THE UNIVERSITY OF QUEENSLAND
AUSTRALIA
CREATE CHANGE

How resilient are organisations to cyber incidents?

A survey on the current state of cyber resilience in organisations

Team Members

UQ: Elinor Tsen, Associate Professor Sergeja Slapničar, Professor Ryan Ko

Research overview

The World Economic Forum highlighted, in their recent *Global Cybersecurity Outlook 2022,* the importance of cyber resilience for all organisations.

Cyber resilience is especially important for critical industries.

However, there is some confusion around:

(1) how cyber resilience differs from existing cyber security measures

(2) what organisations are currently doing to develop cyber resilience

As part of a joint research project between the University of Queensland, Australia and Cloud Security Alliance Asia-Pacific, we conducted focus groups and a survey to understand the current state of cyber resilience in organisations. This e-brochure summarises the key findings from this survey.

In total, 108 individuals completed an online survey between October 2021 – February 2022. Respondents were involved in their organisation's cyber security or resilience management.

Research overview

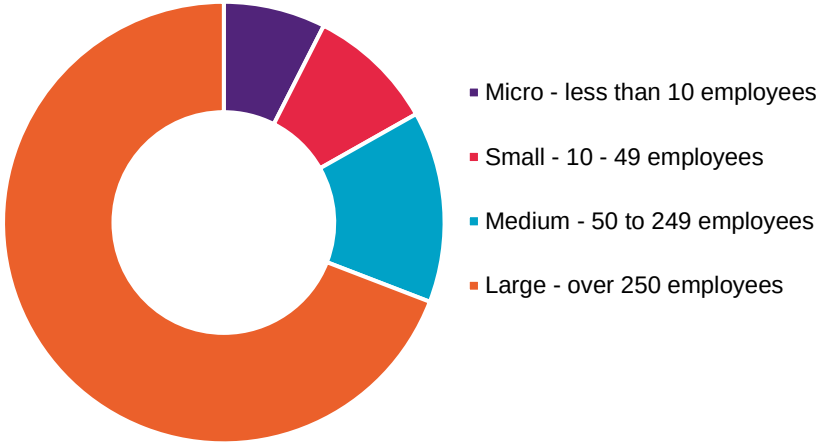
Based on the review of several prominent cyber resilience frameworks, this study is first to operationalise cyber resilience as a measurable research construct. We defined it with seven dimensions:

1) **Prevention**
2) **Detection**
3) **Response**
4) **Recovery**
5) **Education**
6) **Leadership and accountability**
7) **Strategy and planning**

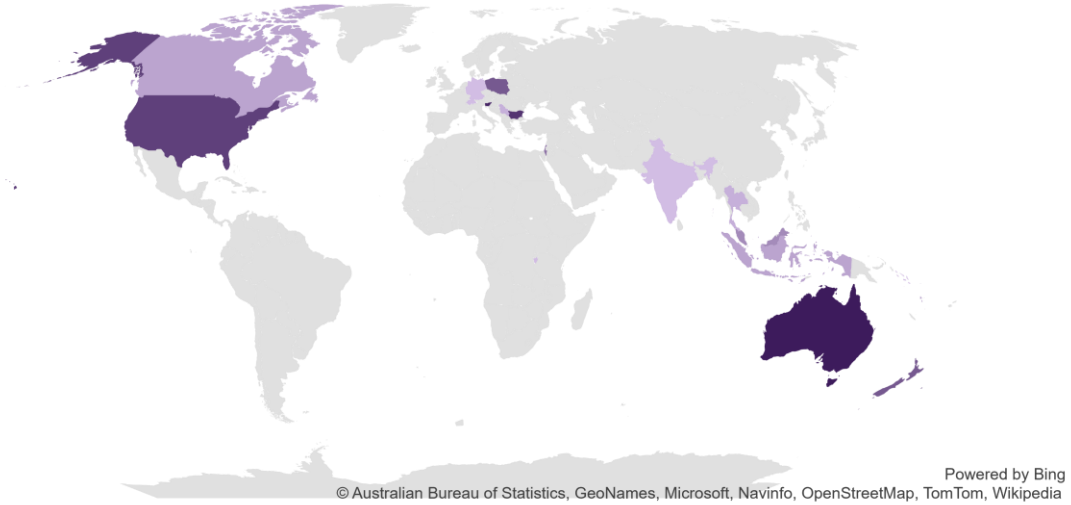
We also investigated factors that affect the development of cyber resilience and cyber incidents that organisations experienced at a given level of cyber resilience.

