



Career & Salary Report

May 2019

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Introduction and methodology

Objective

The study was conducted by *Control Engineering* to identify trending information as it relates to the automation engineering professional's annual compensation, job satisfaction and industry insights.

Sample

The sample was selected from qualified subscribers of *Control Engineering* products with valid email addresses.

Method

Subscribers were sent an email asking them to participate in this study. The email included a URL linked to the questionnaire.

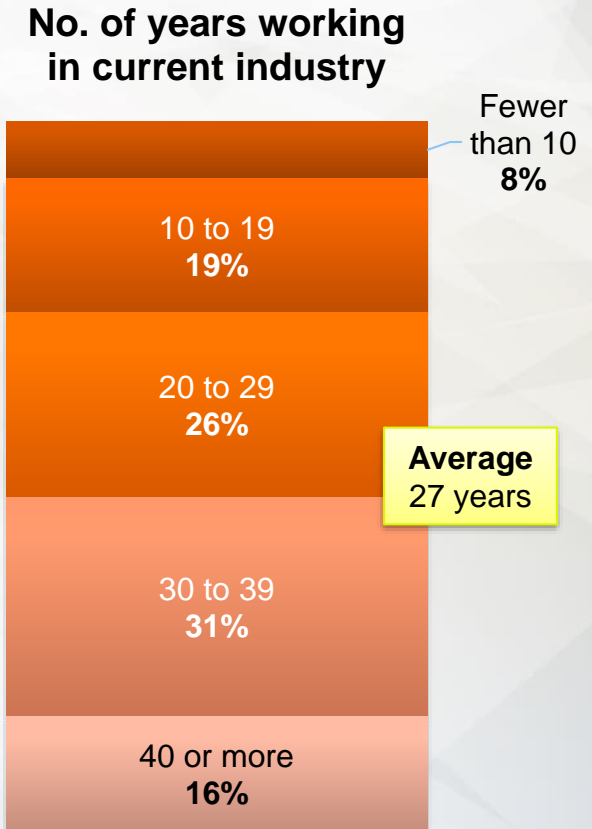
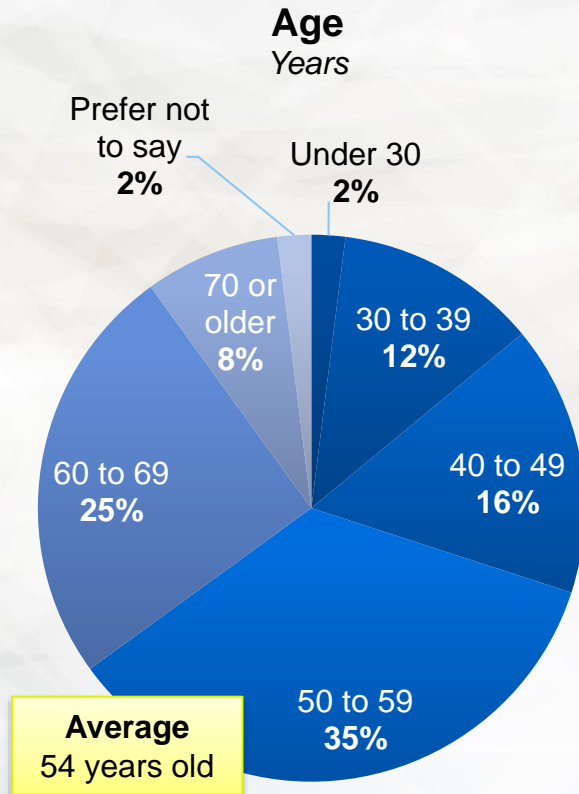
- **Data collected:** February 25, 2019, through March 11, 2019
- **Number of respondents:** 173
 - *Margin of error: +/- 7.5% at a 95% confidence level*
- **Incentive:** Survey participants were offered the opportunity to enter a drawing for a chance to receive one \$100 gift card.



Respondent profile

Age, industry experience

The average respondent is 54 years old—with 33% of respondents being 60 or older—and has worked in their industry for 27 years.

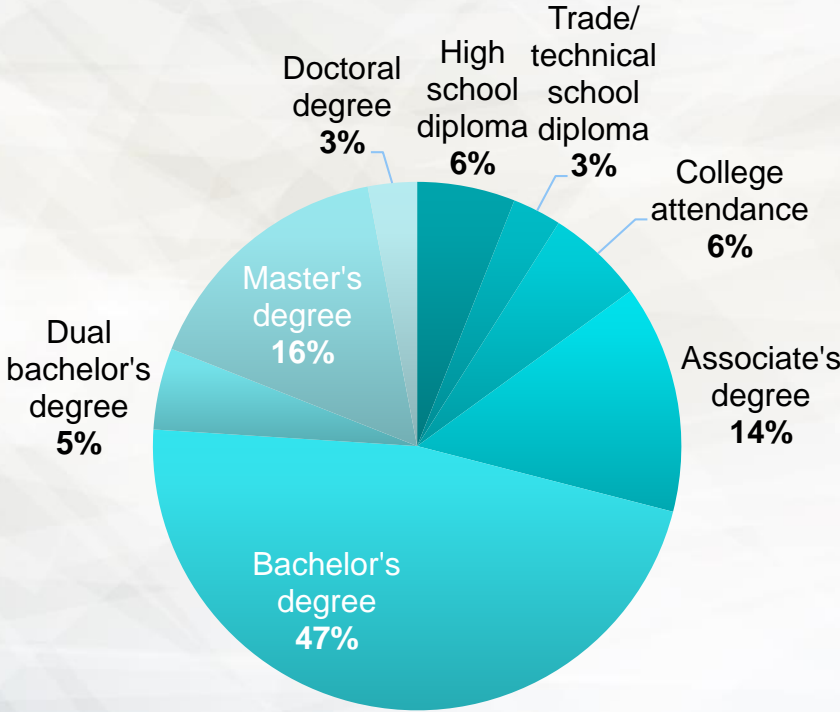


Q: Which of the following ranges includes your current age? (n=173); Q: For how many years have you worked in your industry? (n=173)

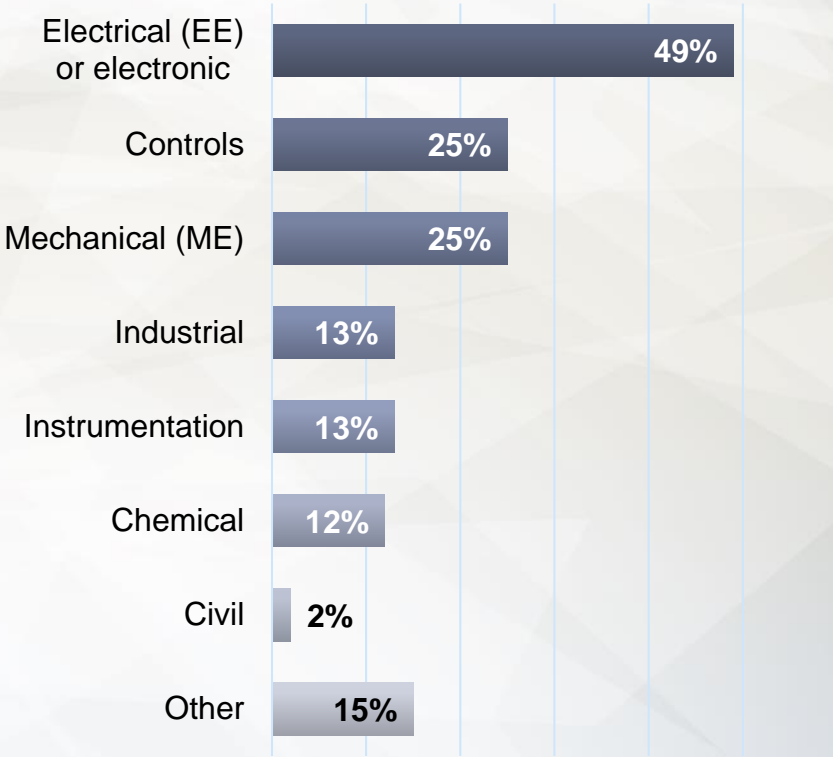
Education

Forty-seven percent of respondents have earned their Bachelor's degree, 16% have their Master's and 14% have an Associate's. The most common discipline studied by respondents is electrical or electronic engineering.

Highest level of education



Engineering disciplines studied

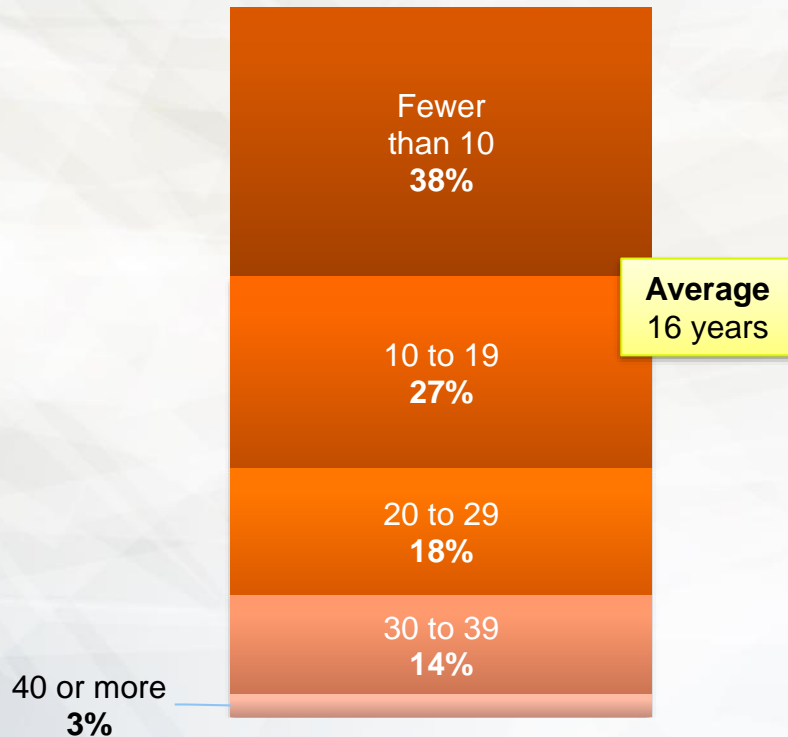


Q: What is the highest level of education you have completed? (n=173); Q: Which of the following engineering discipline(s) did you study or are you studying? Check all that apply. (n=173)

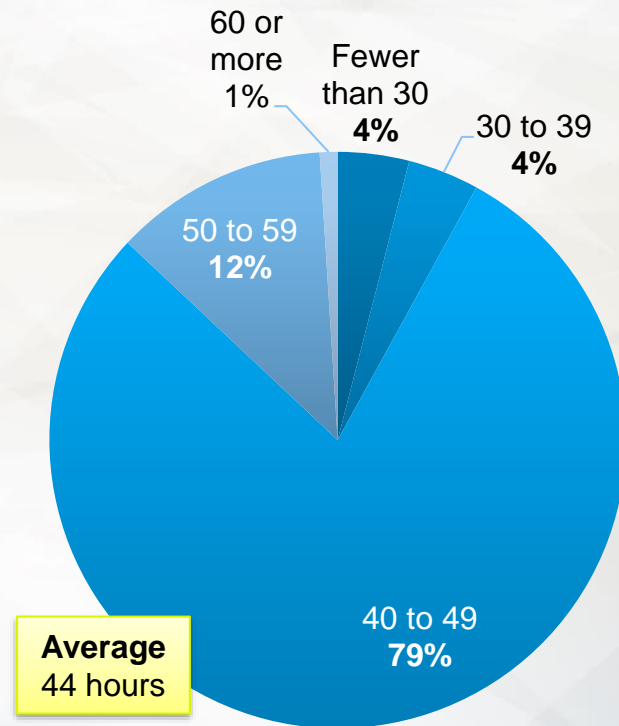
Years with employer, hours per week

Respondents have worked for their current employer for an average of 16 years. End users typically work between 40 and 49 hours each week, but a select few (13%) work 50 hours or more.

