



# Training and Development Survey

SPE Research, December 2012

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# Executive Summary

Overall, a wide range of skills are important for a successful career in the oil and gas industry; therefore employees place great emphasis on training and development opportunities when choosing their employers.

## Skills and Preparation

- Ability to learn, teamwork, communication skills, work ethic, and technical skills are some of the most important skills that are required for a career in the industry.
- Universities play an important role in equipping graduates for the start of their career and are seen to be particularly good at providing computer skills, knowledge, technical skills, and analytical skills.

## Personal Experience

- Upon starting a career, the majority (86.8%) of employees require training, even if only a little. Most (82.4%) expect their employer to provide them with some of this training, which tends to be a combination of formal and informal. Only a tenth (11.1%) expect the employer to provide all of their training.

## Formal Training

- Two-thirds (65.7%) of respondents have received formal training, which consisted of technical training (76.5%), soft skills training (57.8%), and management and finance training (44.3%).
  - Outside companies deliver the greatest share of this formal training.
    - Formal technical training is mostly delivered by a mix of outside companies, workshops, on-the-job training, and internal training programs.
    - Soft-skills training is provided by either outside companies (28%) or internal training programs (24%).

## Training and Development Opportunities

- It is important for companies to have good training and development programs, as three-quarters (74.6%) of employees state that it is important in their choice of role, and over half (53.3%) say that a lack of opportunities would be enough for them to consider leaving.



## Key Skills for the Future

- Unconventionals, Deepwater, EOR/IOR, and Heavy Oil are expected to be some of the major sources of upstream production growth over the next 5 years. Importantly, there is positive awareness of the skill gaps that the industry faces in these areas, which, if not rectified, could impact production growth.

## Preferences by Age Group

- When asked about the skills and attributes required to be successful in the petroleum industry, a few generational differences were noted regarding what respondents' valued most. Some of the differences in age groups were most apparent in motivation and non-technical skills.
- Respondents had different expectations of their need for training required to assume their present role. Expectedly, the amount of training needed decreased with age and experience.
- A few of the noteworthy differences exist in preferences for the mode of training, with younger respondents expecting their employer to be the primary facilitator, providing almost all training, whereas older, more experienced professionals were more self-reliant in procuring their training. Their preferences could influence the types of training companies provide in the future, and how they deliver content.

## Demographics

- More than half (56.4%) of those surveyed are responsible for some form of training and development with staff.
- The respondent profile consists of members with a lot of experience in the oil and gas industry (nearly half, 46.8%, working in the industry for 20 years or more). They have been with their current employer on average 8 years and 5 months and spent at least 4 years and 8 months in their current role.
- The greatest proportion of respondents is currently based in the United States (34.5%), with the next largest based in Canada (7.5%), United Kingdom (7.2%), and Australia (4.9%).

## Objectives and Methodology

The objectives of this study were to build a current picture of the level of skills needed in the global engineering community and the importance the oil and gas industry places on learning and skills development.

To address the objectives of the study, the first invitations to participate in the 2012 Training and Development Survey were sent to a random selection of SPE members on 12 November 2012.

Screening criteria was applied, which excluded the following respondents:

- Self-employed/contract professional between placements
- Unemployed
- Student
- Retired
- Not working in the oil and gas industry

The survey was open for approximately 3 weeks.

The survey achieved a sample of 773 respondents.

The response rate produced a statistical margin of error of  $\pm 3.45$  at a 95% confidence level.

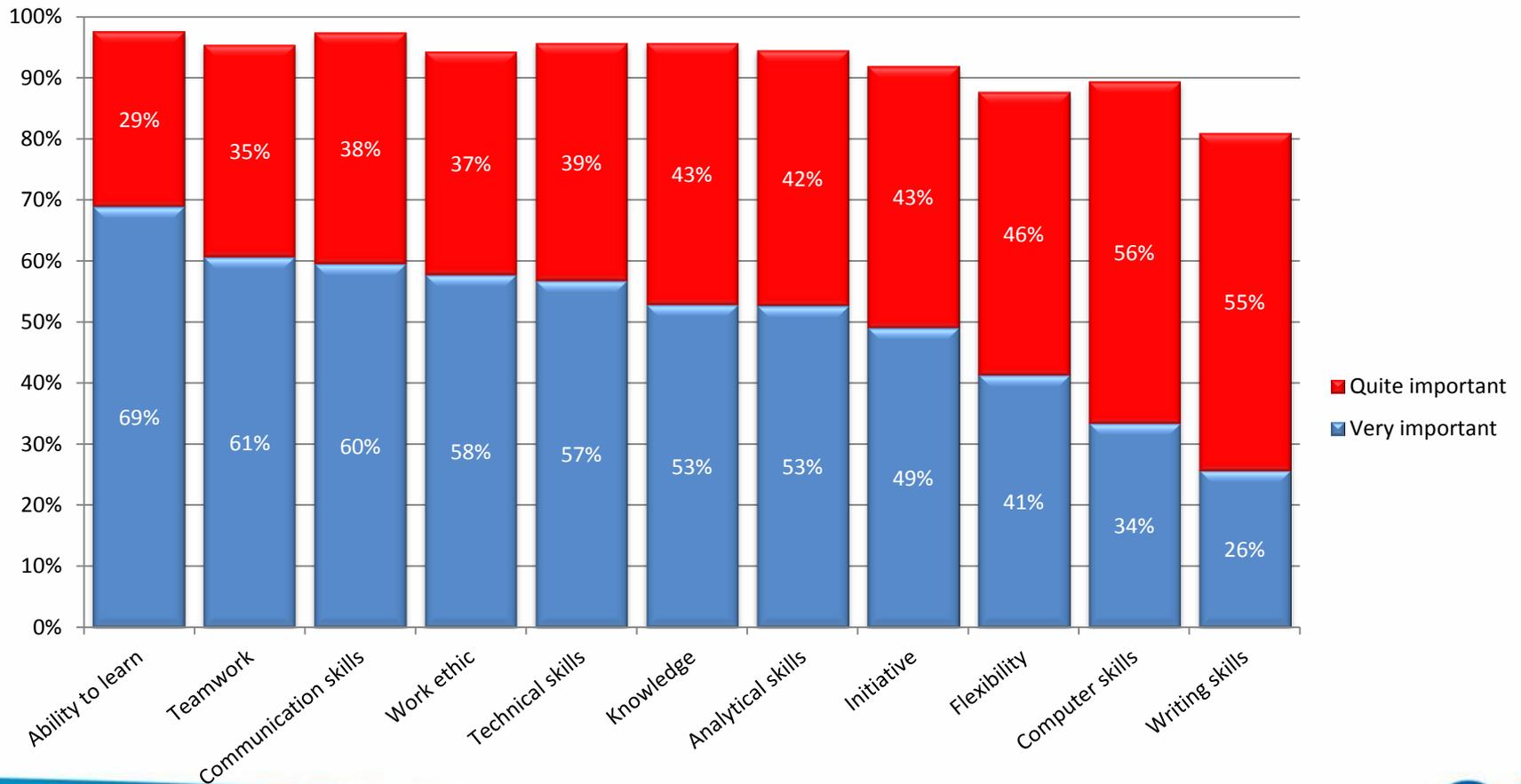


# Skills and Preparation

# More than two thirds of respondents (69%) regard the ability to learn as a most valued attribute for success in the industry, while just over a quarter (26%) find writing to be an essential skill

- Majority of respondents think a wide range of skills are important for a successful career in oil and gas.
- However, ability to learn, teamwork, and communication skills are perceived to be the most important skills for success.

