FAIRMONT STATE UNIVERSITY™

Office of the Provost
1201 Locust Avenue • Fairmont, West Virginia 26554
Phone: (304) 367-4101 • Fax: (304) 367-4902
www.fairmontstate.edu

MEMORANDUM

TO: Faculty Senate

FROM: Dr. Susan Ross

DATE: April 7, 2021

SUBJECT: Curriculum Proposal #20-21-27

This proposal creates an opportunity for Business Administration majors to earn 18 credits in a Data Analytics concentration versus taking major electives. It is designed to provide additional courses that advance their training in this field if they wish to pursue this career path. It does not require the development of any new courses but provides students a specified series of courses already offered within the School of Business & Aviation to enhance the quality and depth of their undergraduate training across quantitative management, data analytics, and data-driven decision-making. Appendix C summarizes the relevant courses and flow of topics.

cc: Richard Stephens Lori Schoonmaker
Stephanie Gabor
Laura Ransom
Dr. Rebecca Giorcelli

CURRICULUM PROPOSAL (Submit one electronic copy to the Executive Director of Academic Programs by the second Tuesday of the month.)

Proposal Number: #20-21-27

School/Department/Program: School of Business and Aviation, Marketing & Management Studies

Preparer/Contact Person: Dr. Rebecca Giorcelli, Chair, Marketing & Management Studies

Title of Degree Program: Data Analytics Concentration

Telephone Extension: 304-367-4183

Date Originally Submitted: 02/19/2021

Revision (Indicate date and label it Revision #1, #2, etc.): N/A

Implementation Date Requested: August 2021

I. **PROPOSAL ABSTRACT**. Write a brief abstract, not exceeding 100 words, which describes the overall content of the proposal.

This proposal creates an opportunity for Business Administration majors to earn 18 credits in a Data Analytics concentration versus taking major electives. It is designed to provide additional courses that advance their training in this field if they wish to pursue this career path. It does not require the development of any new courses but provides students a specified series of courses already offered within the School of Business & Aviation to enhance the quality and depth of their undergraduate training across quantitative management, data analytics, and data-driven decision-making. Appendix C summarizes the relevant courses and flow of topics.

II. **DESCRIPTION OF THE PROPOSAL**. Provide a response for each letter, A-H, and for each Roman Numeral II–V. If any section does not apply to your proposal, reply N/A.

A. Deletion of course(s) or credit(s) from program(s) Total hours deleted: _18_____

B. Addition of course(s) or credit(s) from program(s) Total hours added: __18_____

C. Provision for interchangeable use of course(s) with program(s)

Requirement for free electives is exchanged to a series of required electives.

D. Revision of course content. Include, as an appendix, a revised course description, written in complete sentences, suitable for use in the university catalog.

N/A

E. Identify changes to existing courses such as changes to title, course number, and elective or required status.

See Appendix A and B

F. **Creating a New Course**(s) information (if applicable). For each new course complete the following:

1. **Course Catalog Information:** N/A

a. Course prefix (subject area) and number:	
b. Course title:	
c. Course term(s) (e.g., Fall, Summer only):	
d. Credit hours/Variable credit:	
e. Repeatability (number of repeat credit hours):	
f. **Prerequisite/Corequisites/Restrictions/Cross-listings:** If none, simply indicate with N/A (Not Applicable):	
g. ***Co-requisite*** (include subject prefix and course number):	
h. ***Cross-listings*** (e.g., PSYC 2230 and SOCY 2230):	
i. **Grade Type:** Indicate whether students will be assigned a standard A-F final grade or Credit/No Credit (CR/NCF) grade:	
j. Required Course or Elective Course:	
k. Course Fees (Indicate amount):	

2. If this is a shared course, attach a memo from the Deans of the affected Schools explaining the rationale for course being shared. - N/A

3. **New Course Supplemental/Supporting Documentation**: - N/A

   a. **Course Catalog Description**: Include, as an appendix, a course catalog description written in complement sentences that will be published in the university catalog. The word length for a catalog description should be less than 80 words. Do not include any prerequisites, corequisites or any other restrictions in the description.

   b. **Course Learning Outcomes (CLO's):** These should be stated in terms of what new knowledge and/or skills students should be able to demonstrate upon successful completion of the course. Present course learning outcomes as a bulleted list predicated with "Upon successful completion of this course, students should be able to…"

   c. **Course Outline:** Attach a course outline consisting of at least two levels.

   d. **Assessments:** Describe generally how student's achievement of the course learning outcomes will be assessed.

G. Attach an itemized summary of the present program(s) affected, if any, and of the proposed change(s).

   Describe how this proposal affects the hours needed to complete this program. Specifically, what is the net gain or loss in hours? Use the format for Current and Proposed Programs in Appendix A.

   There is no net gain or loss. **See Appendix A and B.**

   Proposed changes:

   Students in the BSBA program are currently required to take the following courses as part of the Business core requirements:

   MATH 1530 College Algebra
   BISM 1500 Business Information Tools
   BSBA 3310 Business Economics and Statistics

   In addition, students are recommended to take BISM 1200 Introduction to Computing to fulfill Core Curriculum #1.

   The addition of this concentration (18 credits) complements the core courses already being taken and provides a student seeking a career in data analytics with additional skill sets and competencies.

III. RATIONALE FOR THE PROPOSAL

A. **Quantitative Assessment**: Indicate the types of assessment data, i.e., surveys, interviews, capstone courses, projects, licensure exams, nationally-normed tests, locally developed measurements, accreditation reports, etc., that were collected and analyzed to determine that curricular changes were warranted. Quantitative data is preferred.

Over the past decade, there has been explosive growth in technology and significant volumes of data produced in essentially every field. However, Srinivasen Parthasarathy, co-director of the Ohio State University data analytics program (one of the first undergraduate programs introduced in the data analytics field), stated, "companies are generating and collecting huge amounts of data, but they lack the skills to make sense of it." He and his co-director have received many requests from colleges interested in learning more about the program because it is becoming widely recognized

that ***there is an enormous gap between the supply and demand of data analytics skills***. He also indicated that the program is attracting some of the most competitive students with average ACT scores of 33 for entering students (Tate, 2017).

Higher education is being called out to be responsive through bachelor's, graduate, certificate, and executive level programs in meeting the growing demands for data analytics in the workforce. "Data democratization impacts every career path, so academia must strive to make data literacy an option, if not a requirement, for every student in any field of study" (Markow, Braganza, Taska, Miller, & Hughes, 2017). In addition to a foundation in data literacy for every student, the report entitled, "The Quant Crunch: How the Demand for Data Science Skills is Disrupting the Job Market" also emphasizes the significant need for new data science and analytics education programs.

Data Analytics Needs Assessment – Local Survey

A data analytics needs assessment survey was conducted through a faculty development grant to gain insight regarding the specific knowledge, skills, and abilities required and/or preferred of new employees with respect to data analytics in the local region. The target population was high tech companies including NASA IV&V and organizations associated with the West Virginia High Technology Consortium Foundation (WVHTCF). The survey included 23 questions and was administered through SurveyMonkey.

Locally, participants from 29 businesses/organizations completed the survey (Refer to Attachment – APPENDIX_Data Analytic Survey Results_Local 29). These responses were analyzed to gain a better understanding of the need for data analytics in the local area. The questions used in this survey were made by graduate students and reviewed by school of business faculty to ensure they were best suited to provide relevant information. The industries represented in these responses include Manufacturing (1), Construction (2), Transportation (1), Information/Technology/Communication (9), Financial services (2), Real Estate (1), Professional Services (3), Health & Social Services (4), and Other (6). The size of the organizations ranged as follows: less than 10 employees (7), 10-20 employees (2), 21-50 employees (5), 51-75 employees (1), 76-100 employees (3), 101-500 employees (6), 1001-5000 employees (1), and more than 5000 (4).

The first question polled participants regarding hiring for data analyst positions. The responses show that 37.93% (11) have hired people for a data analytics position in the past; 20.69% (6) are currently hiring; and, 55.17% (16) are planning to hire over the next 1-5 years. These findings indicate businesses locally are demanding people with data analytical skill sets.

When asked what functions at your organization use analytics the results showed that accounting & finance was rated the highest at 62.07% (18). Other functions that were highly used are information technology 55.17% (16), Operations 55.17% (16), Audit/Compliance/Risk 44.83% (13), Strategy/Development/Execution 44.83% (13), Sales and Marketing 41.38% (12), and Research and Development 37.93% (11). Therefore, a variety of functions in these organizations are using data analytics. The most common functions using data analytics at local companies was Customer Service, Information Technology, and Operations with 48.28% (14) of participants responding. Additional functions that were commonly selected include Customer and Market Analysis 34.48% (10), Direct & Digital Marketing 34.48% (10), and Product Development/Management 31.03% (9).

A question was posed to assess the number of staff currently dedicated to analytics, modeling, and data mining. Results indicate the majority of respondents at 41.38% (12) have only 1-2 employees who are responsible for acquiring this information for the organization. Additional findings show the number of dedicated data analytics staff for the organizations were 3-5 employees at 20.69% (6); 11-20 employees at 10.34% (3); 21-50 employees at 6.90% (2); and more than 100 employees at 10.34% (3).

Types of analytic products that these companies are either currently using or are considering include Statistical or Mathematical packages 55.17% (16), Custom Analytics 51.72% (15), Data Visualization products 44.83% (13), and Streaming analytics 27.59% (8). The analytic functions/features that are most important to these companies include: Data Visualization 55.17%

(16), Social Network analytics 44.83% (13), Advanced analytic algorithms 41.38% (12), and Machine learning 37.93% (11). Over two-thirds of these companies, 68.97% (20) reported using 3rd party applications to receive their analytics. Close to half of these companies, 44.83% (13) are using a Custom developed in-house application to perform analytics. Over three quarters of companies, 75.86% (22) agree that they have implemented a data analytics platform that is delivering actionable insights. While 20.69% (6) say they aren't using anything to deliver insights to their company.

When asked how challenging it is to source data analytic skills for the organization, the majority 31.03% (9) stated that it is challenging to hire skilled resources. Other responses revealed that sourcing data analytic skills ranged from somewhat challenging at 24.14% (7), to very challenging at 10.34% (3), and even impossible to hire skilled resources 3.45% (1). Only four respondents (13.79%) indicated no issues in hiring skilled resources.

Respondents were polled regarding educational needs for data analytic positions from undergraduate coursework through a graduate degree. Nearly 60% (17 of 29 respondents) reported the need for employees with undergraduate coursework in data analytics. Over half (15 out of 29) reported needing those with an undergraduate degree with a data analytics concentration while approximately 46% (13 out of 28 respondents) reported needing employees with an undergraduate data analytics degree. At the graduate level, respondents reporting a need for employees with graduate level work in data analytics was just slightly more than half (15 out of 29); those needing a graduate degree with a concentration in data analytics was reported by nearly 45% (13 out of 29); and over 41% (12 out of 29) reported needing a graduate level data analytics degree.

Data Analytics Needs Assessment – Global Survey Panel

Since issues related to COVID-19 made it difficult to contact and/or follow up with organizations, resulting in only 29 respondents, a second survey was conducted using the global survey panel through the SurveyMonkey audience (Refer to Attachment – APPENDIX_Data Analytic Survey Results_SurveyMonkey100). The criteria for participation from panel members was that the primary role in his/her organization was Owner or Partner, President/CEO/Chairperson, Senior Management, Project Management, C-level executive, Director, HR manager, or Supervisor. Due to insufficient West Virginia participants available in the global panel meeting these criteria, the population was expanded to include responses from participants in surrounding states, including, Kentucky, Pennsylvania, Maryland, Ohio, and Virginia, as well as Washington, D.C. The surrounding states population survey had a total of 100 respondents using the SurveyMonkey Global Panel. These responses were used to assess the need of data analytics in West Virginia and surrounding states and also provide results for comparative purposes with the 29 local participants.

Respondents reported organizations located in the following states: Alabama (2), Arizona (1), Arkansas (1), Colorado (1), District of Columbia (3), Florida (1), Illinois (1), Indiana (1), Kentucky (8), Maryland (11), Massachusetts (1), New York (3), North Carolina (2), Ohio (21), Pennsylvania (31), Utah (1), Virginia (10), and West Virginia (1).

Note: Discussions with SurveyMonkey representatives revealed that there were some cases where other states appeared in the survey results because the survey filter was based upon the location of the respondent but the question actually inquired about the state in which the organization was located. In addition, only the number of the 100 respondents is provided in the results since the percentage would be the same value.

The industries represented in these responses include agriculture (3), manufacturing (10), energy (4), construction (8), wholesale & retail trade (12), transportation (5), information, technology, and communication (8), hospitality (7), financial services (6), real estate (2), professional services (5), education (4), health & social services (4), entertainment and recreation (5), and other (17). The size of these organizations are: less than 10 employees (30), 10-20 employees (13), 21-50 employees (11), 51-75 employees (6), 76-100 employees (7), 101-500 employees (10), 501-1,000 employees (9), 1,001-5,000 employees (10), or more than 5,000 employees (4).

The first question polled participants regarding hiring for data analyst positions. The responses show that 40% have hired people for a data analytics position in the past; 23% are currently hiring; and, 38% are planning to hire over the next 1-5 years. These findings support the findings that there is demand for data analytical skill sets.

When asked what functions of the business are supported with analytics, the top response received was accounting and finance (37). Other top responses include operations (29), sales & marketing (29), customer service (25), information technology (23), human resources (22), and audit/compliance/ risk (19). Again, a majority of functions of the business are being supported using analytics. The most important function that uses analytics according to these organizations is customer service (26). Additional functions include operations (25), ecommerce/e-business/digital operations (24), customer and market analysis (23), direct and digital marketing (22), and information technology (20).

The results show the amount of staff dedicated to analytics, modeling, and data mining state that the majority have 1-2 employees (25) in this role within the organization. Additional responses to this question were: zero employees (19), 3-5 employees (19), 6-10 employees (7), 11-20 employees (6), 21-50 employees (6), 51-75 employees (4), 76-100 employees (7), and more than 100 employees (7).

Types of analytic products that these companies are either currently using or are considering include data visualization products (33), statistical or mathematical packages (28), streaming analytics (28), and custom analytics (33). The analytic functions/features that are most important to these companies include data visualization (36), social network analytics (28), text analytics (27), advanced analytic algorithms (24), and machine learning (16). Most of these companies are using custom developed in-house applications (45). While others are using either 3rd party applications (41) or custom developed through partner (24).

Analytics at these companies are mainly performed by an individual (26). Others say that multiple teams throughout the organization (24), combination of centralized and decentralized teams (22), or central analytics team is responsible for this role. Out of these employees who are responsible for analytic roles, the majority (45) are general employees with analytical capabilities. Only (26) say they have specialists trained in analytics.

When asked how challenging it is to source data analytical skills in general for your organization the biggest majority (29) stated it is somewhat challenging to hire skilled resources. Other responses to that question include no issues in hiring skilled resources (26), challenging to hire skilled resources (23), very challenging to hire skilled resources (10), or impossible to hire skilled resources (6).

Respondents were polled regarding educational needs for data analytic positions from undergraduate coursework through a graduate degree. Over half (51 of 100 respondents) reported the need for employees with undergraduate coursework in data analytics. Slightly less than half (45 out of 100) reported needing those with an undergraduate degree with a data analytics concentration while slightly less at 41% (41 out of 100 respondents) reported needing employees with an undergraduate data analytics degree. At the graduate level, respondents reporting a need for employees with graduate level work in data analytics was just slightly less than half (48 out of 100); those needing a graduate degree with a concentration in data analytics was reported by 40% (40 out of 100); and 39% (39 out of 100) reported needing a graduate level data analytics degree.

B. **Qualitative Assessment**: Based upon the assessment data above, indicate why a curricular change is justified. Indicate the expected results of the change. Be sure to include an estimate of the increased cost, or reduction in cost of implementation. FOR EXAMPLE: Will new faculty, facilities, equipment, or library materials be required?

Comparison of Survey Results

The results from the two surveys revealed very similar results. Both reveal it is challenging for employers to find and hire individuals who have data analytics skill sets. Both indicate that most companies are training in-house employees to gain analytic capabilities to oversee retrieving and making analytical insights for their company due to the lack of individuals available for hire with required skillsets. Both survey results show that data visualization is an extremely important data analytic function. The only major difference between both survey results was that companies from surrounding states prefer to use custom built applications to retrieve data analytic information while locally it is preferred to use third-party applications.

Lack of Data Analytics Program Offerings in WV

In West Virginia, only three academic institutions were identified with program offerings in data analytics. Salem University offers a bachelor degree with a concentration in Data Sciences as well as a minor in Data Analytics. Their program is offered both on campus and online. Shepherd University markets a Data Analytics Comprehensive program with both bachelor & master degrees. West Virginia University offers a Master in Business Data Analytics.

Industry Contacts

Meetings and communication regarding the development of a data analytics program at Fairmont State were held with Ms. Jennifer Neptune, NASA IV & V Project Manager, Europa Clipper, and Mr. Jeff Northy, Chief Knowledge Officer, NASA IV&V. These discussions have confirmed the significant need at NASA IV&V for data analytics skill sets with regard to producing meaningful data visualization and interpretation. Both Ms. Neptune and Mr. Northy have agreed to work collaboratively with Dr. Giorcelli to develop data analytics course projects for the capstone experience. In addition, they have each expressed interest in exploring the development of dedicated data analytics internship positions for the data analytics program.

Preliminary discussions have been held with Denise Ralston, Director of Customer Service Analytics at First Energy. First Energy is currently embarking on an enterprise-wide data analytics talent recruitment effort. Ms. Ralston contacted Dr. Giorcelli with a proposal to develop an academic partnership for promoting a data analytics internship program with the end goal of creating a talent pipeline for First Energy.

IV. APPROVAL – N/A

Should this proposal affect any course or program in another school, a memo must be sent to the Dean of each school impacted and a copy of the memo(s) must be included with this proposal. In addition, the Deans of the affected schools must sign below to indicate their notification of this proposal.

By signing here, you are indicating your college's/school's notification of this proposal.

College/School	Dean	Signature

V. Should this proposal affect any course to be added or deleted from the general studies requirements, a memo from the chair of the General Studies Committee indicating approval of the change must be included with this proposal.

VI. ADDITIONAL COMMENTS.

APPENDIX A
B.S. Degree in Business Administration
Current Program

Degree Requirements

Core Curriculum Courses For students in this major, list the courses satisfy both core curriculum and major requirements.		
Course Prefix & Number	**Course Name**	**Credit Hours**
BSBA 1100	Business Onboarding (recommended to satisfy **Core Curriculum #1** First Year Seminar)*	3
MATH 1530	College Algebra or Higher (satisfies **Core Curriculum #5** Basic Skills)	3-4
BSBA 2211	Principles of Macroeconomics (satisfies **Core Curriculum #9** Social Science)	3

***recommended course for BSBA majors; students may opt to take any of the courses in the approved Core Curriculum #1**

Required Major Courses (45 Credit Hours) – BSBA Business Core		
Course Prefix & Number	**Course Name**	**Credit Hours**
BSBA 2204	Principles of Marketing	3
BSBA 2209	Principles of Management	3
BSBA 2211	Principles of Macroeconomics (satisfies **Core Curriculum #9** Social Science)	3
BSBA 2212	Principles of Microeconomics *(Pre-req BSBA 2211)*	3
BSBA 2220	Fundamentals of Accounting	3
BSBA 2221	Introduction to Financial Management *(Pre-req BSBA 2220)*	3
BSBA 3306	Business Law I	3
BSBA 3310	Business and Economics Statistics *(Pre-req MATH 1530 or higher)*	3
BSBA 3320	International Business *(Pre-reqs BSBA 2204, BSBA 2209, BISM 2211)*	3
BSBA 4415	Strategic Management & Policy *(Pre-reqs BSBA 3310, BSBA 3320, BISM 3200)*	3
BSBA 4420	Business Ethics and Corporate Responsibility *(Pre-req BSBA 3320, BISM 3200)*	3
BISM 1500	Business Information Tools *(Pre-req Math + BISM 1200)* **[formerly BISM 2200]**	3
BSBA 2800	Business & Digital Communications *(Pre-reqs BISM 1200 & ENGL 1102*)* [**formerly BISM 2800 Corp. Comm**.]	3
BISM 2000	Management Information Systems *(Pre-req BISM 2200)* [**formerly BISM 3200**]	3
MATH 1530	College Algebra (satisfies **Core Curriculum #5** Basic Skills)	3

Major Elective Courses (18 Credit Hours) [Electives are selected from a specific major or program]		
Course Prefix & Number	**Course Name**	**Credit Hours**
This Business concentration is flexible so that students may tailor their programs to their interests and professional goals. With guidance from a faculty advisor and approval by the Dean of the School of Business and Aviation, students will determine a program of 18 credit hours of 3000 or 4000 level business courses that will fulfill their needs and objectives.		