Survey demographics

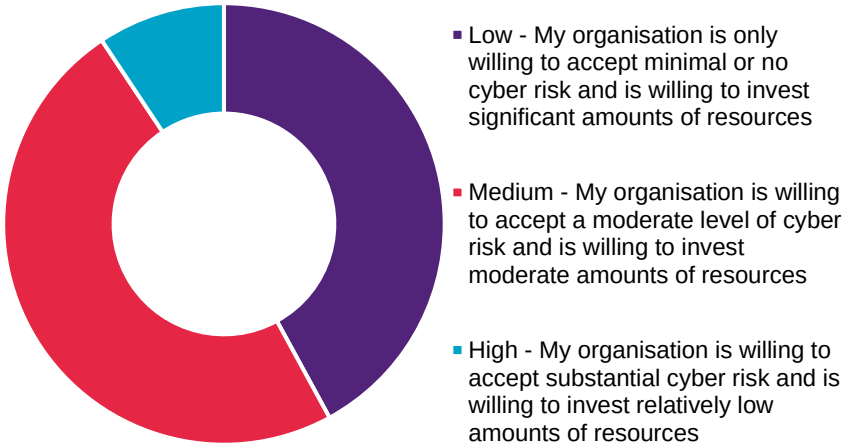
Organisation size



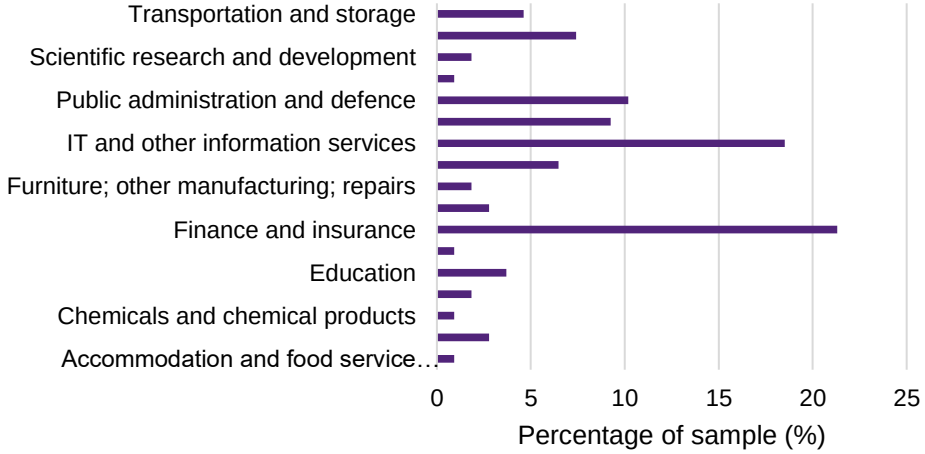
Geographic distribution of respondents



Cyber risk appetite



Sector distribution of sample



Survey results

Cyber resilience score

As part of this study, we calculated an organisation's cyber resilience score.

Each question was assigned a score from 0 to 5 (*5 representing Agree*).

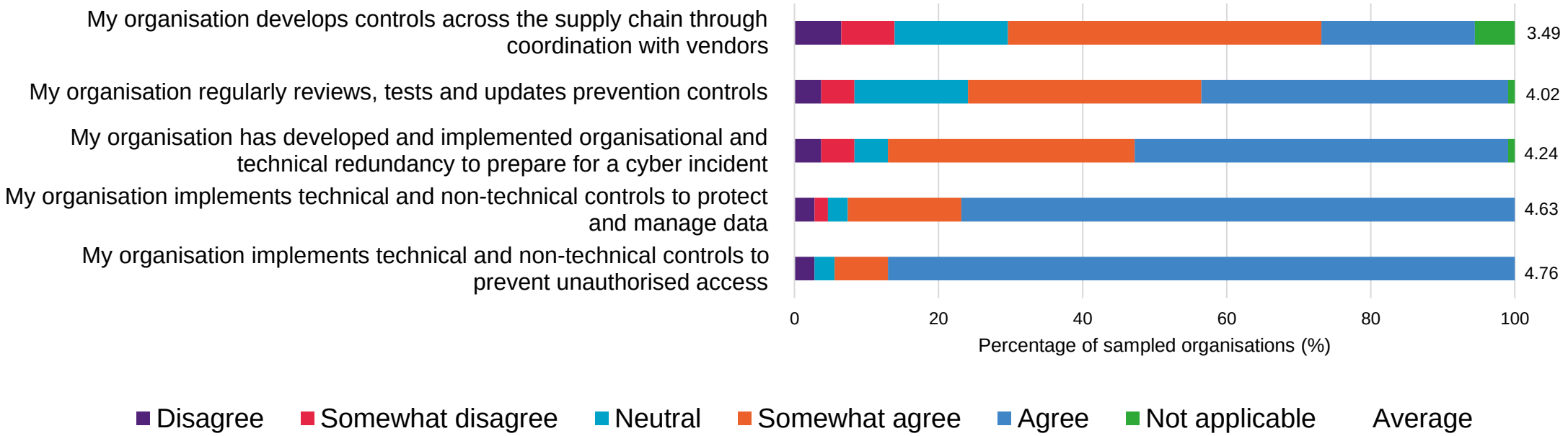
For each of the seven dimensions, the relevant questions were summated.

These summated scores were then standardised from 0 to 10 as each dimension was given equal weighting.

These scores were then presented to respondents as a percentage representing their score out of 70.

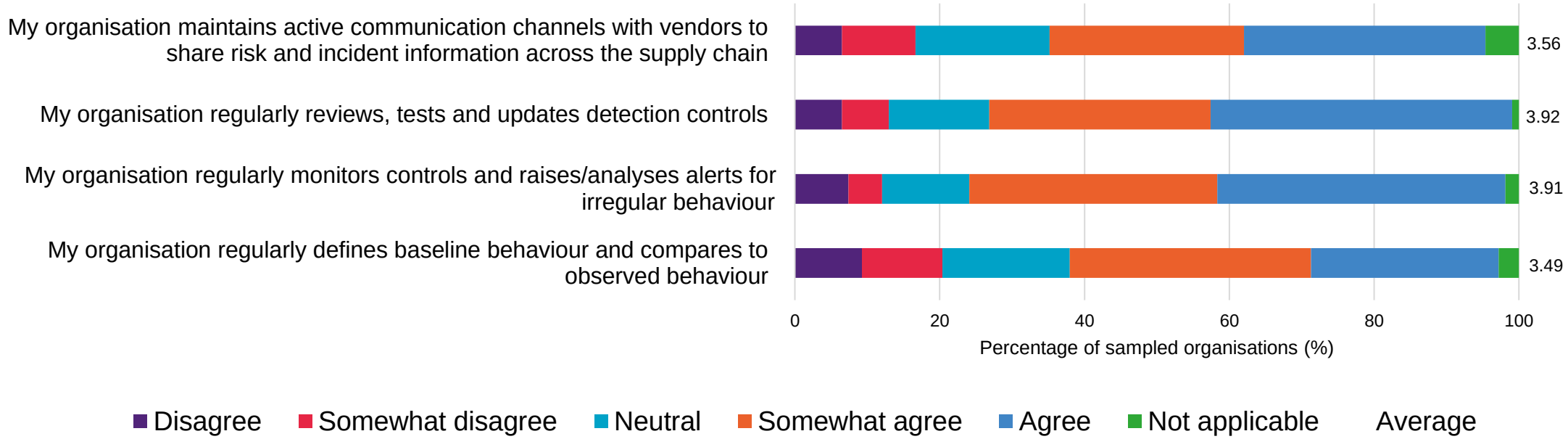
We have provided the average scores by sector for each dimension following the descriptive analysis.