No. of years working for current employer



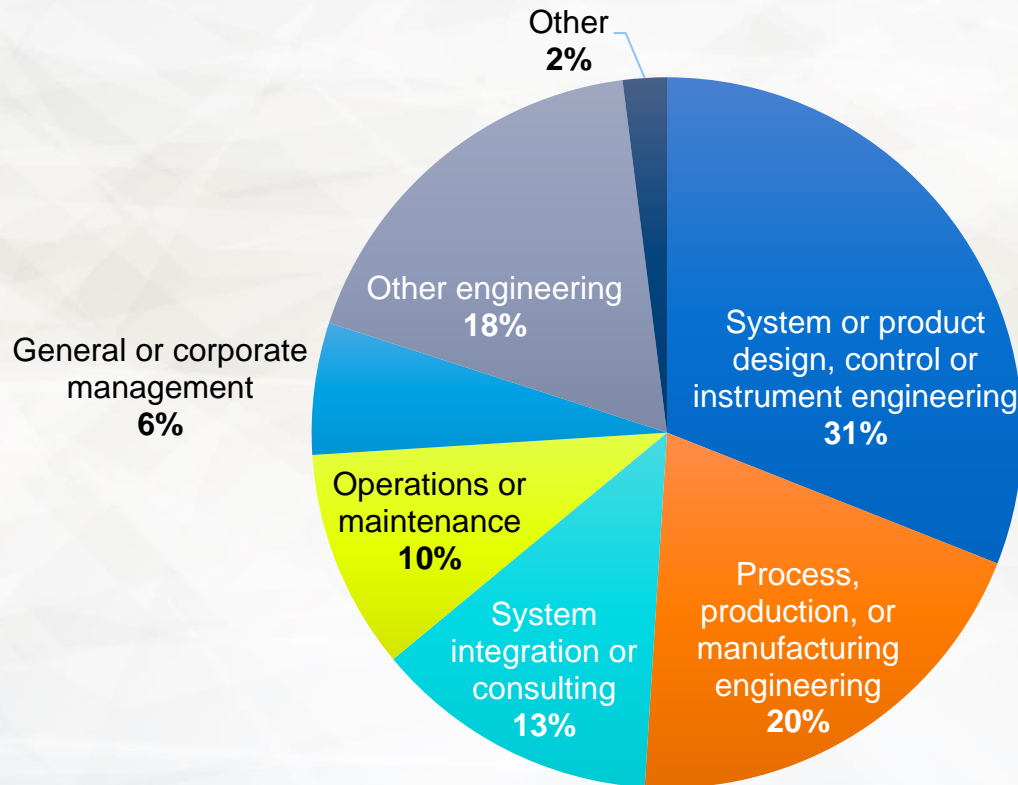
No. of hours worked per week



Q: For how many years have you worked for your current employer? (n=173); Q: In an average week, approximately how many hours do you work? (n=173)

Primary job function

Thirty-one percent of respondents are primarily responsible for system or product design and/or control or instrument engineering at their companies; 20% are mainly involved in process, production or manufacturing engineering.

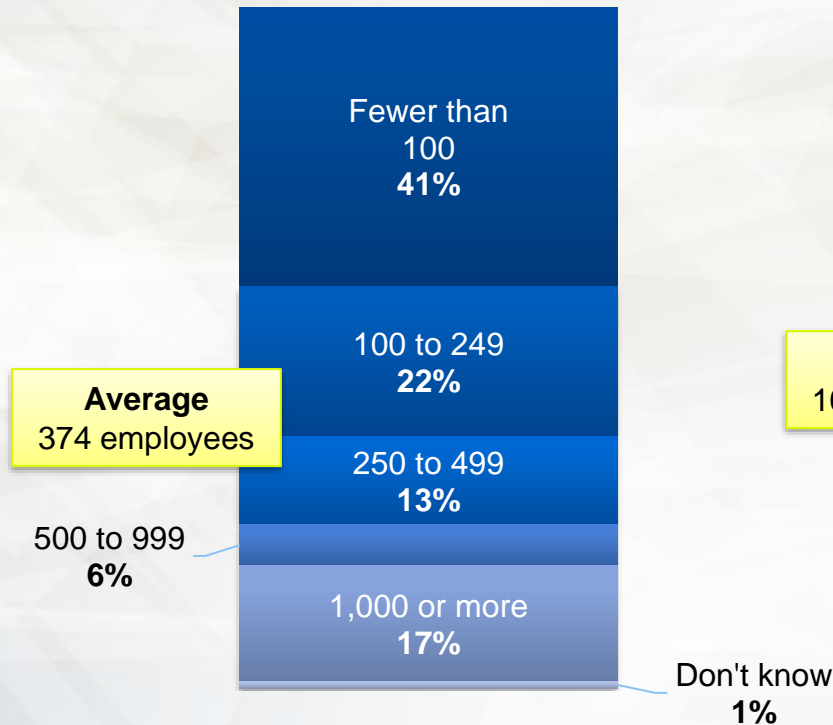


Q: What is your primary job function? (n=162)

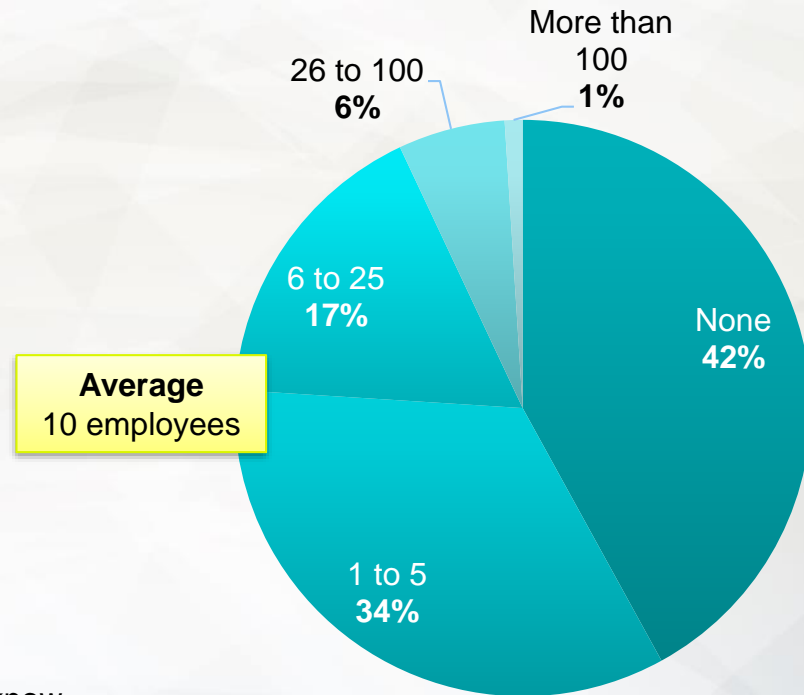
Facility size, supervisory role

Sixty-three percent of respondents' facilities employ fewer than 250 people; the average facility has 374 employees. Fifty-eight percent of respondents directly or indirectly manage or supervise one or more employees.

Facility size
No. of employees



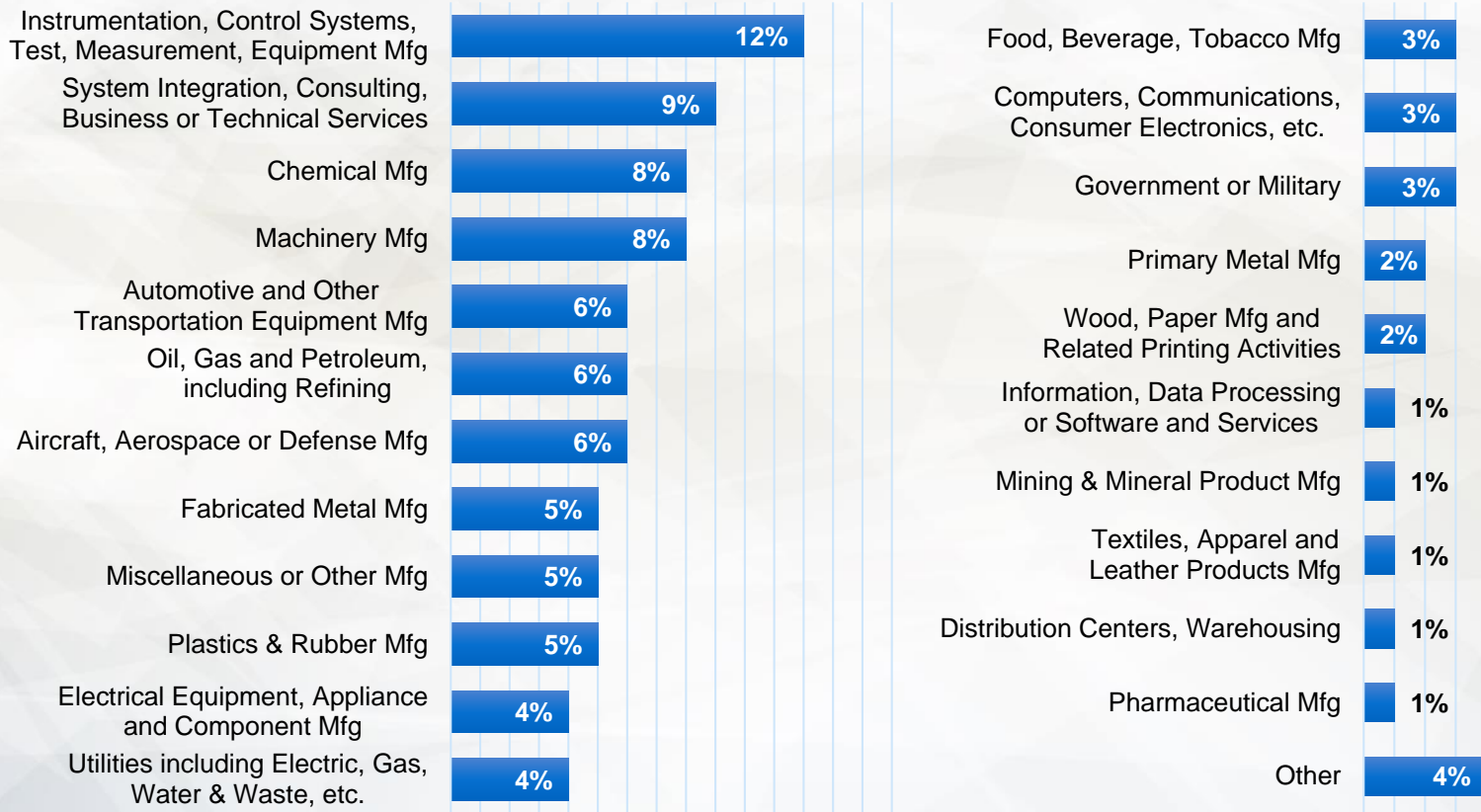
No. of employees supervised



Q: Approximately how many people work at your location? (n=173); Q: Approximately how many employees are under your direct or indirect management or supervision? (n=173)