Total Core Curriculum Hours	**33-34**
Total Pre-Major	**0**
Total Required Major Courses	**45**
Total Electives (If applicable)	**18**
Total Free Electives	**24**
TOTAL CREDIT HOURS	**120**

APPENDIX B
B.S. Degree in Business Administration
Proposed Concentration in Data Analytics

Degree Requirements

Core Curriculum Courses For students in this major, list the courses satisfy both core curriculum and major requirements.		
Course Prefix & Number	**Course Name**	**Credit Hours**
BSBA 1100	Business Onboarding (recommended to satisfy **Core Curriculum #1** First Year Seminar)*	3
BISM 1200	Introduction to Computing (satisfies **Core Curriculum #11** Personal Development)	3
MATH 1530	College Algebra or Higher (satisfies **Core Curriculum #5** Basic Skills)	3-4
BSBA 2211	Principles of Macroeconomics (satisfies **Core Curriculum #9** Social Science)	3

***recommended course for BSBA majors; students may opt to take any of the courses in the approved Core Curriculum #1**

Required Major Courses (48 Credit Hours)		
Course Prefix & Number	**Course Name**	**Credit Hours**
BSBA 2204	Principles of Marketing	3
BSBA 2209	Principles of Management	3
BSBA 2211	Principles of Macroeconomics (satisfies **Core Curriculum #9** Social Science)	3
BSBA 2212	Principles of Microeconomics *(Pre-req BSBA 2211)*	3
BSBA 2220	Fundamentals of Accounting	3
BSBA 2221	Introduction to Financial Management *(Pre-req BSBA 2220)*	3
BSBA 3306	Business Law I	3
BSBA 3310	Business and Economics Statistics *(Pre-req MATH 1530 or higher)*	3
BSBA 3320	International Business *(Pre-reqs BSBA 2204, BSBA 2209, BISM 2211)*	3
BSBA 4415	Strategic Management & Policy *(Pre-reqs BSBA 3310, BSBA 3320, BISM 3200)*	3
BSBA 4420	Business Ethics and Corporate Responsibility *(Pre-req BSBA 3320, BISM 3200)*	3
BISM 1200*	Introduction to Computing (satisfies **Core Curriculum #11** Personal Development)	3
BISM 1500	Business Information Tools *(Pre-req Math + BISM 1200)* **[formerly BISM 2200]**	3
BSBA 2800	Business & Digital Communications *(Pre-reqs BISM 1200 & ENGL 1102*)* [**formerly BISM 2800 Corp. Comm**.]	3
BISM 2000	Management Information Systems *(Pre-req BISM 2200)* [**formerly BISM 3200**]	3
MATH 1530	College Algebra (satisfies **Core Curriculum #5** Basic Skills)	3

**BISM 1200 is currently being proposed as an added requirement to the Business Core through a separate curriculum proposal.*

Major Elective Courses - Concentration Requirements (18 Credit Hours) [Electives are selected from a specific major or program]		
Course Prefix & Number	**Course Name**	**Credit Hours**
BISM 3000	Business Programming Logic	3
BISM 3300	Information Systems & Data Analytics for Managers	3
BISM 3400	Database Design & Development	3
BISM 4300	Business Intelligence	3
MGMT 4409	Quantitative Management	3
BISM 4998	Undergraduate Research (*Data Analytics Capstone Experience*)	3

Total Core Curriculum Hours	**33-34**
Total Pre-Major	**0**
Total Required Major Courses	**48**
Total Electives (If applicable)	**18**
Total Free Electives	**21**
TOTAL CREDIT HOURS	**120**

APPENDIX C

School of Business & Aviation ~ Data Analytics Concentration Proposal

Year/Semester	Course	Pre-reqs	Topics
Freshman	BISM 1200 Introduction to Information Systems	N/A	Data Analytic Tools: Intro to Excel
Sophomore	BISM 1500 Business Information Tools	BISM 1200 and MATH ACT 19 or MATH 1430 or higher	Data Analytics Tools: Intermediate Excel Skills Intro to DB
Junior	BISM 3000 Business Programming Logic	BISM 1500	Python
Junior	BISM 3300 Information Systems & Data Analytics for Managers	N/A	Introductory Concepts: Types of Business Analytics Types of Data Big Data Data Visualization Data Tools: Visualization
Junior	BISM 3400 Database Design & Development	BISM 1500	Data Analytic Tools: Intermediate DB Skills
Junior/Senior	BSBA 3310 Statistics	MATH 1430 or higher	Descriptive & Predictive Analytics
Junior/Senior	BISM 4300 Business Intelligence	Instructor Approval	Data Warehouse Architecture Data Analytic Tools
Senior	MGMT 4409 Quantitative Management	BISM 1500 and BSBA 3310	Data Modeling and Decision-making under Uncertainty Monte Carlo Simulation
Senior	BISM 4998 Undergraduate Research *(Data Analytics Capstone Experience)*	Instructor Approval	Capstone Project

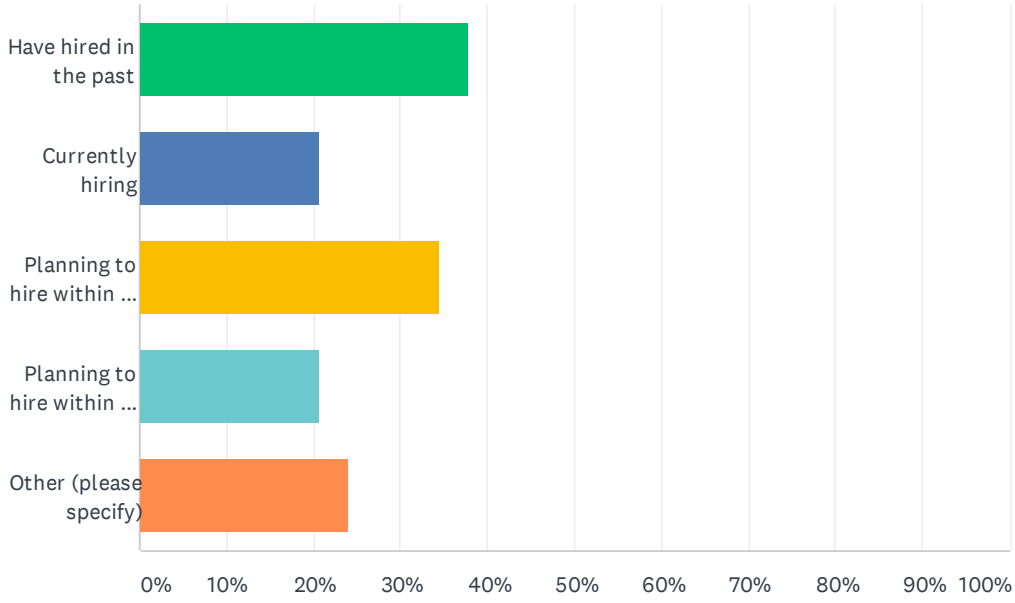
Note: Shaded cells represent current course requirements for the BSBA.

Appendix

Data Analytics Survey Results – Local 29

Q1 Data Analytics is a discipline, still somewhat loosely defined, that uses varying degrees of statistics, data visualizations, computer programming, data mining, machine learning, and database engineering to solve complex data problems. What is the status of your organization with respect to hiring data analysts? (Check all that apply.)

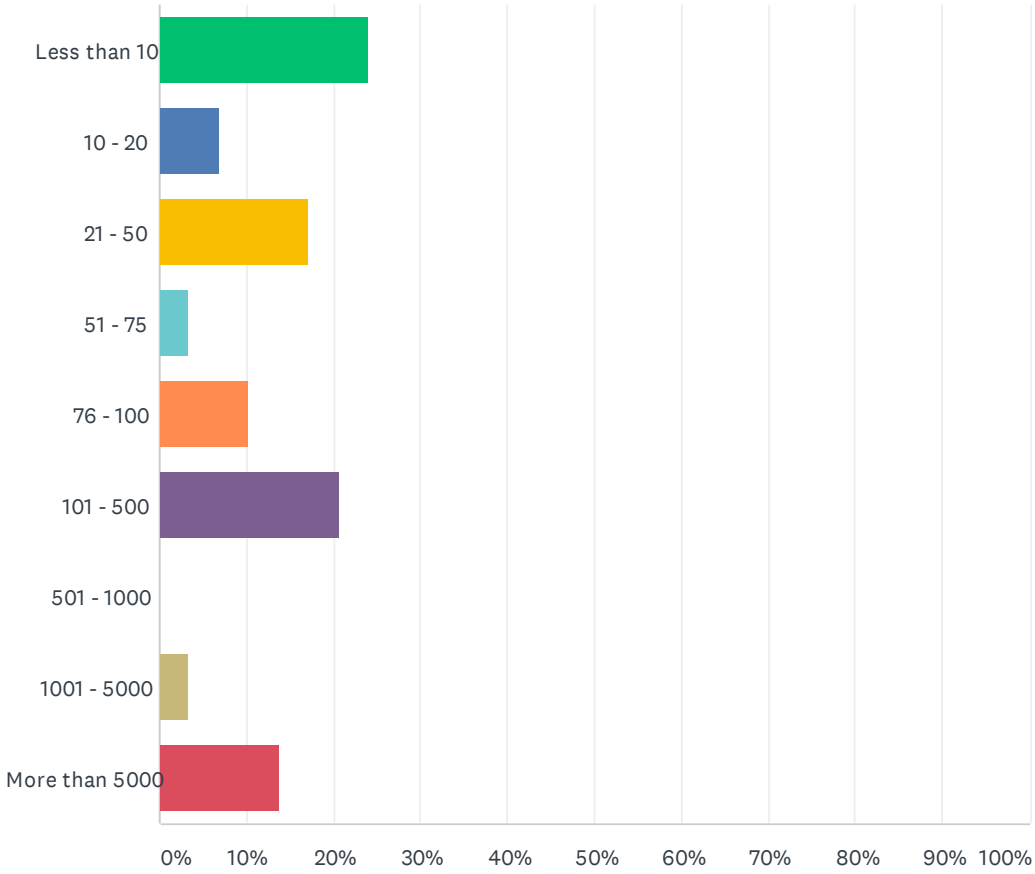
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
Have hired in the past	37.93%	11
Currently hiring	20.69%	6
Planning to hire within the next 1 - 2 years	34.48%	10
Planning to hire within the next 3 - 5 years	20.69%	6
Other (please specify)	24.14%	7
Total Respondents: 29		

Q2 Select the approximate size of your organization:

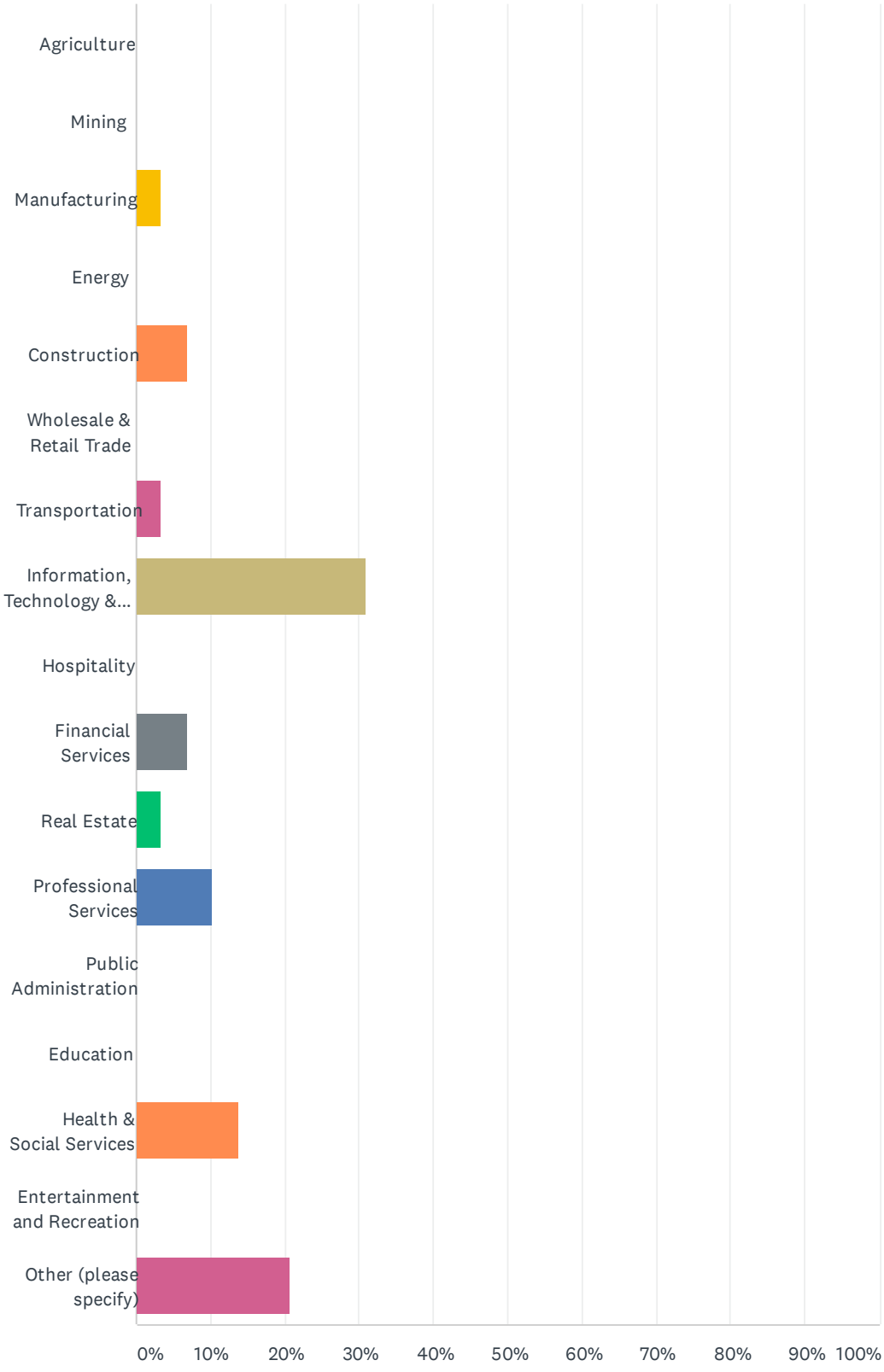
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
Less than 10	24.14%	7
10 - 20	6.90%	2
21 - 50	17.24%	5
51 - 75	3.45%	1
76 - 100	10.34%	3
101 - 500	20.69%	6
501 - 1000	0.00%	0
1001 - 5000	3.45%	1
More than 5000	13.79%	4
TOTAL		29

Q3 What industry best represents your organization?

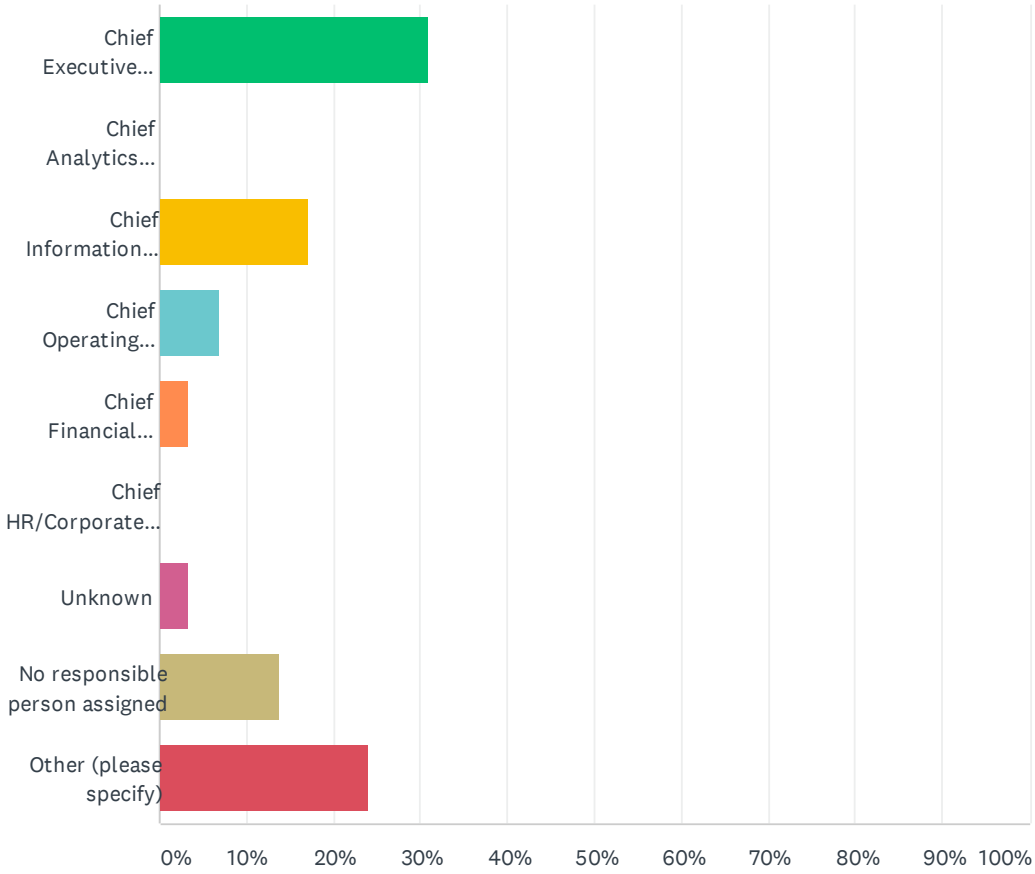
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
Agriculture	0.00%	0
Mining	0.00%	0
Manufacturing	3.45%	1
Energy	0.00%	0
Construction	6.90%	2
Wholesale & Retail Trade	0.00%	0
Transportation	3.45%	1
Information, Technology & Communication	31.03%	9
Hospitality	0.00%	0
Financial Services	6.90%	2
Real Estate	3.45%	1
Professional Services	10.34%	3
Public Administration	0.00%	0
Education	0.00%	0
Health & Social Services	13.79%	4
Entertainment and Recreation	0.00%	0
Other (please specify)	20.69%	6
TOTAL		29

Q4 The executive with overall responsibility for data analytics is:

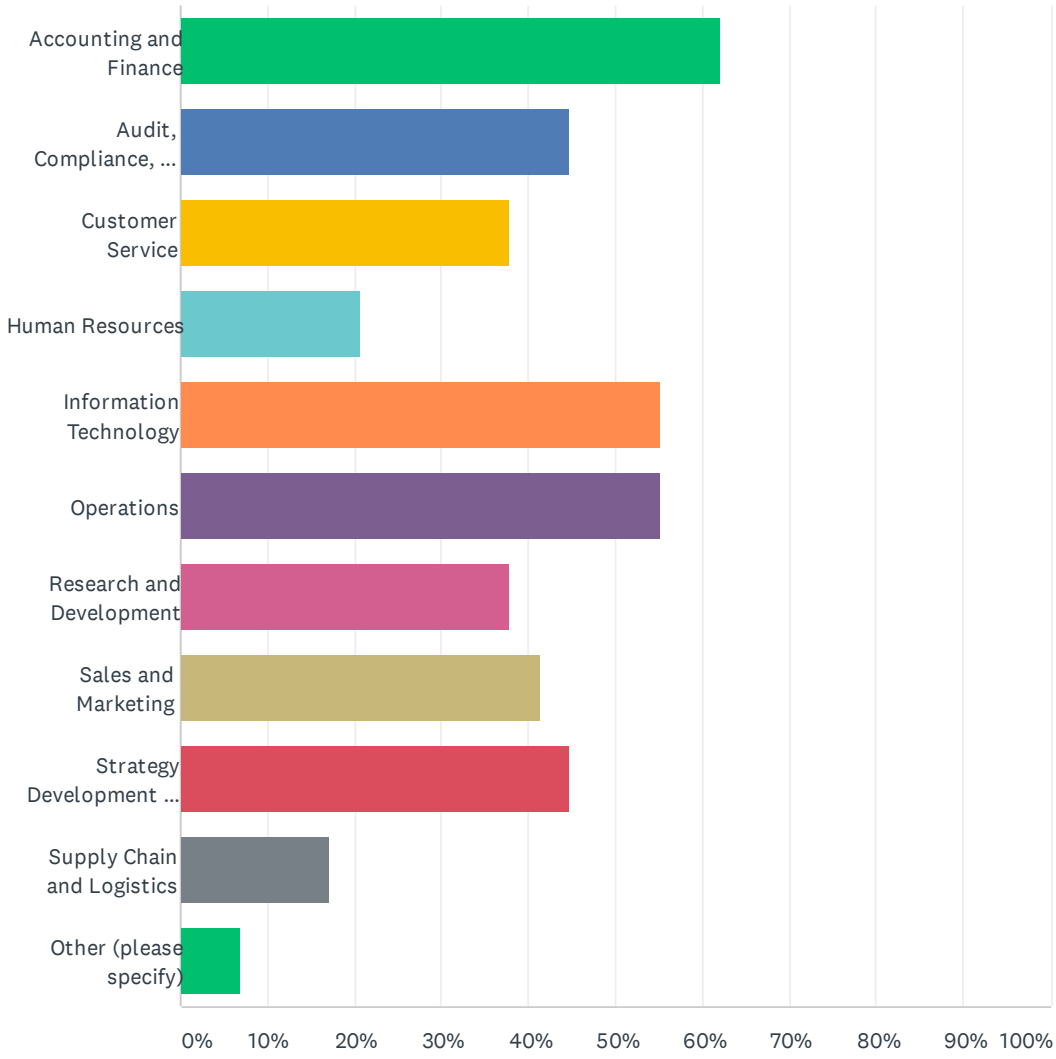
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
Chief Executive Officer	31.03%	9
Chief Analytics Officer	0.00%	0
Chief Information Officer	17.24%	5
Chief Operating Officer	6.90%	2
Chief Financial Officer	3.45%	1
Chief HR/Corporate Affairs Officer	0.00%	0
Unknown	3.45%	1
No responsible person assigned	13.79%	4
Other (please specify)	24.14%	7
TOTAL		29

Q5 Which of the following functions are supported with analytics at your organization? (Check all that apply.)