Prevention



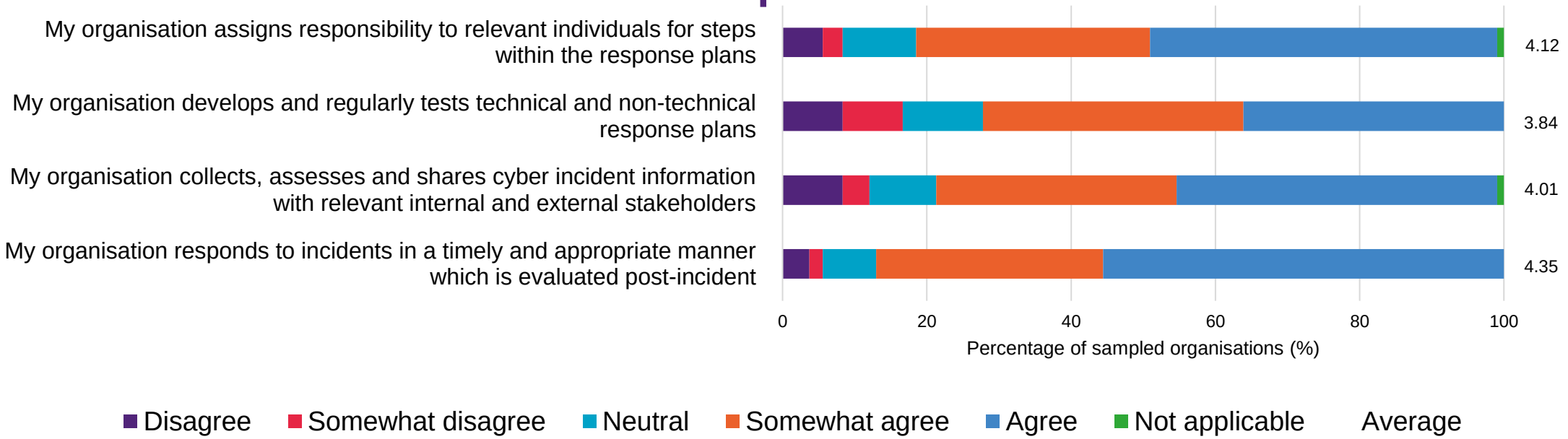
- Prevention controls are the most frequently implemented controls.
- However, *organisations appear to be implementing prevention controls in isolation ignoring the actions of other organisations.*

Detection



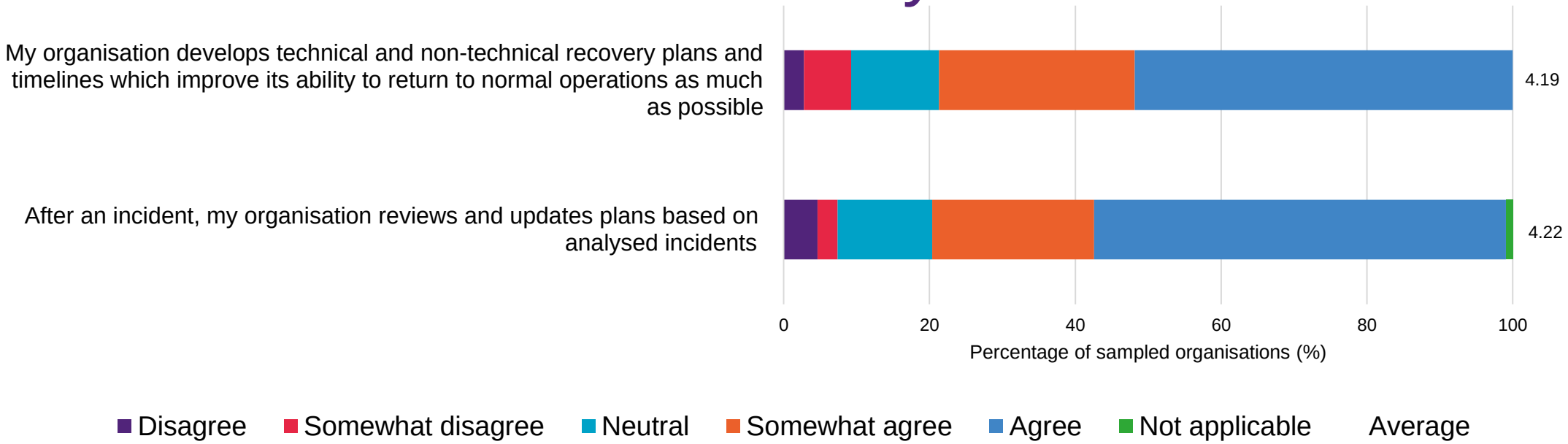
- The evaluation of detection controls appears to be more frequent than the defining of baseline behaviour.
- *This either indicates expected behaviour may not change or organisations are behind when updating expected behaviour.*
- *This may have a run-on effect on what alerts are raised.*