Primary business

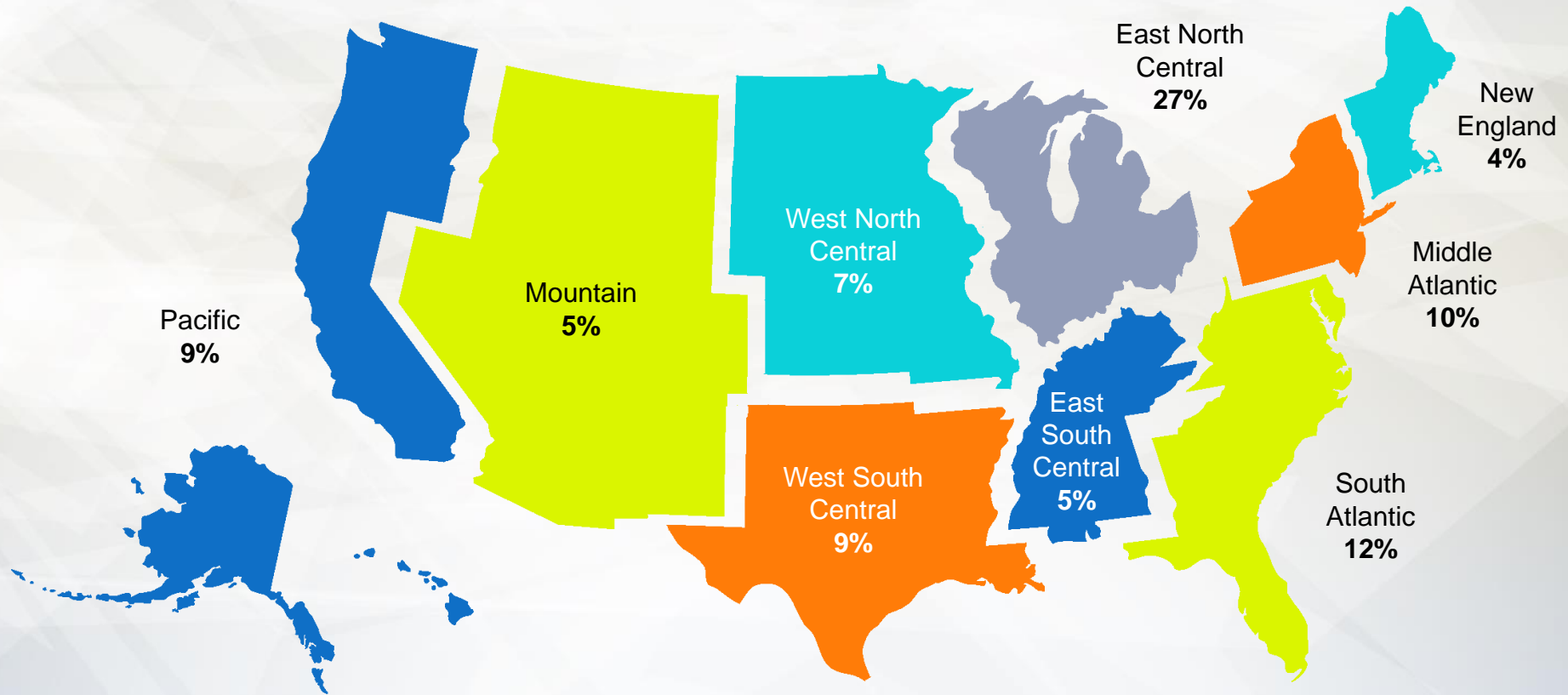
Twelve percent of respondents' companies primarily manufacture instrumentation, control systems, test, measurement or medical equipment.



Q: What is the primary business at your location? (n=155)

Location

Twenty-six percent of respondents are based along the East Coast of the United States; the four central regions account for 48%; Mountain and Pacific areas are just 14%. Twelve percent of respondents are outside of the U.S., including engineers from India, Ireland, Israel and Mexico.



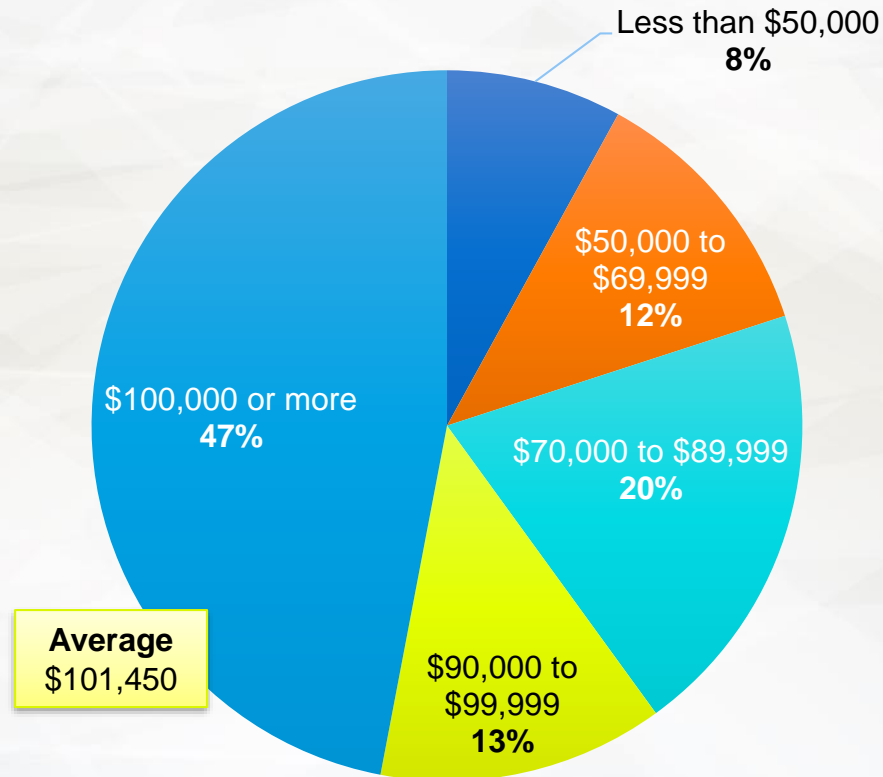
(n=162)



Annual compensation

2018 base annual salary

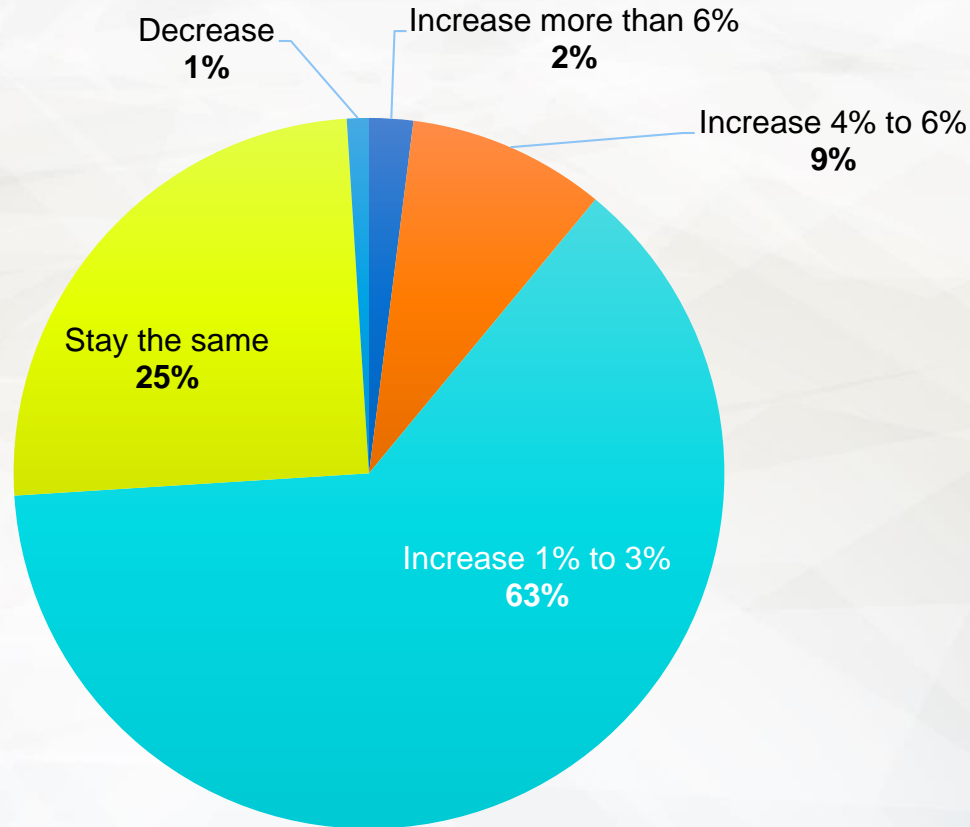
The average respondent earned a base salary of \$101,450 in 2018, not including bonuses, profit-sharing or other non-salary compensation; 47% of respondents received a salary of \$100,000 or more in 2018.



Q: What is your base annual salary without bonuses, profit-sharing or other non-salary compensation? (USD) (n=162)

Expected change to 2019 base salary

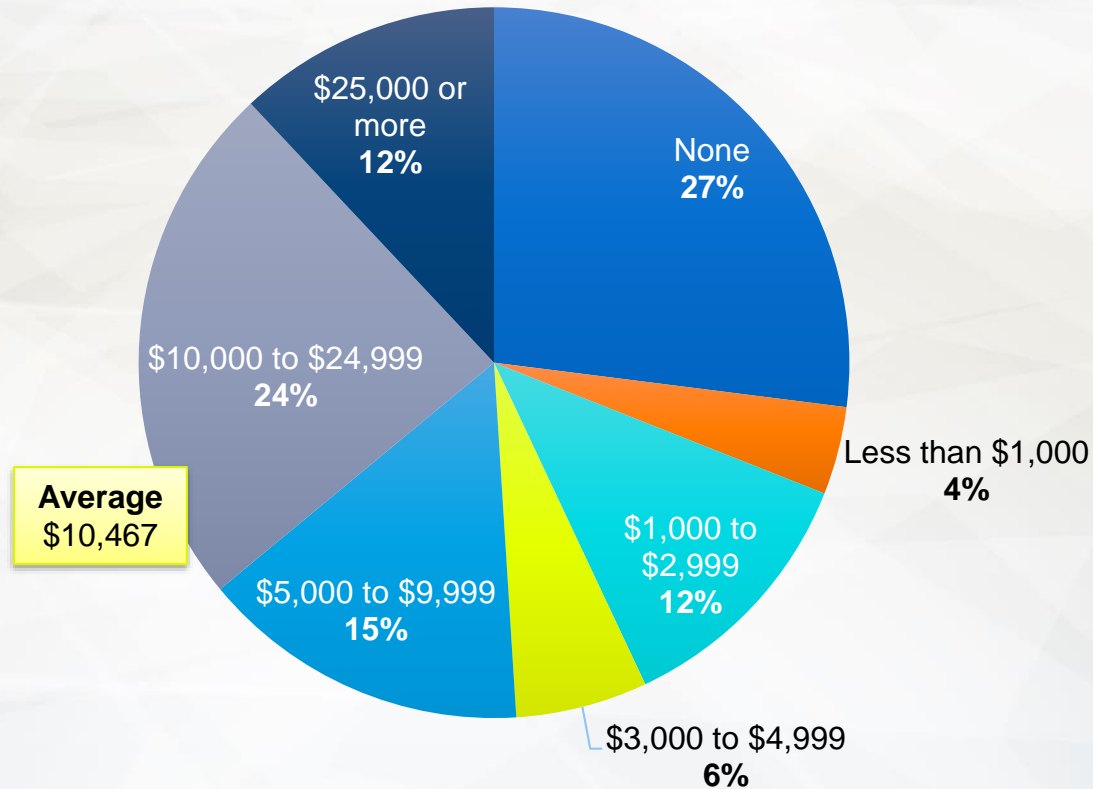
Seventy-four percent of respondents expect their 2019 base salary to increase compared to 2018, the majority of whom anticipate a raise of 1% to 3%.



Q: How do you expect your base annual salary compensation to change in 2019? (n=173)

2018 non-salary compensation

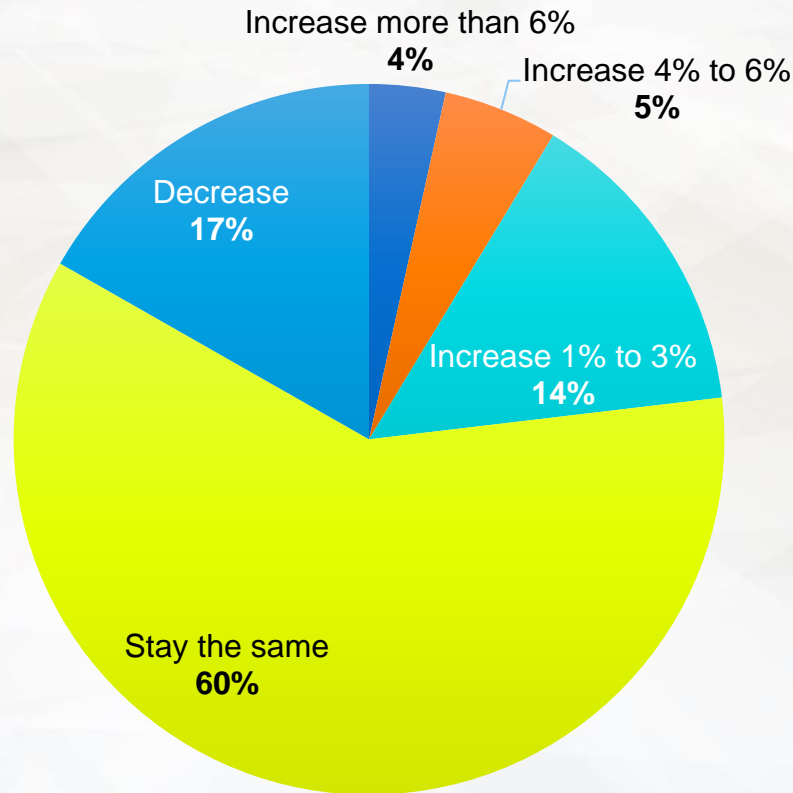
Seventy-three percent of respondents received a bonus or other form of non-salary compensation in 2018, the average additional compensation received was about \$10,000.