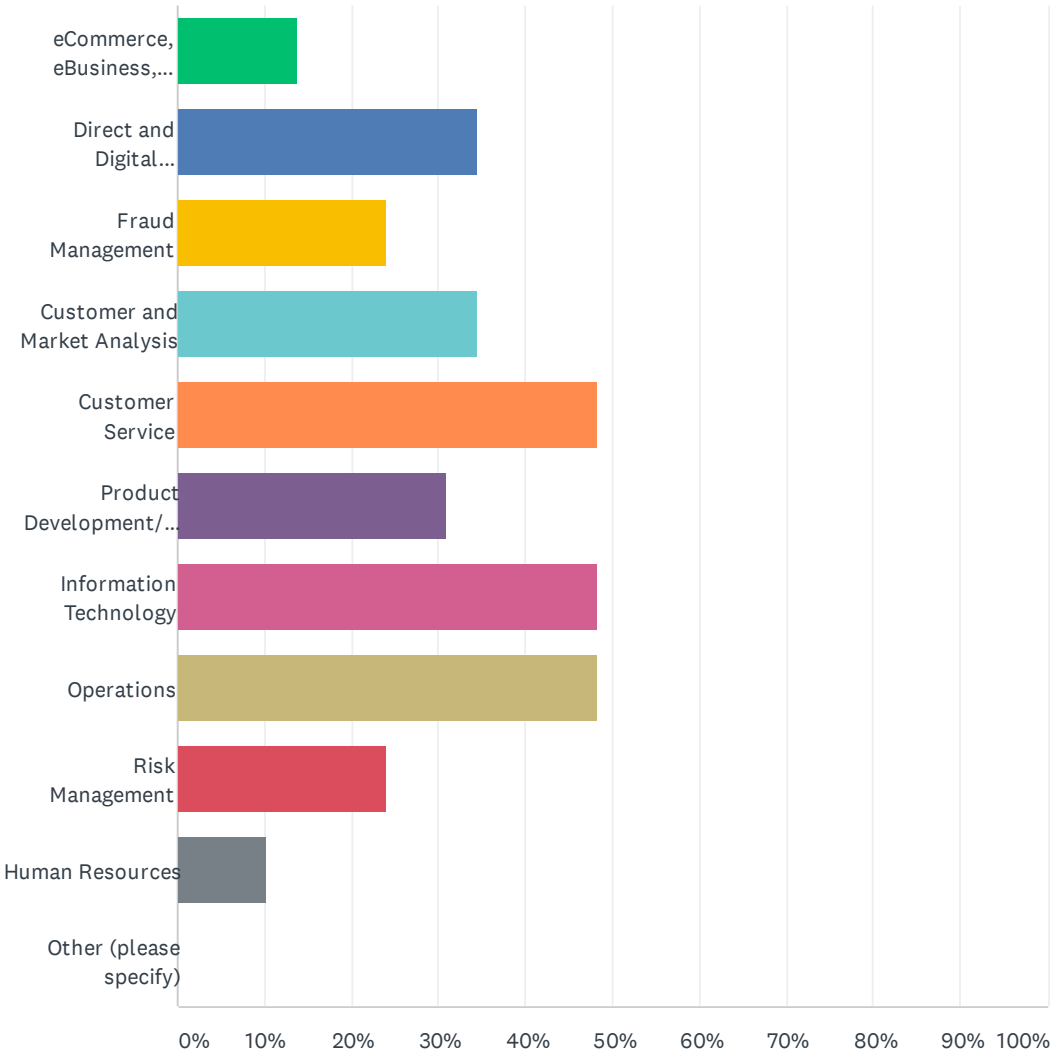
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
Accounting and Finance	62.07%	18
Audit, Compliance, and Risk	44.83%	13
Customer Service	37.93%	11
Human Resources	20.69%	6
Information Technology	55.17%	16
Operations	55.17%	16
Research and Development	37.93%	11
Sales and Marketing	41.38%	12
Strategy Development and Execution	44.83%	13
Supply Chain and Logistics	17.24%	5
Other (please specify)	6.90%	2
Total Respondents: 29		

Q6 What business functions in your company are the most important users of data and analytics? (Check all that apply)

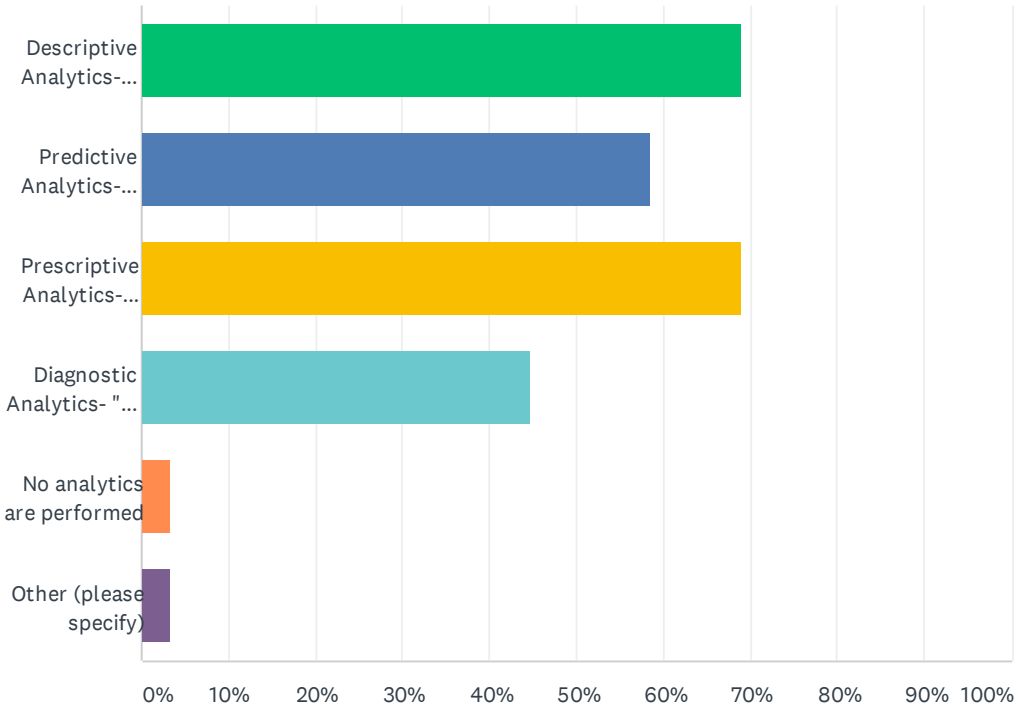
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
eCommerce, eBusiness, Digital Operations	13.79%	4
Direct and Digital Marketing	34.48%	10
Fraud Management	24.14%	7
Customer and Market Analysis	34.48%	10
Customer Service	48.28%	14
Product Development/Management	31.03%	9
Information Technology	48.28%	14
Operations	48.28%	14
Risk Management	24.14%	7
Human Resources	10.34%	3
Other (please specify)	0.00%	0
Total Respondents: 29		

Q7 What types of analytics are performed within your organization? (Check all that apply.)

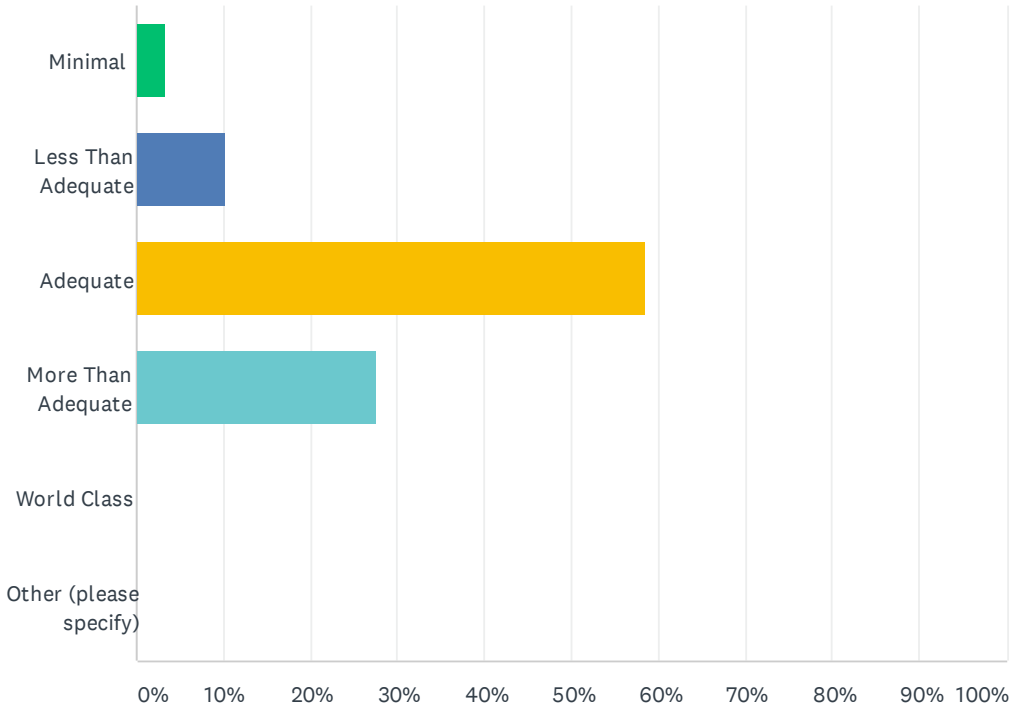
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
Descriptive Analytics- "What happened?"	68.97%	20
Predictive Analytics- "What's likely to happen?"	58.62%	17
Prescriptive Analytics- "What should we do given what's happened or what's likely to happen?"	68.97%	20
Diagnostic Analytics- "Why did it happen"	44.83%	13
No analytics are performed	3.45%	1
Other (please specify)	3.45%	1
Total Respondents: 29		

Q8 How would you rate the access to relevant, accurate, and timely data in your company?

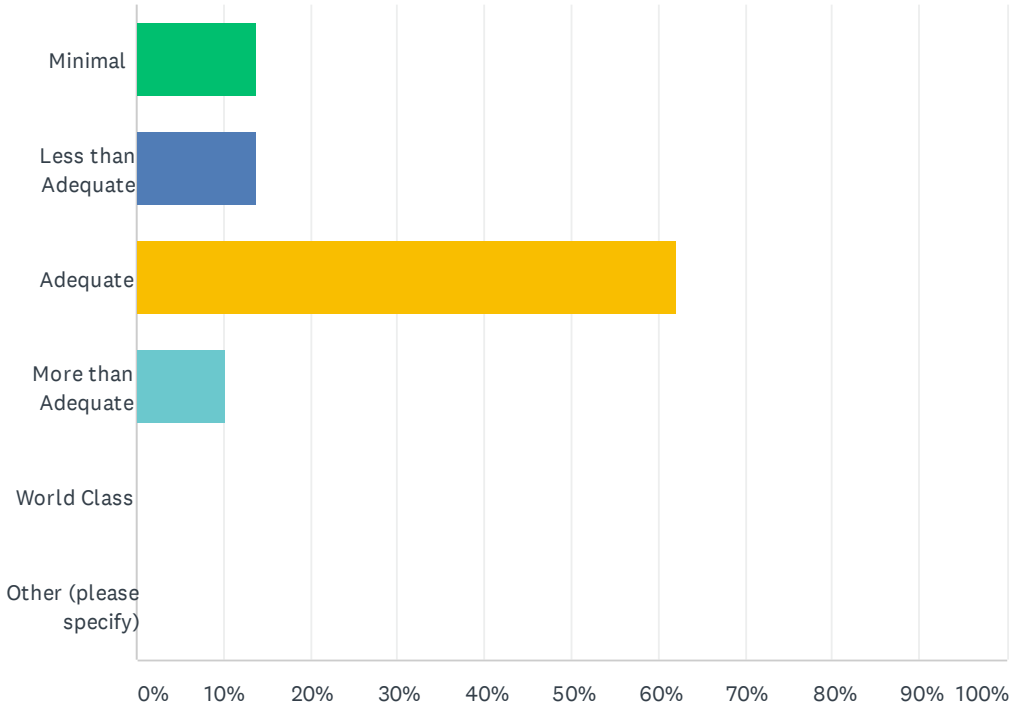
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
Minimal	3.45%	1
Less Than Adequate	10.34%	3
Adequate	58.62%	17
More Than Adequate	27.59%	8
World Class	0.00%	0
Other (please specify)	0.00%	0
TOTAL		29

Q9 How would you rate the analytic capabilities in your company today?

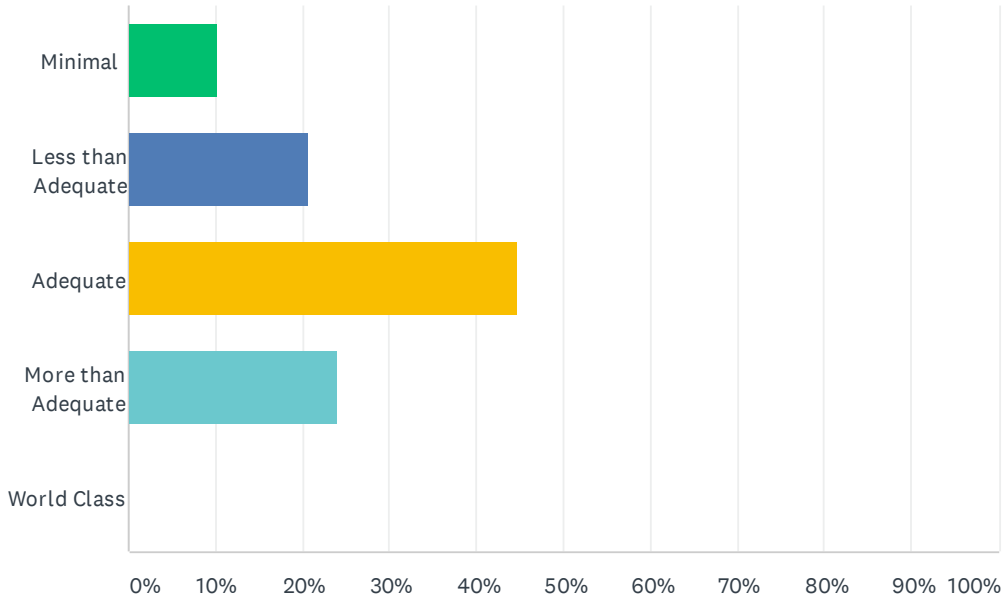
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
Minimal	13.79%	4
Less than Adequate	13.79%	4
Adequate	62.07%	18
More than Adequate	10.34%	3
World Class	0.00%	0
Other (please specify)	0.00%	0
TOTAL		29

Q10 How would you rate your company on the ability, by executives and business leaders, to use data and analytics to improve or transform the business?

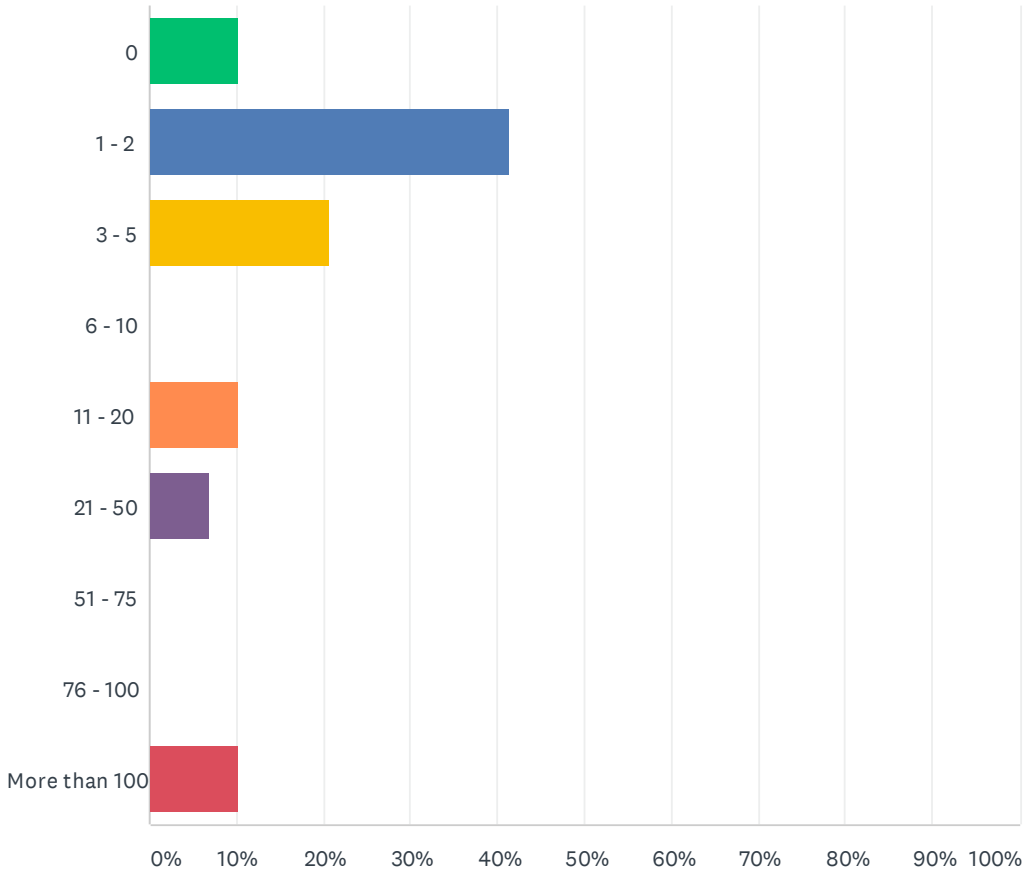
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
Minimal	10.34%	3
Less than Adequate	20.69%	6
Adequate	44.83%	13
More than Adequate	24.14%	7
World Class	0.00%	0
TOTAL		29

Q11 Approximately how many staff in your company are dedicated to analytics, modeling, data mining (not including routine reporting)?

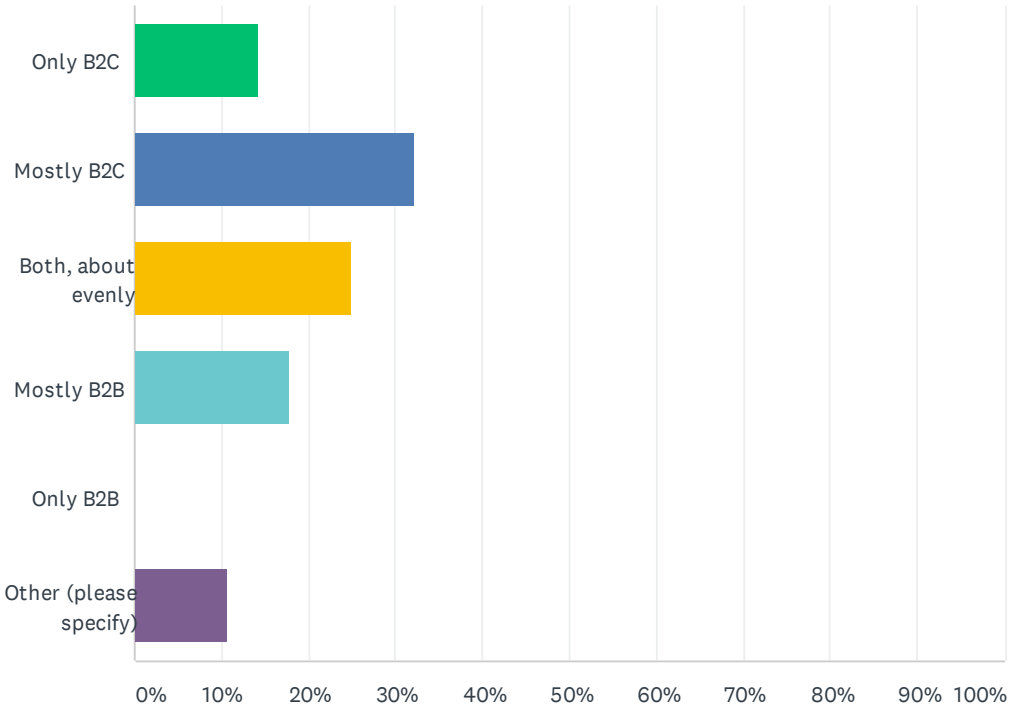
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
0	10.34%	3
1 - 2	41.38%	12
3 - 5	20.69%	6
6 - 10	0.00%	0
11 - 20	10.34%	3
21 - 50	6.90%	2
51 - 75	0.00%	0
76 - 100	0.00%	0
More than 100	10.34%	3
TOTAL		29

Q12 Of these staff, are most working in or for your consumer facing businesses (B2C), your commercial or wholesale businesses (B2B), or both?

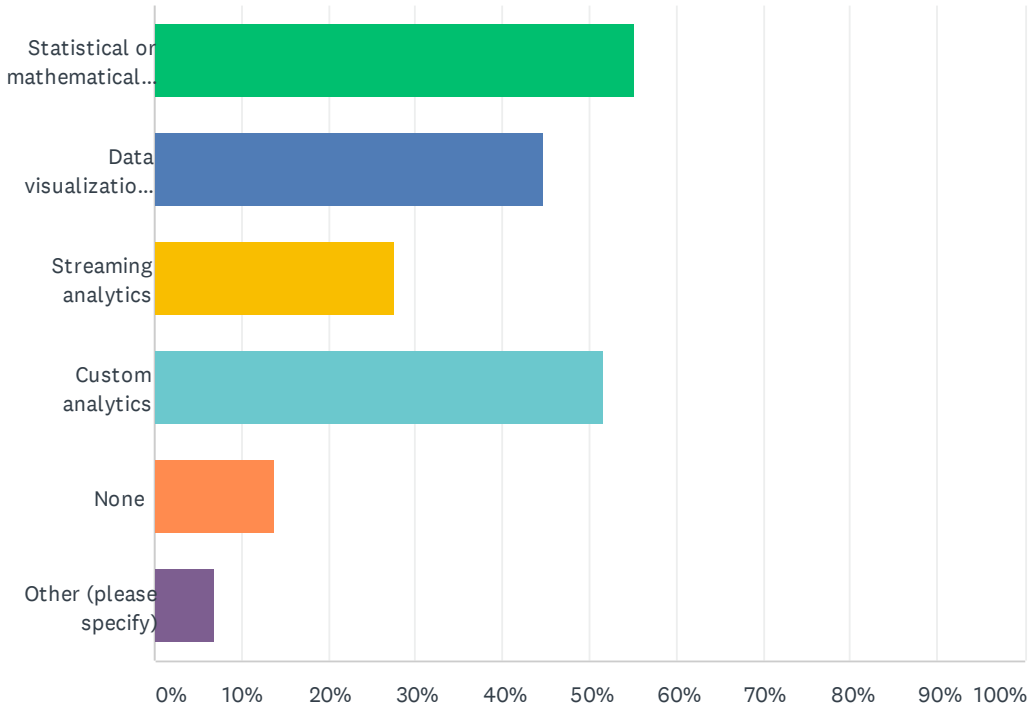
Answered: 28 Skipped: 1



ANSWER CHOICES	RESPONSES	
Only B2C	14.29%	4
Mostly B2C	32.14%	9
Both, about evenly	25.00%	7
Mostly B2B	17.86%	5
Only B2B	0.00%	0
Other (please specify)	10.71%	3
TOTAL		28

Q13 What types of analytics products are you using or considering? (Check all that apply)

