# Research methodology

The IBM Institute for Business Value, in cooperation with Oxford Economics, interviewed 13,484 C-suite executives from 98 countries and 20 industries. Our 3,819 face-to-face meetings and 9,665 live phone interviews collected both quantitative and qualitative responses. For these sessions, we deployed an in-depth survey to uncover how organizations are extracting value from data and exponential technologies to enable business innovation, expand customer engagement and trust, and optimize their business ecosystems.

Respondents in our study represent a balanced mix of six C-suite roles: CEOs, CFOs, CHROs, CIOs, CMOs, and COOs. Data collection was specified at the country and industry levels to acquire a representative set of global respondents.

Our analysis of survey results applied a variety of statistical methods and practices to create regression and correlational models. We used exploratory factor analysis to develop response themes. We also used IBM Watson AI technologies against thousands of qualitative interview responses to conduct sentiment analysis and classify study findings into narrative themes. Then, IBM Watson Project Debater revealed how the prevalent themes were viewed from multiple perspectives.

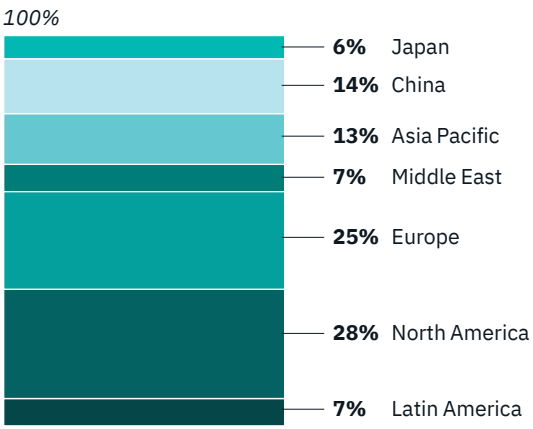
We classified every participant into one of four stages. The horizontal axis is driven by combined responses to three questions: the extent to which an organization's data strategy is integrated with its business strategy; the extent to which the C-suite recognizes the value of data as a strategic asset; and the extent to which the enterprise is aware of and understands the strategic value of data.

The vertical axis is driven by three additional questions: the degree to which an organization has met its expectations for creating value from the strategic use of data; the extent to which the enterprise can access, extract, or link the data together; and the extent to which it can create insights from data.

For this study, we asked respondents to do a self-assessment on more than 100 aspects, including financial performance versus industry peers. We cross-validated responses by comparing two objective financial measures—revenue growth and profitability—where the information was publicly available. Our analysis confirmed a high correlation between self-assessed and actual performance, thereby lowering the potential for distortion from a systemic "halo effect."

In some parts of our analysis, our researchers recognize that a simple reporting of absolute contrast belied the true significance of performance differences. So, to explore the magnitude of a given performance difference in such cases, we report relative, rather than absolute, differences.

**Respondents by region**




**Respondents by role**