Q: How much non-salary (bonus, profit sharing, etc.) compensation did you receive during the most recently completed fiscal year? (n=162)

Expected change to 2019 bonus

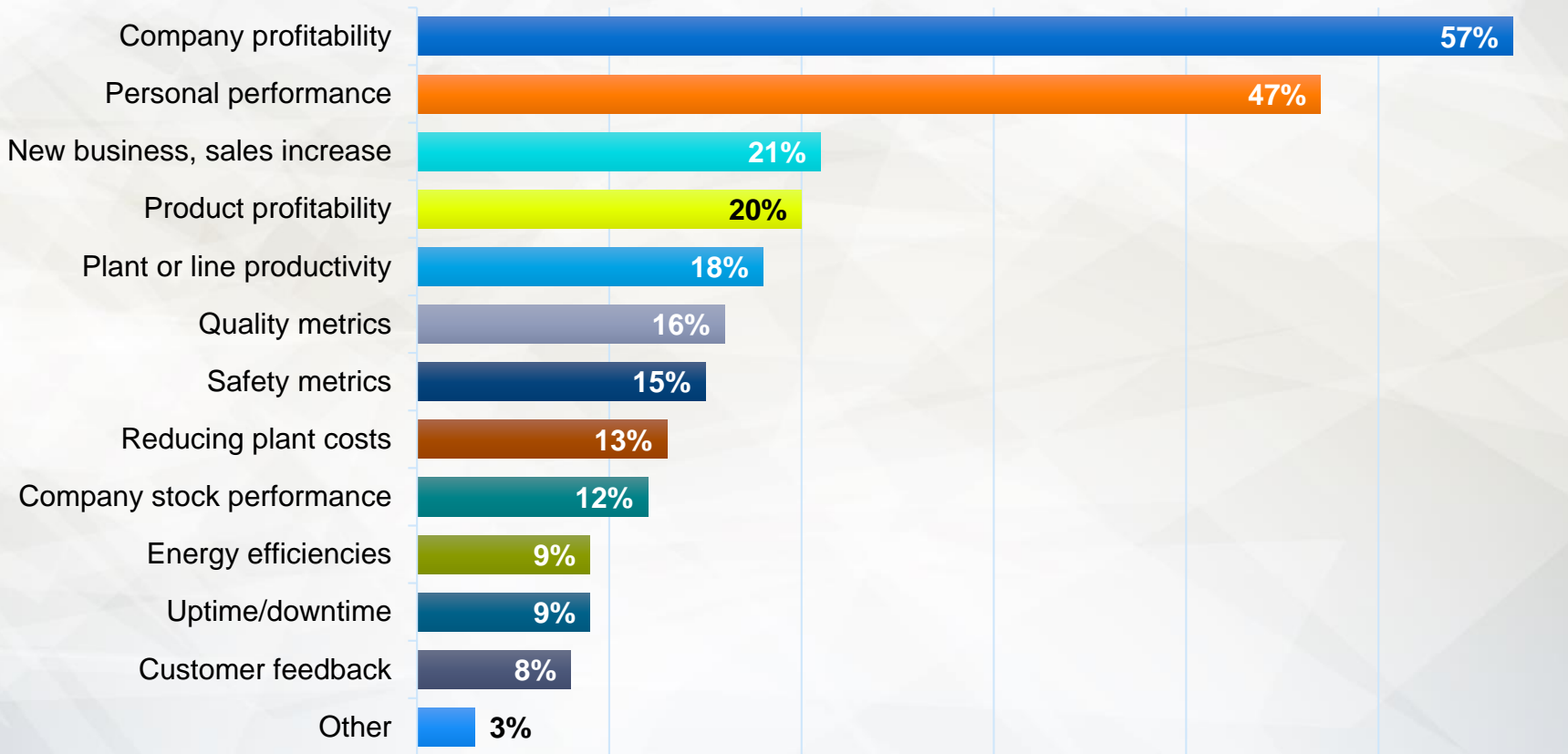
Twenty-three percent of respondents expect to receive a larger bonus or other form of non-salary compensation in 2019 compared to 2018, and 60% expect to receive the same amount as last year.



Q: How do you expect your bonus compensation to change in 2019? (n=173)

Bonus compensation criteria

The awarding of bonus compensation is generally dependent on company profitability and personal performance. Other common criteria for bonus compensation include new business/sales increase, product profitability, plant or line productivity, quality metrics and safety metrics.



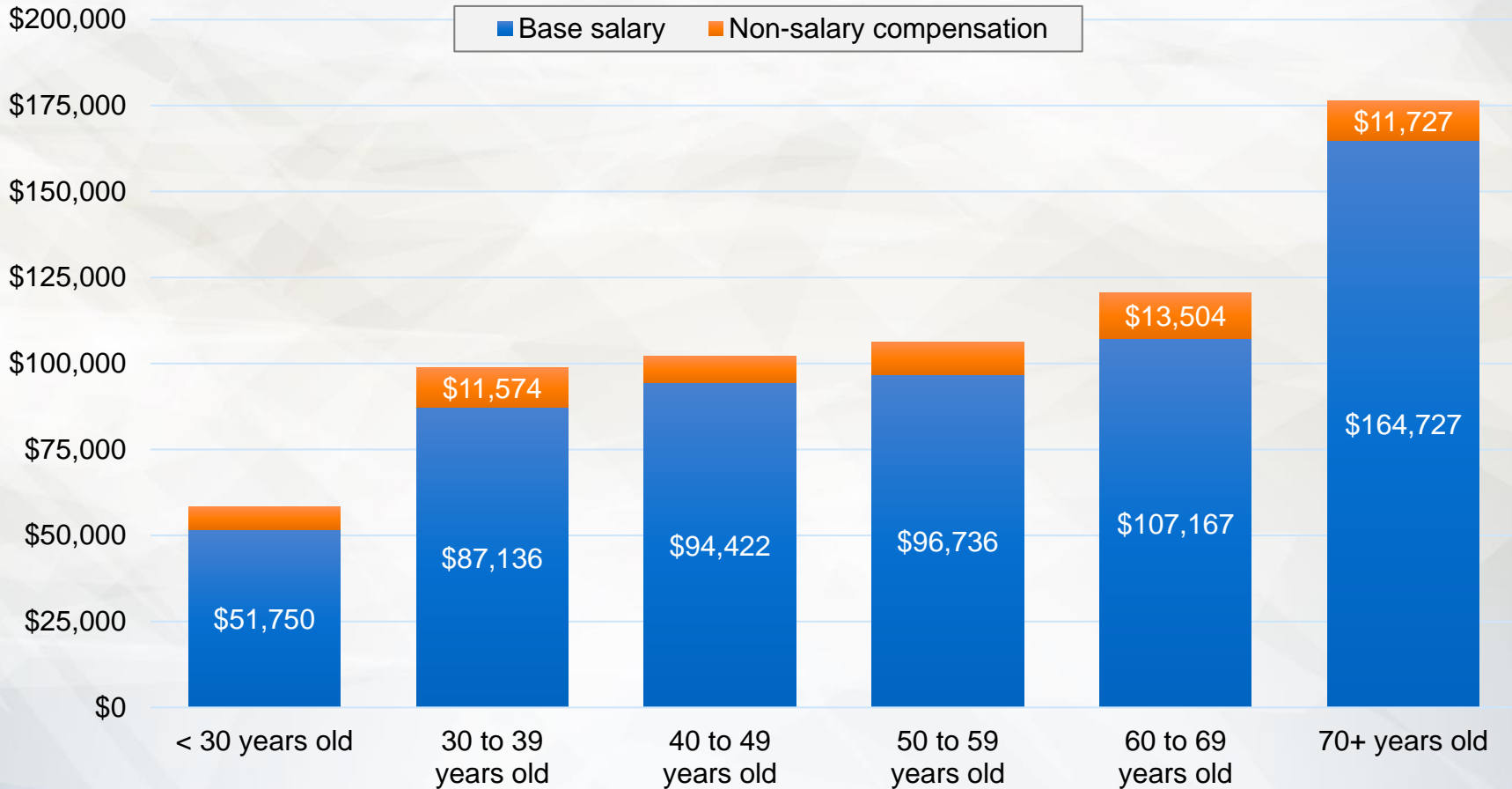
Q: Please indicate all of the criteria for your bonus compensation. Check all that apply. (n=173)



Segmented annual compensation

Compensation by age

With the average respondent being in their 50's, the average base salary earned in 2018 by 50- to 59-year-olds was \$96,736, and the average bonus received was \$9,457—a total take-away of \$106,193.



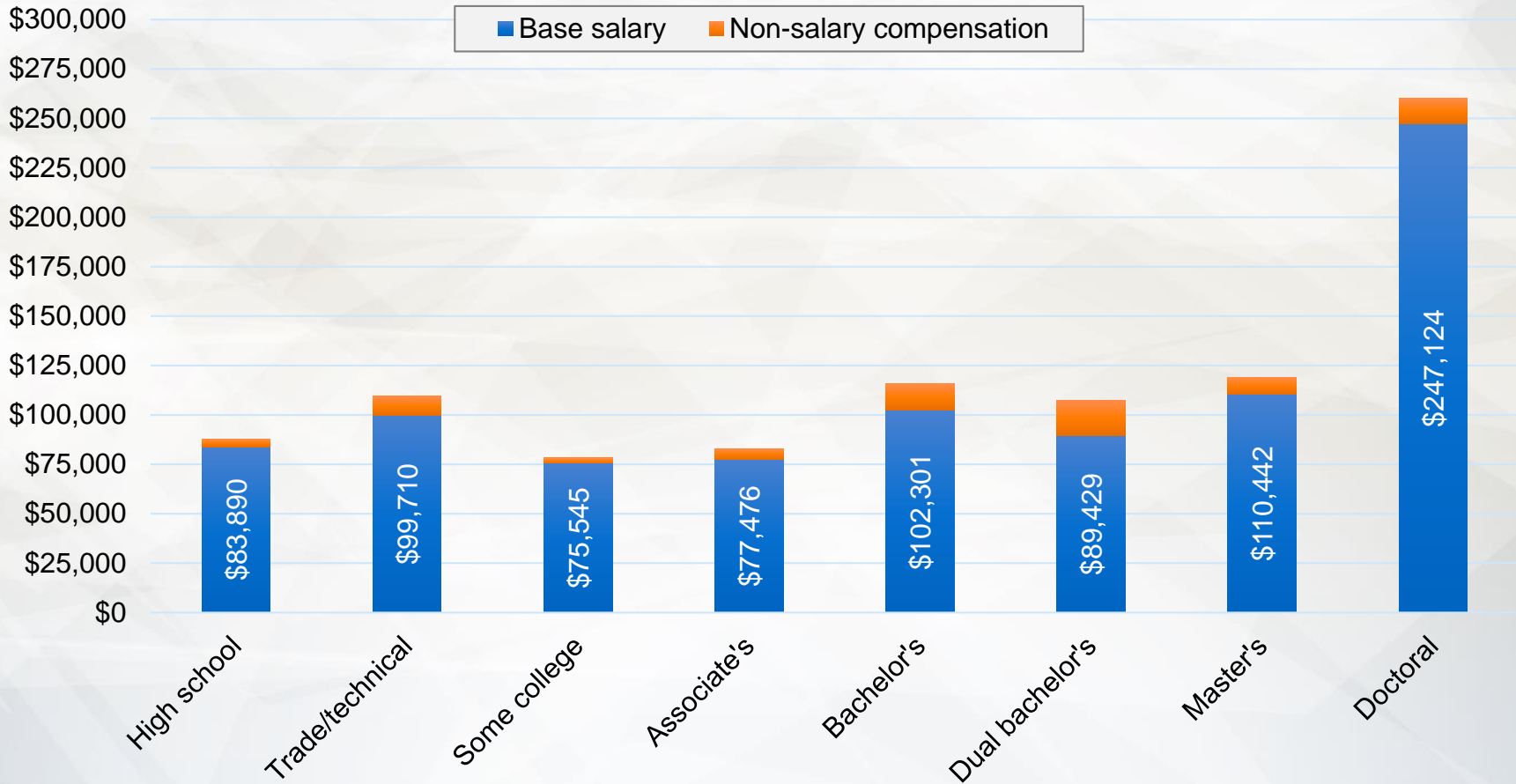
Compensation by industry experience

Respondents who have worked in their current industry for 25 to 27 years earned an average salary of \$90,739 in 2018, with a bonus of \$9,718.



