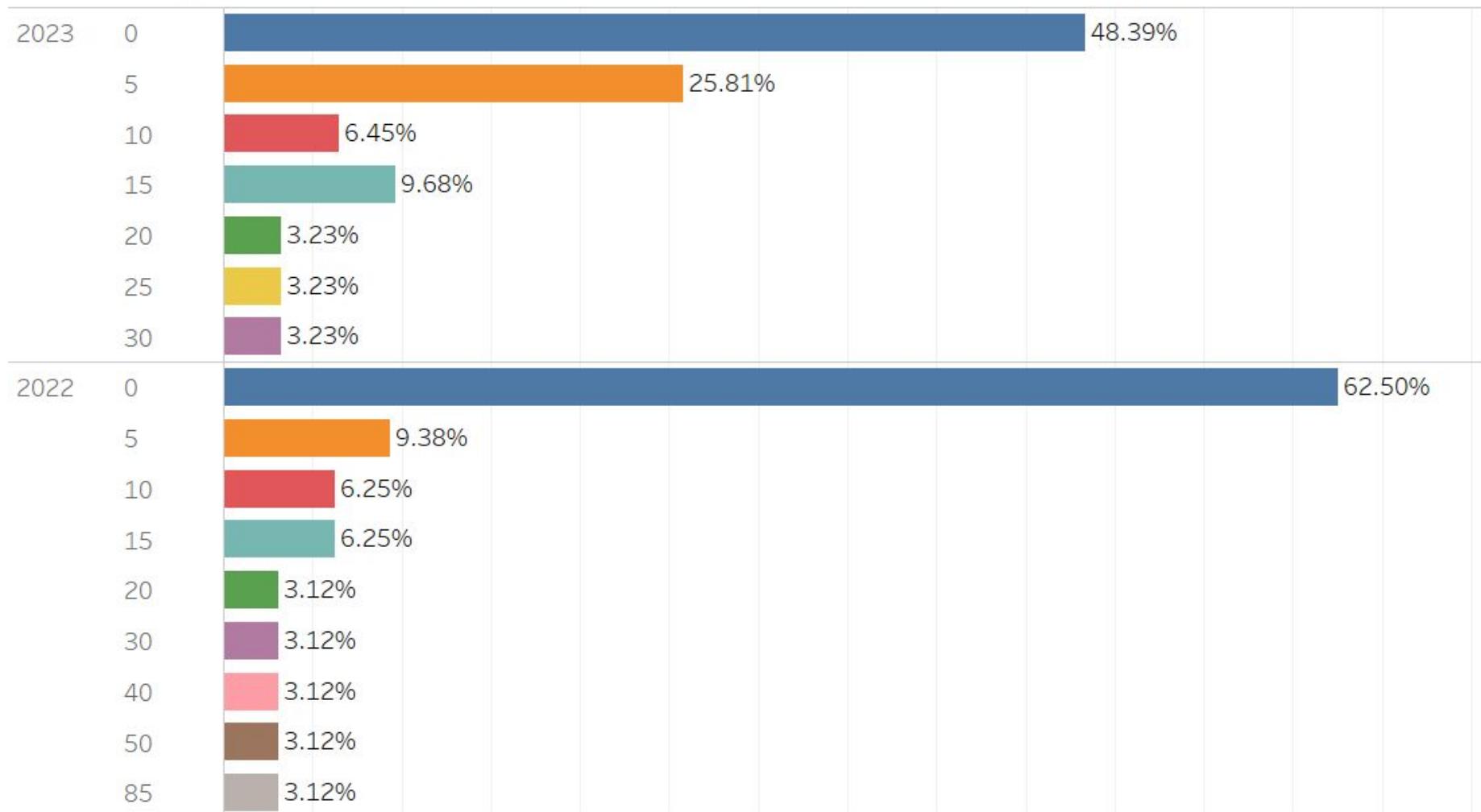
## **Large Size Agencies**

-Majority: 4 – 6 FTEs, ~0 – 6 contractors, 0 – 1 detailees, Null (internal stakeholders)

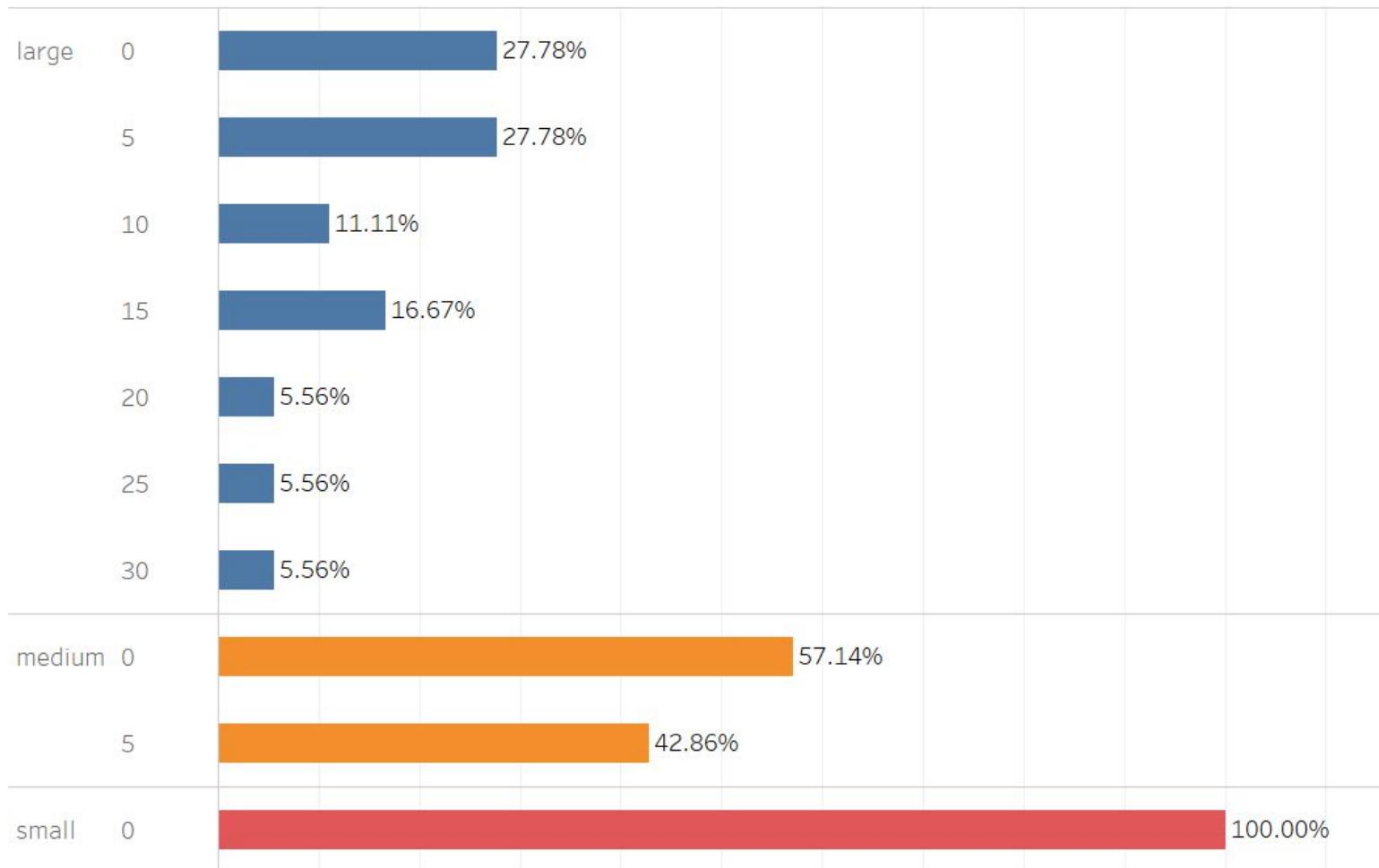
## **Medium / Small Size Agencies**

-Majority: 0 – 1 FTEs, ~0 - 3 contractors, 0 detailees, 0 – 10 internal stakeholders