Response



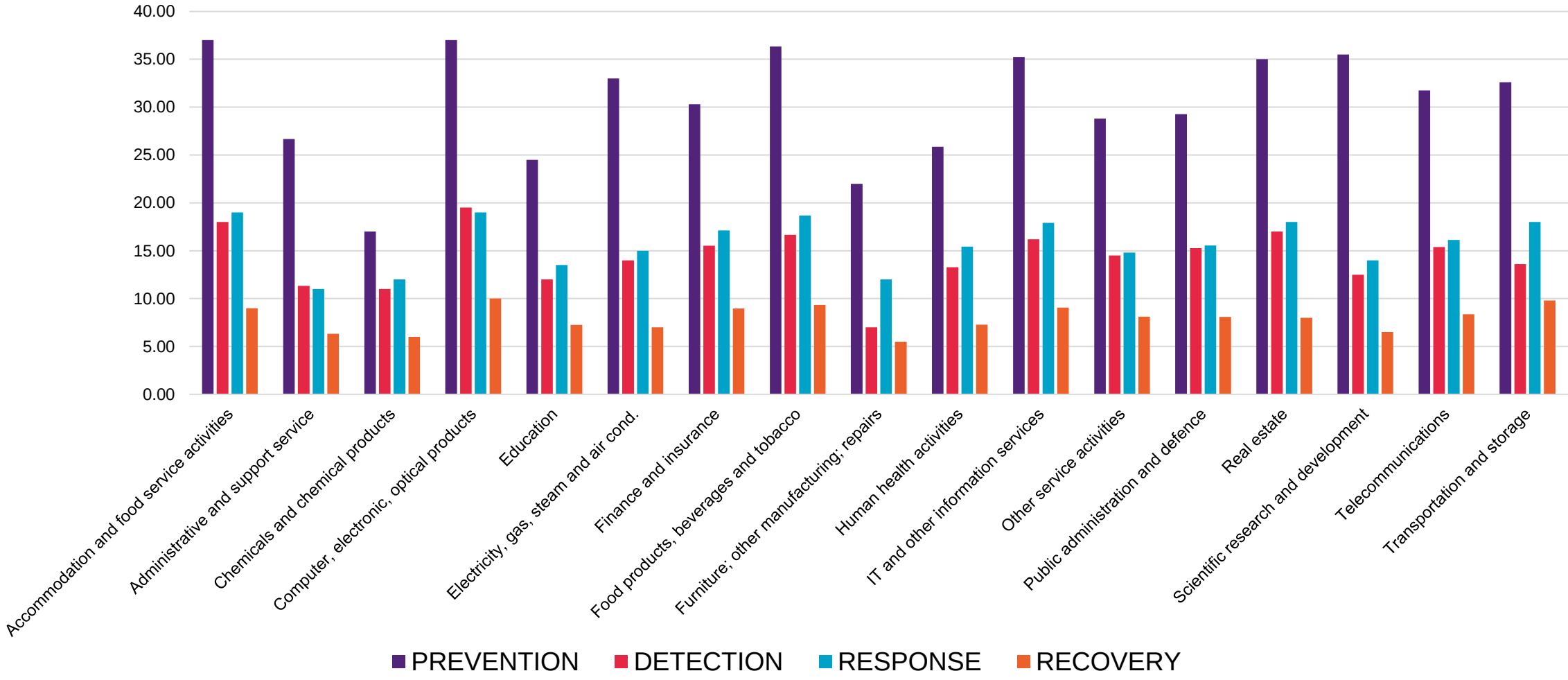
- Most organisations are responding to cyber incidents.
- *However, it appears to be similar to ad-hoc responses rather than planned responses.*

Recovery

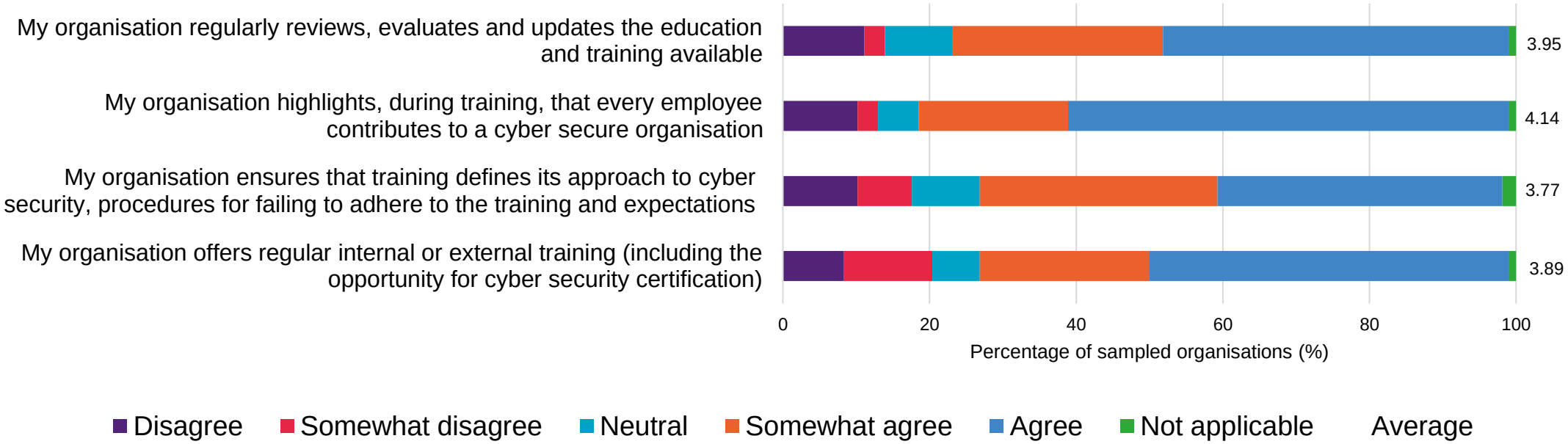


- The process of developing recovery plans is less frequent than expected.
- *Organisations appear to be less focused on recovery than expected.*
- *This may indicate that the planning for cyber incidents stops at responding to the cyber incident.*