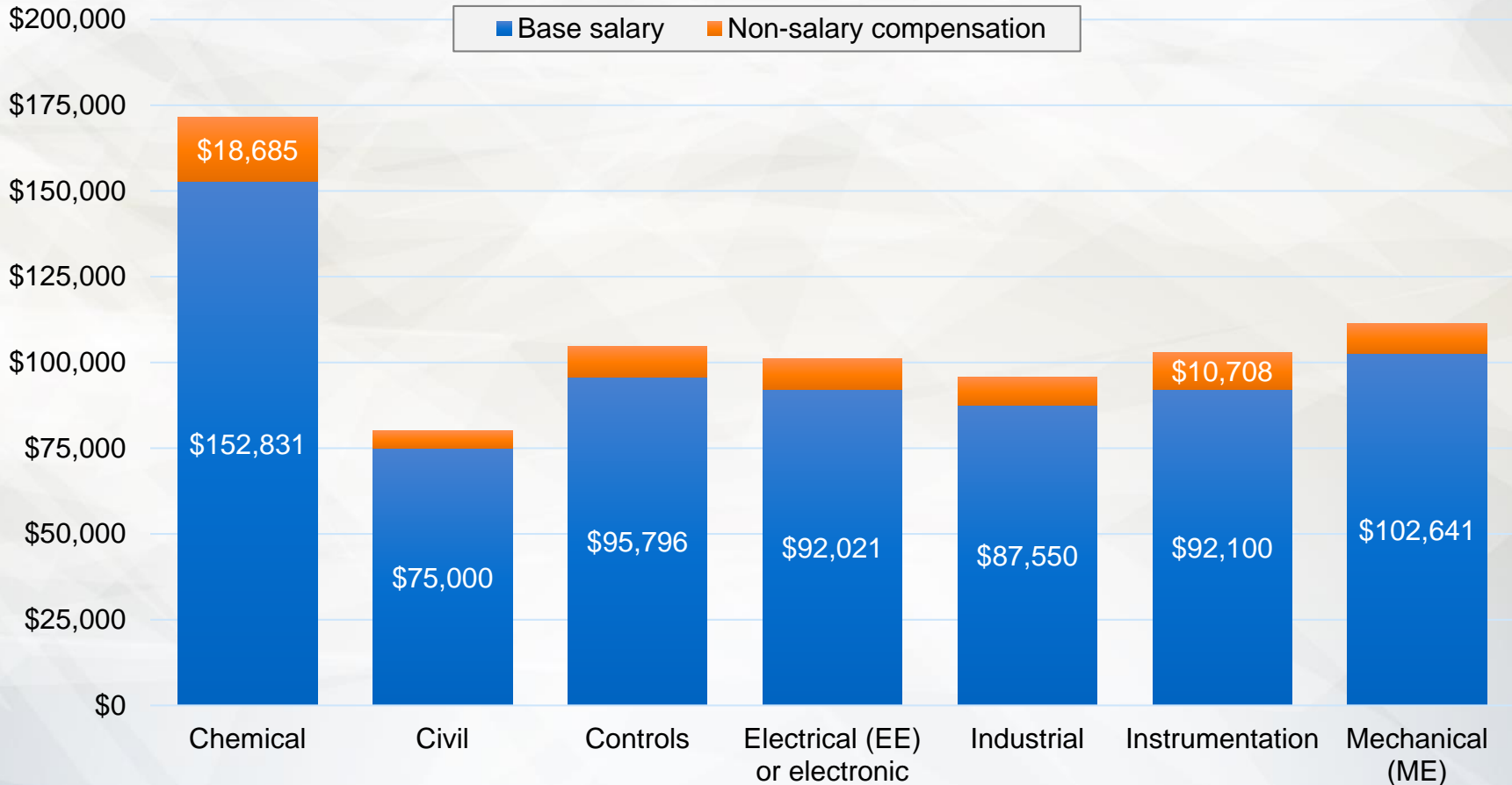
Compensation by education level

With 47% of respondents having achieved their Bachelor's degree as their highest level of education, the average total take-home pay for these engineers in 2018 was \$115,793.



Compensation by discipline studied

Although electrical or electronic engineering is the most commonly studied discipline by respondents, those who studied chemical engineering received the highest average compensation in 2018: \$171,516



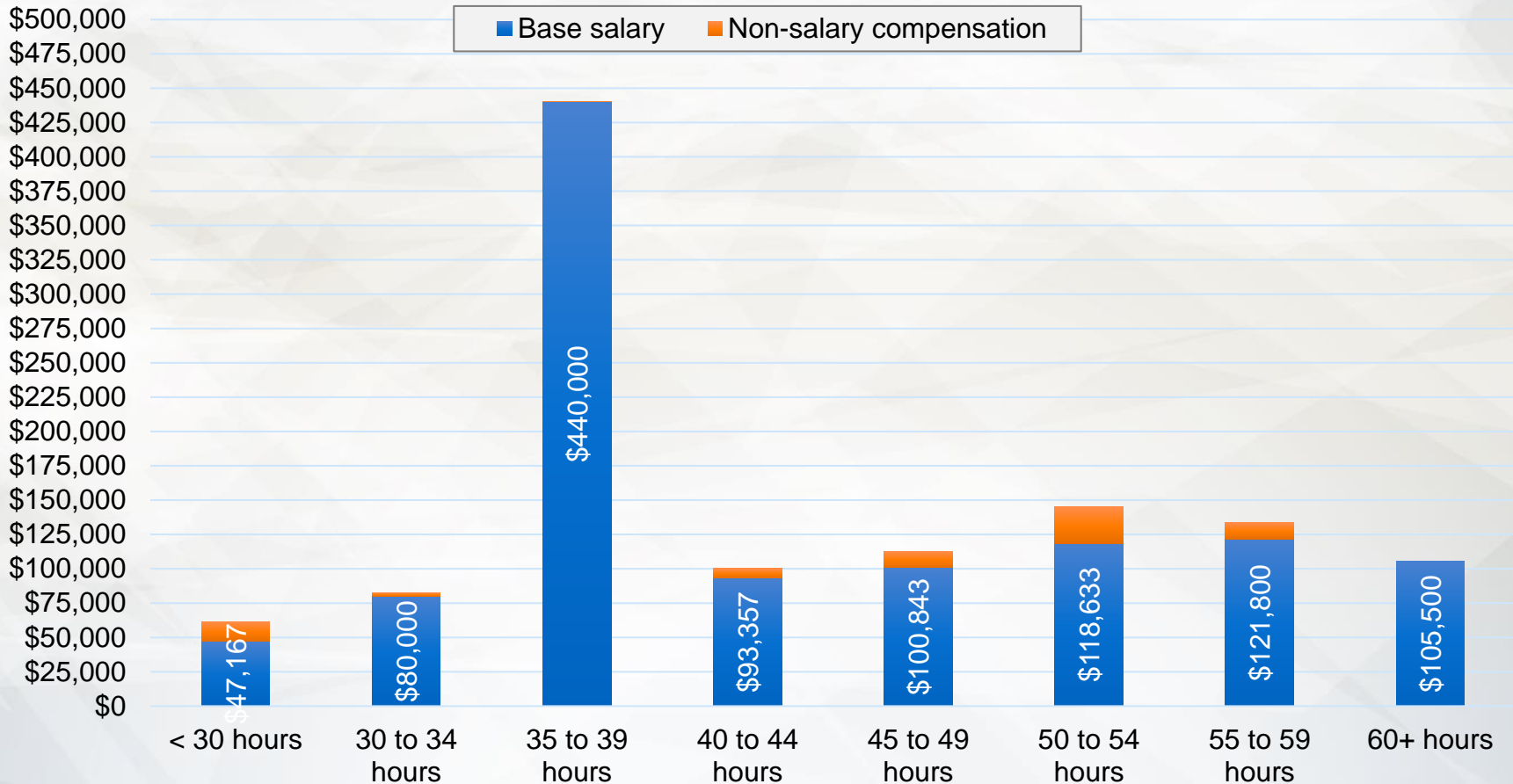
Compensation by no. of years with employer

Respondents who have worked for the current employer for 15 to 19 years earned an average salary of \$97,478 in 2018, with an average bonus of \$13,950.



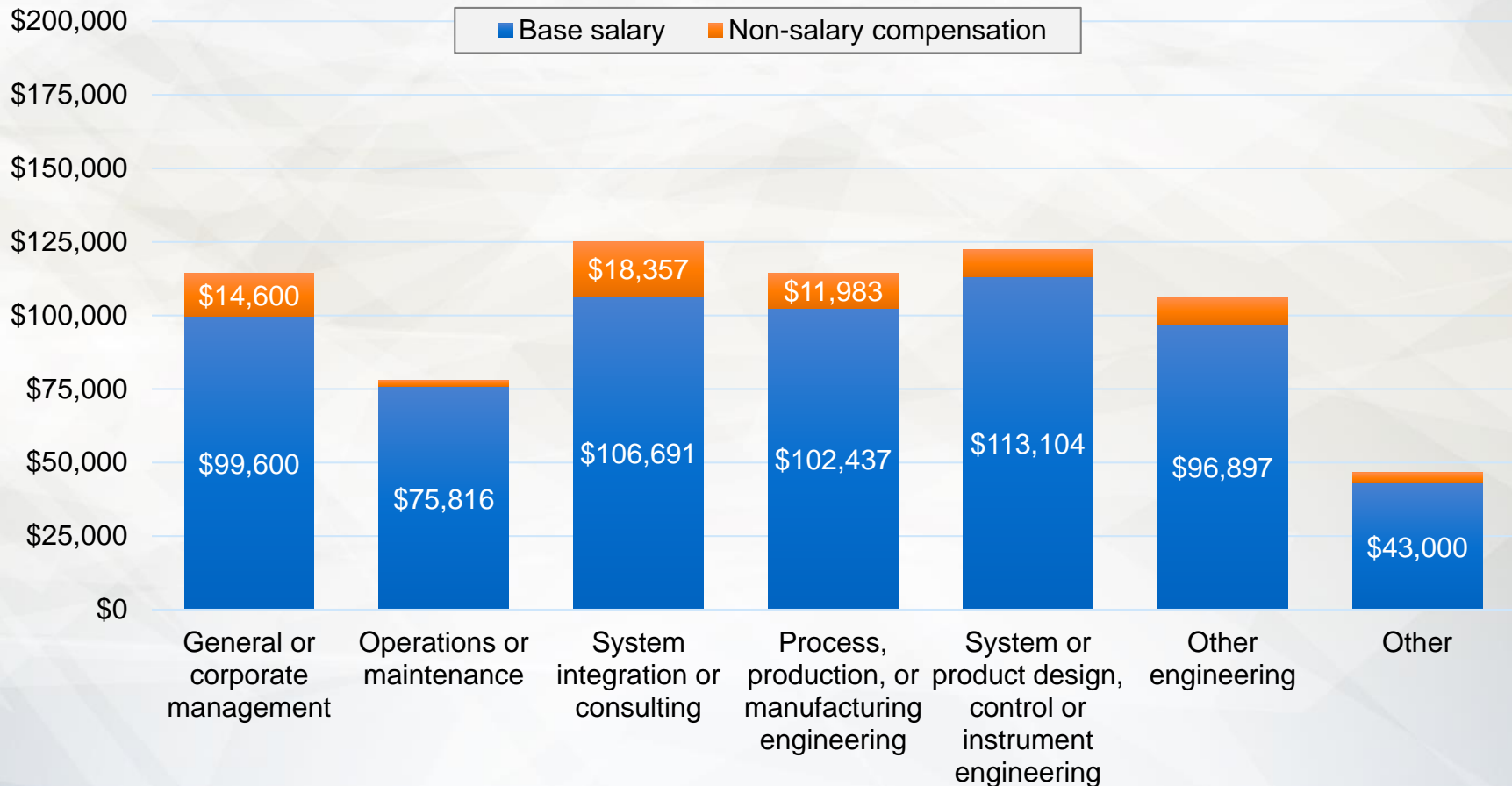
Compensation by no. of hours worked per week

On average, respondents who work between 40 and 44 hours each week made an average salary of \$93,357 with a bonus of \$6,880.