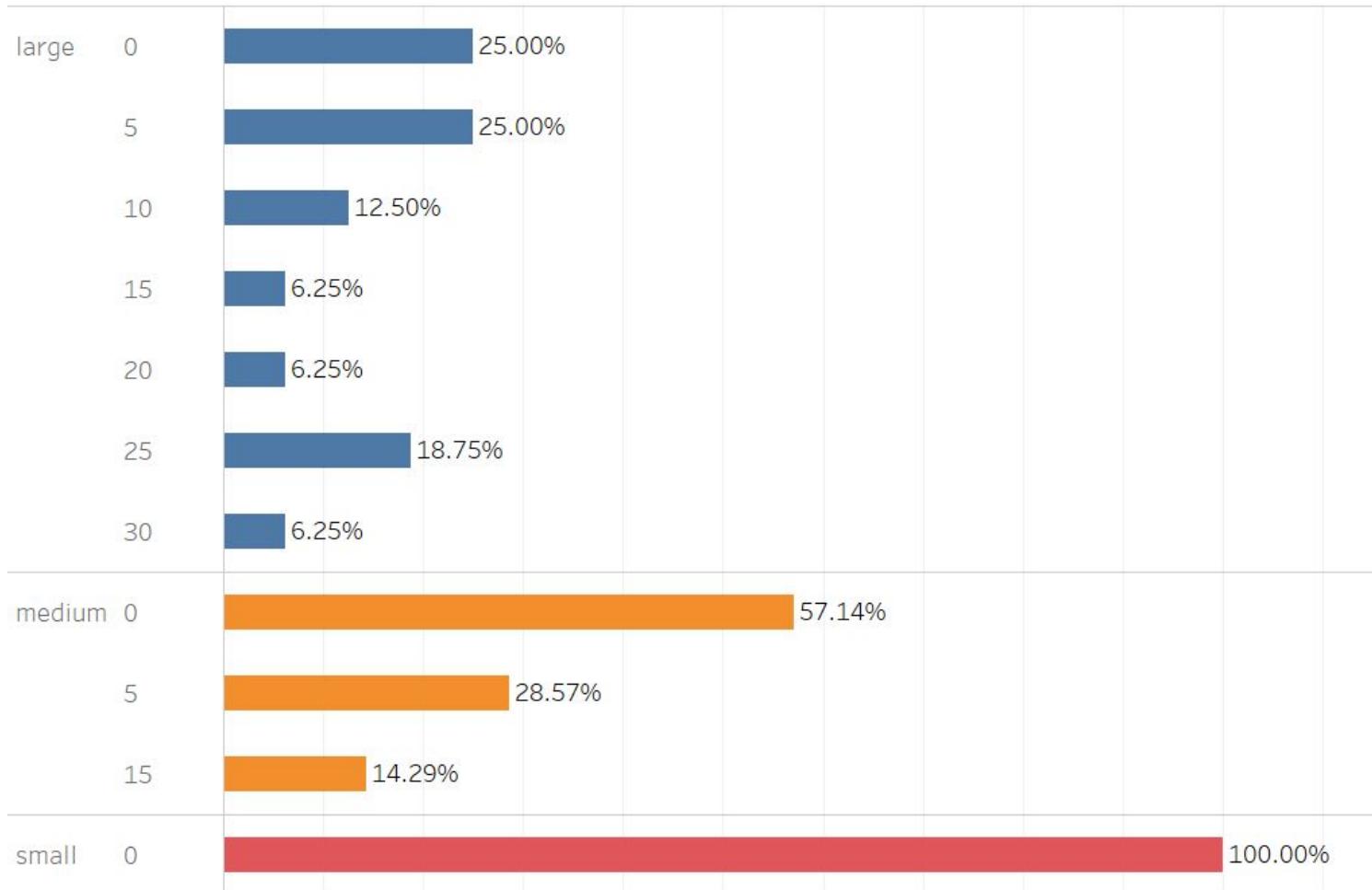
## 2023 vs 2022- Number of FTEs: Team Size at different agencies / One-person CDO Shops (N = 63 )



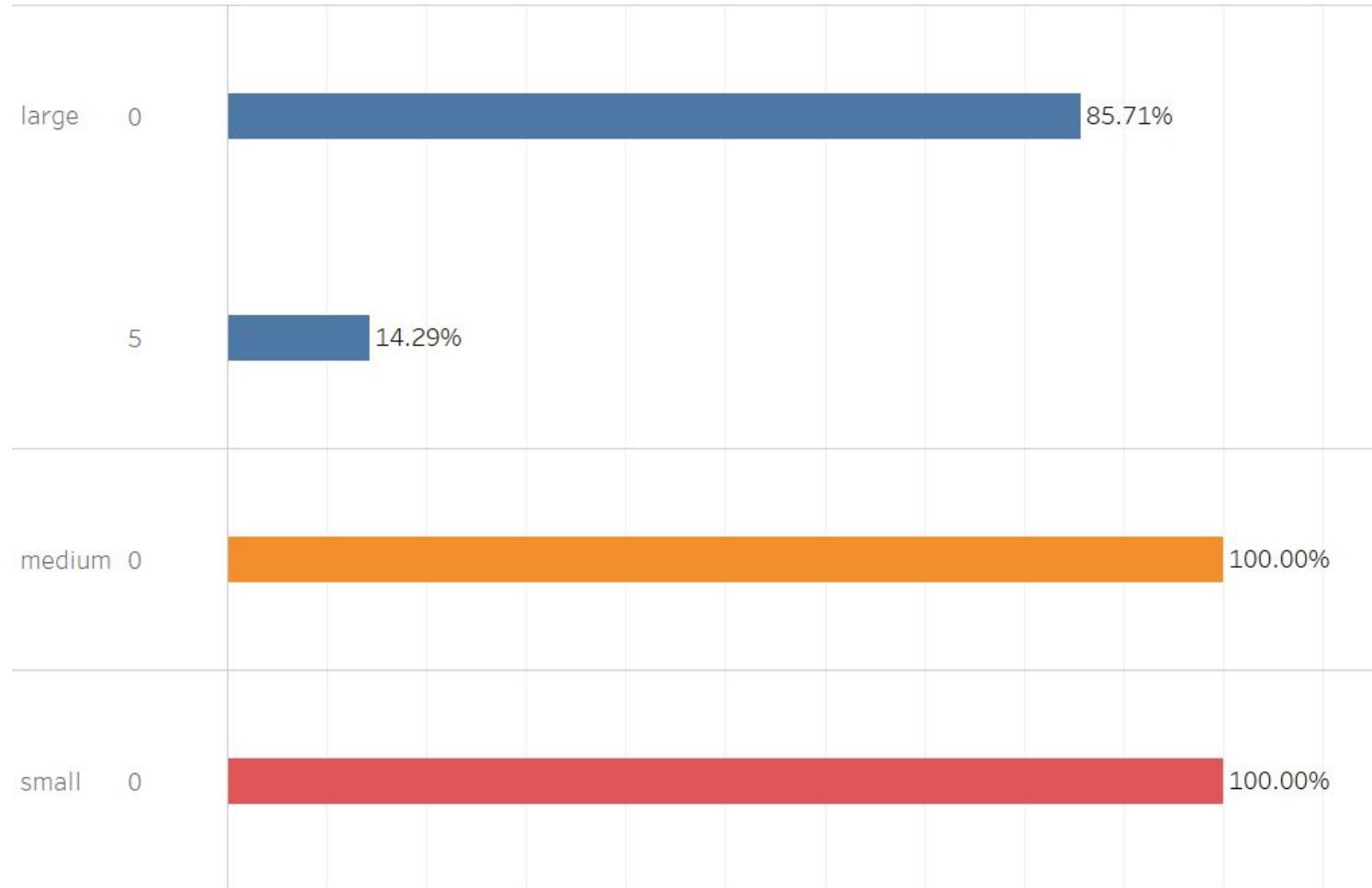
35. What type of support do you have to undertake the functions of a CDO? Please provide the number of FTE for each category that applies. - FTE's reporting to you? (N = 31)



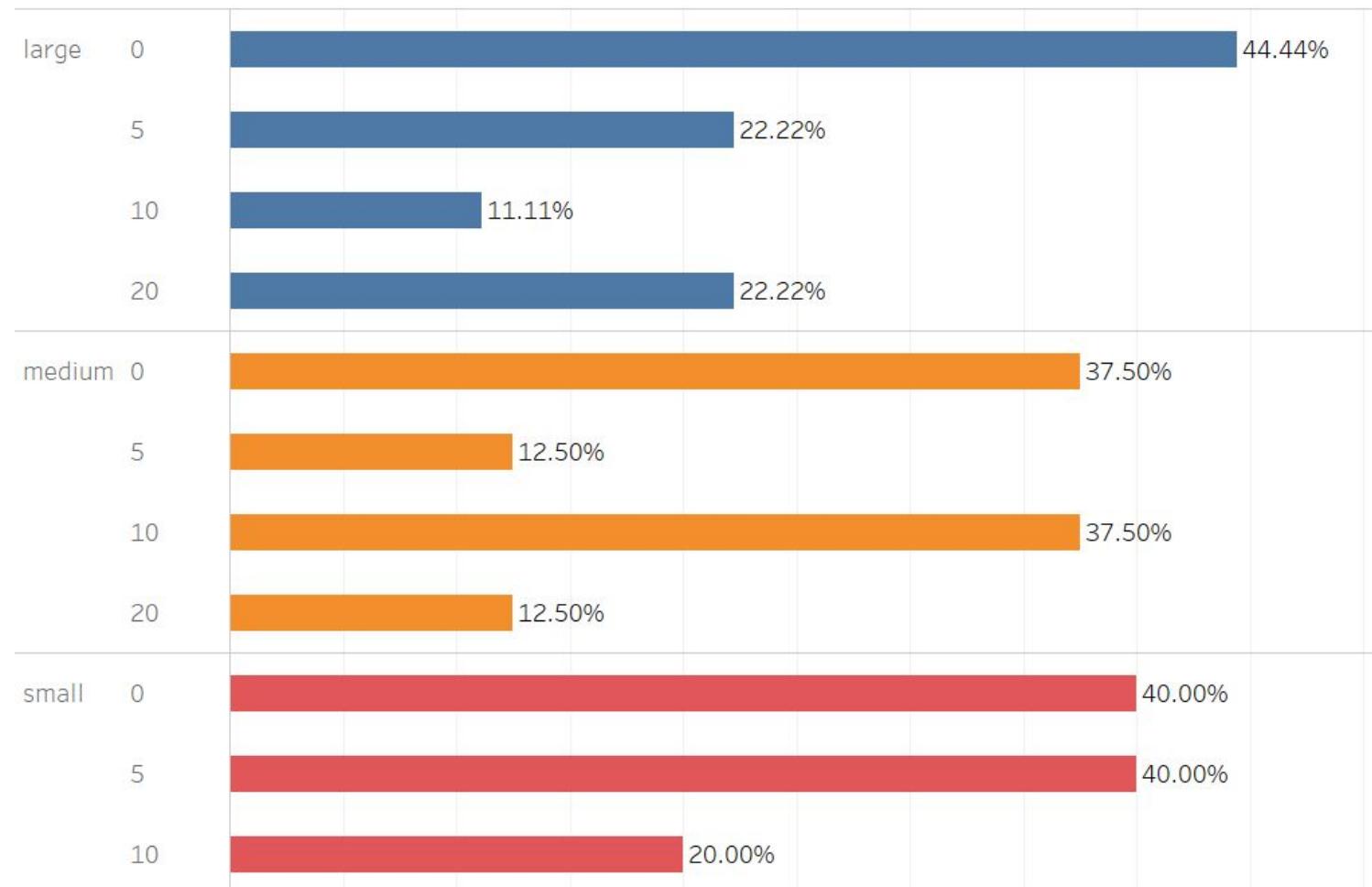
35. What type of support do you have to undertake the functions of a CDO? Please provide the number of FTE for each category that applies. - contractors? (N = 28)