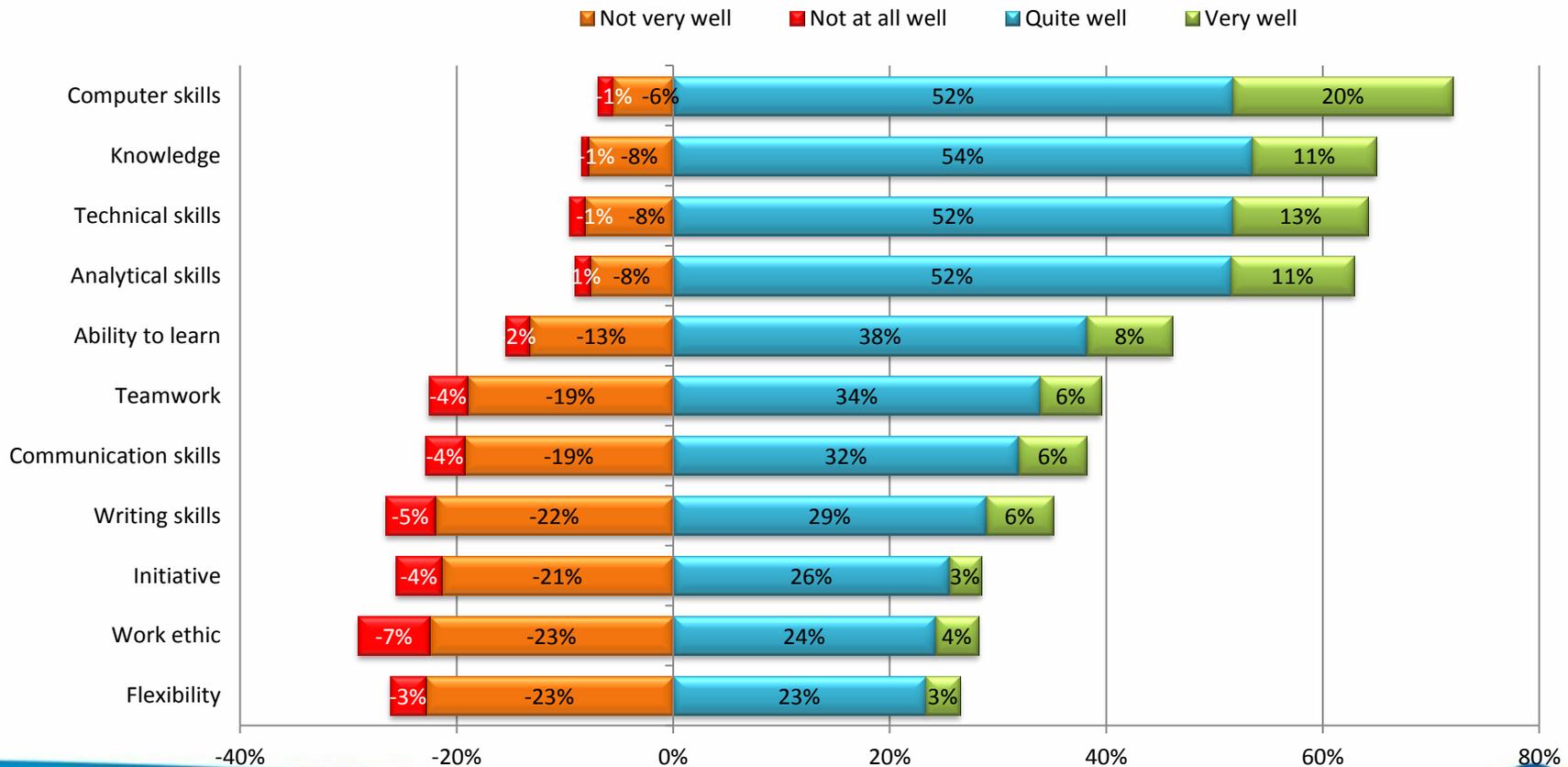
## Importance of skills for a career in the oil and gas industry



# Respondents indicated that they are well prepared in technical knowledge to enter the workforce, which they also regarded as more important overall than “soft skills”

- Universities are perceived to be doing well at equipping graduates with computer skills, knowledge, technical skills, and analytical skills to help them at the beginning of their oil and gas career.
- Areas where universities are seen to not be doing well include providing graduates with initiative, flexibility, writing skills, and a work ethic – more than a quarter perceive universities as doing not well in these areas.

## Performance of universities in equipping graduates for the start of their career in oil and gas

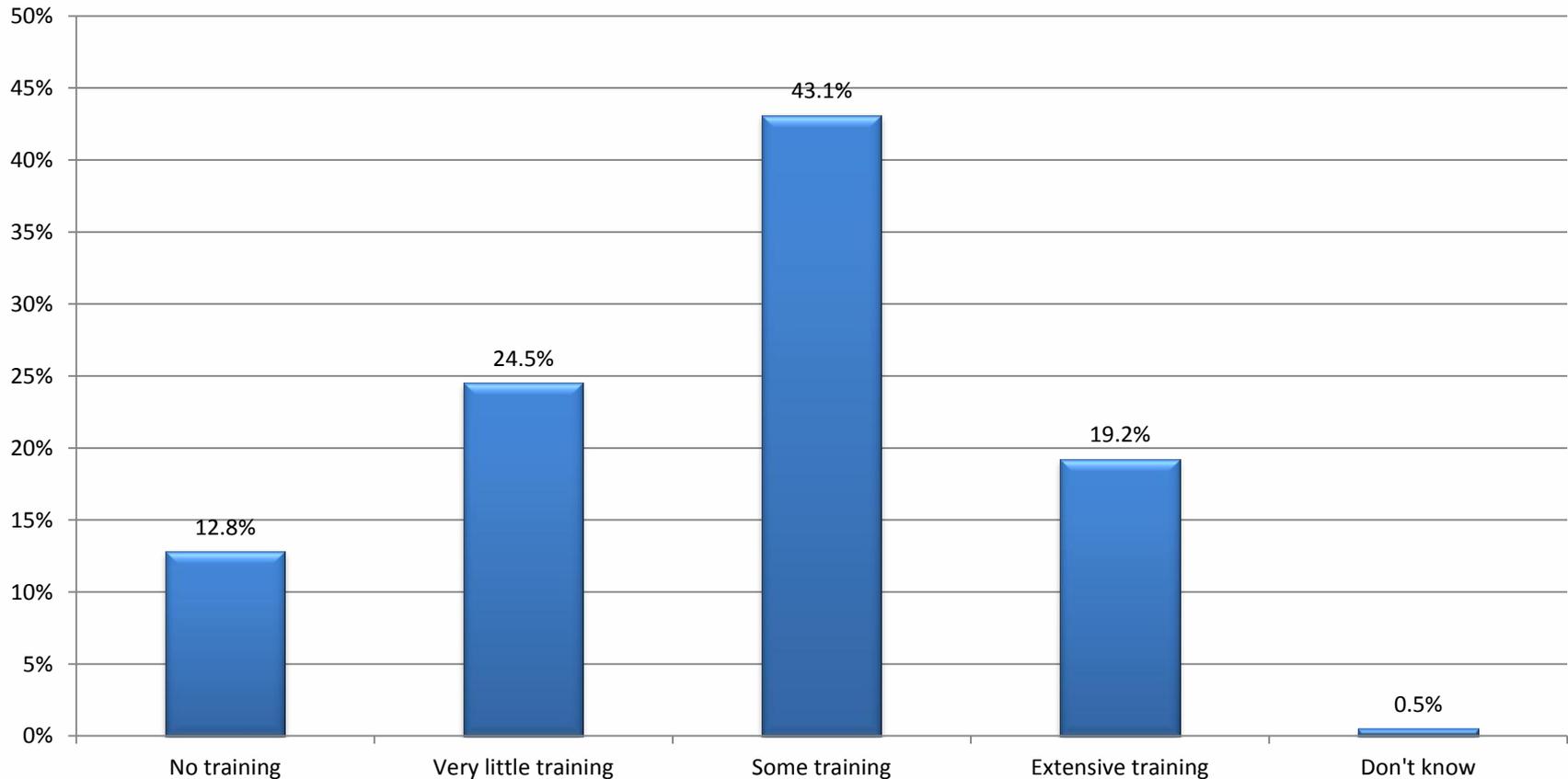


# Personal Experience

# Professionals required a moderate amount of training to assume their current role in the industry

- Only a tenth (12.8%) of people say they required no training when they started their current role.
- Majority of people (86.8%) required training, if only a little.
- Nearly a fifth (19.2%) required extensive training.