Compensation by primary job function

Respondents with a primary job function of system or product design, control or instrument engineering earned an average salary of \$113,104 in 2018, with a bonus of \$9,204.



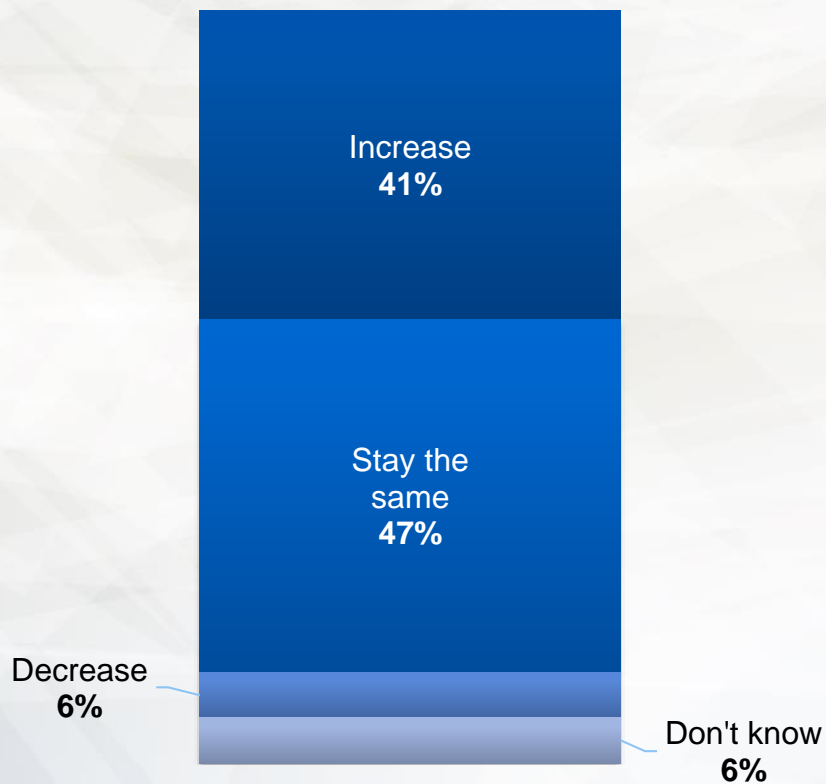


End-user's views, opinion

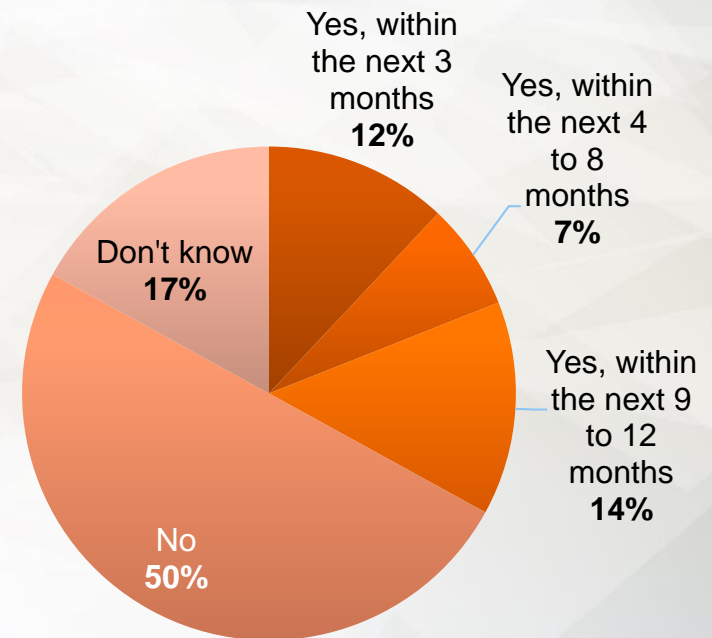
Anticipated changes

Forty-one percent of respondents expect the number of employees in their department to increase over the next 12 months, and 33% expect their facility to add new product lines or shifts.

Expected change to department size



Adding product lines or shifts

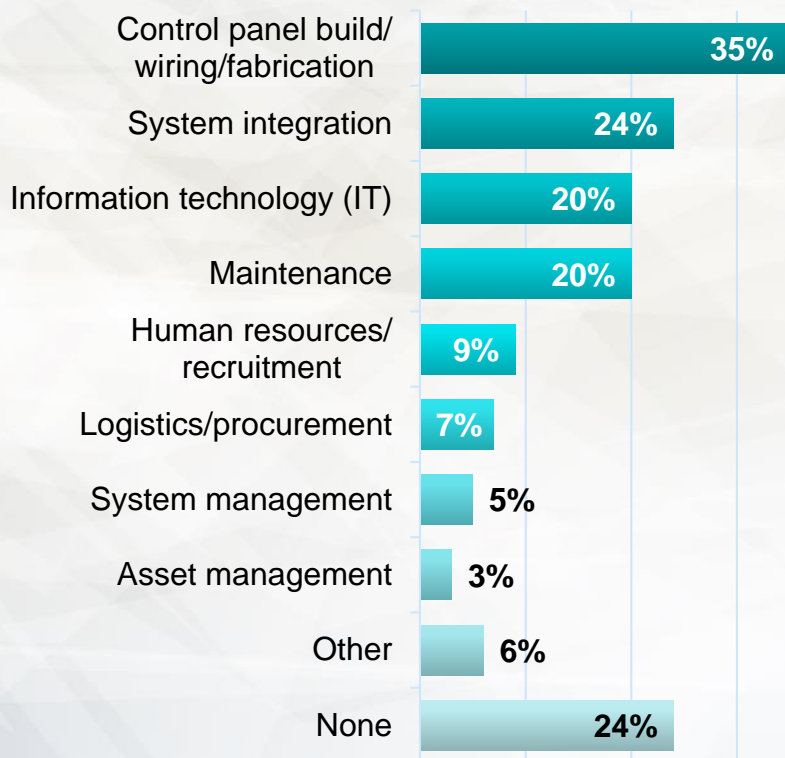


Q: How will the number of employees in your department change in the next 12 months? (n=173); Q: Does your facility expect to add new product lines or shifts in the next 12 months? (n=173)

Outsourcing

Seventy-six percent of facilities outsource one or more functions to third-party providers; the most common task being outsourced is control panel build/wiring/fabrication (35%). The top reasons facilities outsource some functions are the desire to focus better on core competencies and lack of skilled staff.

Outsourced functions



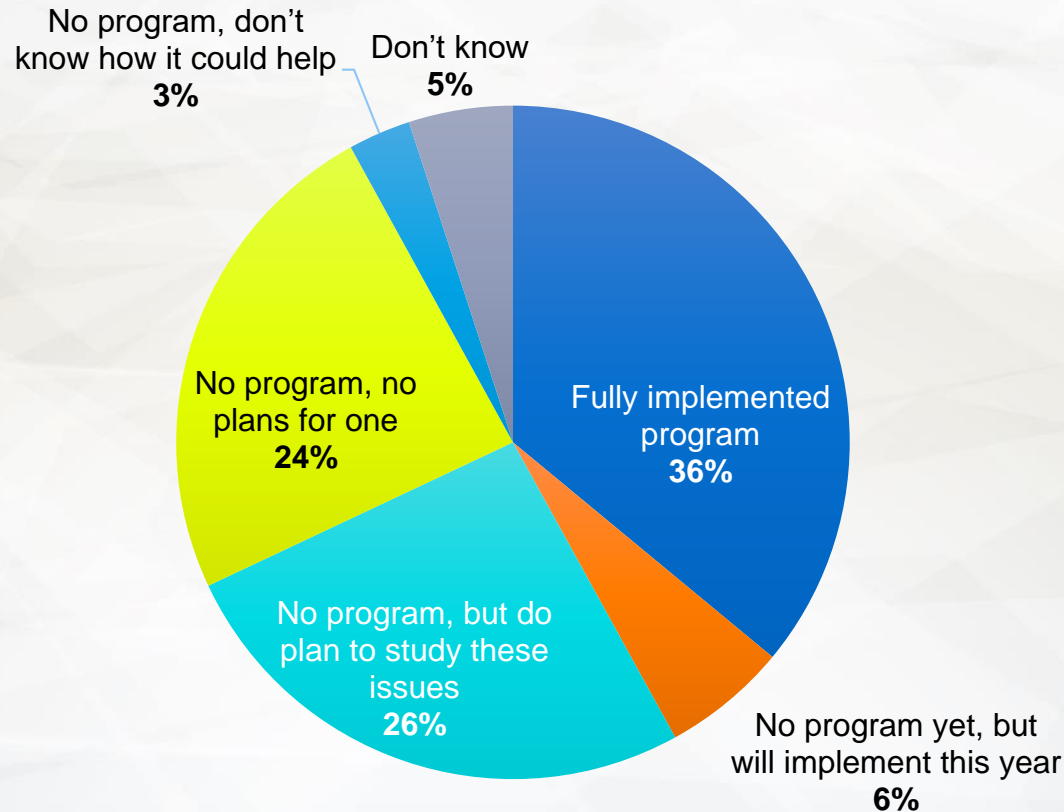
Reasons for outsourcing



Q: What functions does your facility outsource to third-party providers? Check all that apply. (n=173); Q: Why does your facility outsource functions to third-party providers? Check all that apply. (n=124)

Evaluating, optimizing processes

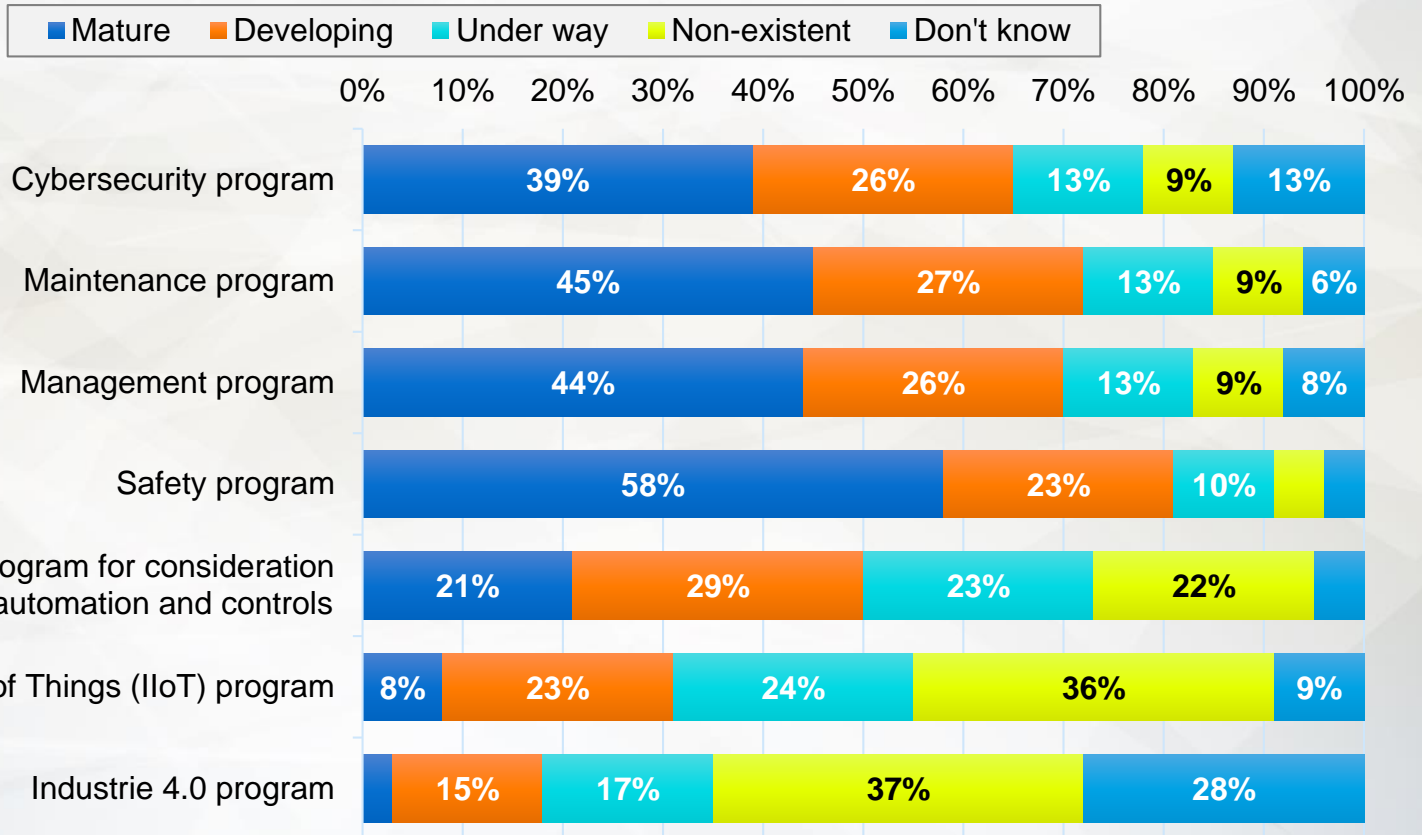
Thirty-six percent of facilities have implemented a program to evaluate and optimize processes so that appropriate automation and controls can be considered and applied.