35. What type of support do you have to undertake the functions of a CDO? Please provide the number of FTE for each category that applies. - detailees? (N = 24)



35. What type of support do you have to undertake the functions of a CDO? Please provide the number of FTE for each category that applies. - internal stakeholders? (N = 22)



# CDO Staffing Support (Office Makeup)

## Unfilled Positions: Federal/ Contractor (2023)

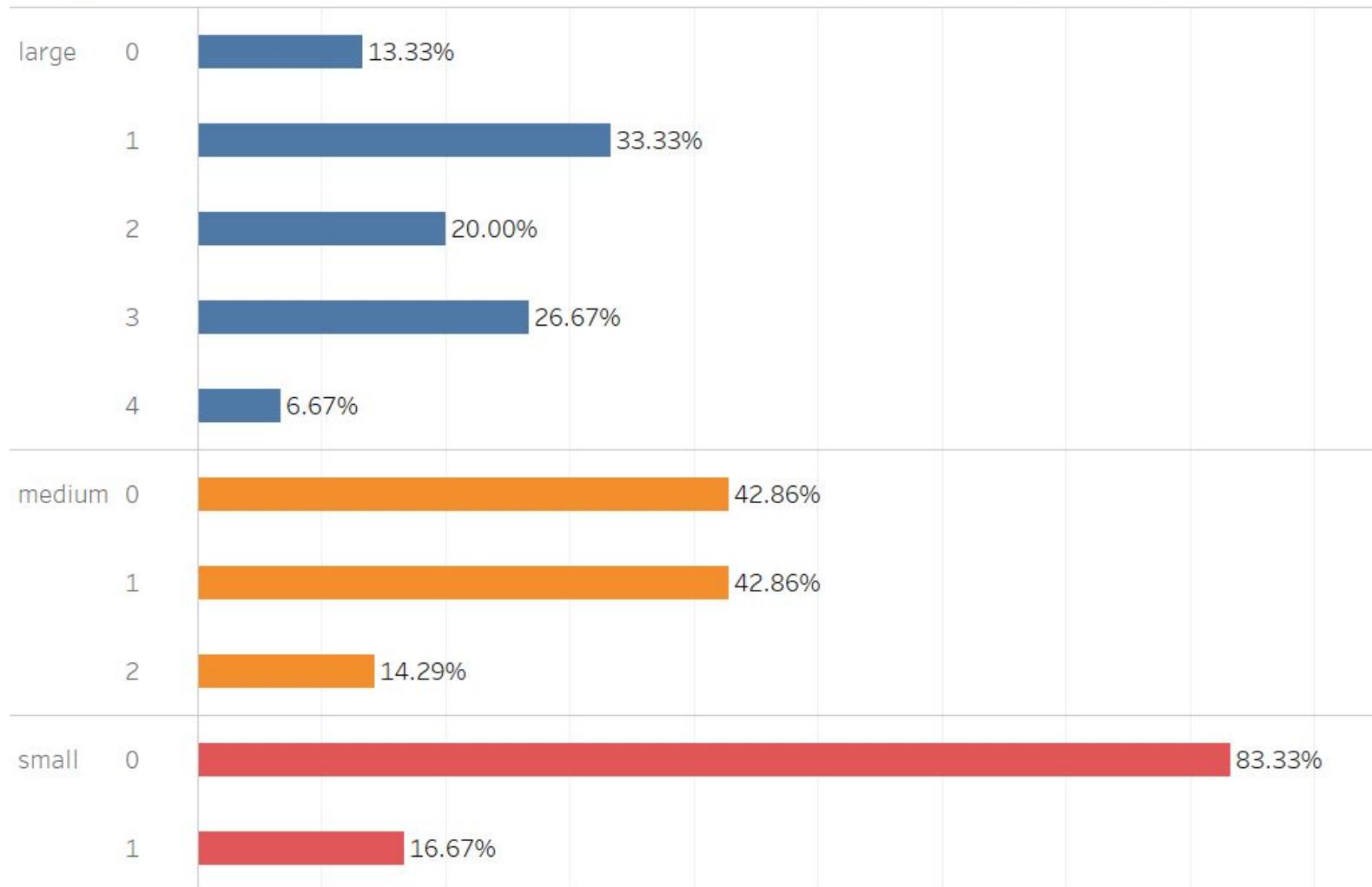
### **Large Size Agencies**

- Majority: 0 – 3 unfilled Federal positions
- Null (no response) on unfilled contractors

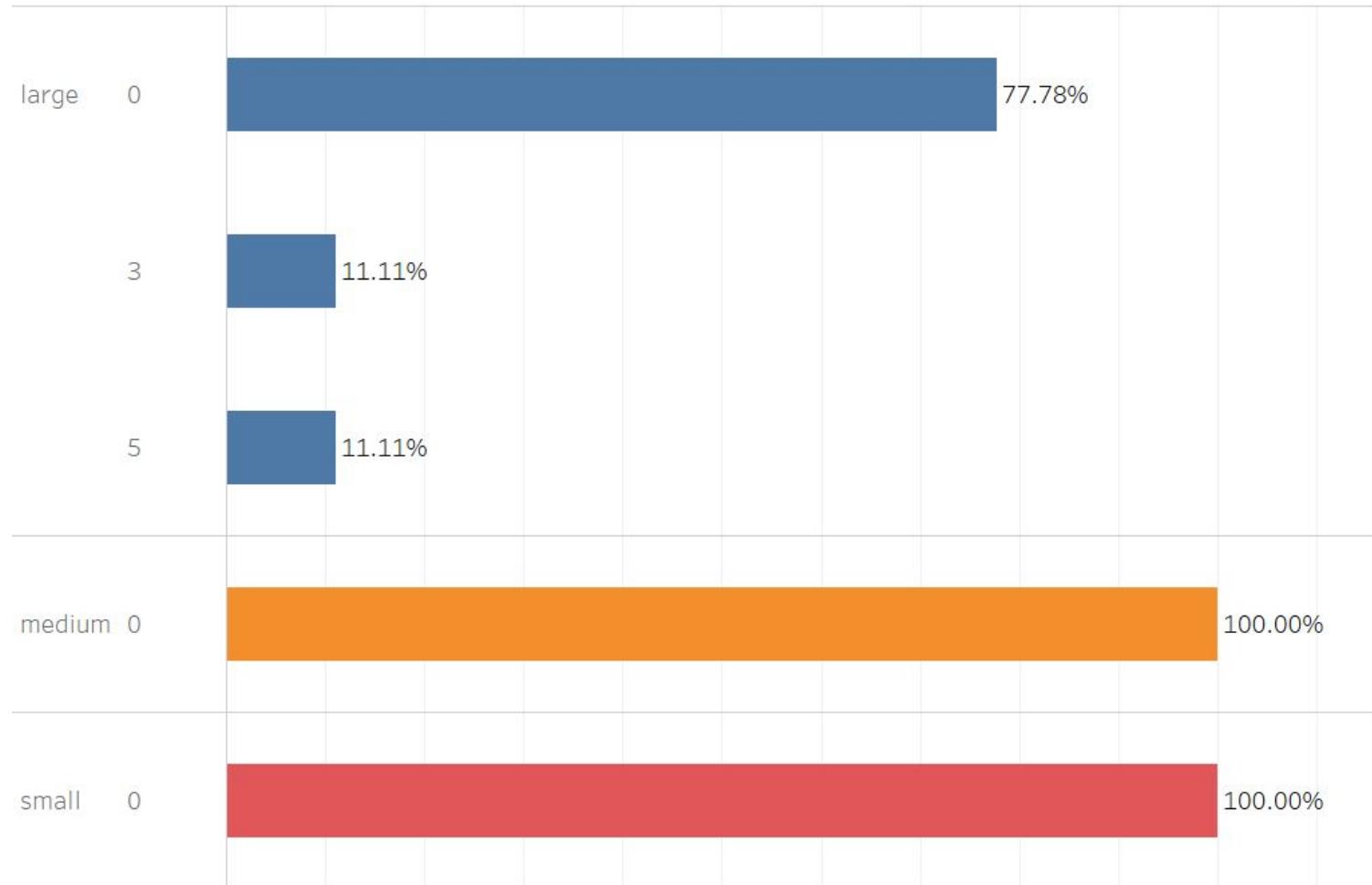
### **Medium / Small Size Agencies**

- Majority: 0 – 1 unfilled Federal positions (Medium), 0 unfilled Federal positions (Small)
- 0 unfilled contractor positions.