## Level of training required when starting current role



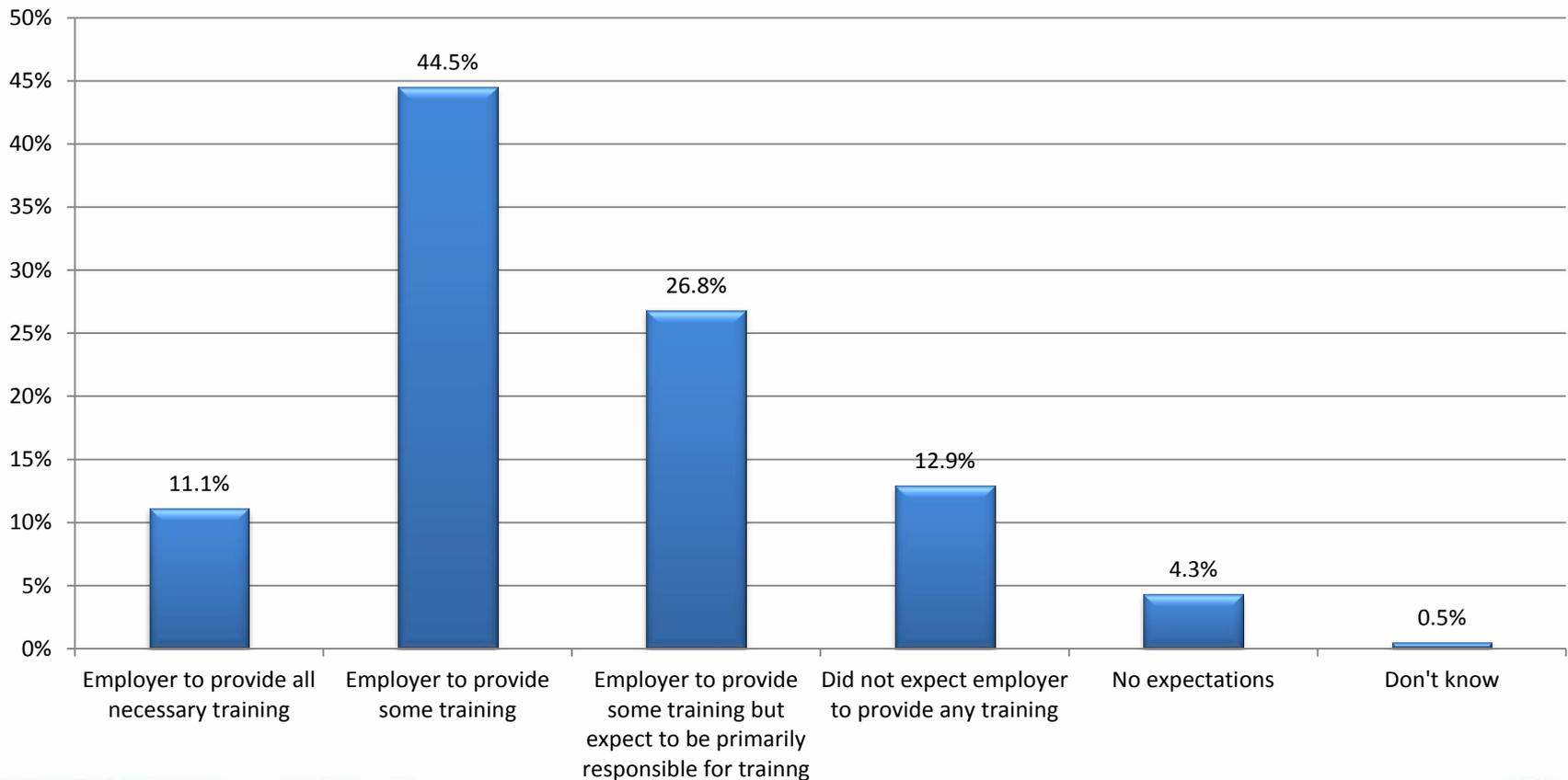
Base: n=650 respondents



# Most employees in the industry expect their employer to assume a large portion of the responsibility of preparing them for a new position

- The majority (82.4%) of respondents expect their employer to provide some training when starting a new role.
- Only 11.1% expect their employer to provide them with all the necessary training.
- More than a quarter (26.8%) expects to be responsible for their training and development, with the employer providing some.

## Expectations regarding training and development when starting current role



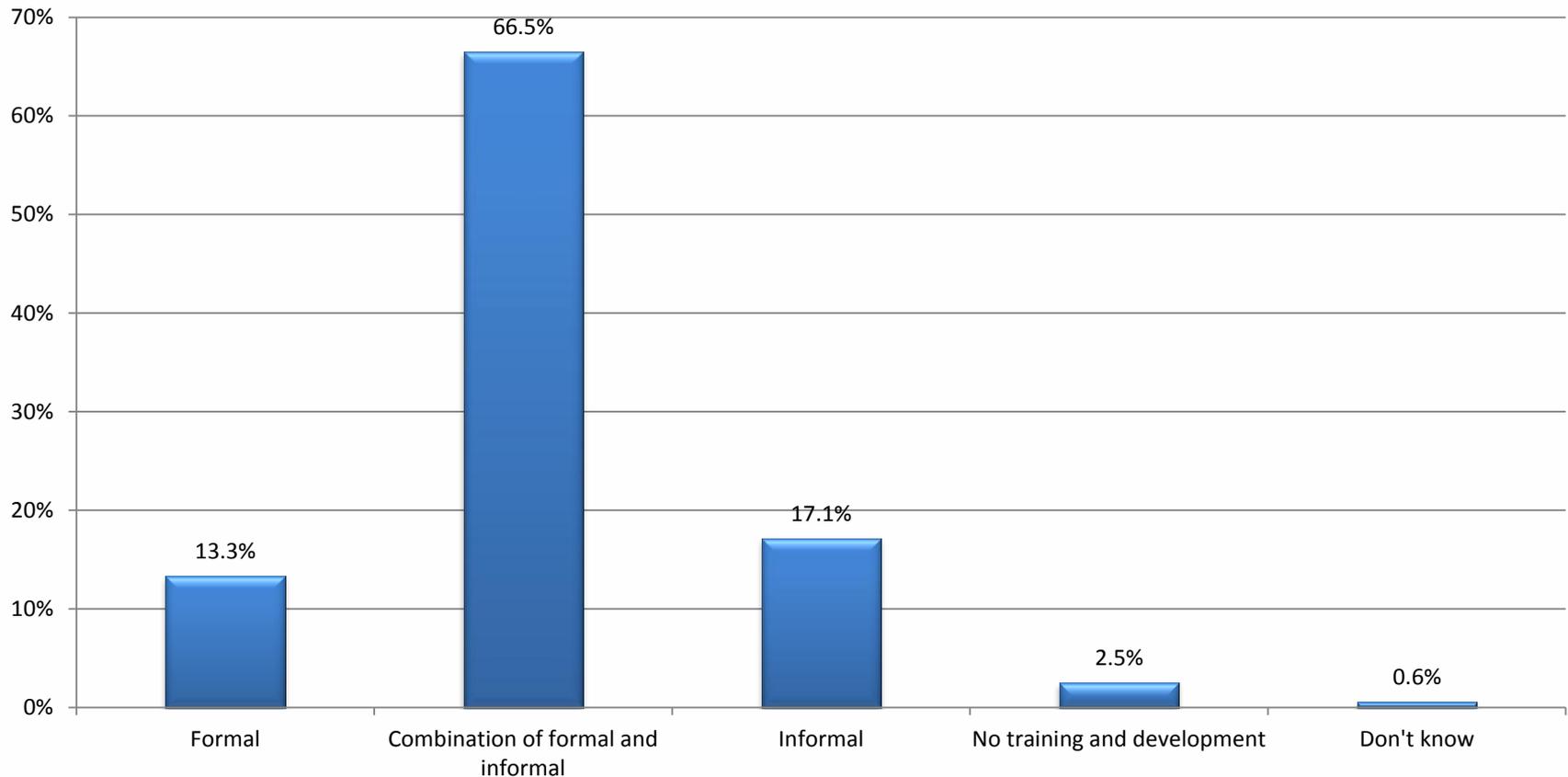
Base: n=650 respondents



# Eight out of ten companies provide at least some formal training as their overall approach to employee development

- Two-thirds (66.5%) of training and development being carried out by organisations is a mix of formal and informal.

## Organisations approach to training and development

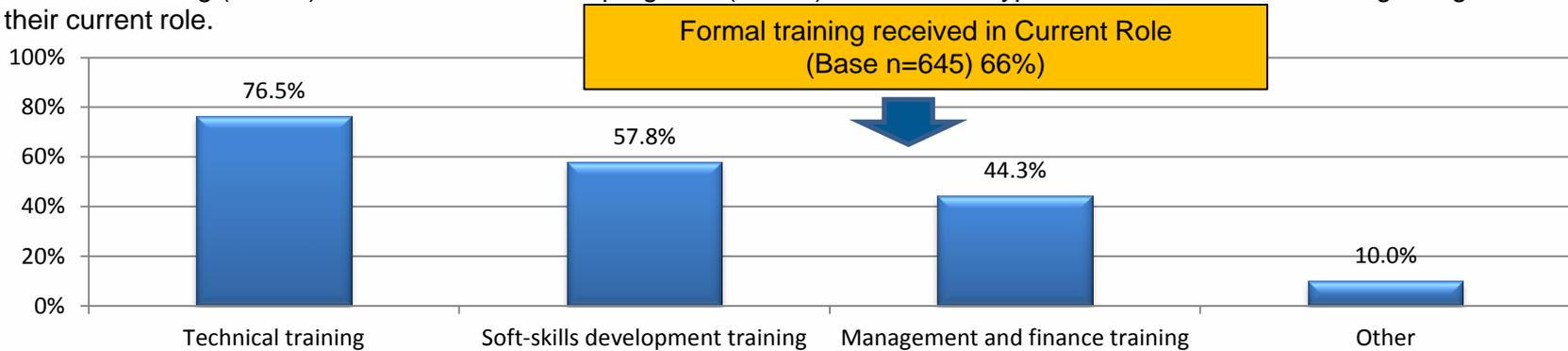


Base: n=645 respondents

# Formal Training

# Technical training is the most common form of training provided by employers, with almost a fifth having received software training

- Two-thirds (65.7%) of respondents have received formal training in their current role.
- Of those having formal training, three quarters (76.5%) are receiving technical training, while a further 57.8% are getting soft-skills training and 44.3% management and finance training.
- Software training (17.6%) and technical courses/programs (12.6%) are the main types of formal technical training being received in their current role.