Prevention tends to be the most highly developed dimension

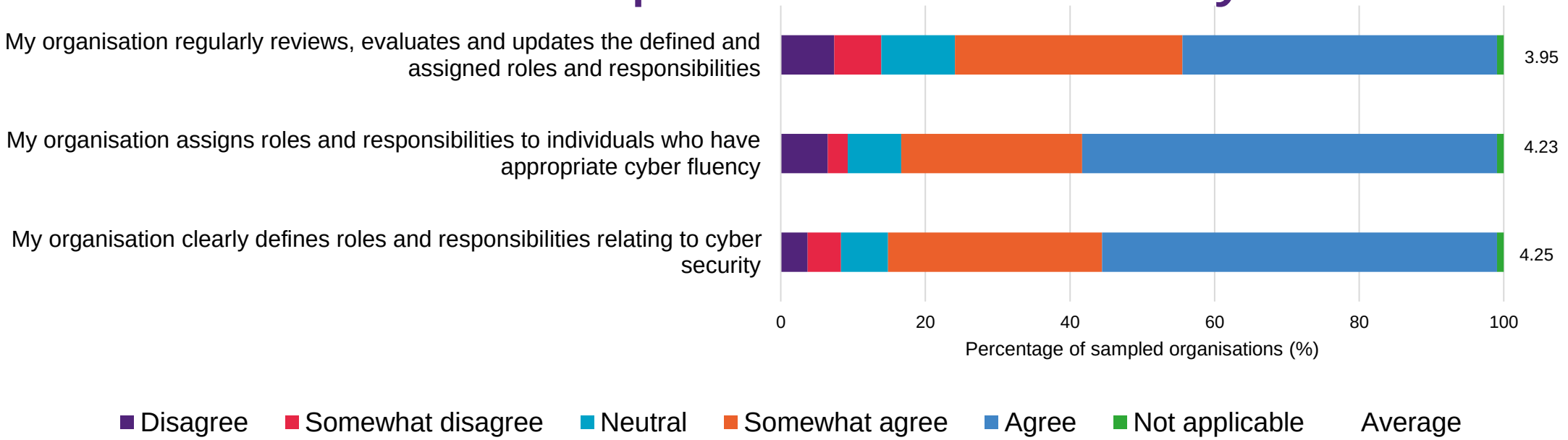


Education



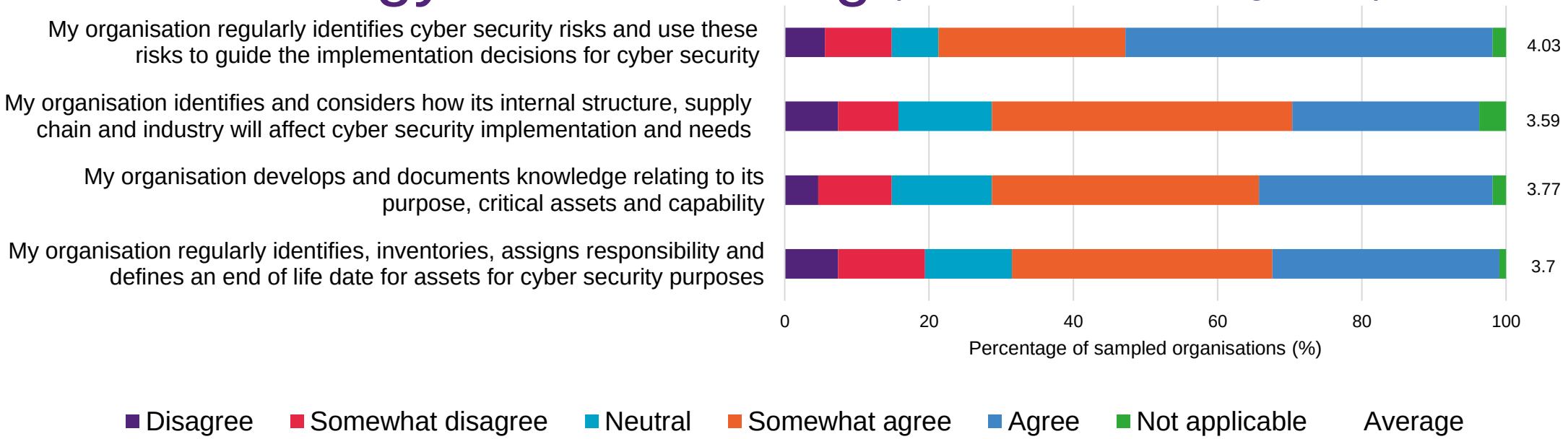
- Education does not appear to be as much of a priority as expected; however employees are expected to contribute to the cyber security of the organization.
- *This may indicate that the education program offered to employees may vary in detail but the expectations on employees do not change.*