36. Do you currently have any unfilled positions for data talent to support your CDO role? - How many Federal positions (if any)? (N = 28)



36. Do you currently have any unfilled positions for data talent to support your CDO role? - How many Contractor positions (if any)? (N = 20)



# CDO Office Expertise

**CDO Office contain both Business and Technical people**

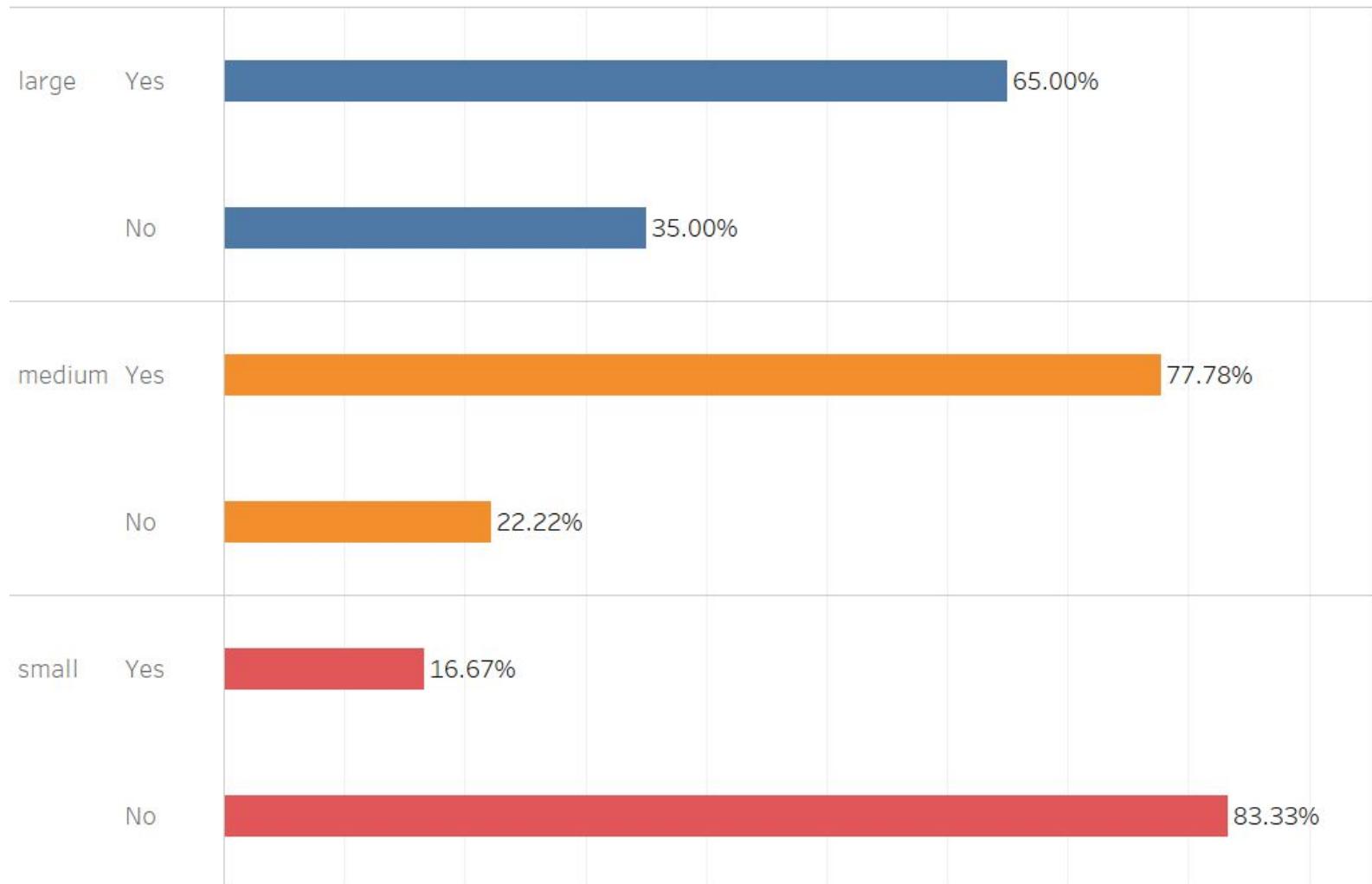
## **Large / Medium Size Agencies**

- Majority: contain both business and technical people

## **Small Size Agencies**

- Majority: Does not contain both business and technical people

37. Does the CDO Office contain both business and technical people? (N = 35)



# CDO Office Expertise

**CDO Office hiring of consultants and outside groups for the following:**

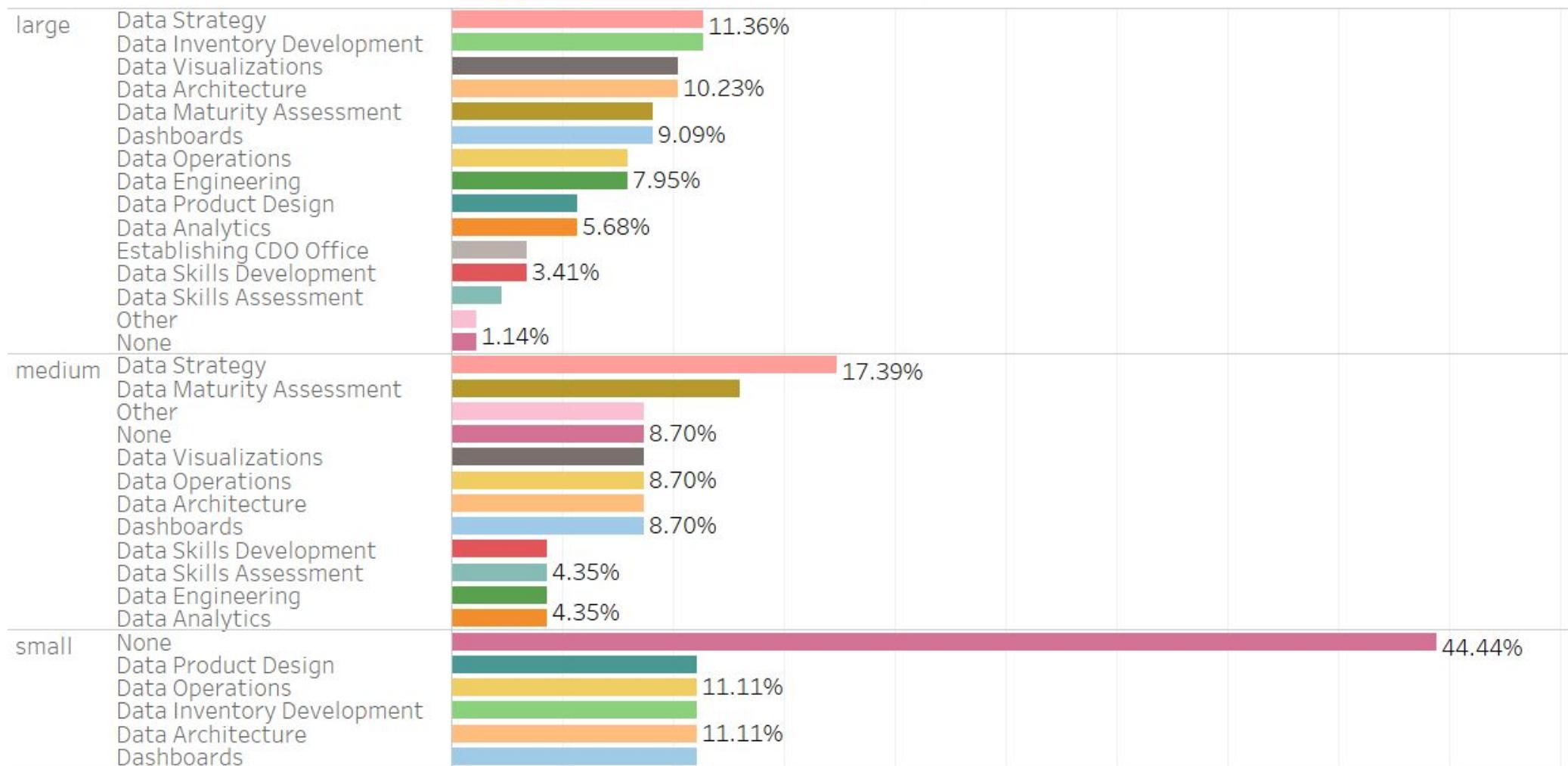
## **Large / Medium Size Agencies**

- Data Strategy
- Data Inventory Development
- Data Visualizations
- Data Architecture
- Data Maturity Assessment
- Dashboards