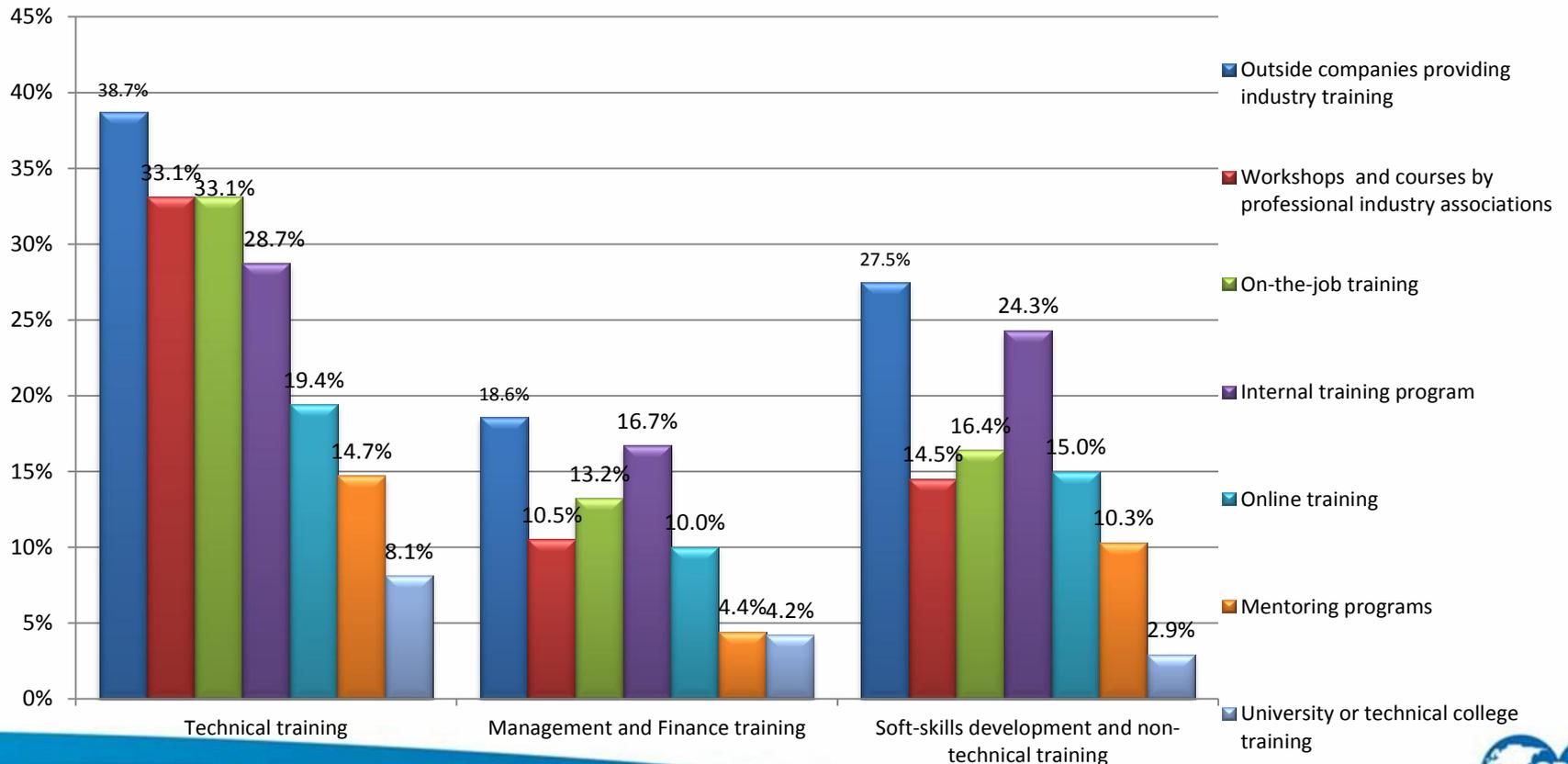
## Formal 'technical' training received in Current Role (Base n=278)

- Software training 17.6% (n=49)
- Attended technical courses/programs 12.6% (n=35)
- Management Skills 8.3% (n=23)
- Economics/Sales/Business 5.4% (n=15)
- HSE/Emergency 5.4% (n=15)
- Internal/Company-specific training 5.4% (n=15)
- Reservoir Engineering 4.3% (n=12)
- Training related to my job/position 4.0% (n=11)
- University training 4.0% (n=11)

# Companies most often rely on firms that provide industry training to deliver their technical training, with workshops and courses by industry associations and on-the-job training each accounting for about a third of technical training

- Outside companies are being used to provide the greatest proportion of formal technical training (39%), management and finance training (19%), and soft-skills development training (28%) to employees.
- More than half of all soft-skills training is provided by either outside companies (28%) or internal training programs (24%).
- University or technical college training programs are the least used to provide employees with formal training.

## Delivery of formal training in current role



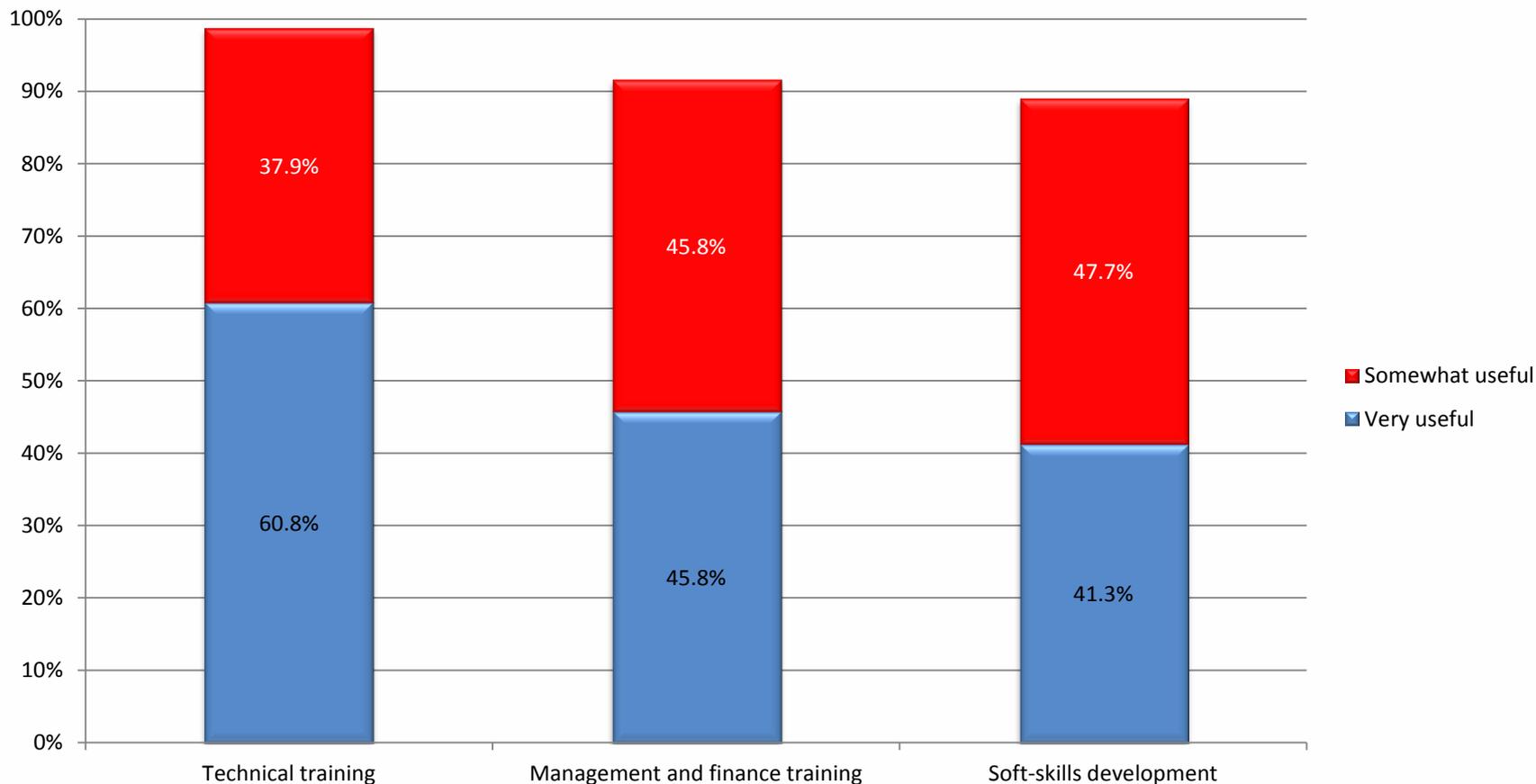
Base: Varies by selection



## Technical training is valued most in preparing them for their job by those who indicated that they have received formal training

- All three types of formal training offered are seen to be useful in equipping respondents with skills required to meet the day to day responsibilities of their current role.
- Formal technical training has been the most useful in equipping respondents to meet the day to day responsibilities of their current role, with 60.8% saying it has been very useful to them in their current role.