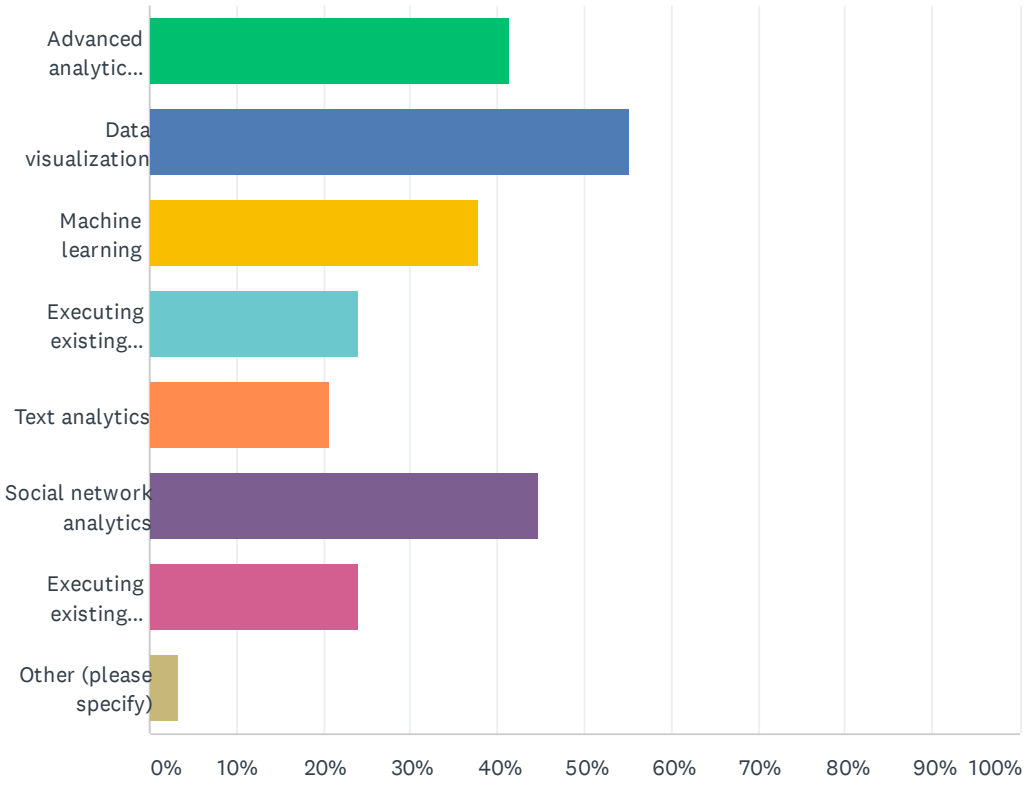
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
Statistical or mathematical packages	55.17%	16
Data visualization products	44.83%	13
Streaming analytics	27.59%	8
Custom analytics	51.72%	15
None	13.79%	4
Other (please specify)	6.90%	2
Total Respondents: 29		

Q14 What analytic functions/features are most important to you? (Check all that apply)

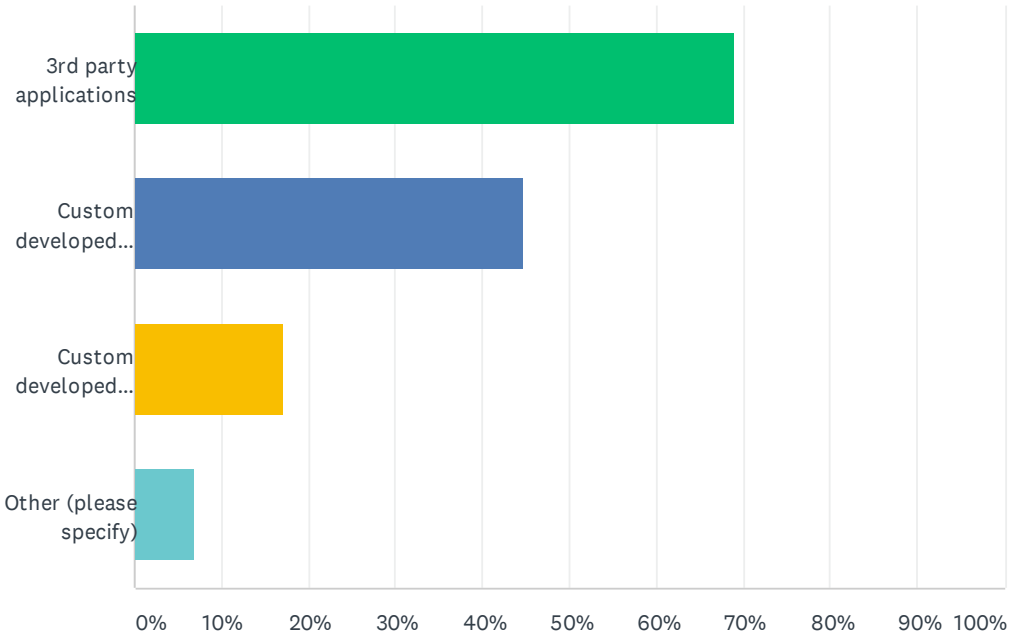
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
Advanced analytic algorithms	41.38%	12
Data visualization	55.17%	16
Machine learning	37.93%	11
Executing existing algorithms faster	24.14%	7
Text analytics	20.69%	6
Social network analytics	44.83%	13
Executing existing algorithms on much larger data sets	24.14%	7
Other (please specify)	3.45%	1
Total Respondents: 29		

Q15 Do you use or plan to use 3rd party applications or develop your own? (Check all that apply)

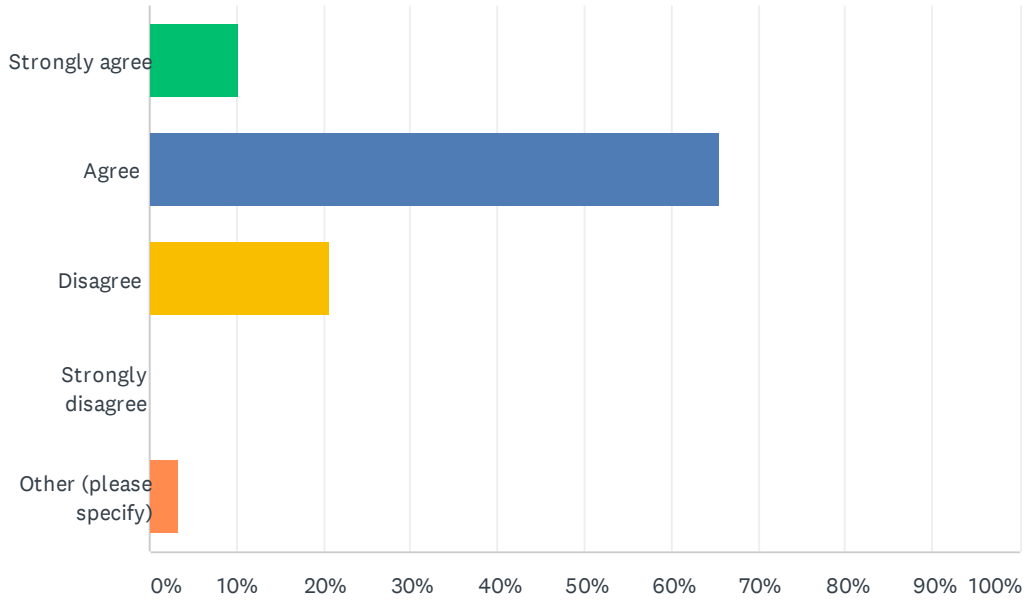
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
3rd party applications	68.97%	20
Custom developed in-house	44.83%	13
Custom developed through partner	17.24%	5
Other (please specify)	6.90%	2
Total Respondents: 29		

Q16 We have implemented a data analytics platform which is delivering actionable insights:

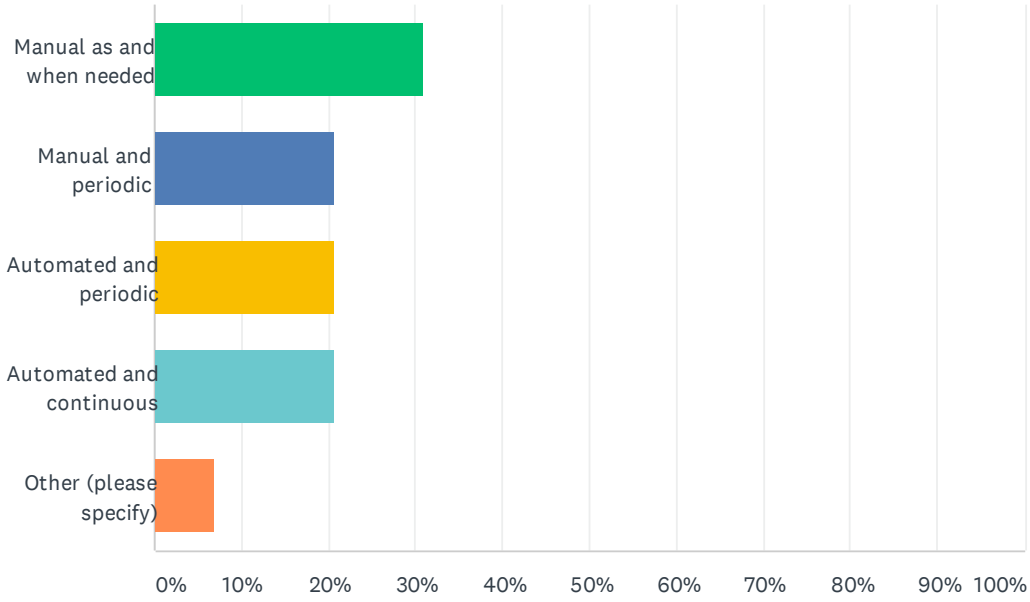
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
Strongly agree	10.34%	3
Agree	65.52%	19
Disagree	20.69%	6
Strongly disagree	0.00%	0
Other (please specify)	3.45%	1
TOTAL		29

Q17 The execution of our analytics is:

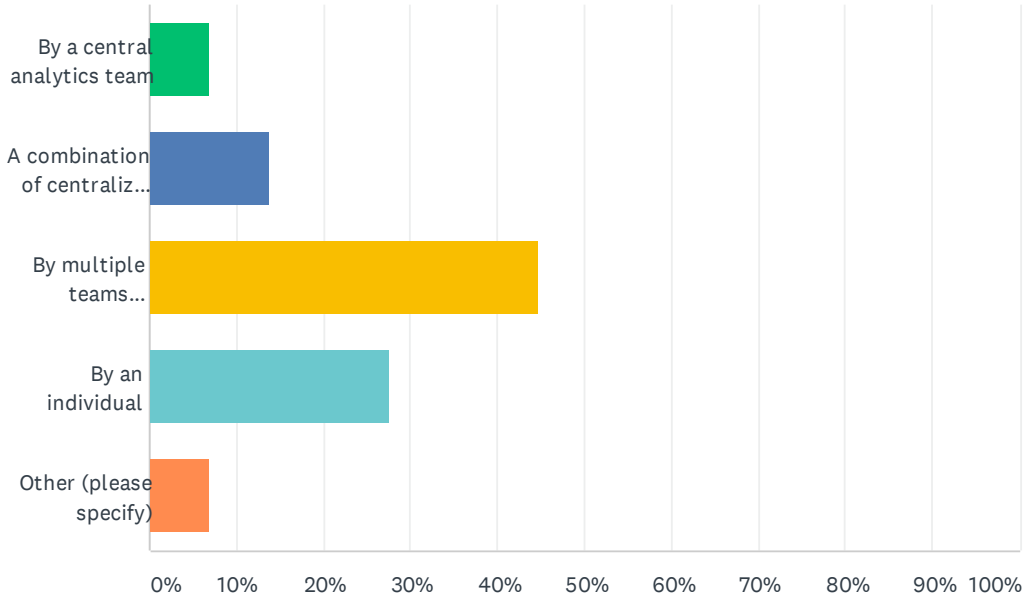
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
Manual as and when needed	31.03%	9
Manual and periodic	20.69%	6
Automated and periodic	20.69%	6
Automated and continuous	20.69%	6
Other (please specify)	6.90%	2
TOTAL		29

Q18 Data analytics are performed:

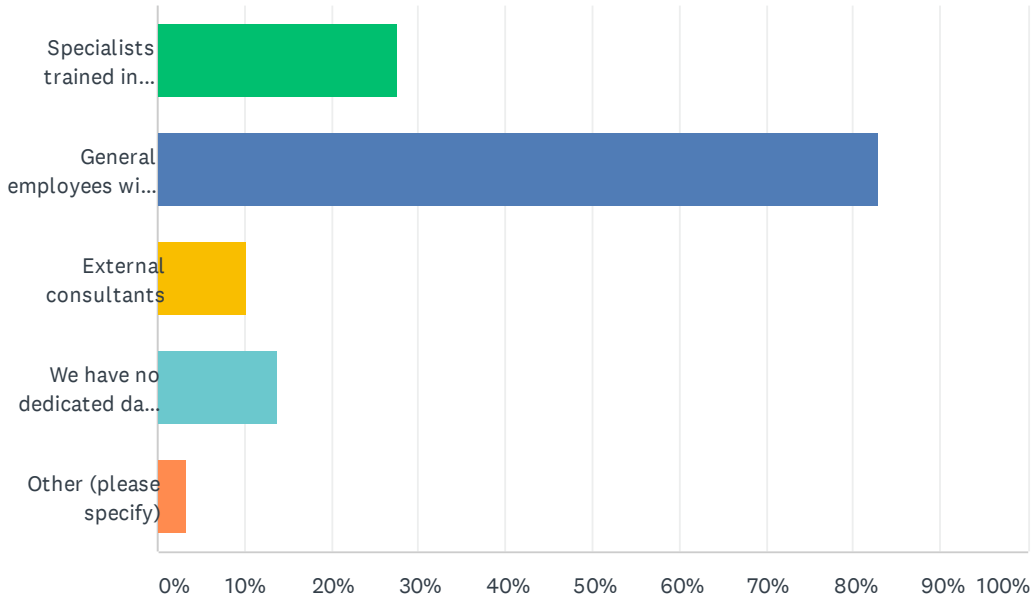
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
By a central analytics team	6.90%	2
A combination of centralized and decentralized teams	13.79%	4
By multiple teams throughout the organization	44.83%	13
By an individual	27.59%	8
Other (please specify)	6.90%	2
TOTAL		29

Q19 Which of the following best represents the data analysts at your organization? (Check all that apply.)

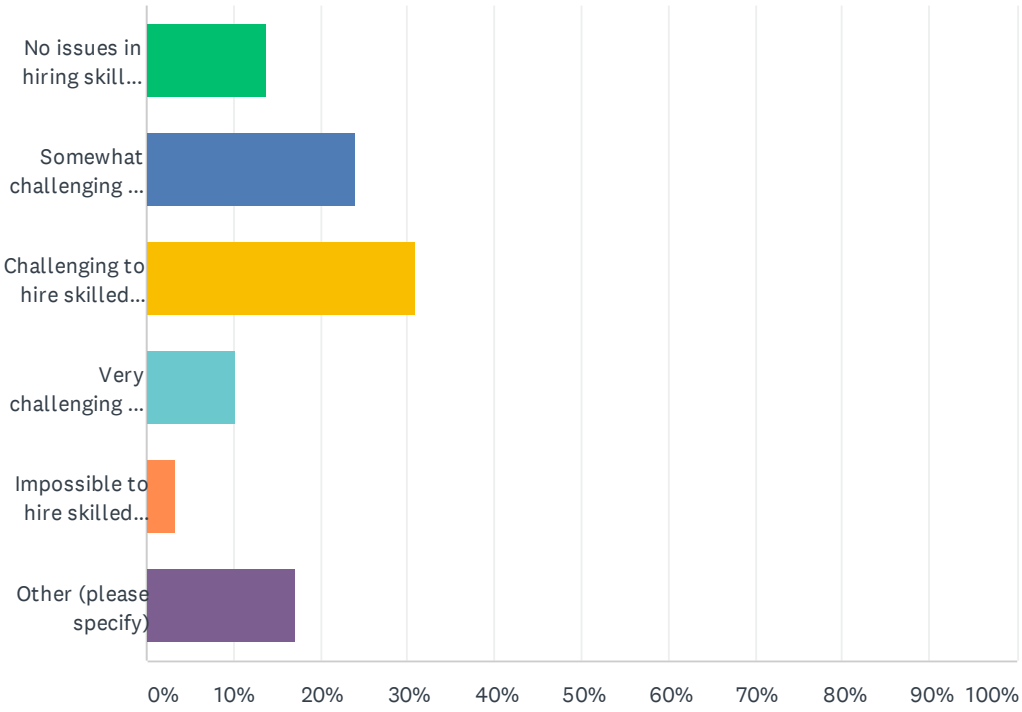
Answered: 29 Skipped: 0



ANSWER CHOICES	RESPONSES	
Specialists trained in analytics	27.59%	8
General employees with analytical capabilities	82.76%	24
External consultants	10.34%	3
We have no dedicated data analysts	13.79%	4
Other (please specify)	3.45%	1
Total Respondents: 29		

Q20 How challenging has it been to source data analytic skills in general for your organization?

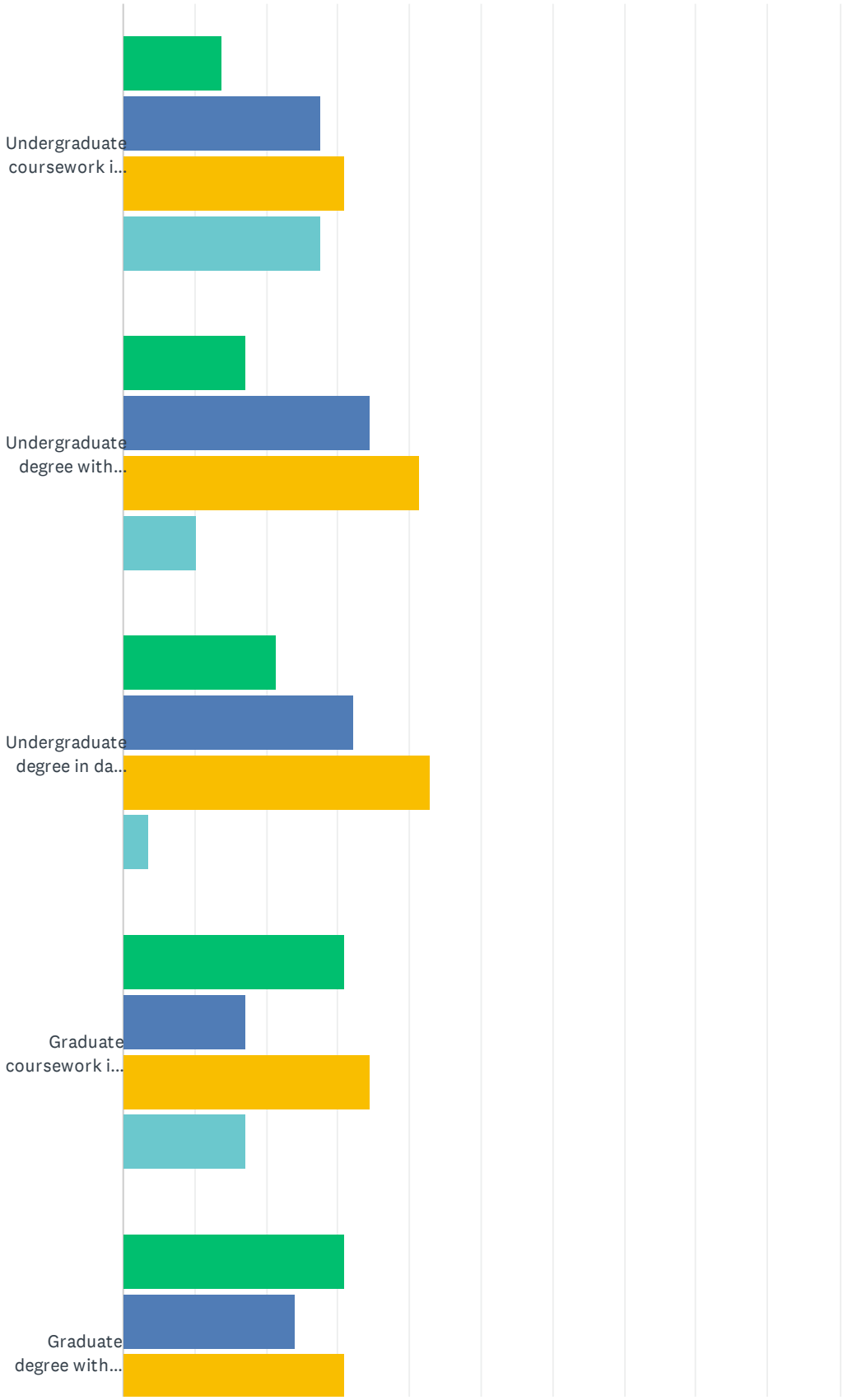
Answered: 29 Skipped: 0

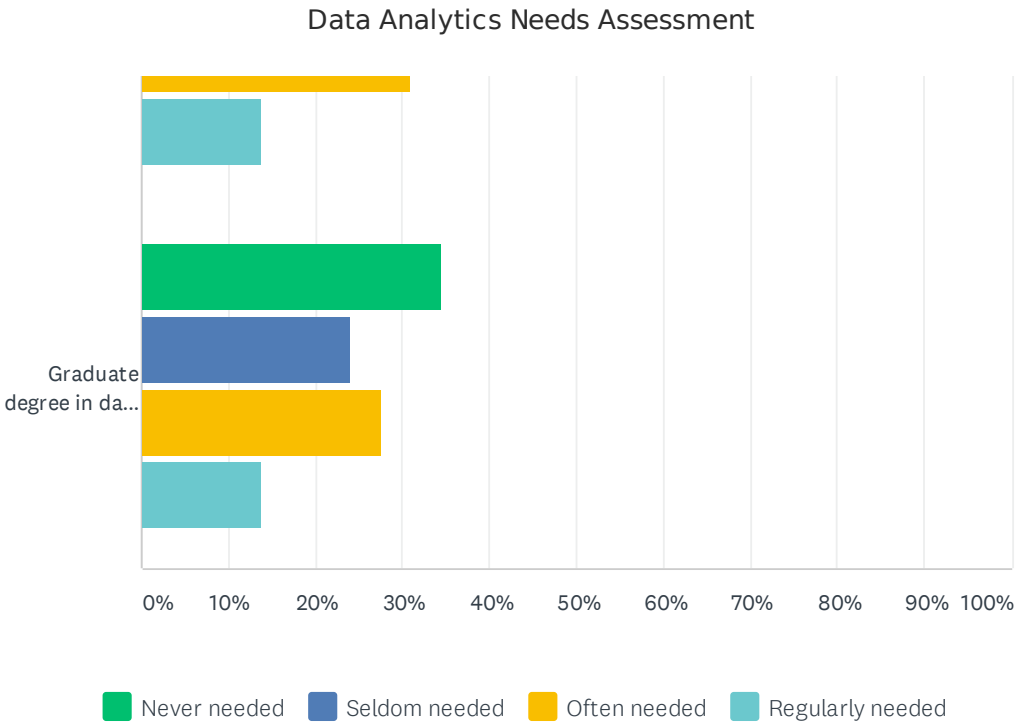


ANSWER CHOICES	RESPONSES	
No issues in hiring skilled resources	13.79%	4
Somewhat challenging to hire skilled resources	24.14%	7
Challenging to hire skilled resources	31.03%	9
Very challenging to hire skilled resources	10.34%	3
Impossible to hire skilled resources	3.45%	1
Other (please specify)	17.24%	5
TOTAL		29

Q21 Please rank the data analytic education needs at your organization.