## **Small Size Agencies (In addition to some tasks mentioned above)**

- None

**38. Has your agency hired consultants or other outside groups to perform any of the following? (check all that apply) - Selected Choice (N = 120)**



# CDO Performance

## CDO Role / Data Team Goals (2023)

### **Large / Medium Size Agencies**

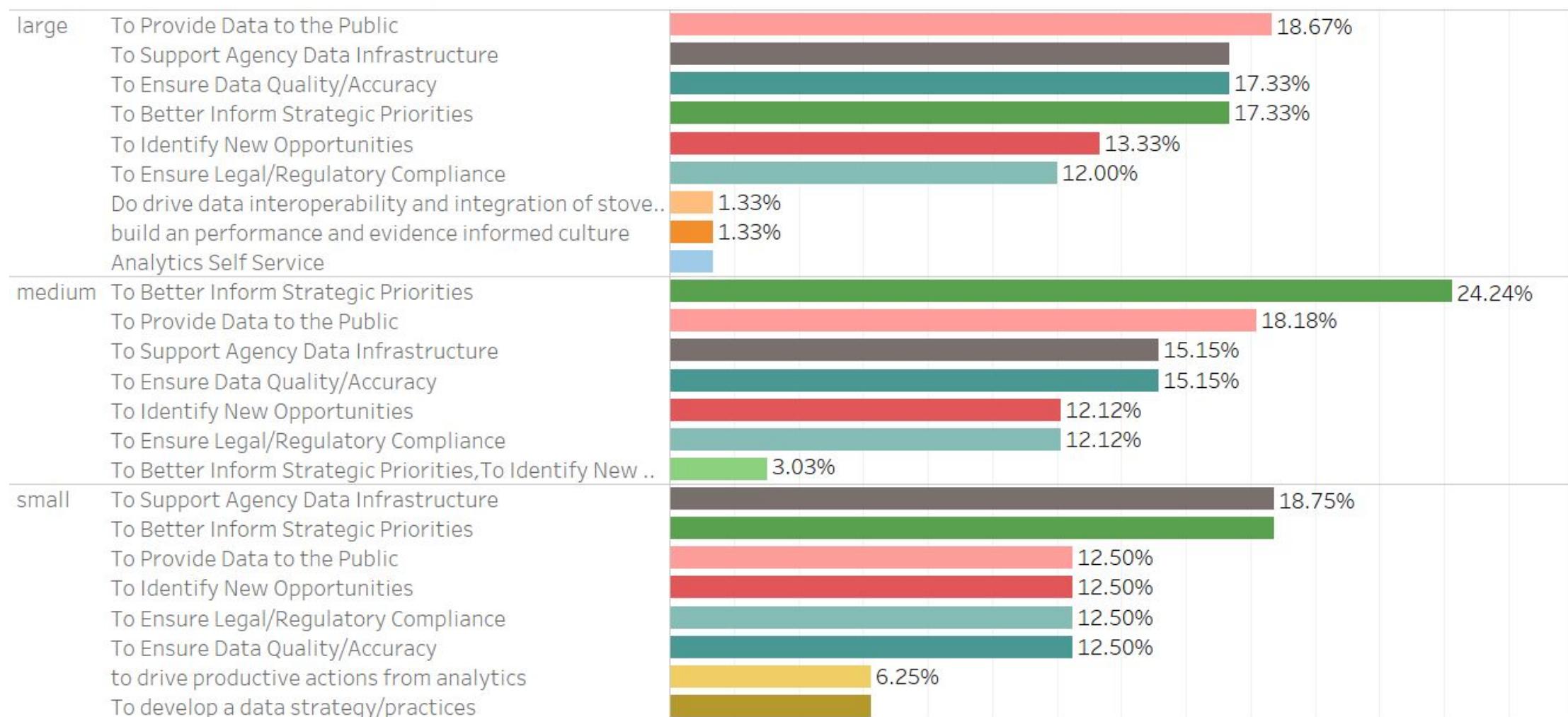
- Provide Data to the Public
- Support Agency Data Infrastructure
- Ensure Data Quality/ Accuracy
- Better Inform Strategic Priorities

### **Small Size Agencies**

In addition to the points above, goals also included:

- Identify New Opportunities
- Ensure Legal/ Regulatory Compliance

### 33. What are the current goals of your agency's CDO role or data team? (check all that apply) - Selected Choice (N = 124)

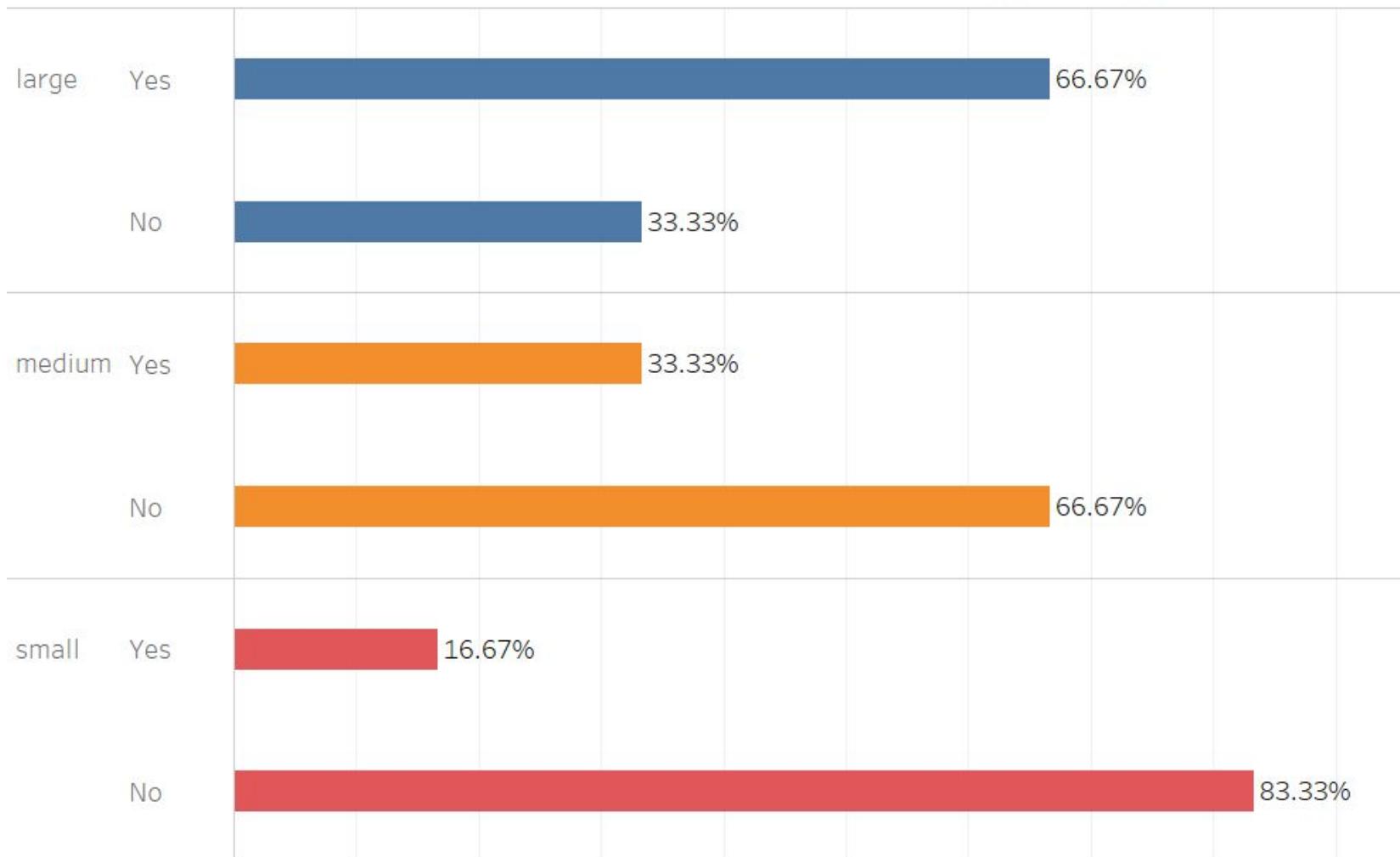


# CDO Performance (Continued)

## **Key Performance Indicators (KPI)(2023)**

- Majority of Large Size Agencies reported having performance measures for the CDO office
- Majority of Medium and Small Size Agencies reported not having performance measures

30. Does the organization have Key Performance Indicators (KPI) or other Performance Measures for the CDO Office? (N = 33)