### Usefulness of formal training to meet the day to day responsibilities in current role

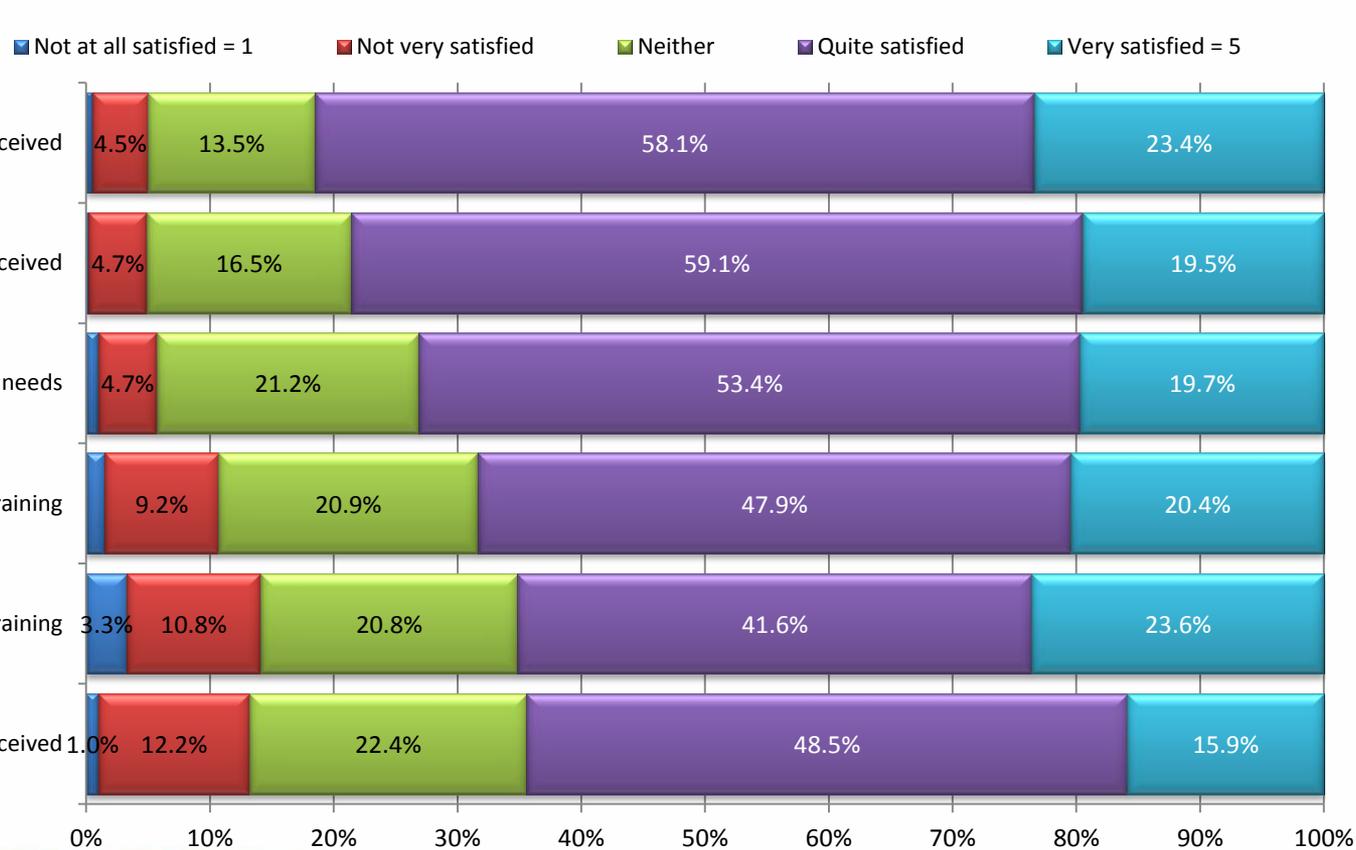


Base: Varies by selection

# Training that professionals currently receive seems to meet or exceed their perceived need for formal training

- Most people are satisfied with the formal training they have received in their current role.
- Quality (81.5%) and content (78.6%) of training are the areas that people were most satisfied with.
- Some improvement could be made to the amount of training provided, which received the lowest rating.

## Level of satisfaction with aspects of formal training received in current role



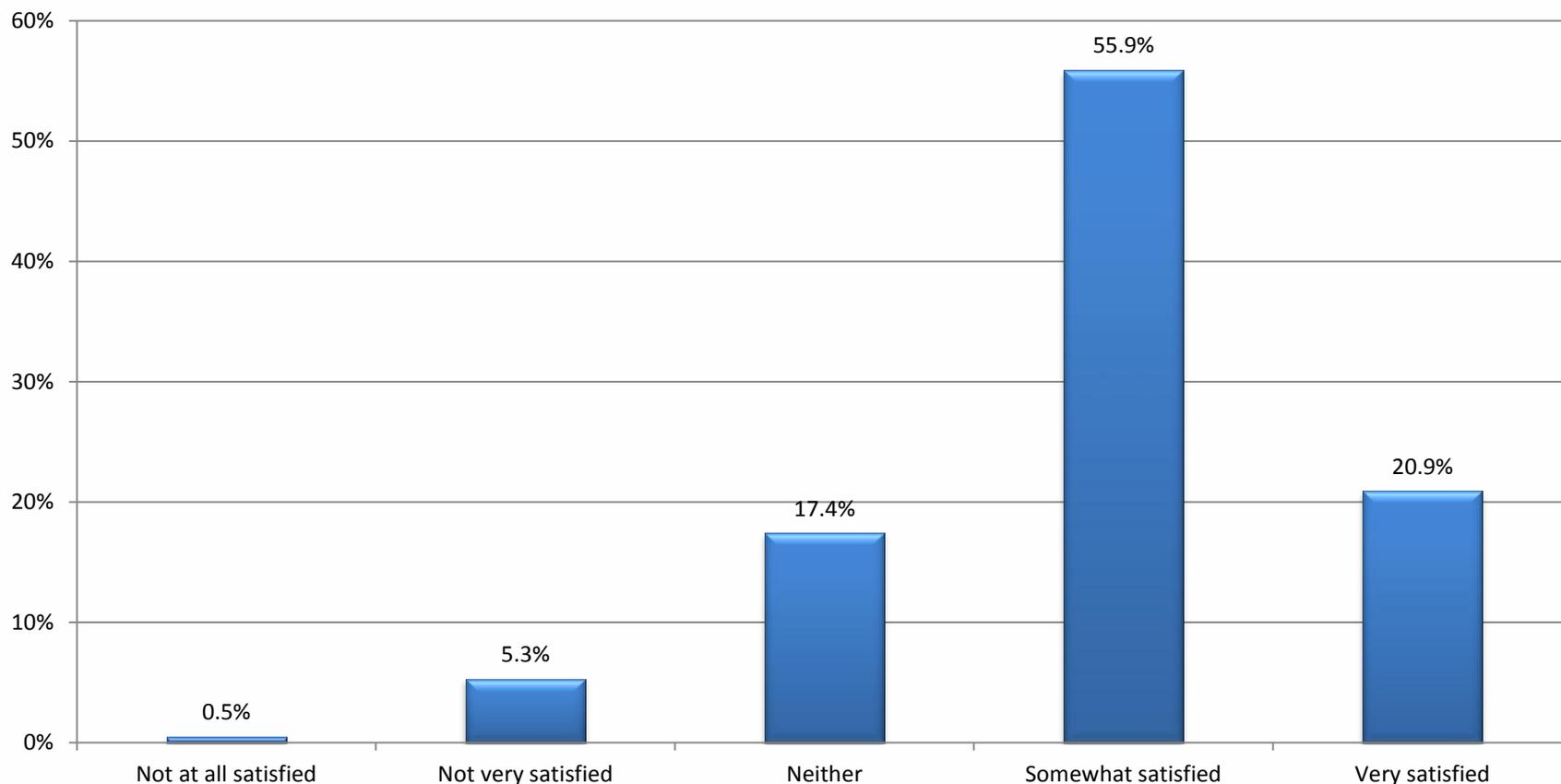
Base: Varies by selection



## Overall satisfaction with formal training is high, although three out of four felt that it can be improved

- Majority of respondents (76.8%) are satisfied with the formal training they have received in their current role.
- A fifth (20.9%) are very satisfied with the formal training they have received.