Answered: 29 Skipped: 0





	NEVER NEEDED	SELDOM NEEDED	OFTEN NEEDED	REGULARLY NEEDED	TOTAL RESPONDENTS
Undergraduate coursework in data analytics	13.79% 4	27.59% 8	31.03% 9	27.59% 8	29
Undergraduate degree with data analytics concentration	17.24% 5	34.48% 10	41.38% 12	10.34% 3	29
Undergraduate degree in data analytics	21.43% 6	32.14% 9	42.86% 12	3.57% 1	28
Graduate coursework in data analytics	31.03% 9	17.24% 5	34.48% 10	17.24% 5	29
Graduate degree with data analytics concentration	31.03% 9	24.14% 7	31.03% 9	13.79% 4	29
Graduate degree in data analytics	34.48% 10	24.14% 7	27.59% 8	13.79% 4	29

Q22 Please provide any additional feedback with respect to data analytic needs in industry that should be considered for program development in higher education.

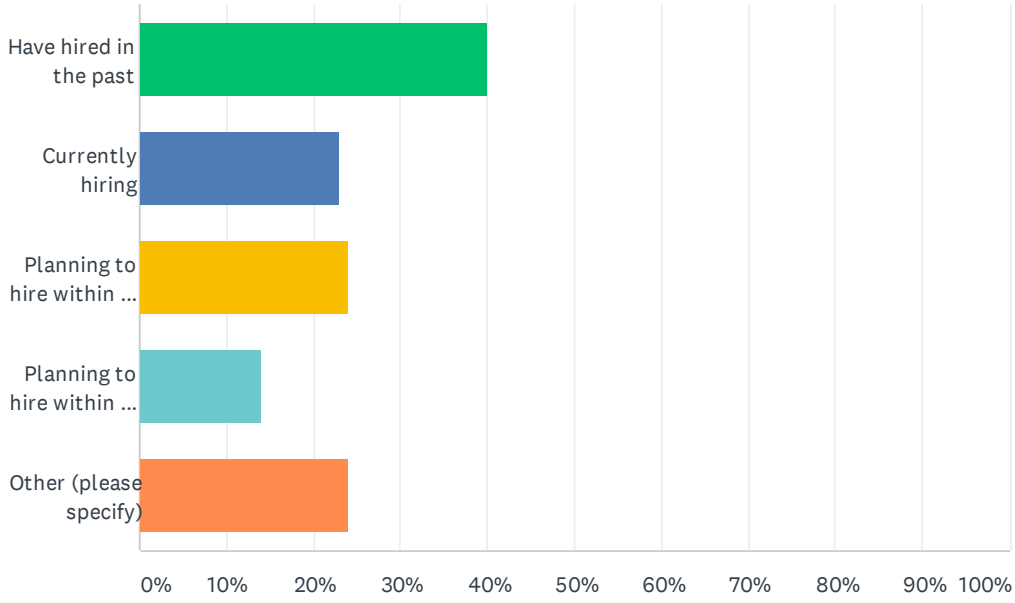
Answered: 9 Skipped: 20

Appendix

Data Analytics Survey Results – Survey Monkey 100

Q1 Data Analytics is a discipline, still somewhat loosely defined, that uses varying degrees of statistics, data visualizations, computer programming, data mining, machine learning, and database engineering to solve complex data problems. What is the status of your organization with respect to hiring data analysts? (Check all that apply.)

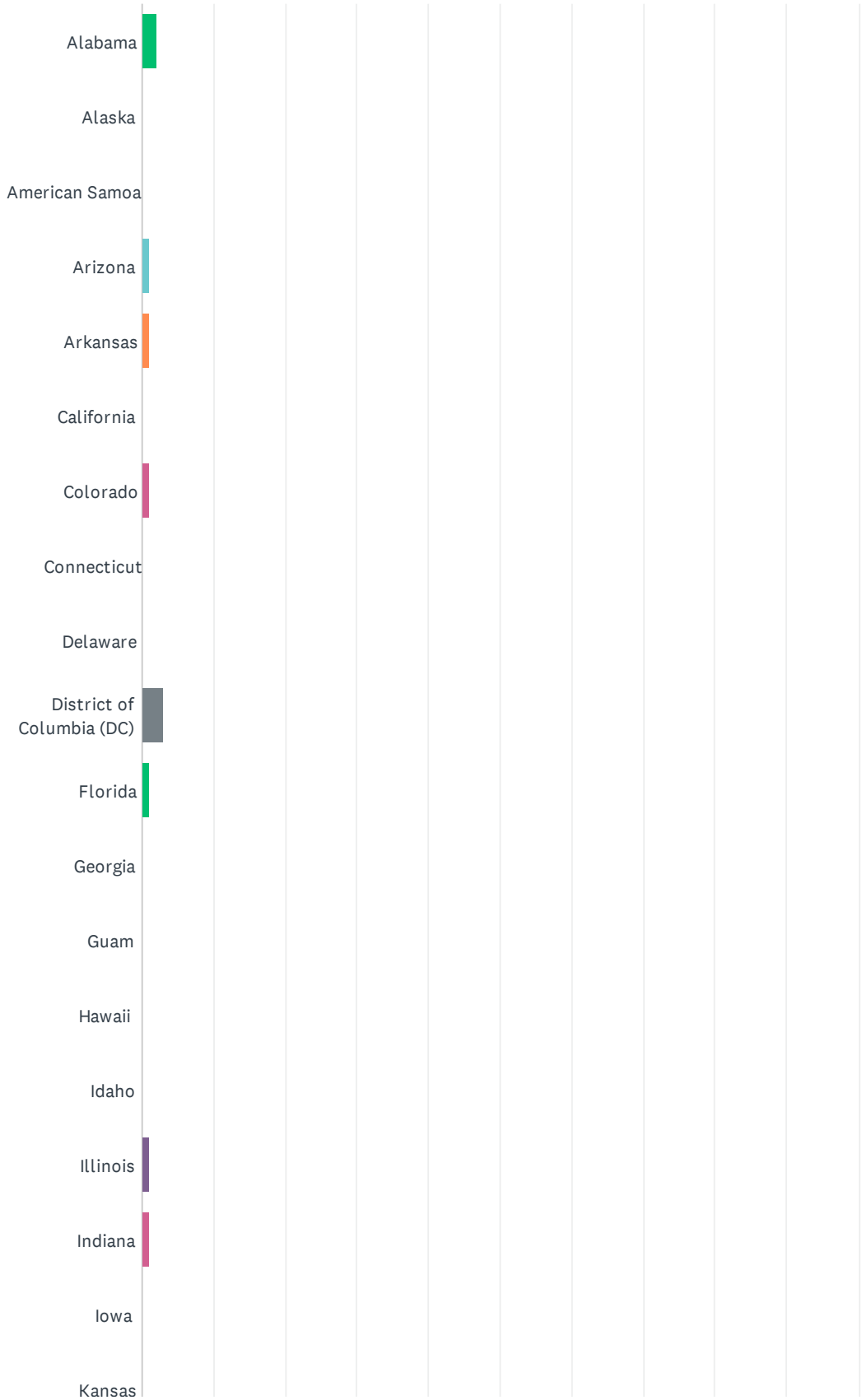
Answered: 100 Skipped: 0

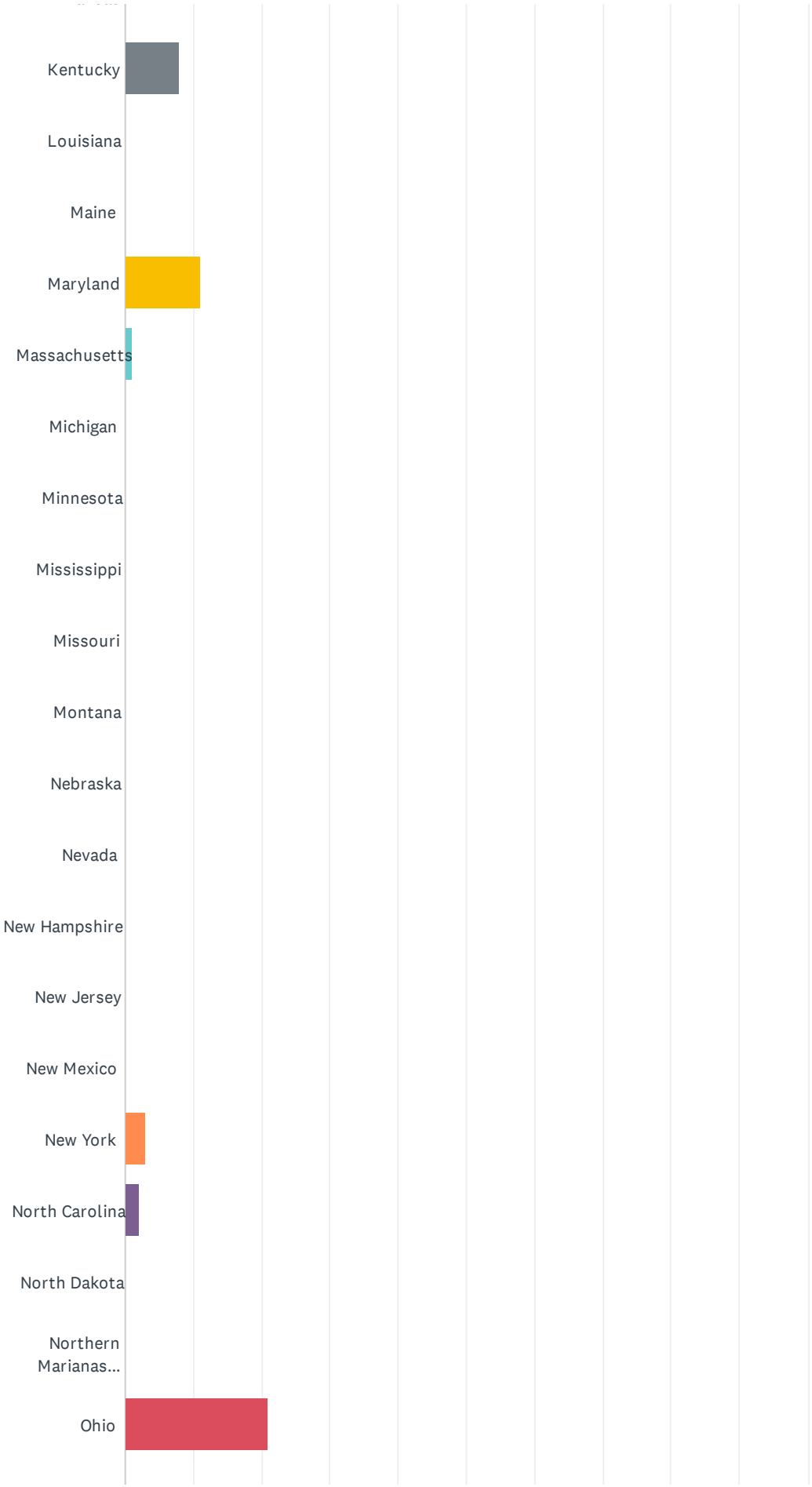


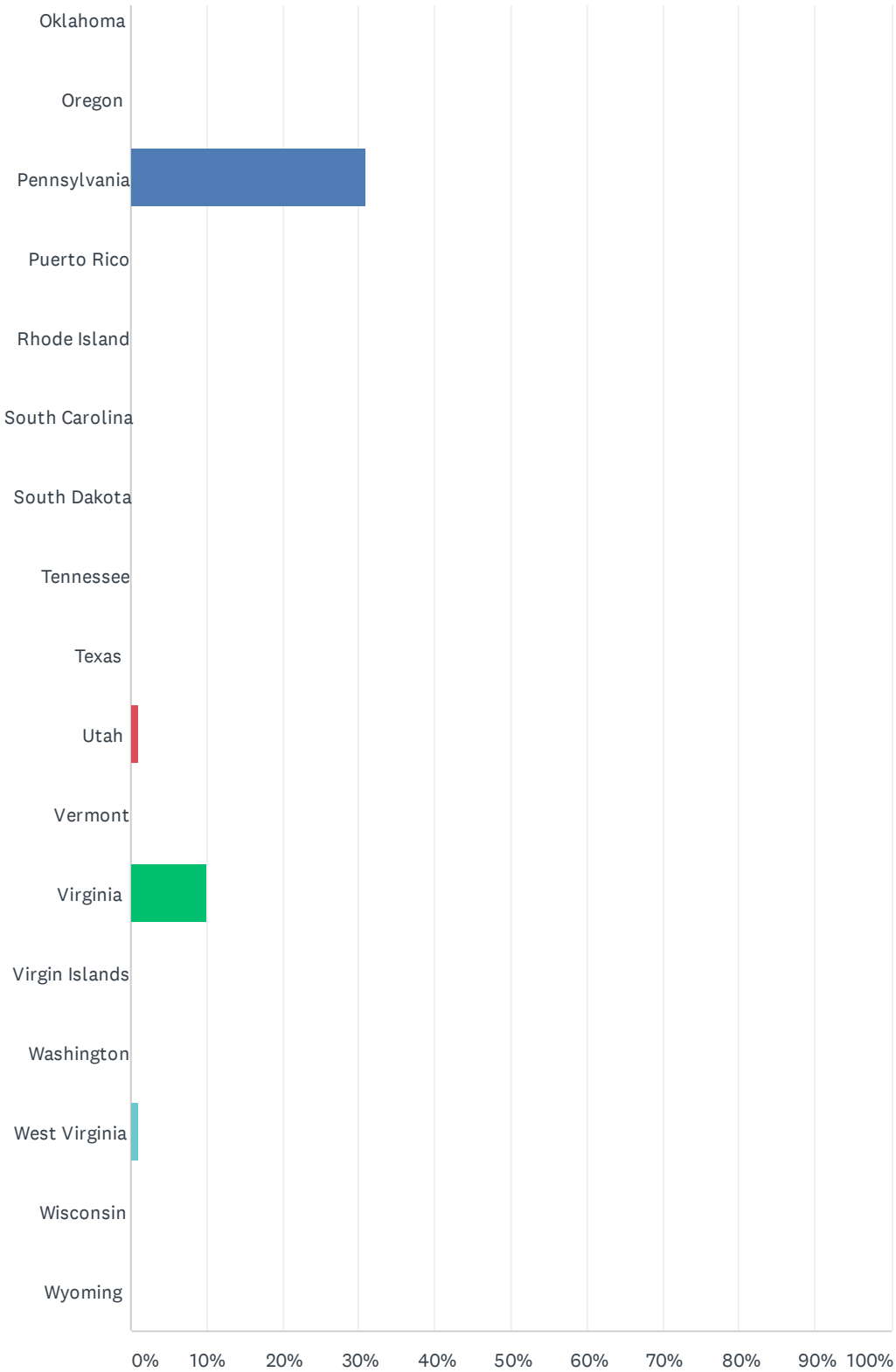
ANSWER CHOICES	RESPONSES	
Have hired in the past	40.00%	40
Currently hiring	23.00%	23
Planning to hire within the next 1 - 2 years	24.00%	24
Planning to hire within the next 3 - 5 years	14.00%	14
Other (please specify)	24.00%	24
Total Respondents: 100		

Q2 In what state or U.S. territory is your organization located?

Answered: 100 Skipped: 0




Kentucky
Louisiana
Maine
Maryland
Massachusetts
Michigan
Minnesota
Mississippi
Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
North Carolina
North Dakota
Northern Marianas...
Ohio

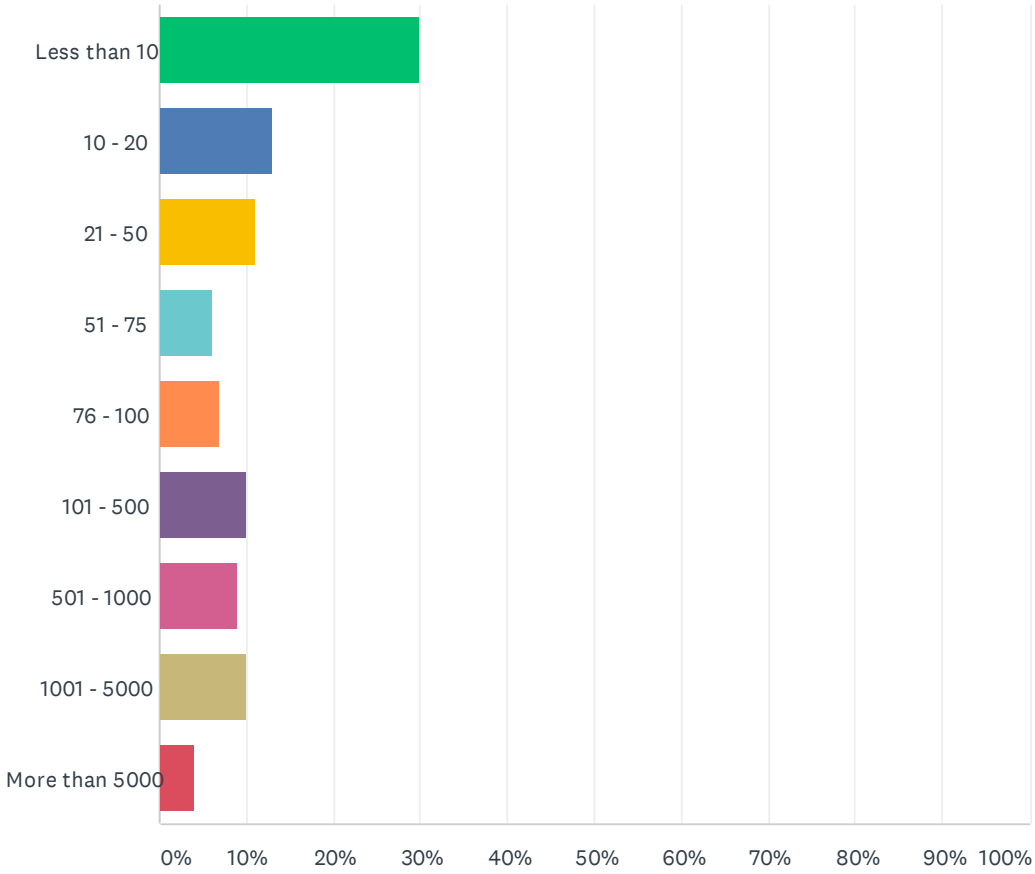

Oklahoma
Oregon
Pennsylvania
Puerto Rico
Rhode Island
South Carolina
South Dakota
Tennessee
Texas
Utah
Vermont
Virginia
Virgin Islands
Washington
West Virginia
Wisconsin
Wyoming
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

ANSWER CHOICES	RESPONSES	
Alabama	2.00%	2
Alaska	0.00%	0
American Samoa	0.00%	0
Arizona	1.00%	1
Arkansas	1.00%	1
California	0.00%	0
Colorado	1.00%	1
Connecticut	0.00%	0
Delaware	0.00%	0
District of Columbia (DC)	3.00%	3
Florida	1.00%	1
Georgia	0.00%	0
Guam	0.00%	0
Hawaii	0.00%	0
Idaho	0.00%	0
Illinois	1.00%	1
Indiana	1.00%	1
Iowa	0.00%	0
Kansas	0.00%	0
Kentucky	8.00%	8
Louisiana	0.00%	0
Maine	0.00%	0
Maryland	11.00%	11
Massachusetts	1.00%	1
Michigan	0.00%	0
Minnesota	0.00%	0
Mississippi	0.00%	0
Missouri	0.00%	0
Montana	0.00%	0
Nebraska	0.00%	0
Nevada	0.00%	0
New Hampshire	0.00%	0

New Jersey	0.00%	0
New Mexico	0.00%	0
New York	3.00%	3
North Carolina	2.00%	2
North Dakota	0.00%	0
Northern Marianas Islands	0.00%	0
Ohio	21.00%	21
Oklahoma	0.00%	0
Oregon	0.00%	0
Pennsylvania	31.00%	31
Puerto Rico	0.00%	0
Rhode Island	0.00%	0
South Carolina	0.00%	0
South Dakota	0.00%	0
Tennessee	0.00%	0
Texas	0.00%	0
Utah	1.00%	1
Vermont	0.00%	0
Virginia	10.00%	10
Virgin Islands	0.00%	0
Washington	0.00%	0
West Virginia	1.00%	1
Wisconsin	0.00%	0
Wyoming	0.00%	0
TOTAL		100

Q3 Select the approximate size of your organization:

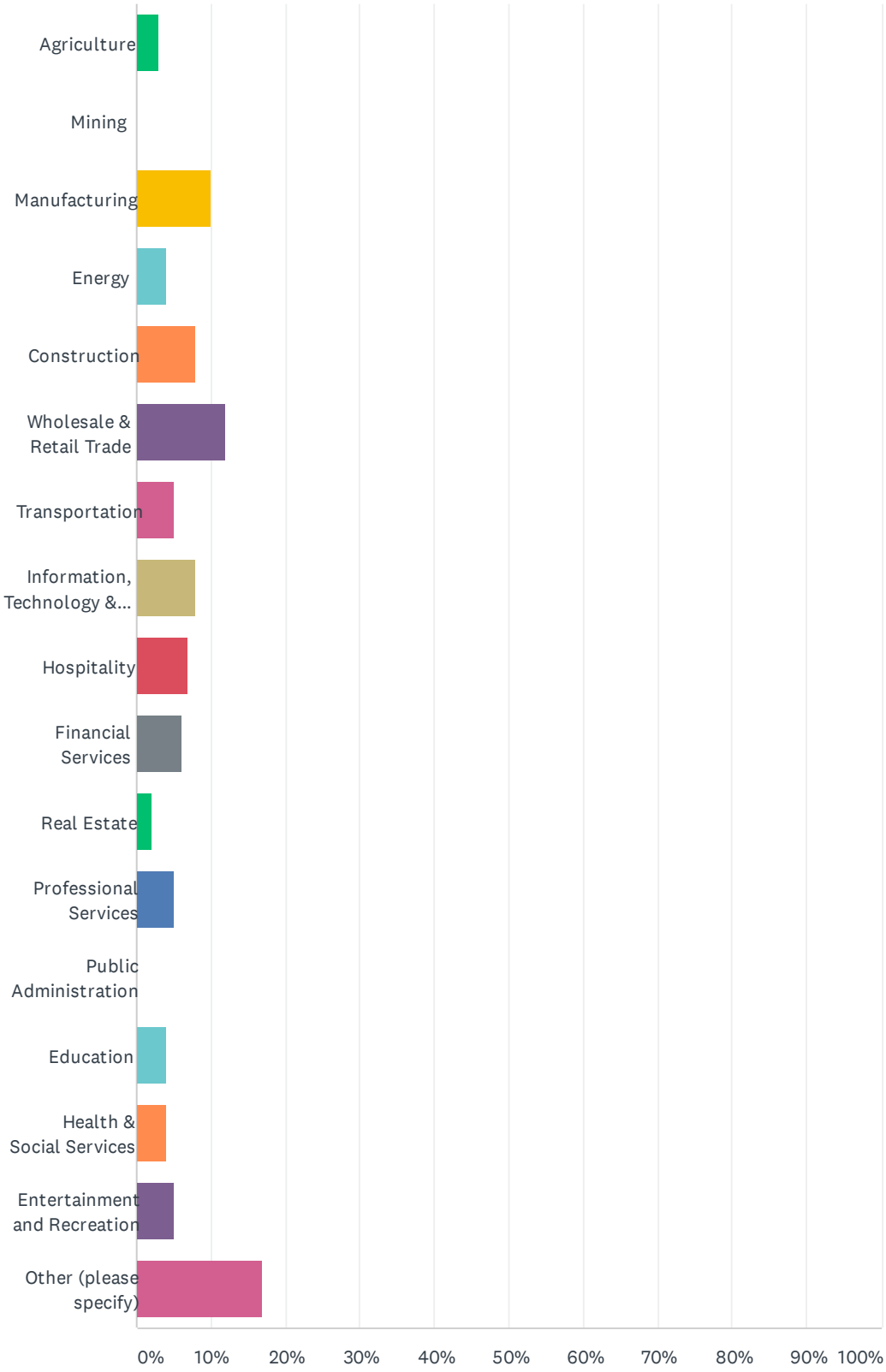
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Less than 10	30.00%	30
10 - 20	13.00%	13
21 - 50	11.00%	11
51 - 75	6.00%	6
76 - 100	7.00%	7
101 - 500	10.00%	10
501 - 1000	9.00%	9
1001 - 5000	10.00%	10
More than 5000	4.00%	4
TOTAL		100

Q4 What industry best represents your organization?