# CDO Performance (Continued)

## **Greatest Obstacles to using Data to support Agency Mission (2023)**

### **Large / Medium Size Agencies**

- Cultural Barriers
- Limited Staff Skills/ Workforce Hiring Challenges
- Limited Data Access / Sharing
- Lack of Direct Funding
- Data Governance Challenges

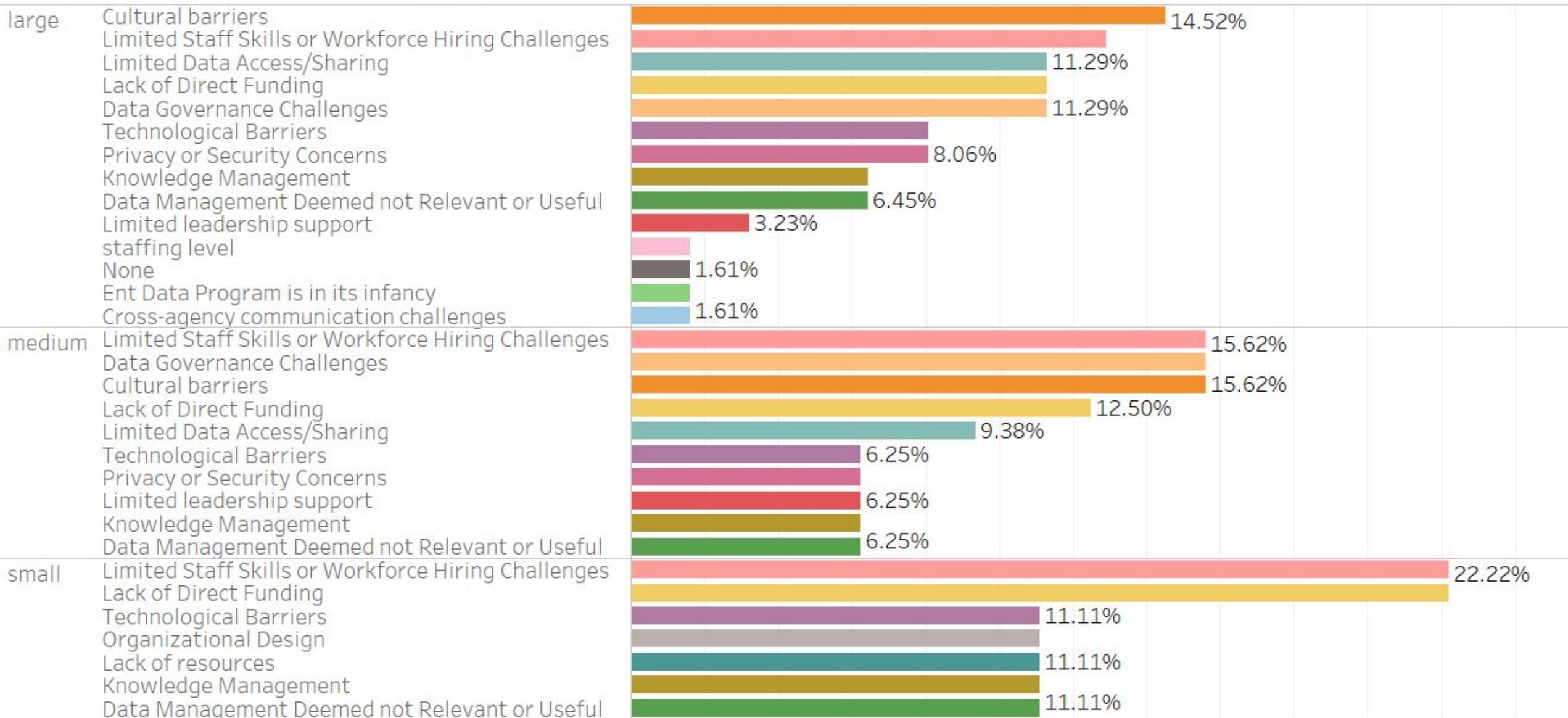
### **Small Size Agencies (in addition to above)**

- Organizational Design
- Lack of Resources
- Knowledge Management

# 31. What do you view as the greatest obstacle(s) to using data to support your agency's mission? (check all that apply): - Selected Choice N = 103

|                                                               | Large                                                                                                                                                                                                                                                                                                                                   | Medium                                                                                                                                                                                                                                        | Small                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Top 3 most frequently cited obstacles (including ties)</b> | <ul style="list-style-type: none"><li>• Cultural barriers</li><li>• Limited staff skills or workforce hiring challenges</li><li>• Limited data access/sharing</li><li>• Lack of direct funding</li><li>• Data governance challenges</li></ul>                                                                                           | <ul style="list-style-type: none"><li>• Limited staff skills or workforce hiring challenges</li><li>• Data governance challenges</li><li>• Cultural barriers</li><li>• Lack of direct funding</li><li>• Limited data access/sharing</li></ul> | <ul style="list-style-type: none"><li>• Limited staff skills or workforce hiring challenges</li><li>• Lack of direct funding</li><li>• Technological barriers</li><li>• Organizational Design</li><li>• Lack of resources</li><li>• Knowledge management</li><li>• Data management not deemed relevant or useful</li></ul> |
| <b>Other obstacles mentioned</b>                              | <ul style="list-style-type: none"><li>• Privacy or security concerns</li><li>• Knowledge management</li><li>• Data management not deemed relevant or useful</li><li>• Limited leadership support</li><li>• Staffing level</li><li>• Enterprise data program is in its infancy</li><li>• Cross-agency communication challenges</li></ul> | <ul style="list-style-type: none"><li>• Technological barriers</li><li>• Privacy or security concerns</li><li>• Limited leadership support</li><li>• Knowledge management</li><li>• Data management not deemed relevant or useful</li></ul>   |                                                                                                                                                                                                                                                                                                                            |

### 31. What do you view as the greatest obstacle(s) to using data to support your agency's mission? (check all that apply): - Selected Choice N = 103



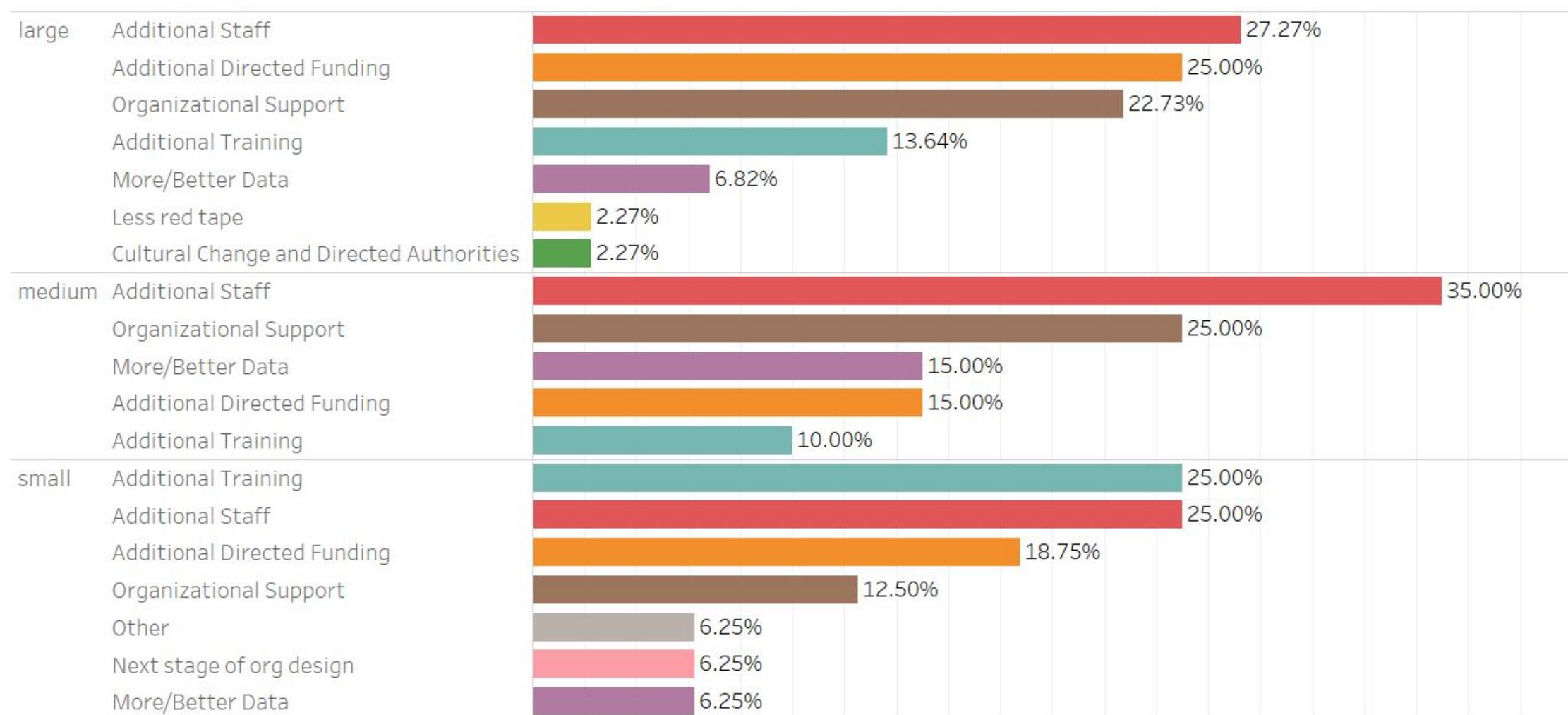
# CDO Performance (Continued)