### Level of satisfaction with formal training received in current role



Base: n=397 respondents



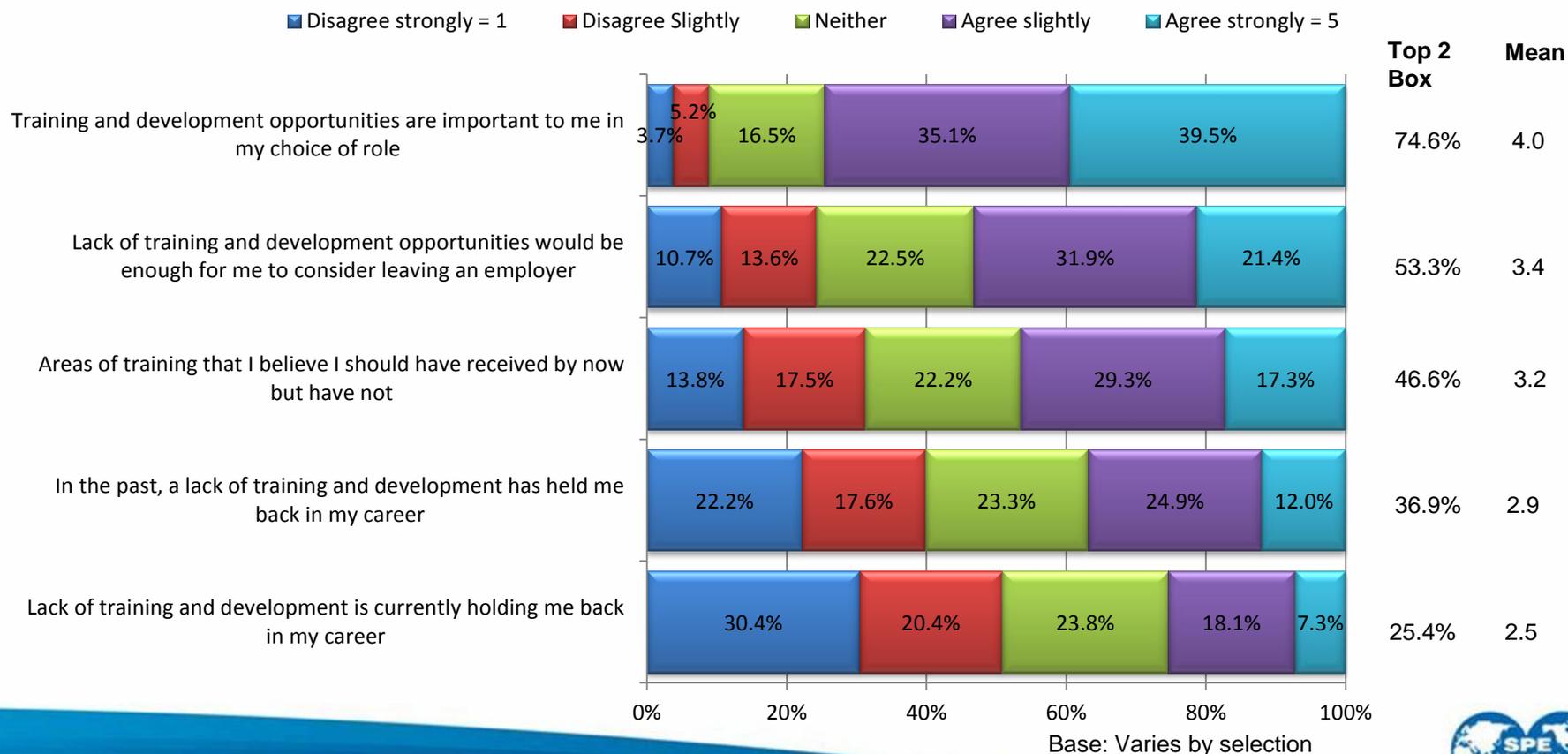
# Training and Development Opportunities



# Clearly training and development is an important consideration to most employees in planning their career progression

- Training and development opportunities are one of the most important factors employees look for when choosing their role – three quarters (75%) of respondents agree that these opportunities are important.
- Importantly, lack of opportunities would force some to consider leaving for an employer that provided opportunities in training and development.
- However, a quarter (25%) believe that a lack of training and development holds them back in their career.

## Level of agreement with statements made about training



# Some employees expressed concern that there are gaps in their receiving the appropriate training

- The majority of respondents (62.1%) are waiting to receive technical training, which they feel they should have already received.
- A significant proportion feel that they should have received management and finance training (46.4%) and soft-skills training (34.6%).
- The main barriers to receiving this training are budget and time constraints.
- However, there is hope, as nearly three quarters (64.7%) anticipate that this training will eventually be provided by their employer.

## Types of training needed, but not received



### Main barriers to receiving training Base: n=220

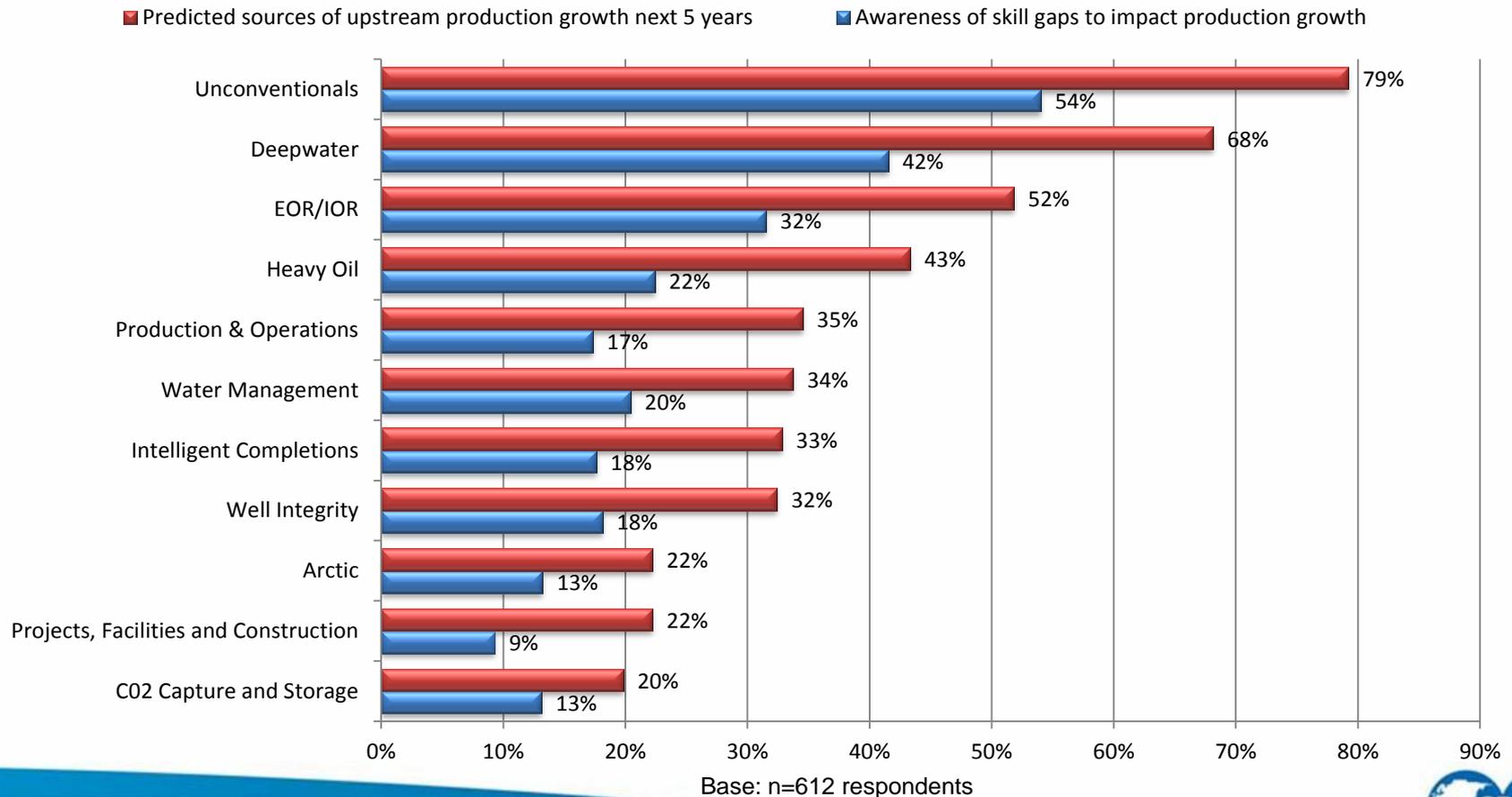
- Budget 29.6% (n=65)
- Time constraints 28.2% (n=62)
- Company lack of interest/not considered necessary 13.2% (n=29)
- Lack of organisation/plan 9.1% (n=20)
- Availability of classes 8.2% (n=18)
- Workload 5.9% (n=13)
- Job responsibilities 2.7% (n=6)
- Emphasis on new hires 2.7% (n=6)

Base: n=280 respondents

# Key Skills for the Future

# Training in specific technical areas such as unconventional resources is a highly valued area of development

- Unconventionals, Deepwater, and EOR/IOR are expected to be the major sources of upstream production growth over the next 5 years.
- Other areas expected to be major sources of upstream production growth are Shale Gas and extension of well use.
- Interestingly, awareness of skill gaps is high and is highest among those that predict unconventionals to be the main source of upstream growth in the next 5 years, with a ratio of 1.46.



# Skill gaps can be potentially mitigated by developing training alongside developing resources

- Lack of technical skills and limited experience/knowledge are some of the main skill gaps faced within each of the areas that are expected to be major sources of upstream production growth over the next 5 years. It is important to address these gaps so that growth in these channels is not hampered.
- Improving knowledge of fracking will help to improve growth within the area of unconventional, which is expected to be one of the major sources of upstream production growth over the next 5 years.