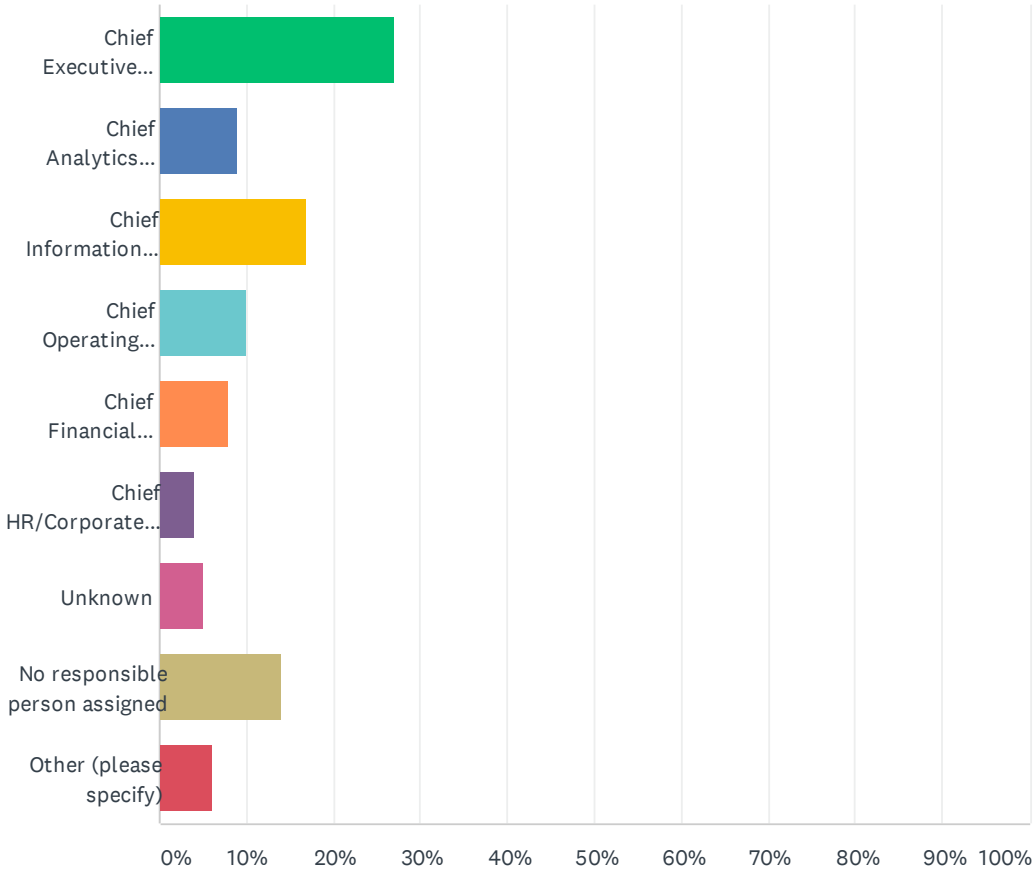
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Agriculture	3.00%	3
Mining	0.00%	0
Manufacturing	10.00%	10
Energy	4.00%	4
Construction	8.00%	8
Wholesale & Retail Trade	12.00%	12
Transportation	5.00%	5
Information, Technology & Communication	8.00%	8
Hospitality	7.00%	7
Financial Services	6.00%	6
Real Estate	2.00%	2
Professional Services	5.00%	5
Public Administration	0.00%	0
Education	4.00%	4
Health & Social Services	4.00%	4
Entertainment and Recreation	5.00%	5
Other (please specify)	17.00%	17
TOTAL		100

Q5 The executive with overall responsibility for data analytics is:

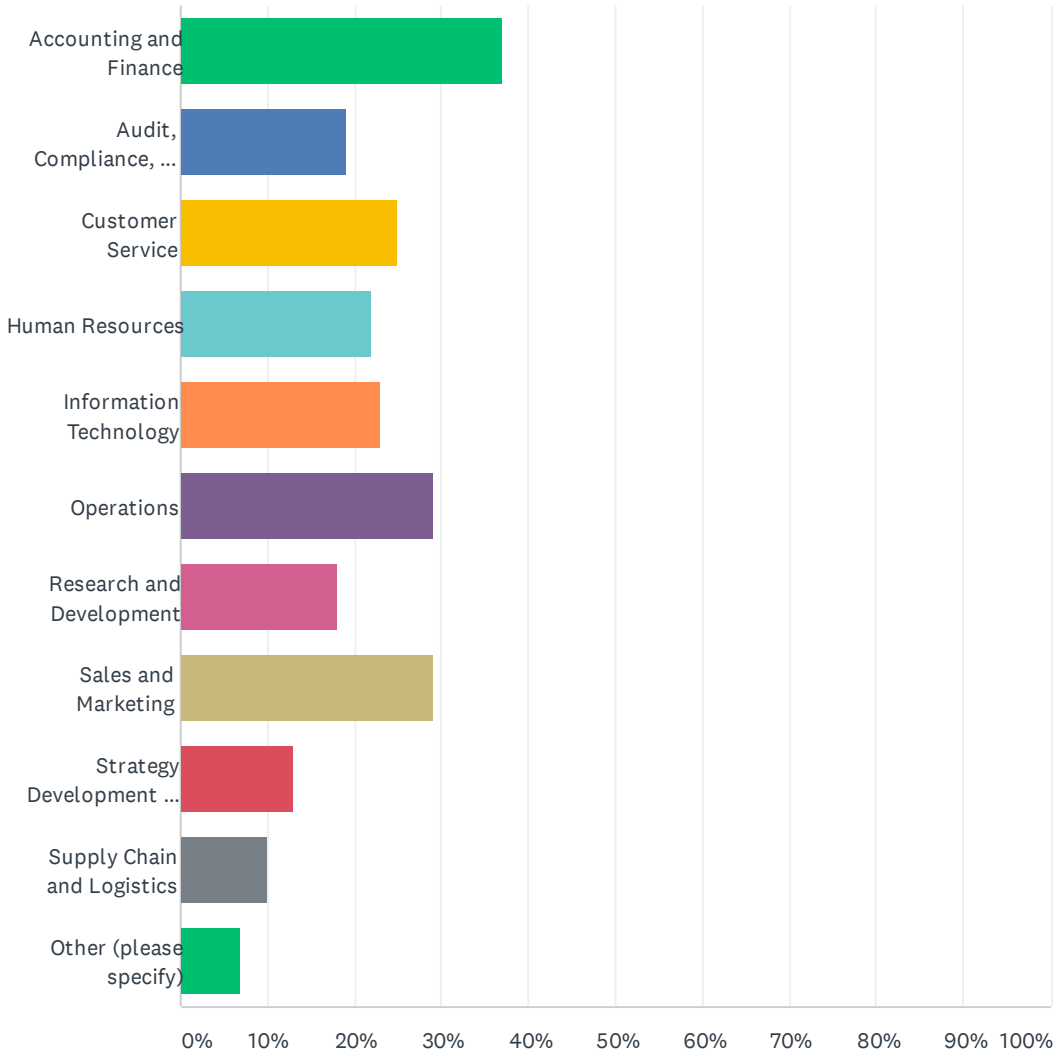
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Chief Executive Officer	27.00%	27
Chief Analytics Officer	9.00%	9
Chief Information Officer	17.00%	17
Chief Operating Officer	10.00%	10
Chief Financial Officer	8.00%	8
Chief HR/Corporate Affairs Officer	4.00%	4
Unknown	5.00%	5
No responsible person assigned	14.00%	14
Other (please specify)	6.00%	6
TOTAL		100

Q6 Which of the following functions are supported with analytics at your organization? (Check all that apply.)

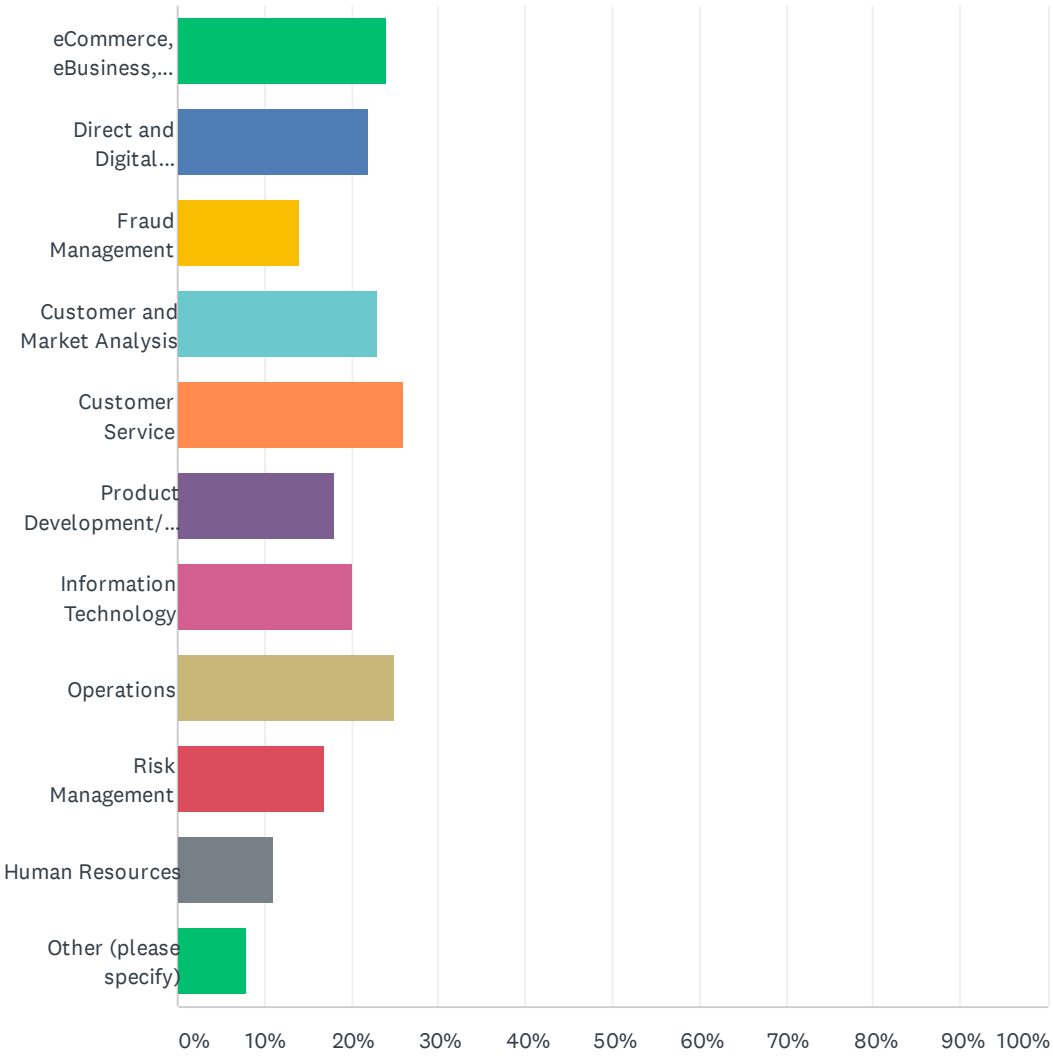
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Accounting and Finance	37.00%	37
Audit, Compliance, and Risk	19.00%	19
Customer Service	25.00%	25
Human Resources	22.00%	22
Information Technology	23.00%	23
Operations	29.00%	29
Research and Development	18.00%	18
Sales and Marketing	29.00%	29
Strategy Development and Execution	13.00%	13
Supply Chain and Logistics	10.00%	10
Other (please specify)	7.00%	7
Total Respondents: 100		

Q7 What business functions in your company are the most important users of data and analytics? (Check all that apply)

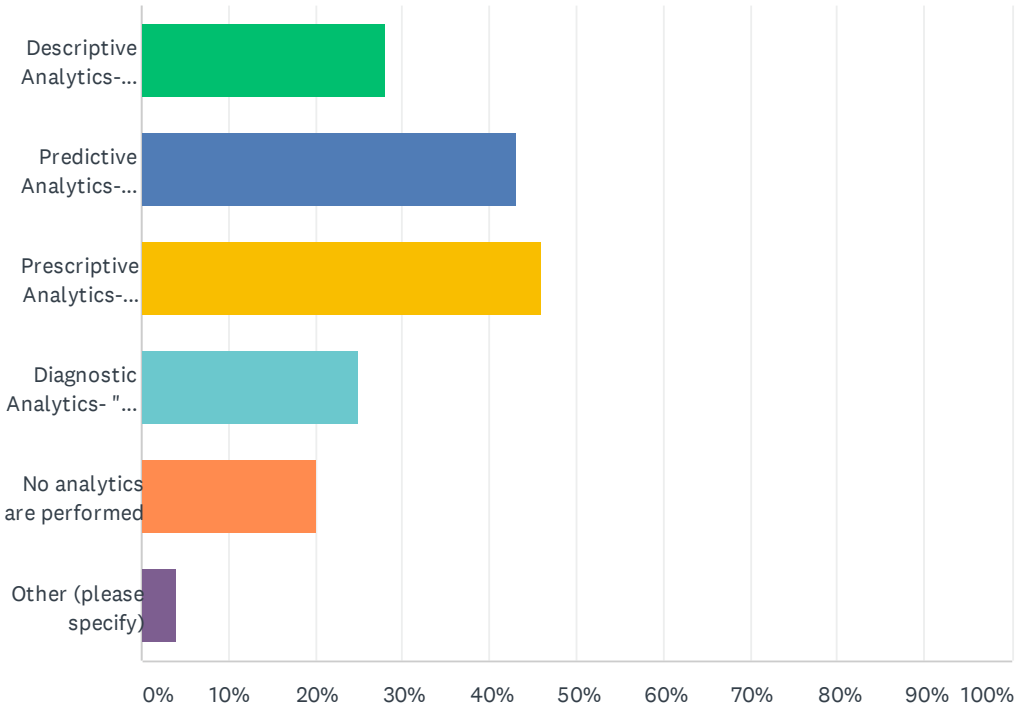
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
eCommerce, eBusiness, Digital Operations	24.00%	24
Direct and Digital Marketing	22.00%	22
Fraud Management	14.00%	14
Customer and Market Analysis	23.00%	23
Customer Service	26.00%	26
Product Development/Management	18.00%	18
Information Technology	20.00%	20
Operations	25.00%	25
Risk Management	17.00%	17
Human Resources	11.00%	11
Other (please specify)	8.00%	8
Total Respondents: 100		

Q8 What types of analytics are performed within your organization? (Check all that apply.)

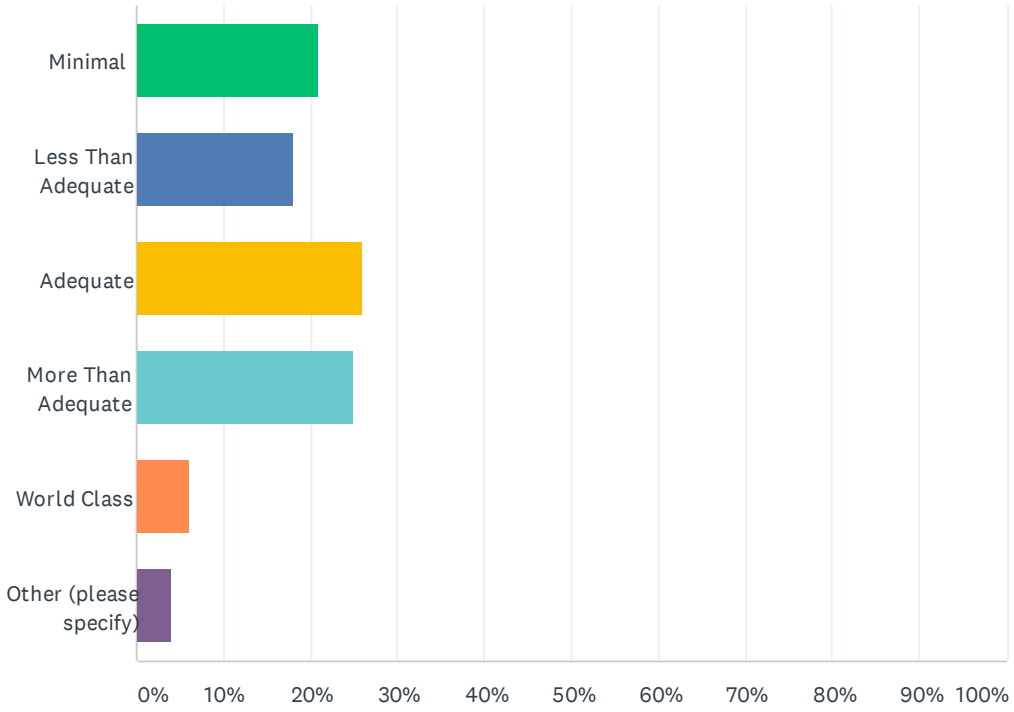
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Descriptive Analytics- "What happened?"	28.00%	28
Predictive Analytics- "What's likely to happen?"	43.00%	43
Prescriptive Analytics- "What should we do given what's happened or what's likely to happen?"	46.00%	46
Diagnostic Analytics- "Why did it happen"	25.00%	25
No analytics are performed	20.00%	20
Other (please specify)	4.00%	4
Total Respondents: 100		

Q9 How would you rate the access to relevant, accurate, and timely data in your company?

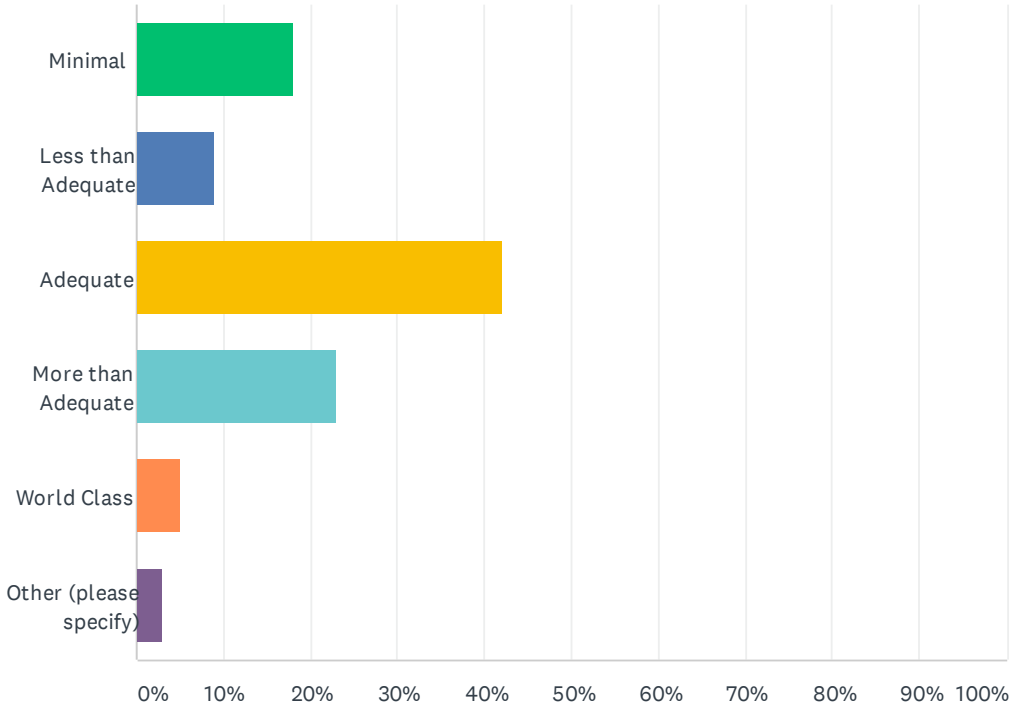
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Minimal	21.00%	21
Less Than Adequate	18.00%	18
Adequate	26.00%	26
More Than Adequate	25.00%	25
World Class	6.00%	6
Other (please specify)	4.00%	4
TOTAL		100

Q10 How would you rate the analytic capabilities in your company today?