## **CDO role or Data Team Needs to be Successful (2023)**

### **Large / Medium / Small Size Agencies**

- Additional Staff
- Additional Direct Funding
- Organizational Support
- Additional Training (Small Size Agencies in addition to above)

### 32. What do you believe your agency's CDO role or data team needs to be successful? (check all that apply) - Selected Choice (N = 80)



# CDO Enterprise Analytics

## **CDO and Oversight of Enterprise Analytics (EA):**

### **Large Size Agencies**

- Partner / Manager Responsibility in oversight of Enterprise Analytics
- Pilot implementation in EA platform across various components/ silos
- Pilot Integration of mission supported data (e.g. HR, finance, IT)
- Pilot Integration of mission specific data across divisions or component agencies at enterprise level.
- Pilot / Mature Implementation of enterprise-wide analytics and data dashboards

# CDO Enterprise Analytics (Continued)

## **CDO and Oversight of Enterprise Analytics (EA):**

### **Medium Size Agencies**

- Mature implementation in EA platform
- Range from No Plans, Pilot – Planned – Mature Integration of mission supported data
- Mature integration of mission specific data across divisions or component agencies at enterprise level.
- Pilot / Mature Implementation of enterprise-wide analytics and data dashboards

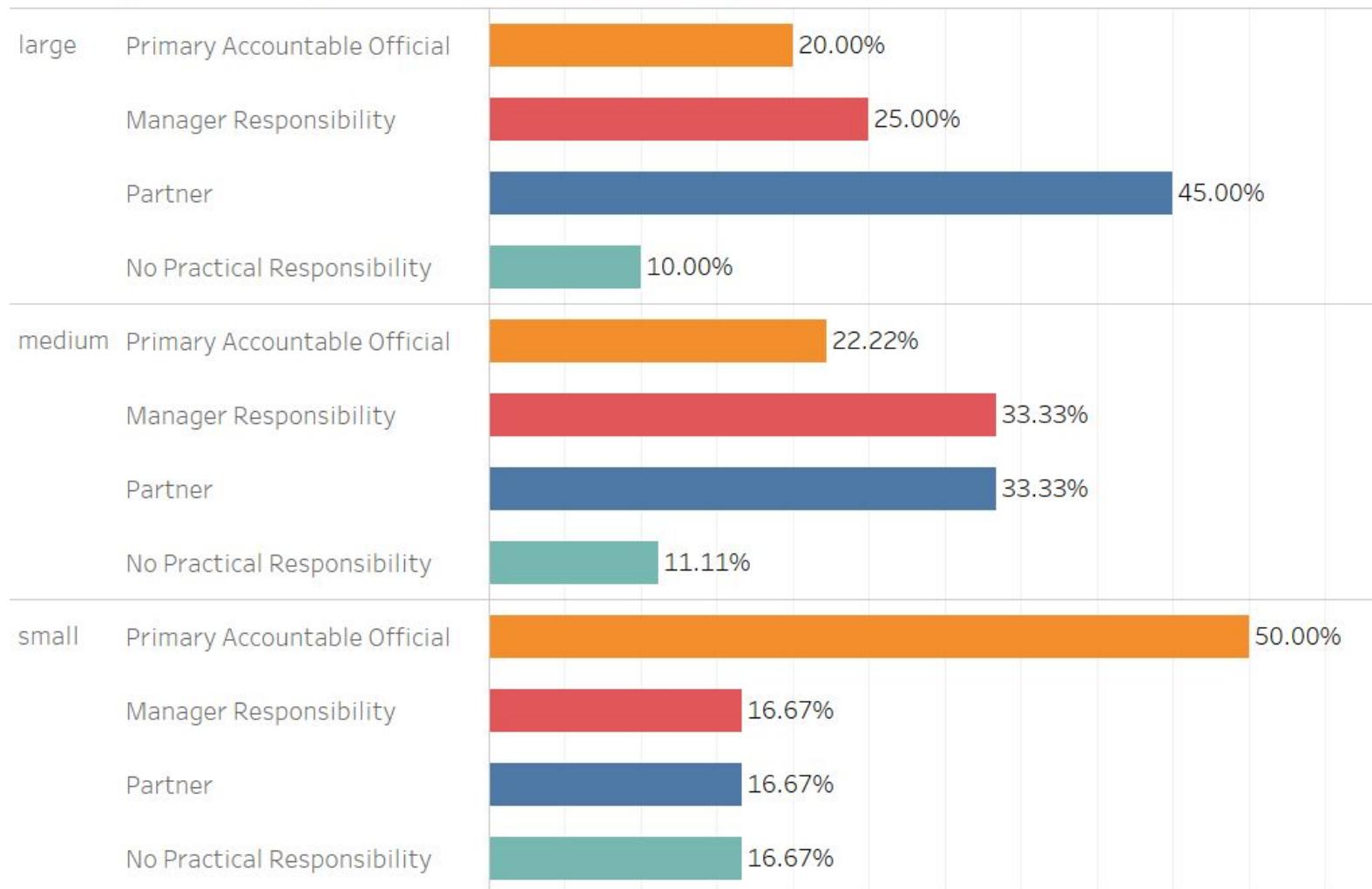
# CDO Enterprise Analytics (Continued)

## **CDO and Oversight of Enterprise Analytics (EA):**

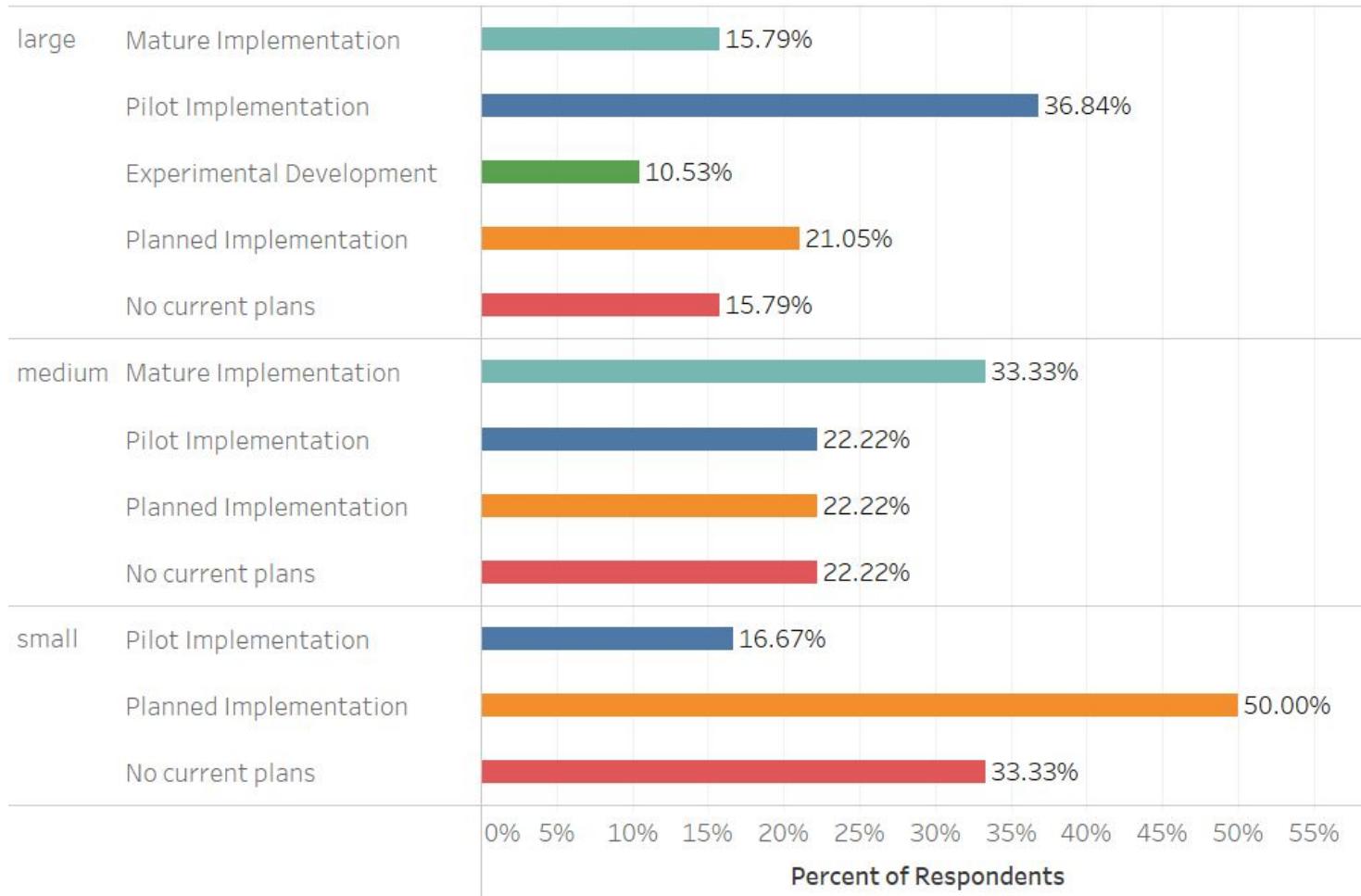
### **Small Size Agencies**

- Primary Accountable Official in oversight of EA
- Planned implementation in EA platforms for integrating/ analyzing data
- No Current Plans for Integration of mission supported data
- No Current Plans/ Pilot Integration of mission specific data across divisions or component agencies at enterprise level.
- No Current Plans / Planning Implementation of enterprise-wide analytics and data dashboards