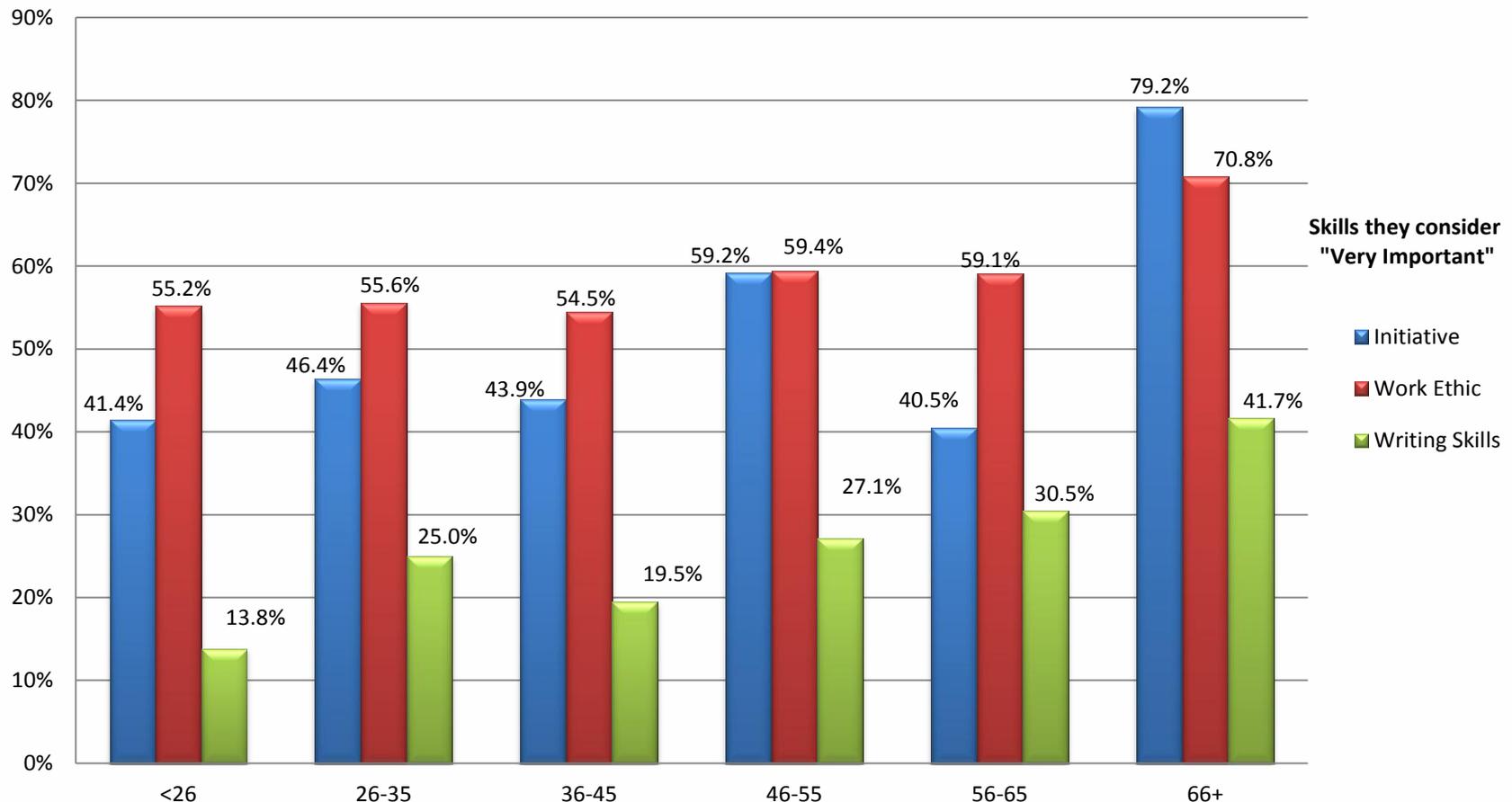
Channel	Top 5 Skill Gaps
<b>Unconventionals (n=269)</b>	Fracking 7.8% (n=21), General Lack of Experience 7.4% (n=20), General Lack of Knowledge 7.1% (n=19), Limited Experienced Personnel 5.6% (n=15), Drilling 4.5% (n=12)
<b>Deepwater (n=200)</b>	Technology 14% (n=28), Limited Experienced Personnel 13.5% (n=27), General Lack of Knowledge 10% (n=20), Safety/Risk Management/ HSE 8% (n=16), General Lack of Experience 7.5% (n=15)
<b>EOR/IOR (n=148)</b>	Technology 12.8% (n=19), General Lack of Knowledge/Understanding 11.5% (n=17), Limited Experienced Personnel 9.5% (n=14), Reservoirs 7.4% (n=11), General Lack of Training 6.8% (n=9)
<b>Heavy Oil (n=103)</b>	Heavy Oil 13.6% (n=14), General Lack of Knowledge 10.7% (n=11), Reservoirs 8.7% (n=9), Technical Skills/Knowledge 7.8% (n=8), Production 6.8% (n=7)
<b>Water Management (n=101)</b>	Technology 11.9% (n=12), Water Disposal 9.9% (n=10), General Lack of Knowledge 8.9% (n=9), Water Recycling 8.9% (n=9), Water Treatment 5.9% (n=6)
<b>Intelligent Completions (n=84)</b>	Technology 14.3% (n=12), Tools 13.1% (n=11), General Lack of Knowledge/Skills 11.9% (n=10), Limited Experienced Personnel 8.3% (n=7), General Lack of Training 7.1% (n=6)
<b>Well Integrity (n=83)</b>	Well Integrity Issues/Assessment 14.5% (n=12), Limited Experienced Personnel 8.4% (n=7), Technology 7.2% (n=7.2), General Lack of Experience 7.2% (n=6), General Lack of Training 6% (n=5)
<b>Production and Operations (n=75)</b>	Operations 12% (n=9), General Lack of Training 10.7% (n=8), Limited Experienced Personnel 6.7% (n=5), Production 6.7% (n=5), Technology 5.3% (n=4)
<b>Arctic (n=63)</b>	Environment/Conditions 23.8% (n=15), General Lack of Knowledge 11.1% (n=7), Technology 9.5% (n=6), Drilling Challenges 7.9% (n=5), Oil Spill Response 6.4% (n=4)
<b>CO2 Capture and Storage (n=57)</b>	CO2 Capture and Storage 17.5% (n=10), General Lack of Knowledge/Training 17.5% (n=10), Generation Gap 8.8% (n=5), Technology 8.8% (n=5), Legislation/Regulatory 8.8% (n=5)
<b>Projects Facilities and Construction (n=46)</b>	Facilities/Construction 15.2% (n=7), Limited Experienced Personnel 8.7% (n=4), Project Management 6.5% (n=3), Generation Gap 6.5% (n=3), General Lack of Knowledge 6.5% (n=3)

# Preferences by Age Group

# Expectations and preferences for skills development and training vary by audience

- When asked about the skills and attributes required to be successful in the petroleum industry, a few generational differences were noted regarding what respondents valued most. Some of the differences in age groups were most apparent in motivation and non-technical skills.

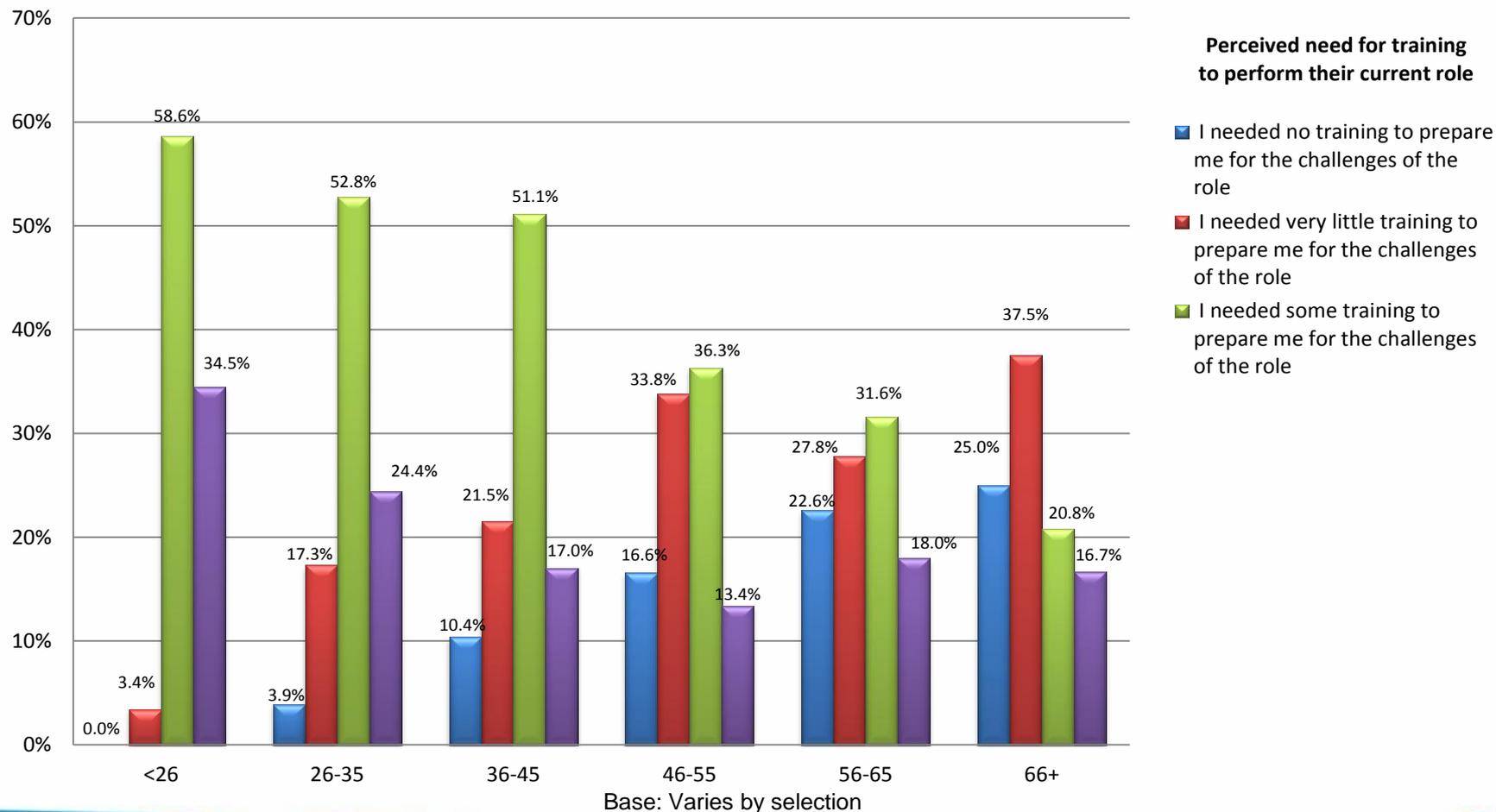
## Importance of Skills to Success in the Industry by Age



# Expectations of training required to do their job vary with age

- Respondents had different expectations of their need for training required to assume their present role. Expectedly, the amount of training needed decreased with age and experience.