Leadership and Accountability



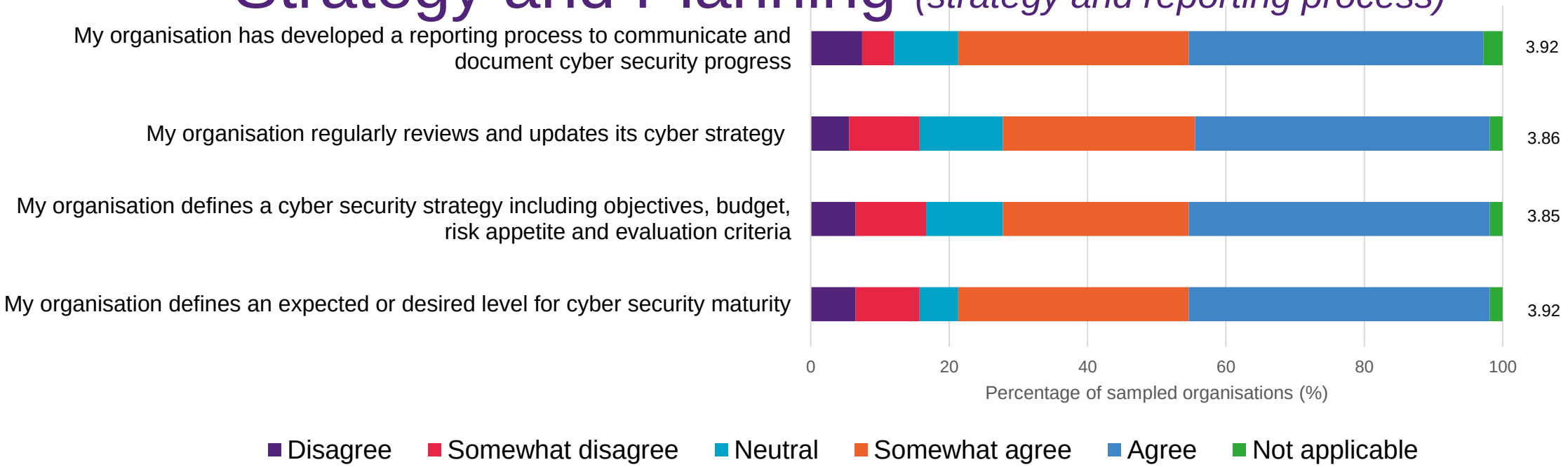
- The evaluation of cyber leadership roles is less frequent than expected.
- *This may indicate that the accountability of cyber leadership may be lacking, which may not encourage optimal decision-making.*

Strategy and Planning *(asset and risk management)*



- Organisations do not appear to be frequently considering their internal structure and capabilities for cyber resilience.
- *This reinforces the idea that cyber security, and cyber resilience, may be developed in organisations as one-size-fits-all.*

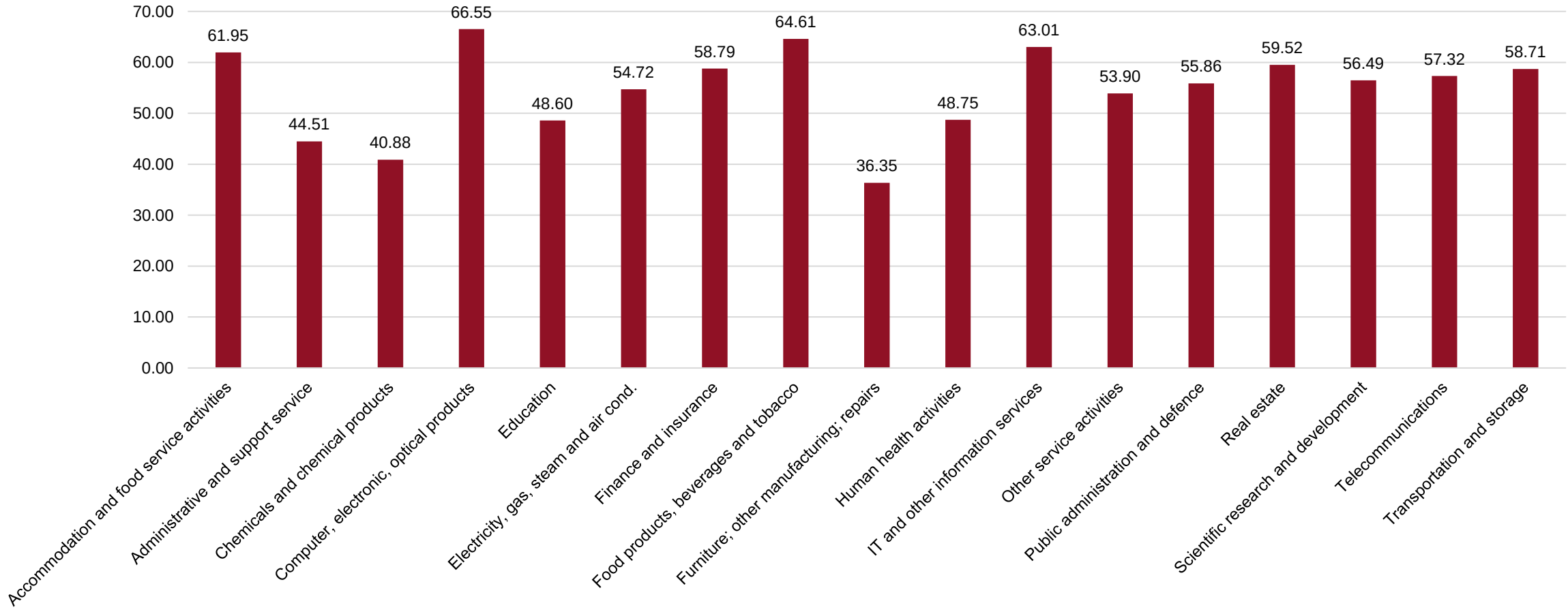
Strategy and Planning *(strategy and reporting process)*



- Most organisations are developing an appropriate strategy and reporting process.
- *This indicates that this area of cyber resilience may be becoming a focus for cyber leadership.*

Average education, leadership and accountability, strategy and planning score by sector

Average total score by sector



Scores by sector summary

Highest average scores for prevention and strategy and planning

This may indicate that organisations perceive these two dimensions as the most important

Recovery has the smallest average score across sectors

This dimension is still lacking across organisations indicating that the focus is not on recovering post-incident but on preventing cyber incidents

Education and leadership and accountability are also smaller than the other dimensions

Unexpectedly, the human factor for cyber resilience is still an issue despite the historical focus of cyber security and resilience