Q: Does your facility have a program to evaluate and optimize processes so appropriate automation and controls can be considered and applied? (n=173)

Program stages of development

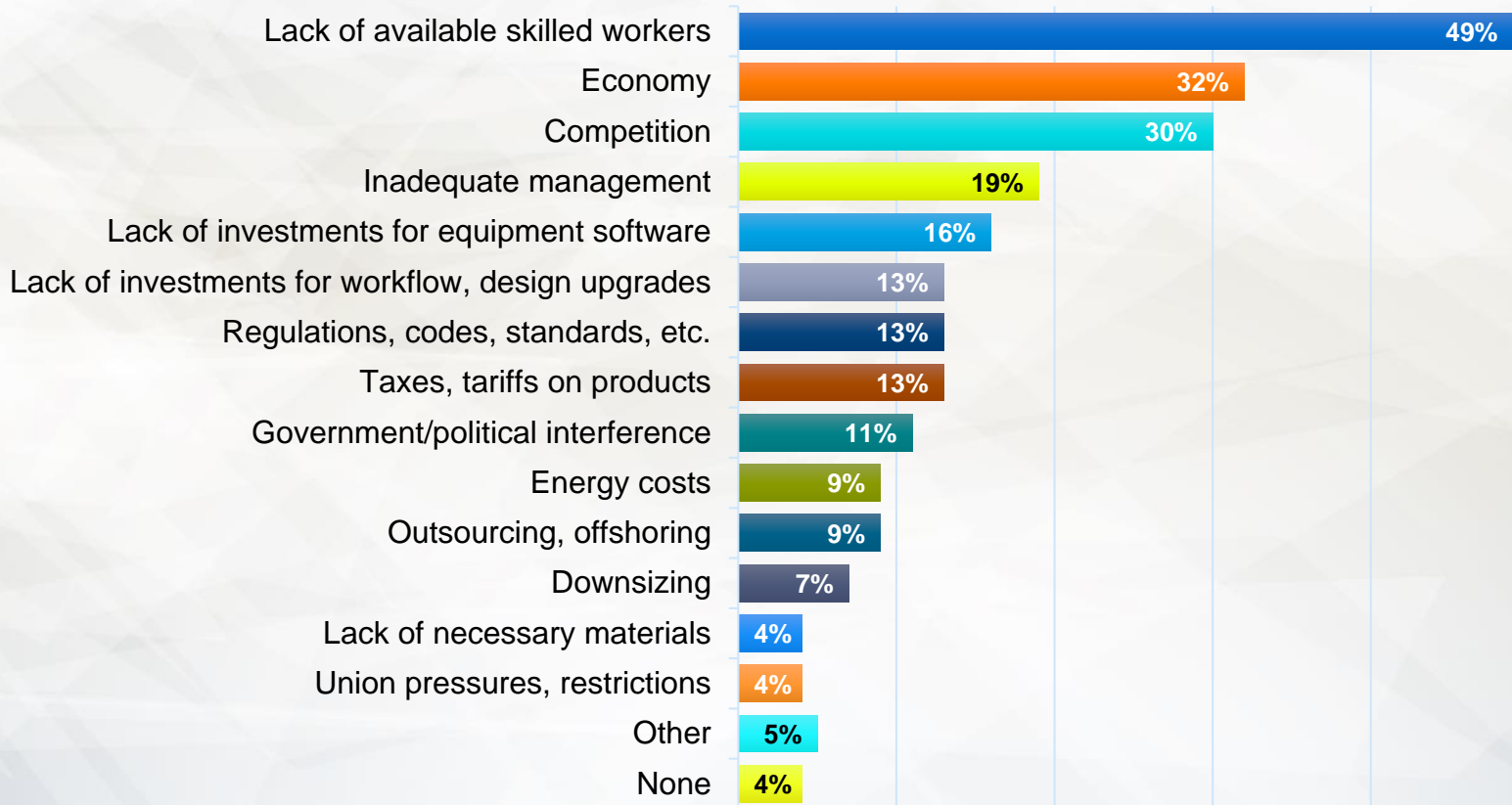
The most common programs implemented or underway in respondents' facilities are safety programs, maintenance programs, management programs and cybersecurity programs.



Q: Please indicate the stage of development for the following programs in your facility: (n=173)

Biggest threats to manufacturing businesses

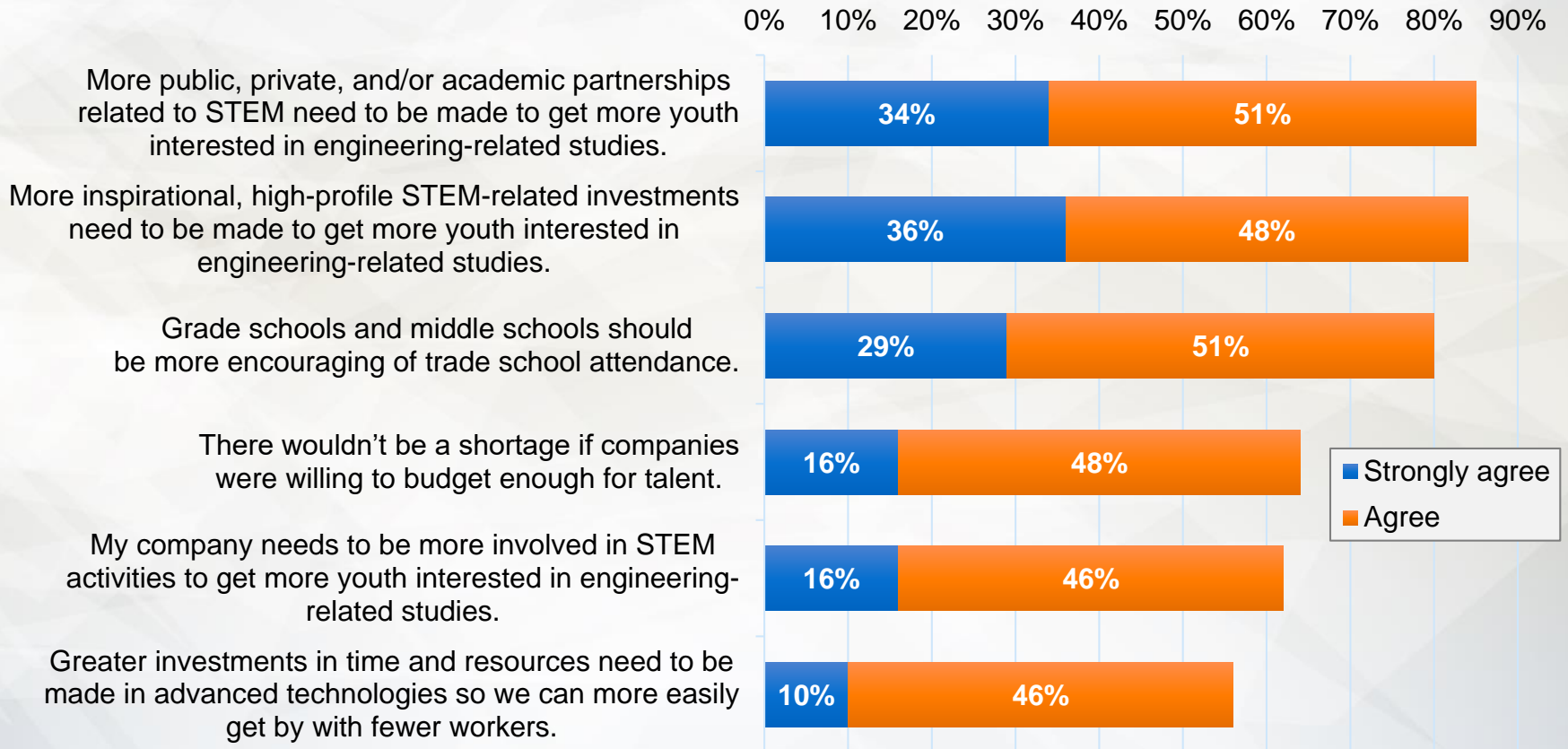
Forty-nine percent of respondent believe the lack of available skilled workers to be a big threat to manufacturing businesses, up from 37% in the 2018 survey. Economic factors, keeping pace with the competition and inadequate management strategies are other threats identified by respondents.



Q: What are the biggest threats that your manufacturing business faces today? Check all that apply. (n=164)

Thoughts on skilled workers

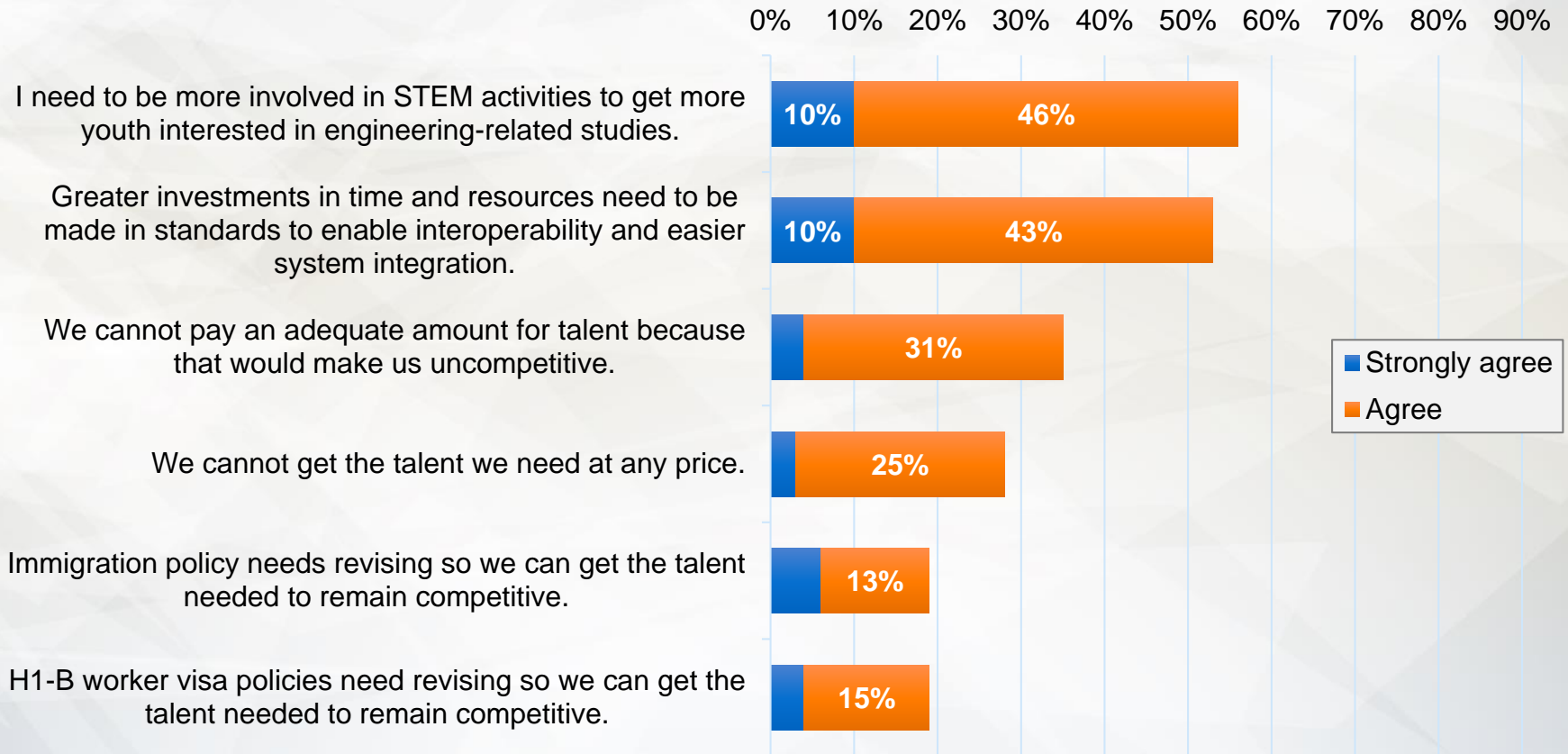
In response to the shortage of skilled workers, 80% of respondents agree that grade schools and middle schools should be more encouraging of trade school attendance as an alternative to 4-year colleges.