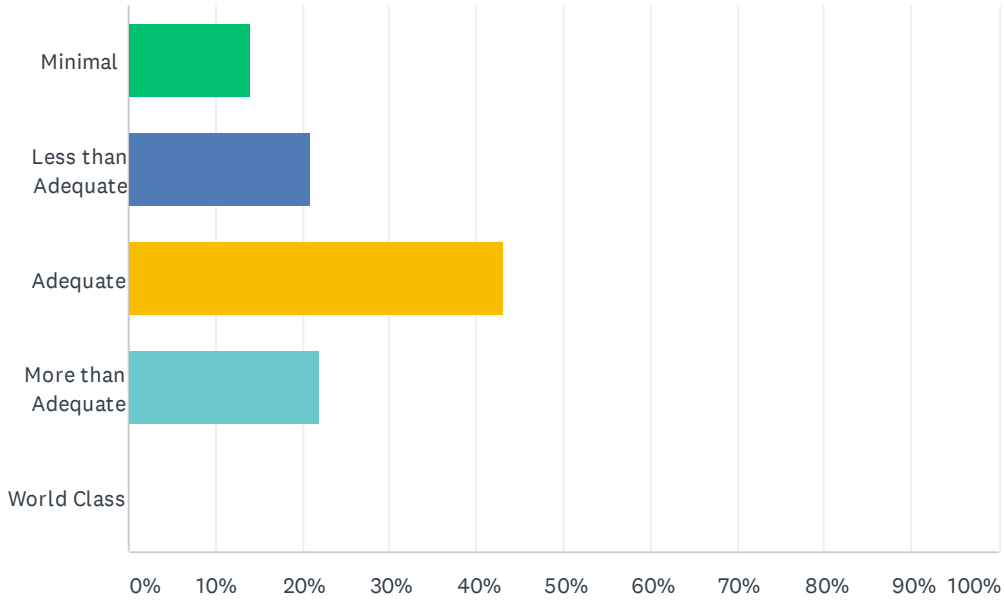
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Minimal	18.00%	18
Less than Adequate	9.00%	9
Adequate	42.00%	42
More than Adequate	23.00%	23
World Class	5.00%	5
Other (please specify)	3.00%	3
TOTAL		100

Q11 How would you rate your company on the ability, by executives and business leaders, to use data and analytics to improve or transform the business?

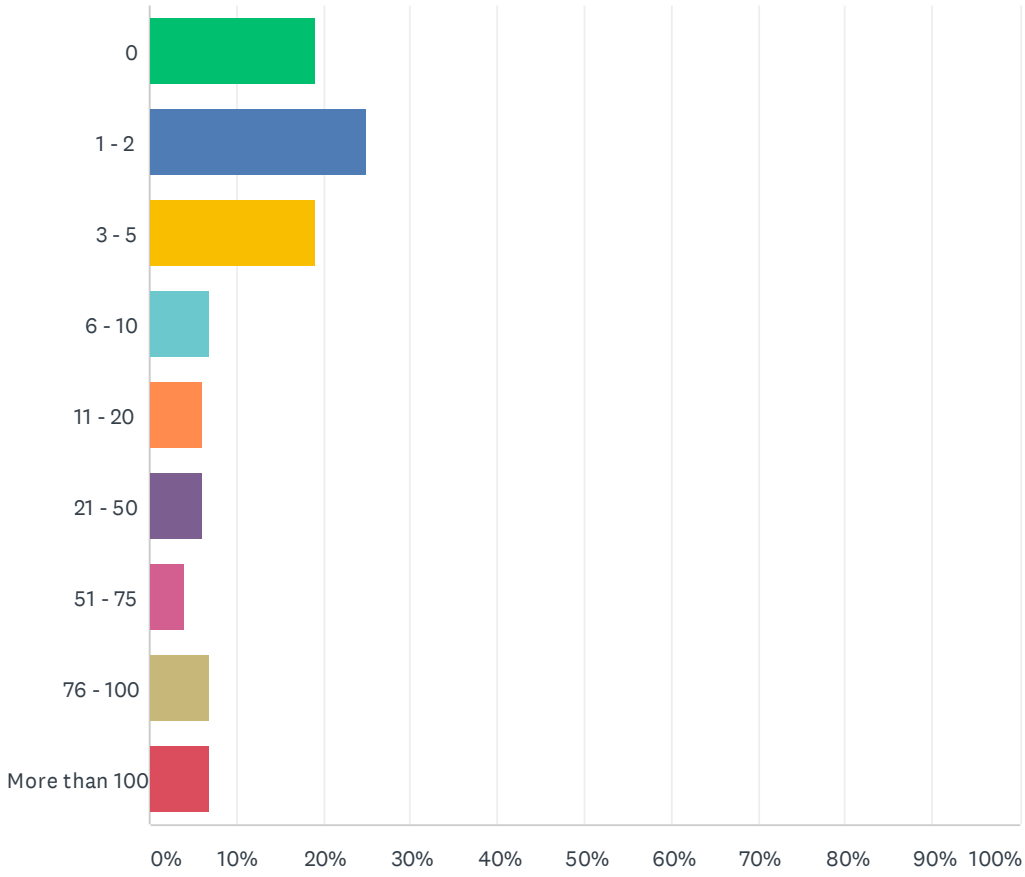
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Minimal	14.00%	14
Less than Adequate	21.00%	21
Adequate	43.00%	43
More than Adequate	22.00%	22
World Class	0.00%	0
TOTAL		100

Q12 Approximately how many staff in your company are dedicated to analytics, modeling, data mining (not including routine reporting)?

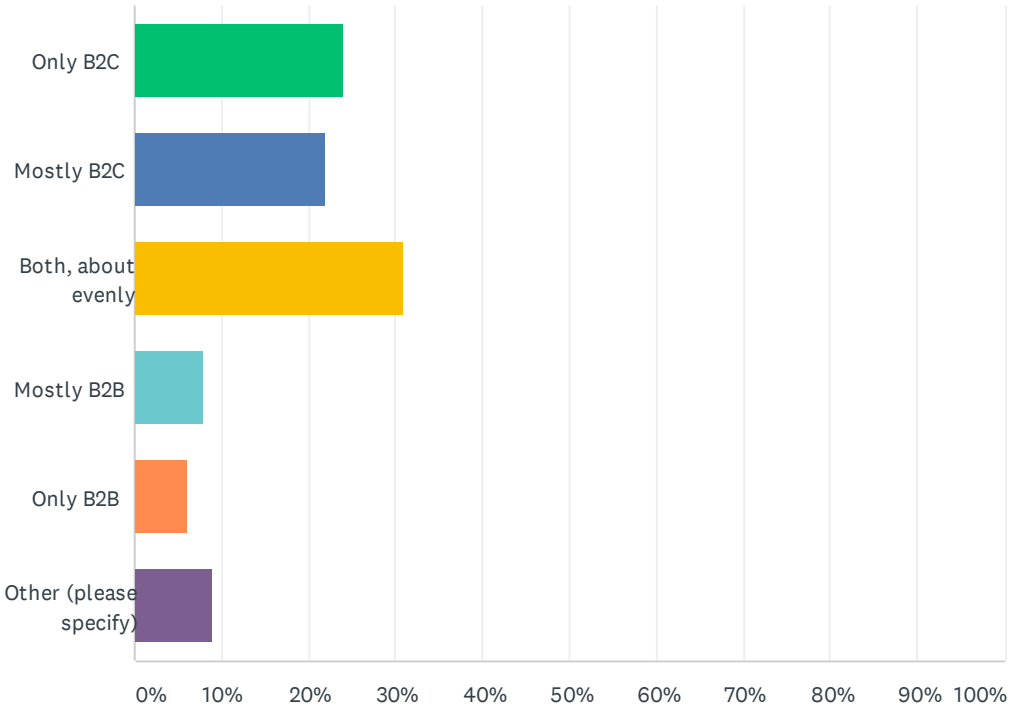
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
0	19.00%	19
1 - 2	25.00%	25
3 - 5	19.00%	19
6 - 10	7.00%	7
11 - 20	6.00%	6
21 - 50	6.00%	6
51 - 75	4.00%	4
76 - 100	7.00%	7
More than 100	7.00%	7
TOTAL		100

Q13 Of these staff, are most working in or for your consumer facing businesses (B2C), your commercial or wholesale businesses (B2B), or both?

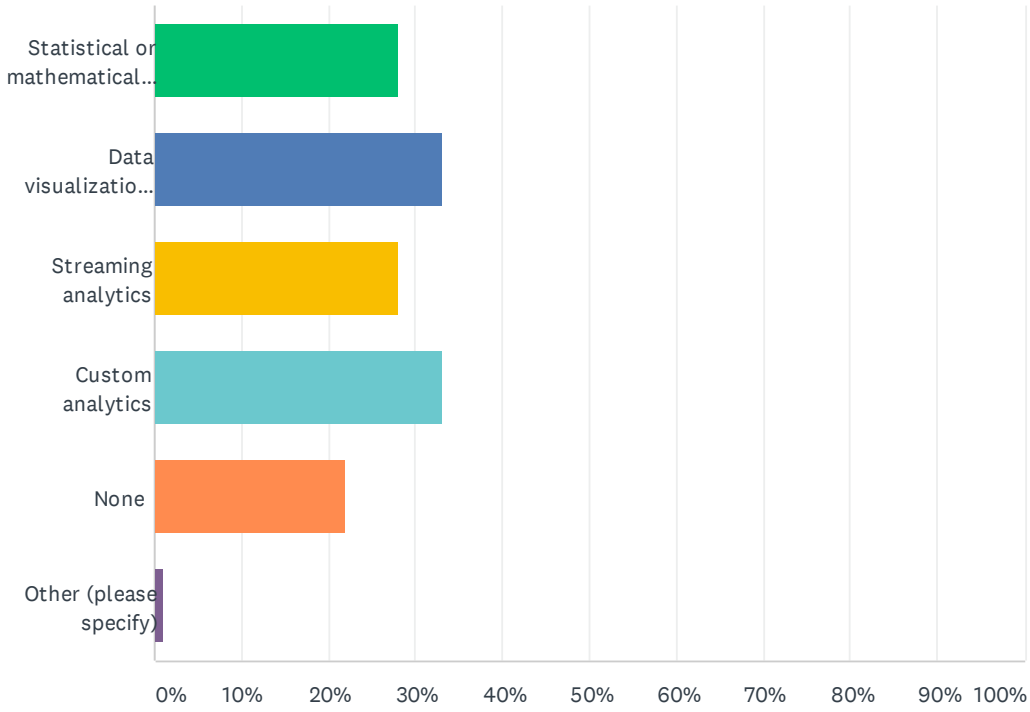
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Only B2C	24.00%	24
Mostly B2C	22.00%	22
Both, about evenly	31.00%	31
Mostly B2B	8.00%	8
Only B2B	6.00%	6
Other (please specify)	9.00%	9
TOTAL		100

Q14 What types of analytics products are you using or considering? (Check all that apply)

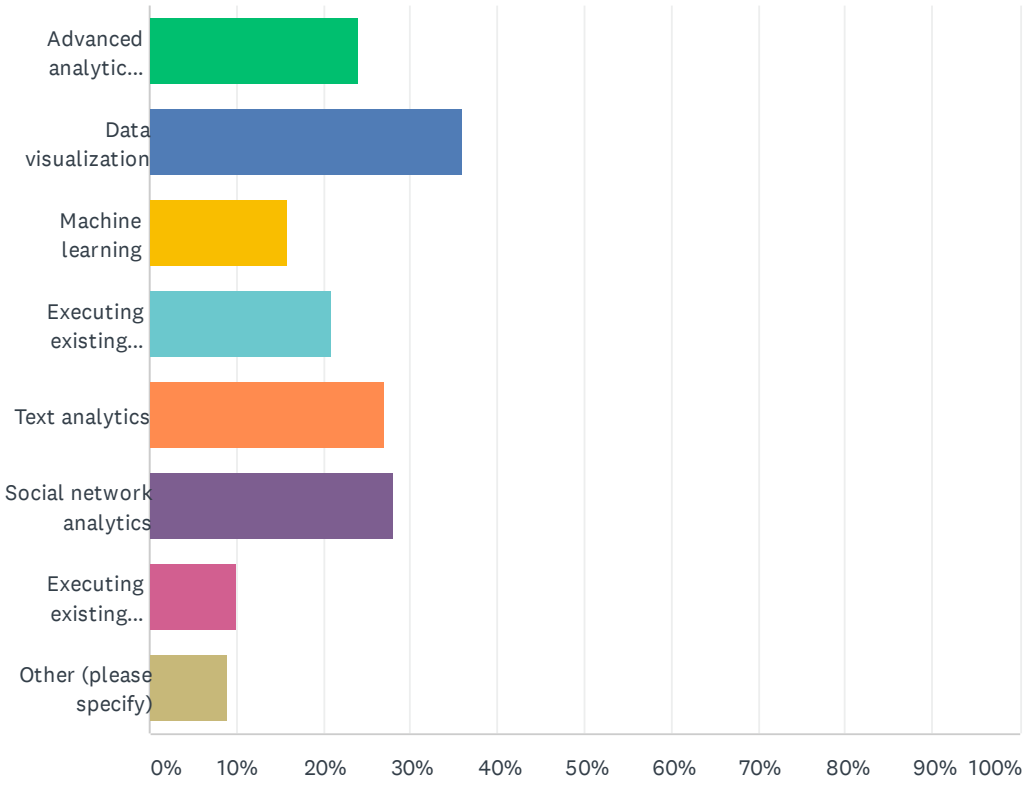
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Statistical or mathematical packages	28.00%	28
Data visualization products	33.00%	33
Streaming analytics	28.00%	28
Custom analytics	33.00%	33
None	22.00%	22
Other (please specify)	1.00%	1
Total Respondents: 100		

Q15 What analytic functions/features are most important to you? (Check all that apply)

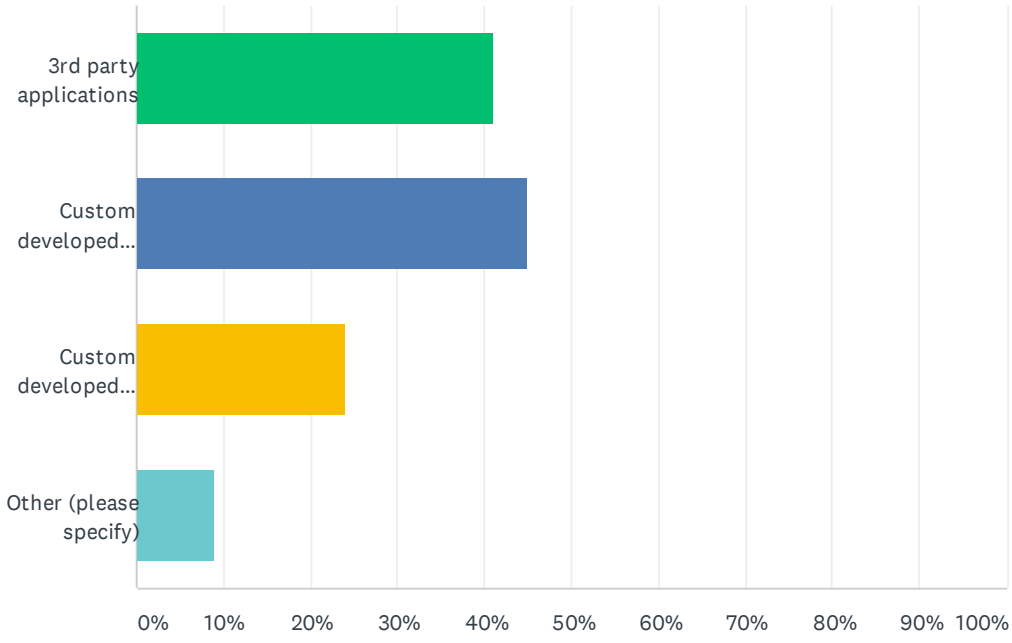
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Advanced analytic algorithms	24.00%	24
Data visualization	36.00%	36
Machine learning	16.00%	16
Executing existing algorithms faster	21.00%	21
Text analytics	27.00%	27
Social network analytics	28.00%	28
Executing existing algorithms on much larger data sets	10.00%	10
Other (please specify)	9.00%	9
Total Respondents: 100		

Q16 Do you use or plan to use 3rd party applications or develop your own? (Check all that apply)

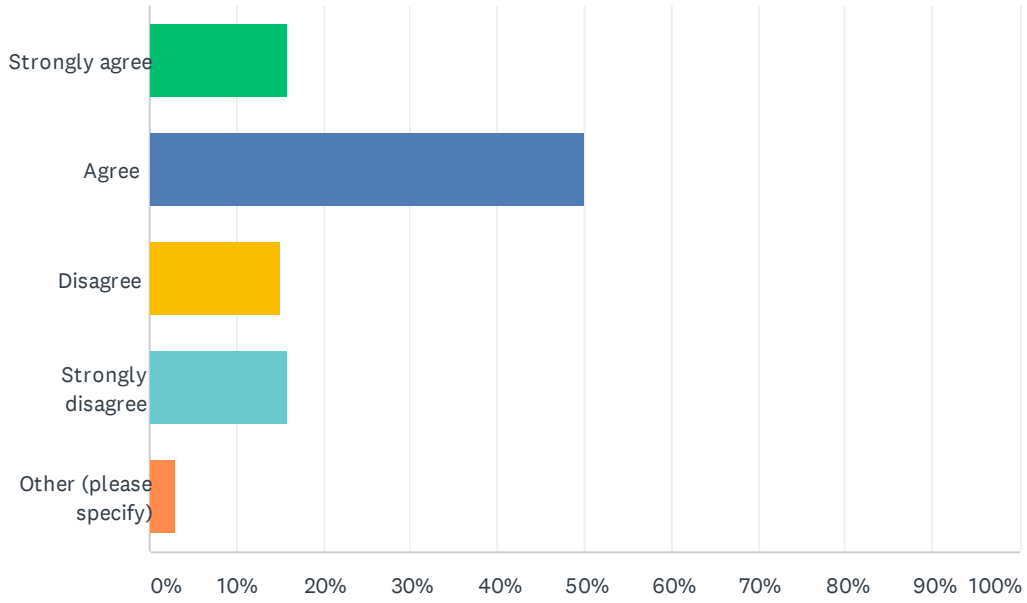
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
3rd party applications	41.00%	41
Custom developed in-house	45.00%	45
Custom developed through partner	24.00%	24
Other (please specify)	9.00%	9
Total Respondents: 100		

Q17 We have implemented a data analytics platform which is delivering actionable insights:

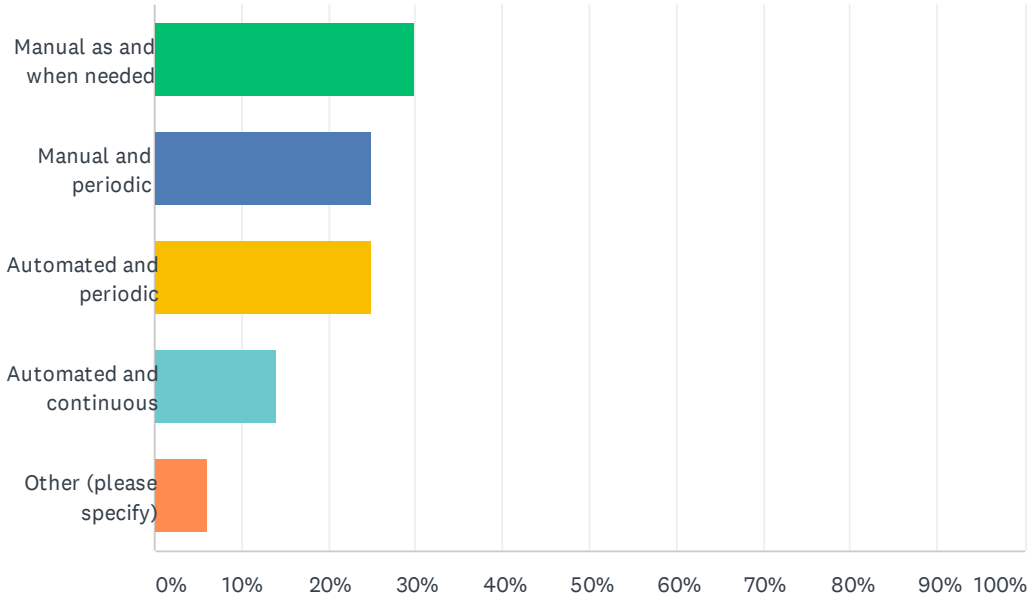
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Strongly agree	16.00%	16
Agree	50.00%	50
Disagree	15.00%	15
Strongly disagree	16.00%	16
Other (please specify)	3.00%	3
TOTAL		100

Q18 The execution of our analytics is:

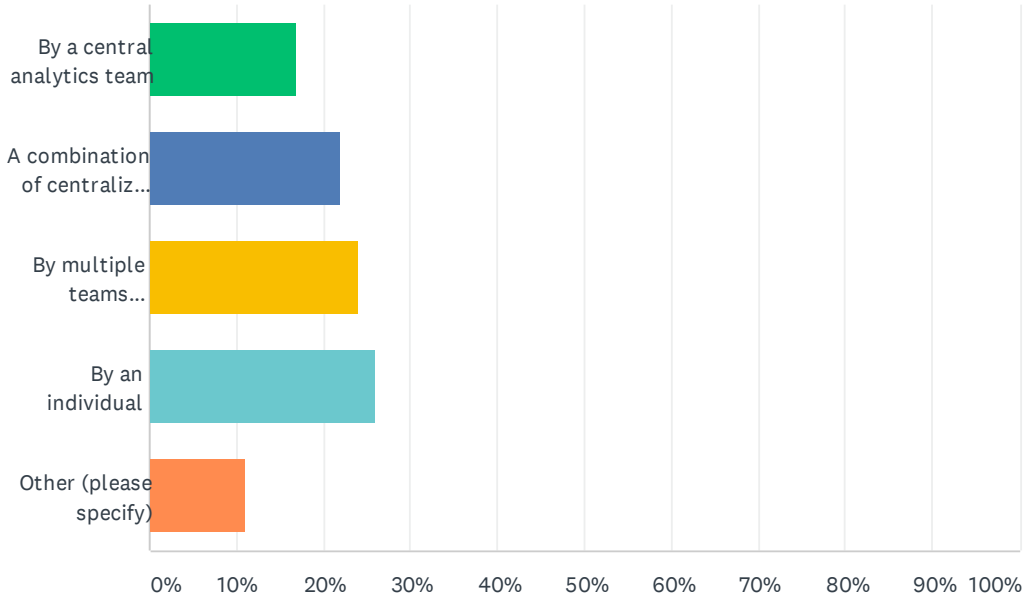
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Manual as and when needed	30.00%	30
Manual and periodic	25.00%	25
Automated and periodic	25.00%	25
Automated and continuous	14.00%	14
Other (please specify)	6.00%	6
TOTAL		100

Q19 Data analytics are performed:

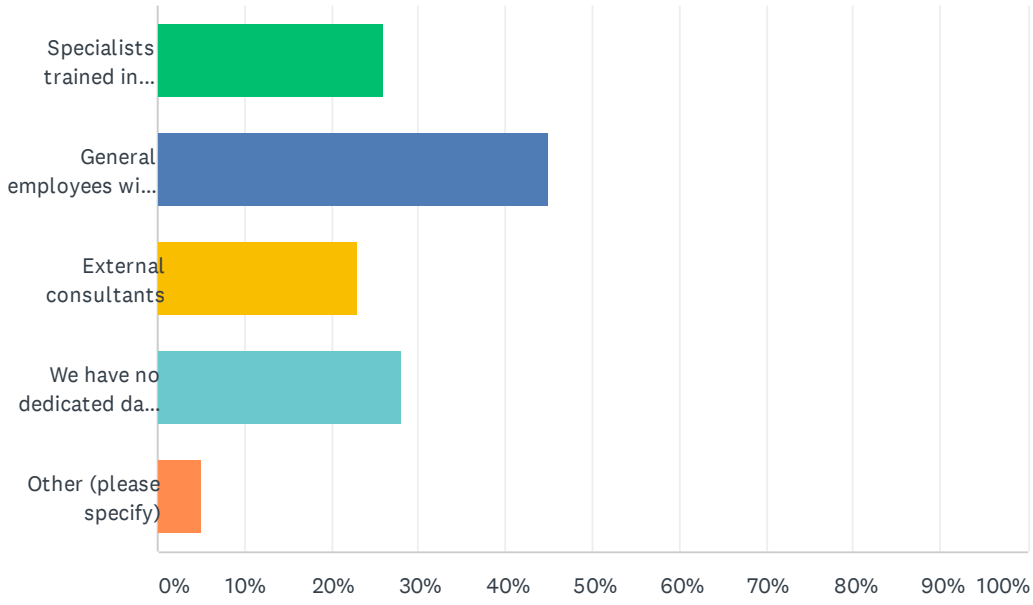
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
By a central analytics team	17.00%	17
A combination of centralized and decentralized teams	22.00%	22
By multiple teams throughout the organization	24.00%	24
By an individual	26.00%	26
Other (please specify)	11.00%	11
TOTAL		100

Q20 Which of the following best represents the data analysts at your organization? (Check all that apply.)