Detection and response appear to have similar average scores across sectors

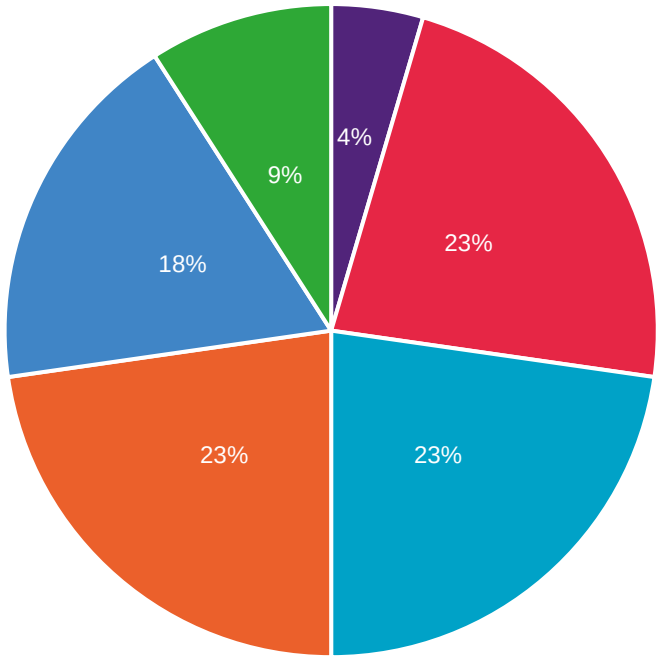
The best performing sectors overall are

- Computer, electronic and optical products
- Food products, beverages and tobacco
- IT and other information services
- Accommodation and food services
- Real estate

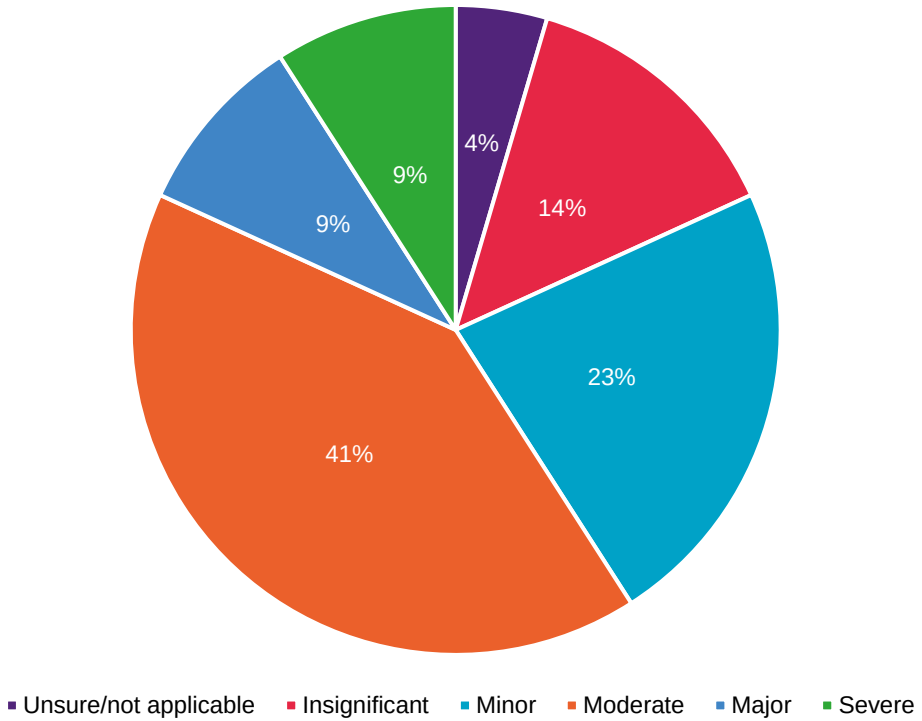
Outcomes - Organisation

- Only 20% of organisations suffered a cyber incident they were willing to disclose
- Most cyber incidents were categorised as DDOS, phishing and ransomware
- Major negative outcomes were uncommon (less than 25%)

Operational downtime



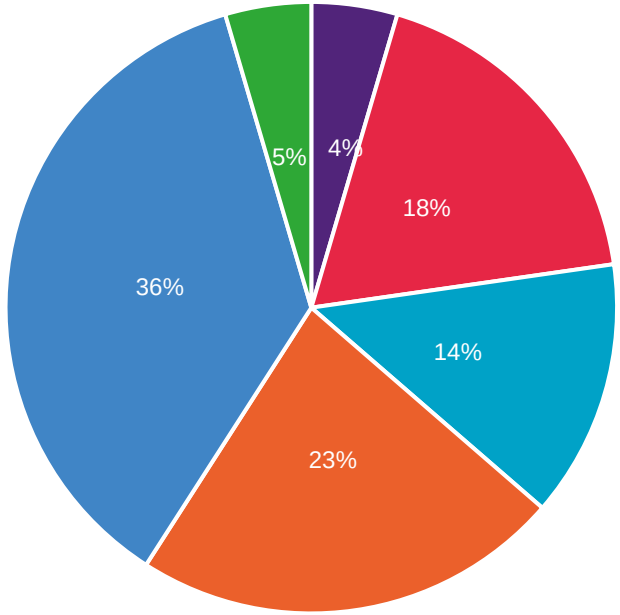
Inability to deliver value proposition (protecting human life, achieving organisational goals, etc.)