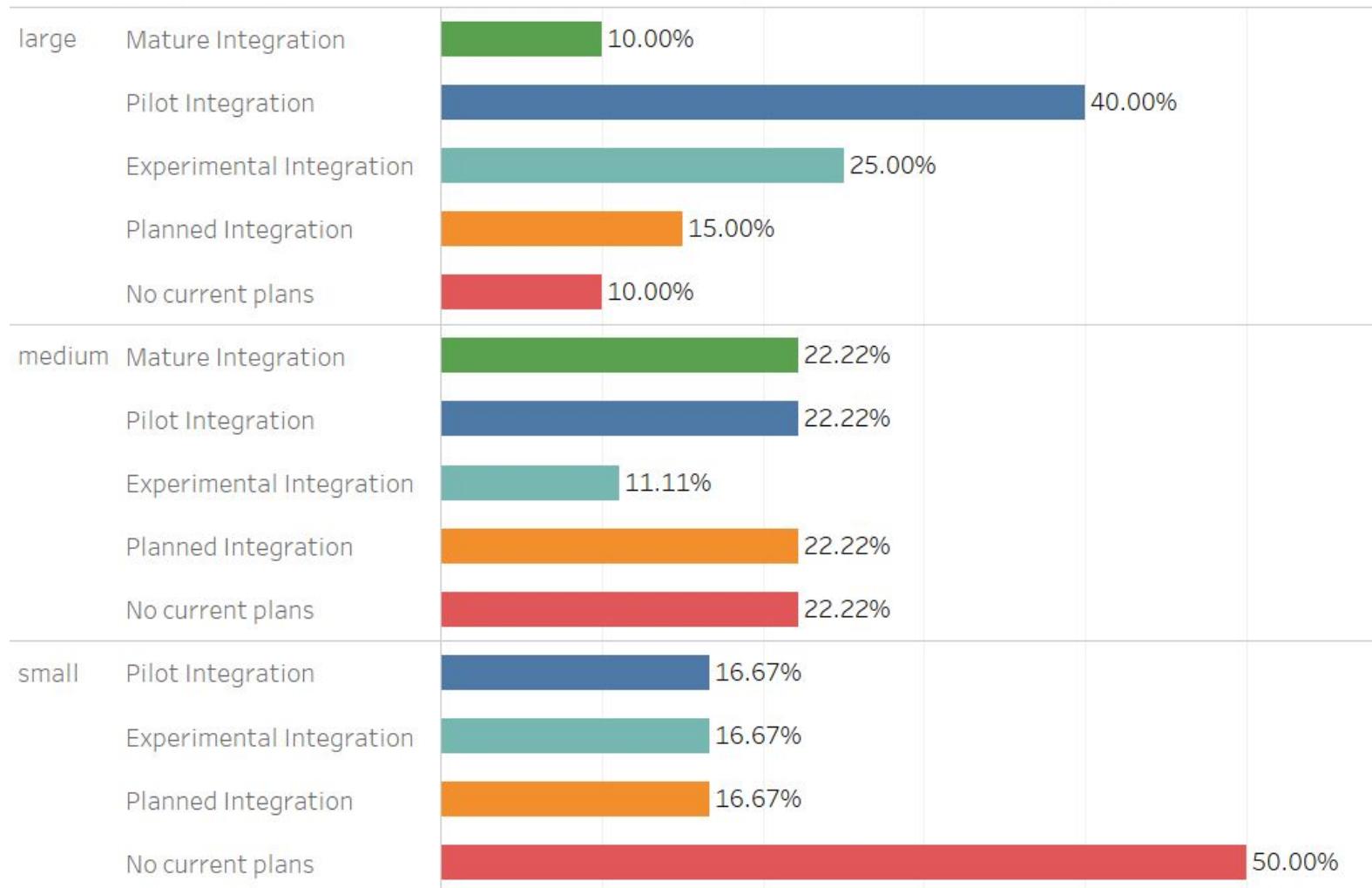
#### 40. To what extent does your role as CDO involve oversight of enterprise analytics for your agency? (N = 35)



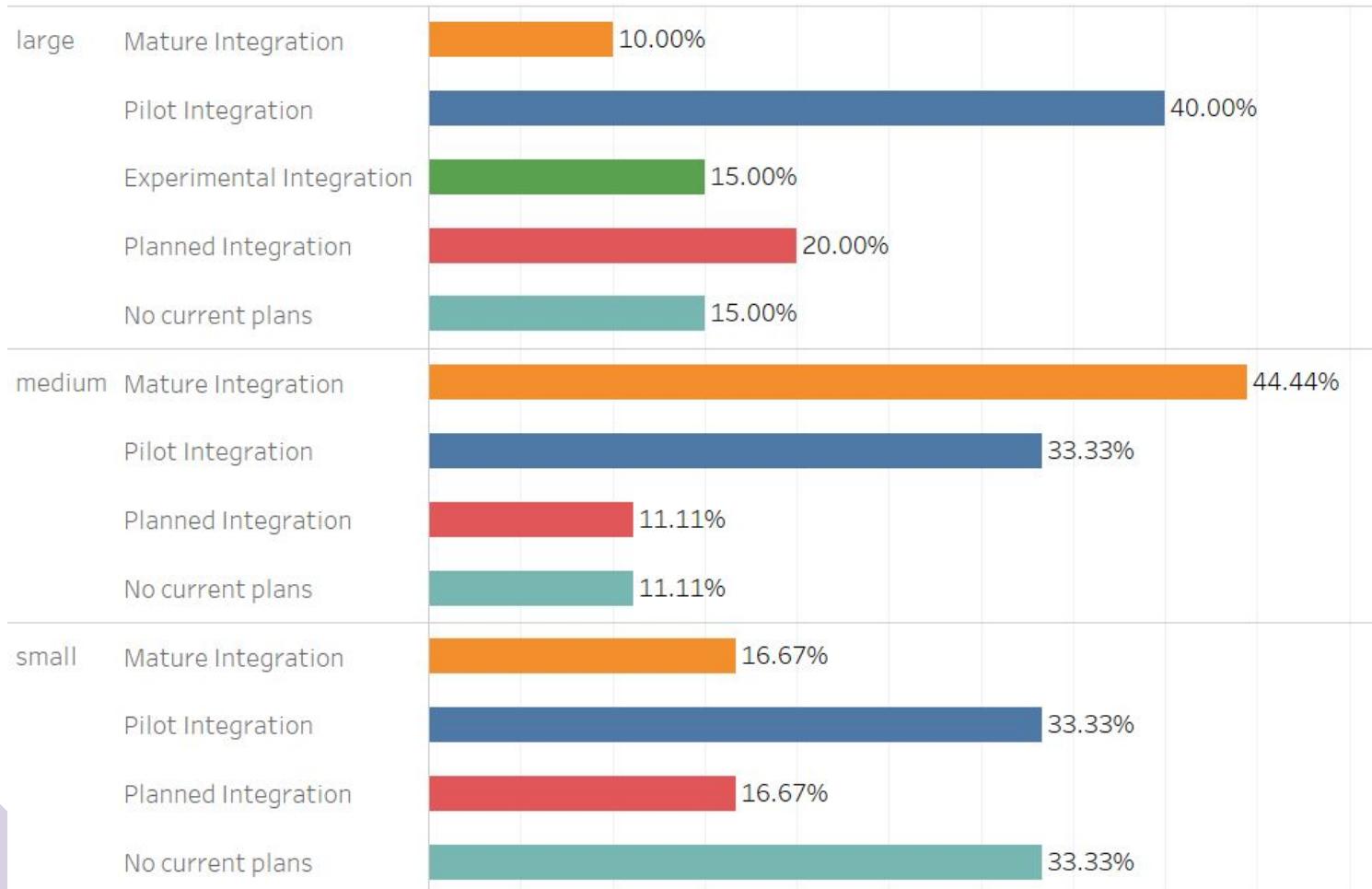
**41. Has your agency implemented an enterprise analytics platform for integrating and analyzing data across various components and functional silos? (N = 34)**



42. In your agency, how mature is the integration of mission-support data (e.g., HR, finance, IT) at the enterprise level? (N = 35)



43. In your agency, how mature is the integration of mission-specific data across divisions or component agencies at the enterprise level? (N = 35)



#### 44. How mature is your agency's implementation of enterprise-wide analytics and data dashboards? (N = 33)