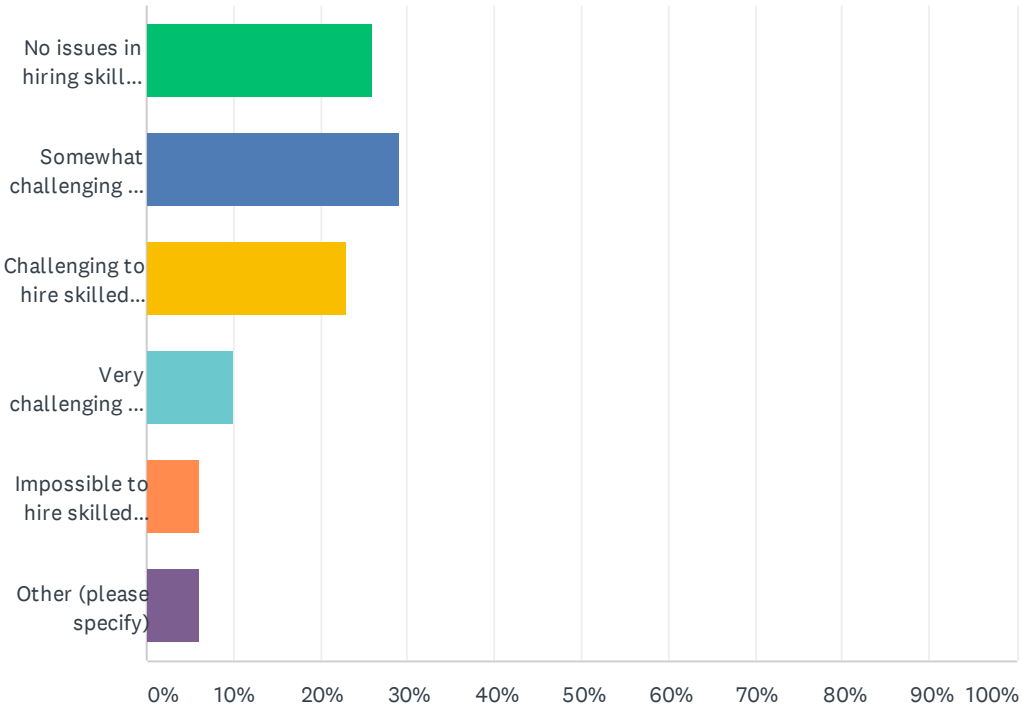
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Specialists trained in analytics	26.00%	26
General employees with analytical capabilities	45.00%	45
External consultants	23.00%	23
We have no dedicated data analysts	28.00%	28
Other (please specify)	5.00%	5
Total Respondents: 100		

Q21 How challenging has it been to source data analytic skills in general for your organization?

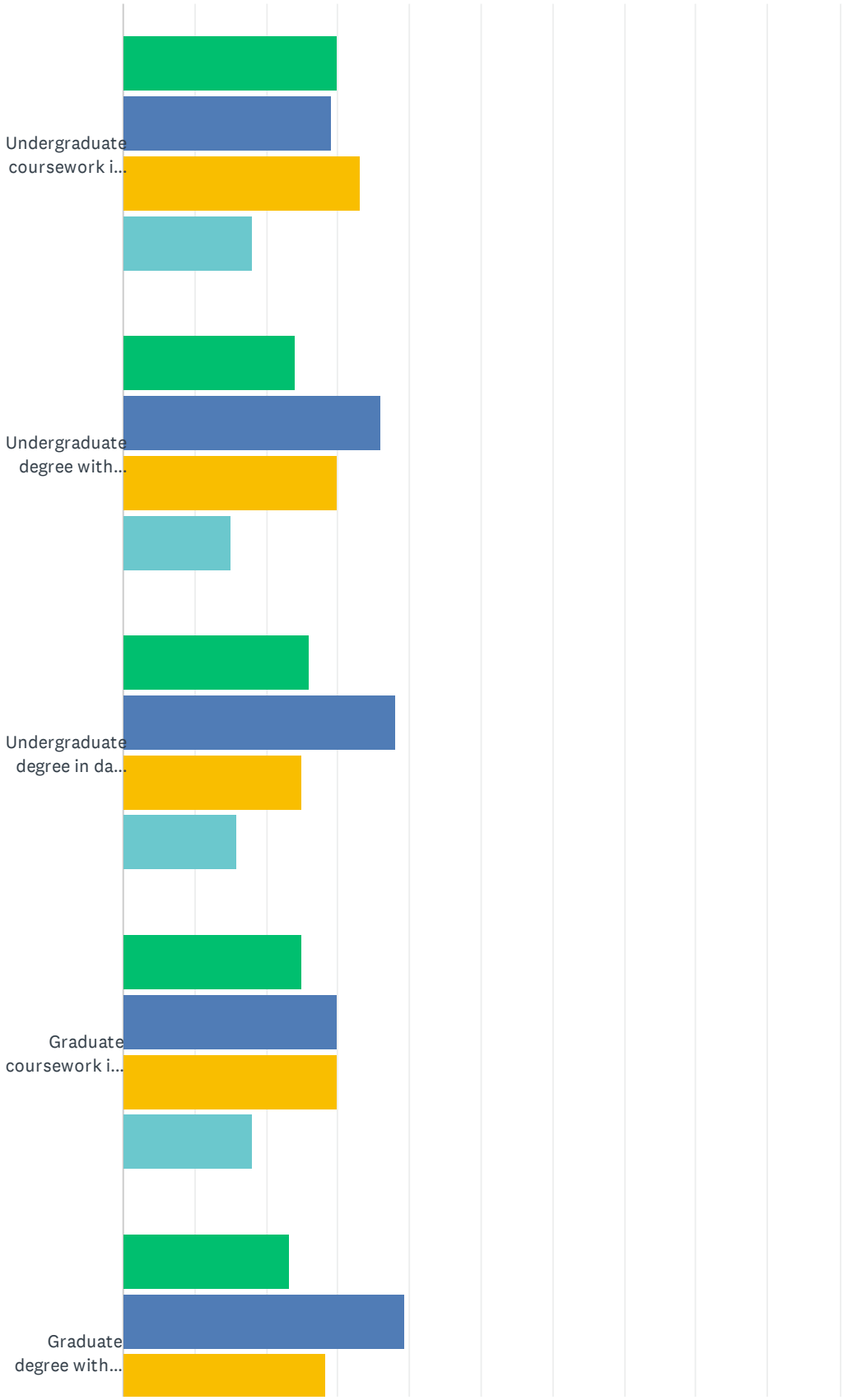
Answered: 100 Skipped: 0

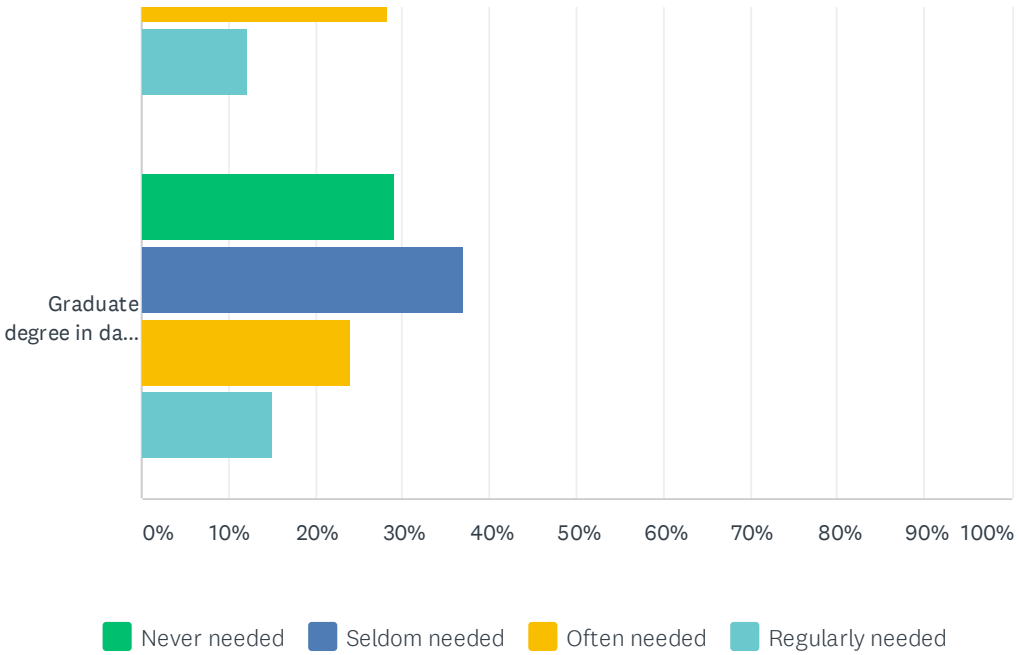


ANSWER CHOICES	RESPONSES	
No issues in hiring skilled resources	26.00%	26
Somewhat challenging to hire skilled resources	29.00%	29
Challenging to hire skilled resources	23.00%	23
Very challenging to hire skilled resources	10.00%	10
Impossible to hire skilled resources	6.00%	6
Other (please specify)	6.00%	6
TOTAL		100

Q22 Please rank the data analytic education needs at your organization.

Answered: 100 Skipped: 0





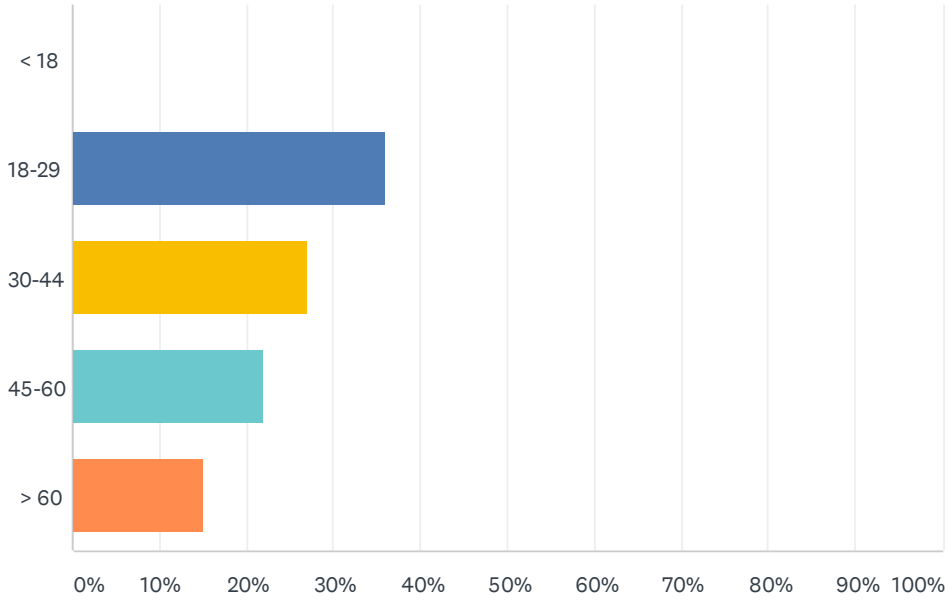
	NEVER NEEDED	SELDOM NEEDED	OFTEN NEEDED	REGULARLY NEEDED	TOTAL RESPONDENTS
Undergraduate coursework in data analytics	30.00% 30	29.00% 29	33.00% 33	18.00% 18	100
Undergraduate degree with data analytics concentration	24.00% 24	36.00% 36	30.00% 30	15.00% 15	100
Undergraduate degree in data analytics	26.00% 26	38.00% 38	25.00% 25	16.00% 16	100
Graduate coursework in data analytics	25.00% 25	30.00% 30	30.00% 30	18.00% 18	100
Graduate degree with data analytics concentration	23.23% 23	39.39% 39	28.28% 28	12.12% 12	99
Graduate degree in data analytics	29.00% 29	37.00% 37	24.00% 24	15.00% 15	100

Q23 Please provide any additional feedback with respect to data analytic needs in industry that should be considered for program development in higher education.

Answered: 47 Skipped: 53

Q24 Age

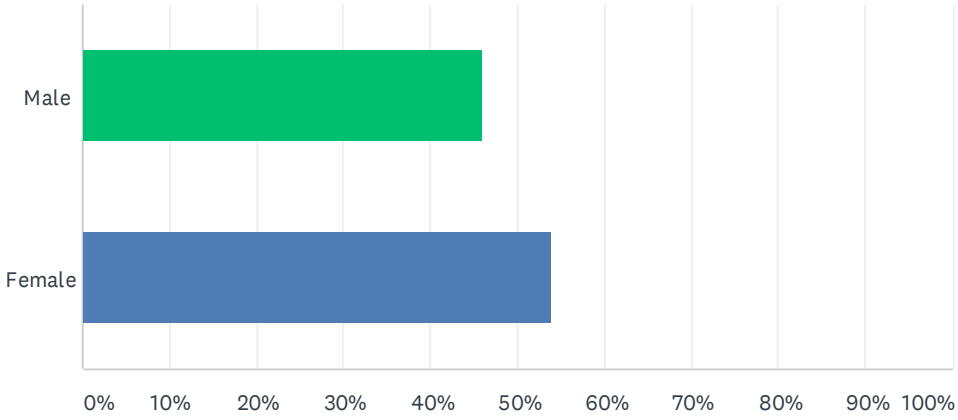
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
< 18	0.00%	0
18-29	36.00%	36
30-44	27.00%	27
45-60	22.00%	22
> 60	15.00%	15
TOTAL		100

Q25 Gender

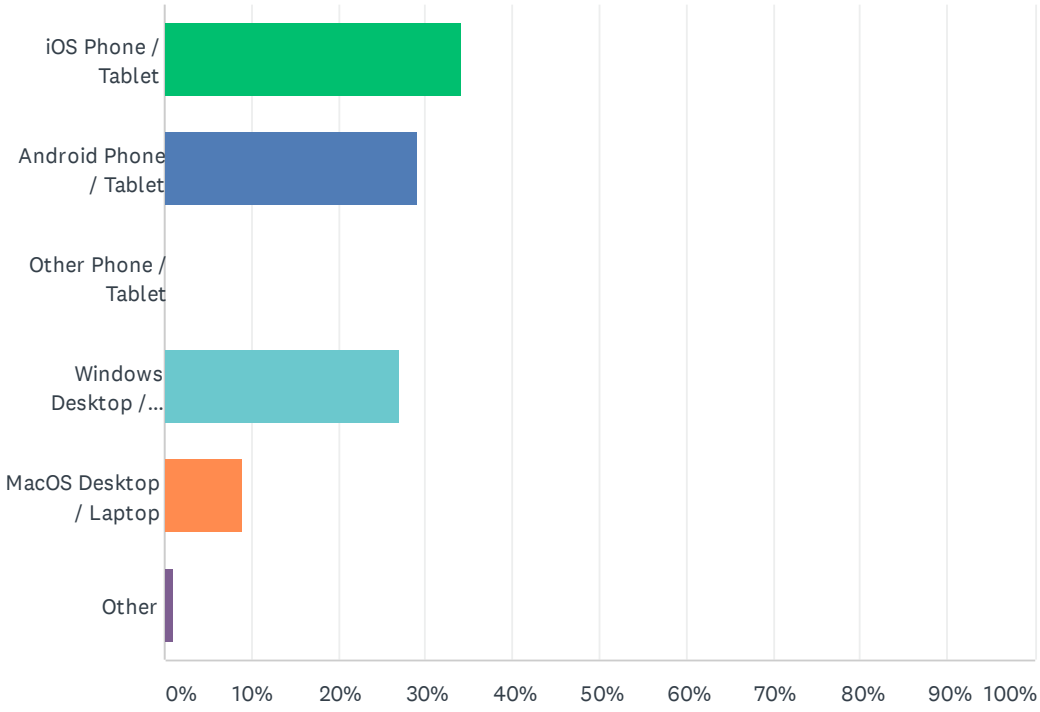
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Male	46.00%	46
Female	54.00%	54
TOTAL		100

Q26 Device Type

Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
iOS Phone / Tablet	34.00%	34
Android Phone / Tablet	29.00%	29
Other Phone / Tablet	0.00%	0
Windows Desktop / Laptop	27.00%	27
MacOS Desktop / Laptop	9.00%	9
Other	1.00%	1
TOTAL		100

Q27 Household Income

Answered: 0 Skipped: 100

⚠ No matching responses.

ANSWER CHOICES	RESPONSES	
$0-$9,999	0.00%	0
$10,000-$24,999	0.00%	0
$25,000-$49,999	0.00%	0
$50,000-$74,999	0.00%	0
$75,000-$99,999	0.00%	0
$100,000-$124,999	0.00%	0
$125,000-$149,999	0.00%	0
$150,000-$174,999	0.00%	0
$175,000-$199,999	0.00%	0
$200,000+	0.00%	0
Prefer not to answer	0.00%	0
TOTAL		0

Q28 Region

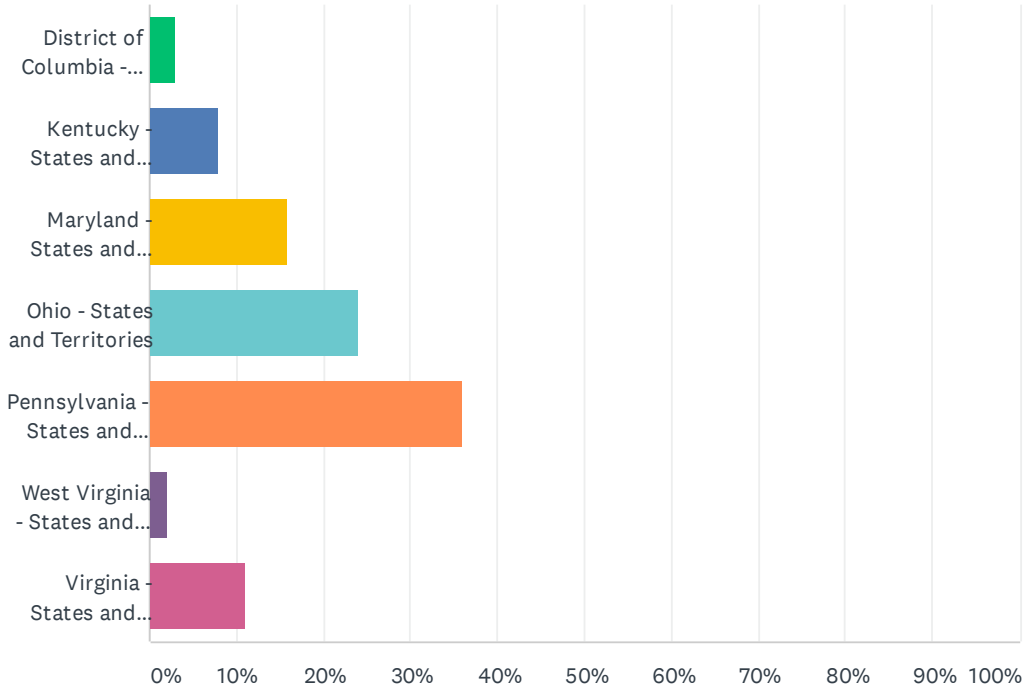
Answered: 0 Skipped: 100

⚠ No matching responses.

ANSWER CHOICES	RESPONSES	
New England	0.00%	0
Middle Atlantic	0.00%	0
East North Central	0.00%	0
West North Central	0.00%	0
South Atlantic	0.00%	0
East South Central	0.00%	0
West South Central	0.00%	0
Mountain	0.00%	0
Pacific	0.00%	0
TOTAL		0

Q29 United States Region

Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
District of Columbia - States and Territories	3.00%	3
Kentucky - States and Territories	8.00%	8
Maryland - States and Territories	16.00%	16
Ohio - States and Territories	24.00%	24
Pennsylvania - States and Territories	36.00%	36
West Virginia - States and Territories	2.00%	2
Virginia - States and Territories	11.00%	11
TOTAL		100