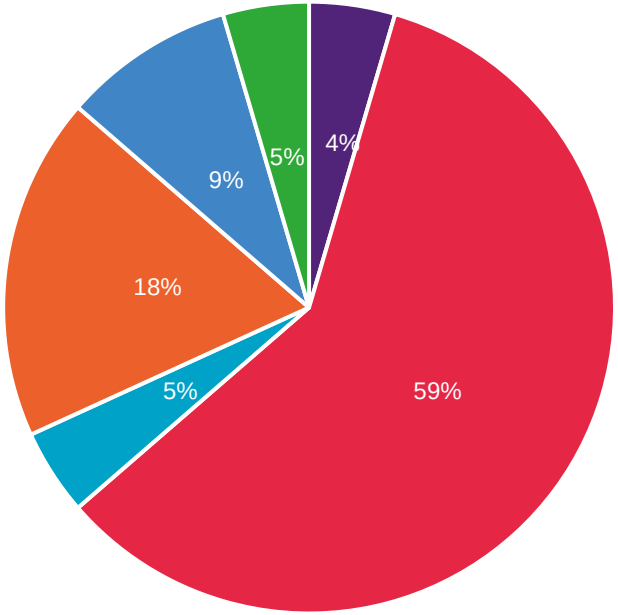
Outcomes - Reputation

- Most organisations experienced an insignificant impact on share price post-incident
- Major negative customer costs were relatively common

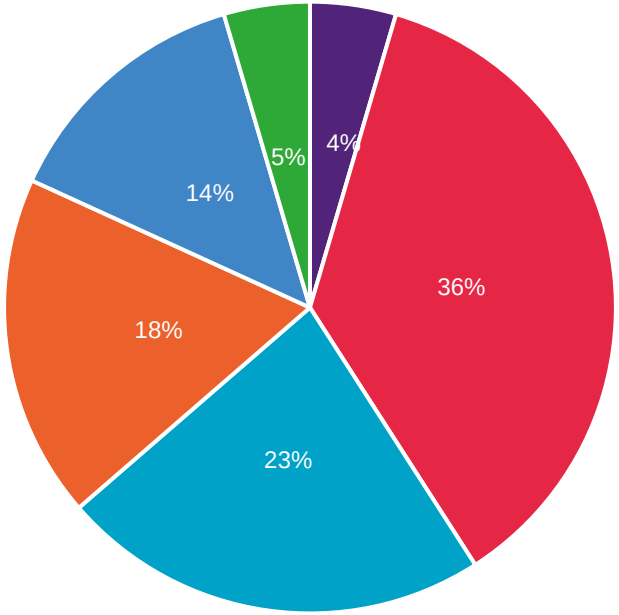
Reputation costs (customer satisfaction, etc.)



Impact on share price

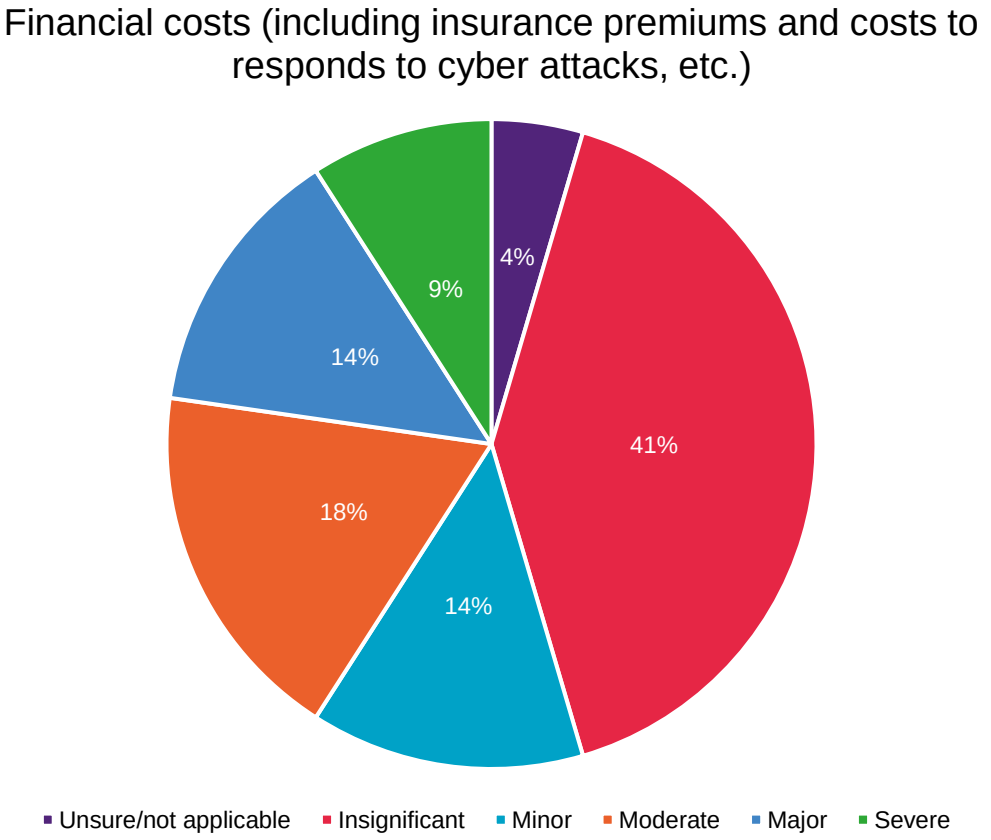


Litigation or penalties



Outcomes - Financial

- Most organisations had significant financial costs (55%)



Cyber resilience and outcomes

We analysed the results using a statistical method called MANOVA (*multivariate analysis of variance*) and found the following:

- Prevention affects operational downtime and ability to deliver value proposition.
- Prevention affects reputation costs, impact on share price and occurrence of litigation or penalties.
- Overall, strategy and planning appears to be important for organisations after a cyber incident.

Implications

- Our research shows that prevention and strategy and planning are two most highly developed dimensions. *Having good prevention controls, particularly redundancy, is important in allowing the organisation to continue operating post-incident. In addition, organisations with good prevention controls are perceived more favourably as it is then apparent that the organisation is attempting to be cyber resilient.*
- However, strategy and planning controls are also relevant. *Generally, strategy and planning are important in providing evidence to stakeholders in showing that an organisation is attempting to be cyber resilient*
- This does not mean that other dimensions are not as important for cyber resilience. Our findings may indicate that some dimensions are valued more by stakeholders than others.