Q: On the topic of skilled workers, please share your opinions: (n=161;160;156;159;158;158)

Thoughts on skilled workers *continued*

More than half of respondents agree that greater investments in time and resources need to be made in standards to enable interoperability and easier system integration so companies can more easily get by with fewer workers.



Q: On the topic of skilled workers, please share your opinions: (n=160;159;161;160;159;158)

Attitude towards current job

Forty-eight percent of respondents enjoy going to work every day, while 40% are satisfied and grateful to be working. Only 12% are looking to possibly switch positions in the near future.



Q: Which of the following best describes your attitude towards your current job? (n=163)

Factors that impact job satisfaction

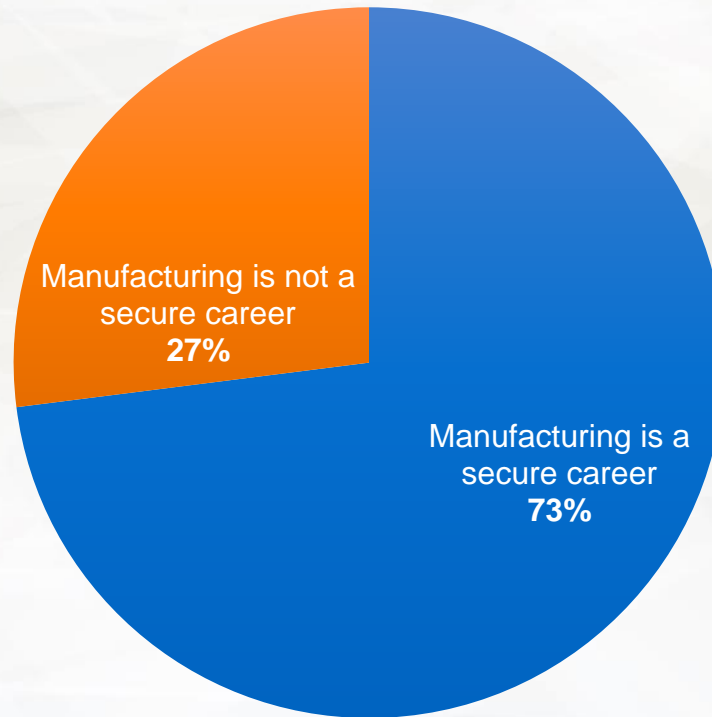
The top three factors that impact end users' satisfaction towards their jobs are the feeling of accomplishment, technical challenges and financial compensation.



Q: What 3 factors have the greatest impact on your satisfaction with your current job? (n=163)

Consider manufacturing a secure career

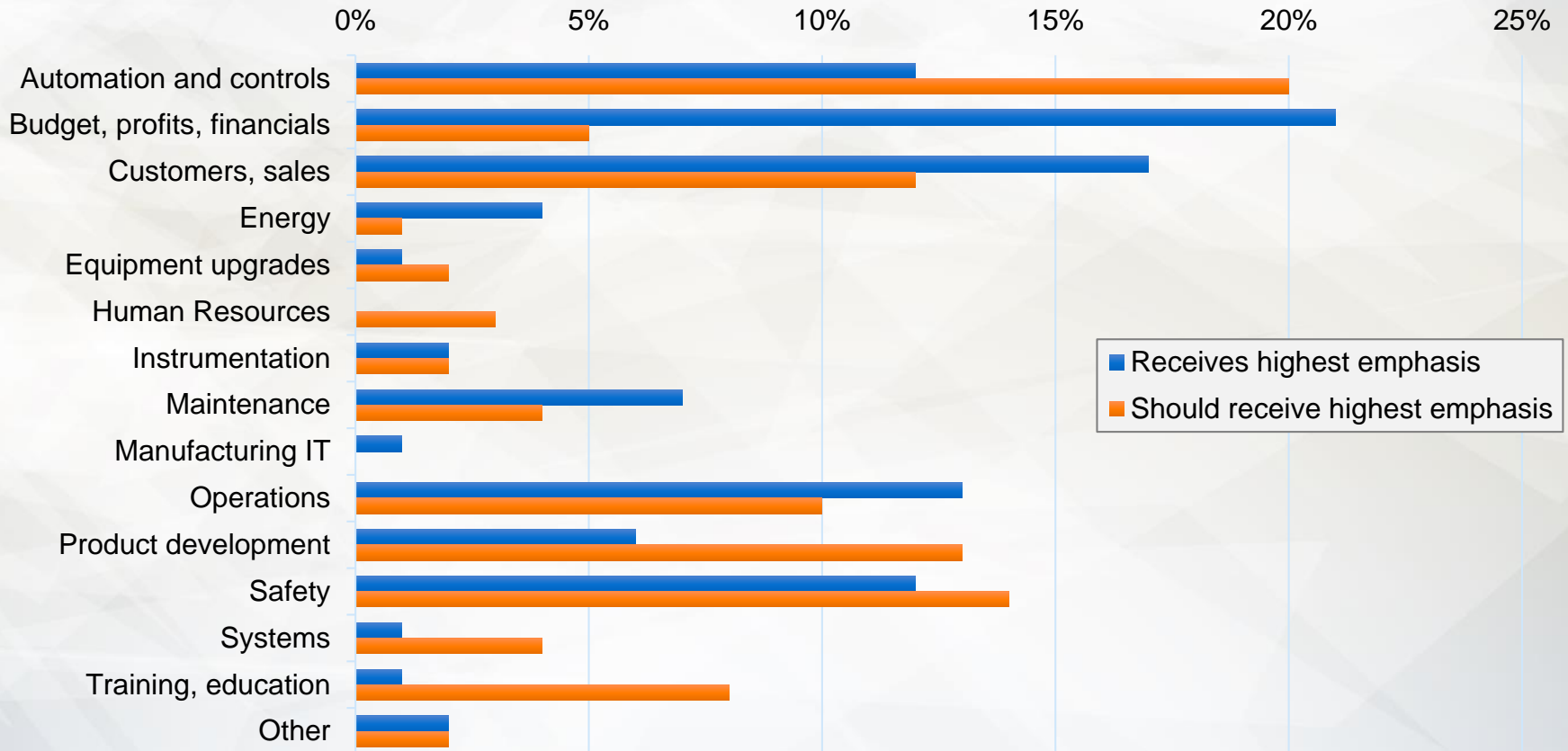
The majority—73%—of respondents consider manufacturing to be a secure career.



Q: Do you consider manufacturing to be a secure career? (n=163)

Emphasis on areas of operation

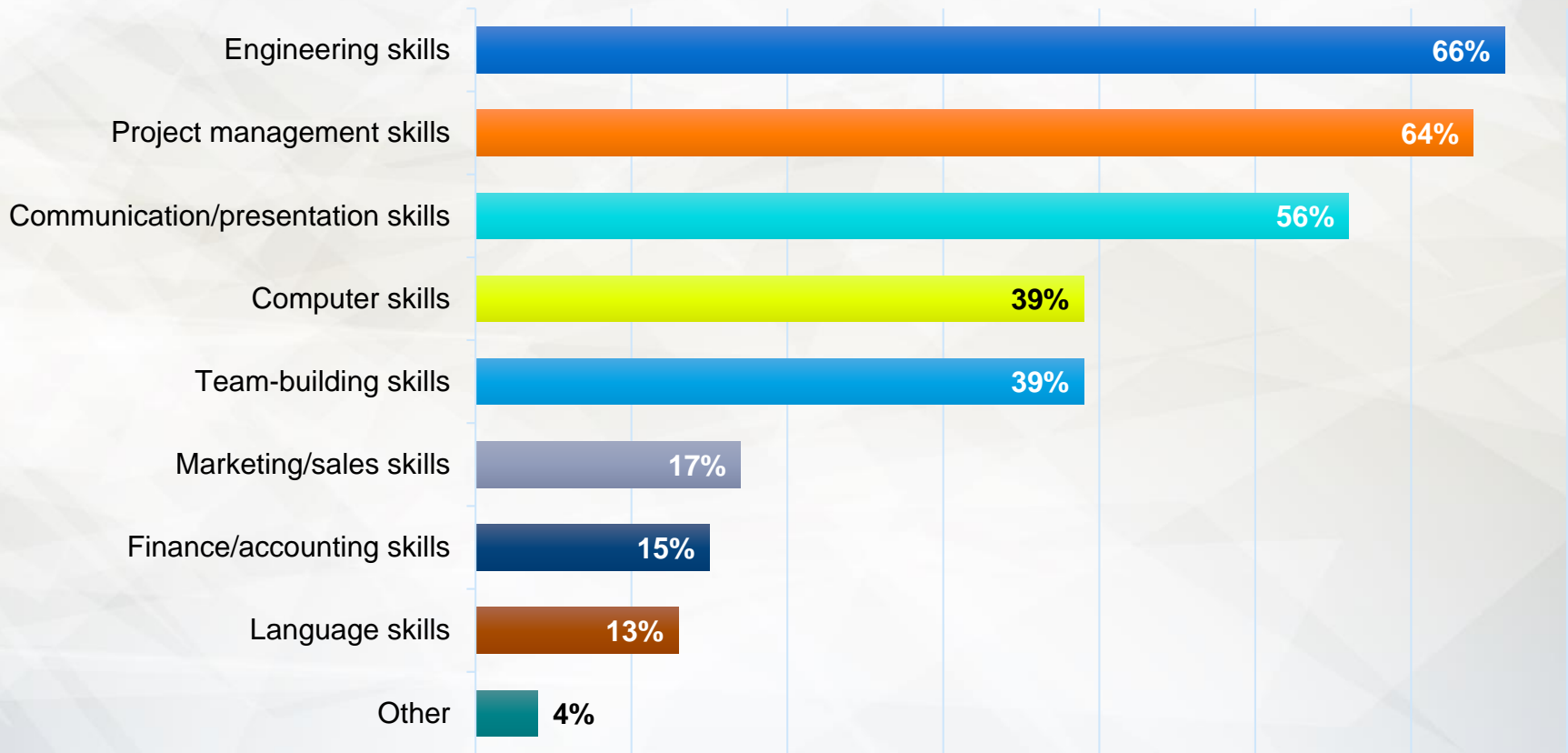
According to respondents, the budget, profits and financials tend to receive the highest emphasis in their facilities, when the emphasis should really be more applied to automation and controls, safety and product development.



Q: Which area of your operation gets the highest emphasis? (n=163); Q: Which area of your operation should get the highest emphasis? (n=163)

Skills needed to get ahead

The top skills that respondents believe they or their peers need in order to get ahead in their profession today are engineering (66%), project management (64%) and communication/presentation (56%).



Q: What skills do you or others in your areas of responsibility need to get ahead in their profession today? (n=163)

Additional resources

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