## Level of Training required for current role



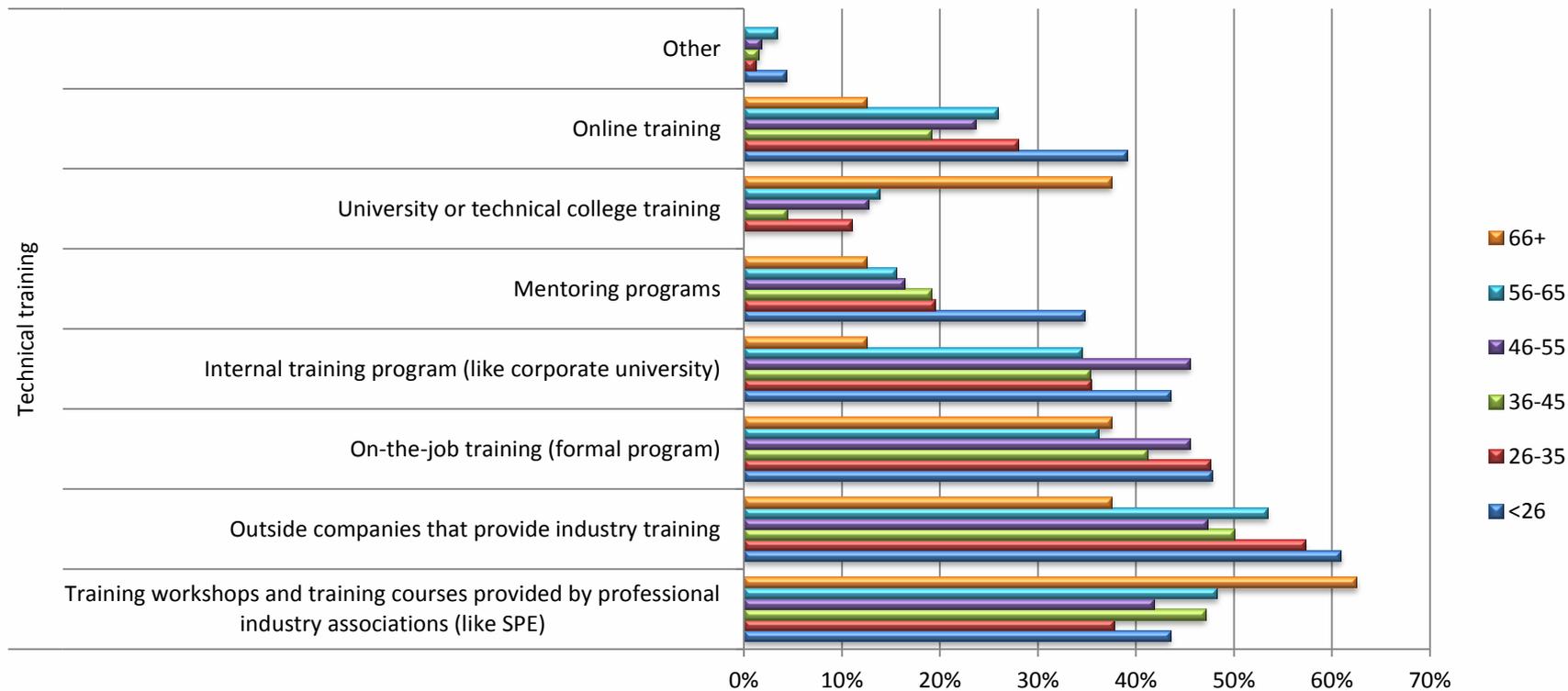
# The mode and method of delivery also varied by age and experience

- A few of the noteworthy differences exist in preferences for the mode of training, with younger respondents expecting their employer to be the primary facilitator, providing almost all training, whereas older, more experienced professionals were more self-reliant in procuring their training. Their preferences could influence the types of training companies provide in the future, and how they deliver content.

## Technical Training

- Most age groups prefer combined structured and on the job training, but older professionals still prefer traditional academics over mentoring and online training, which younger professionals prefer.

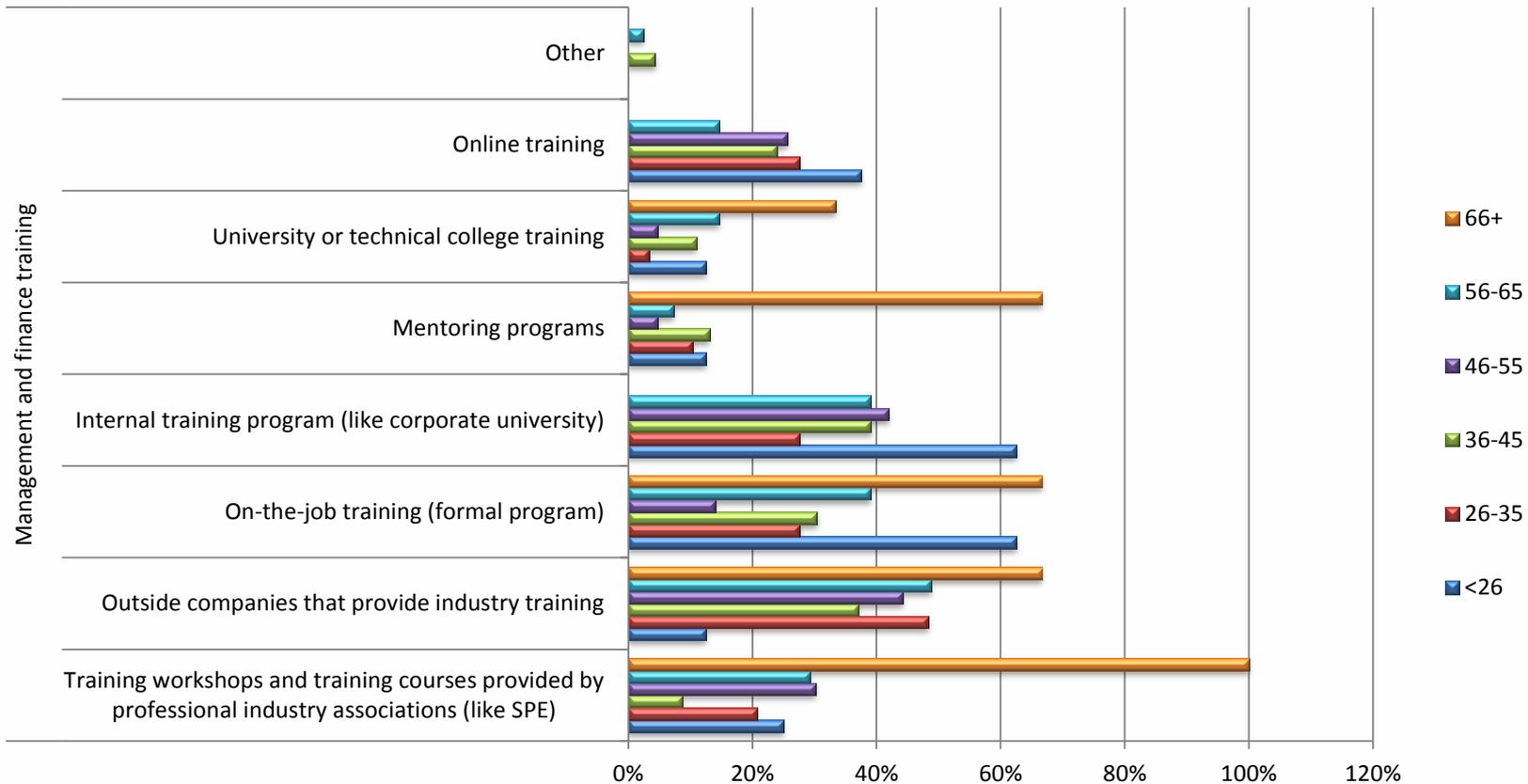
### Preferred type of training



Base: Varies by selection

# Management and Finance

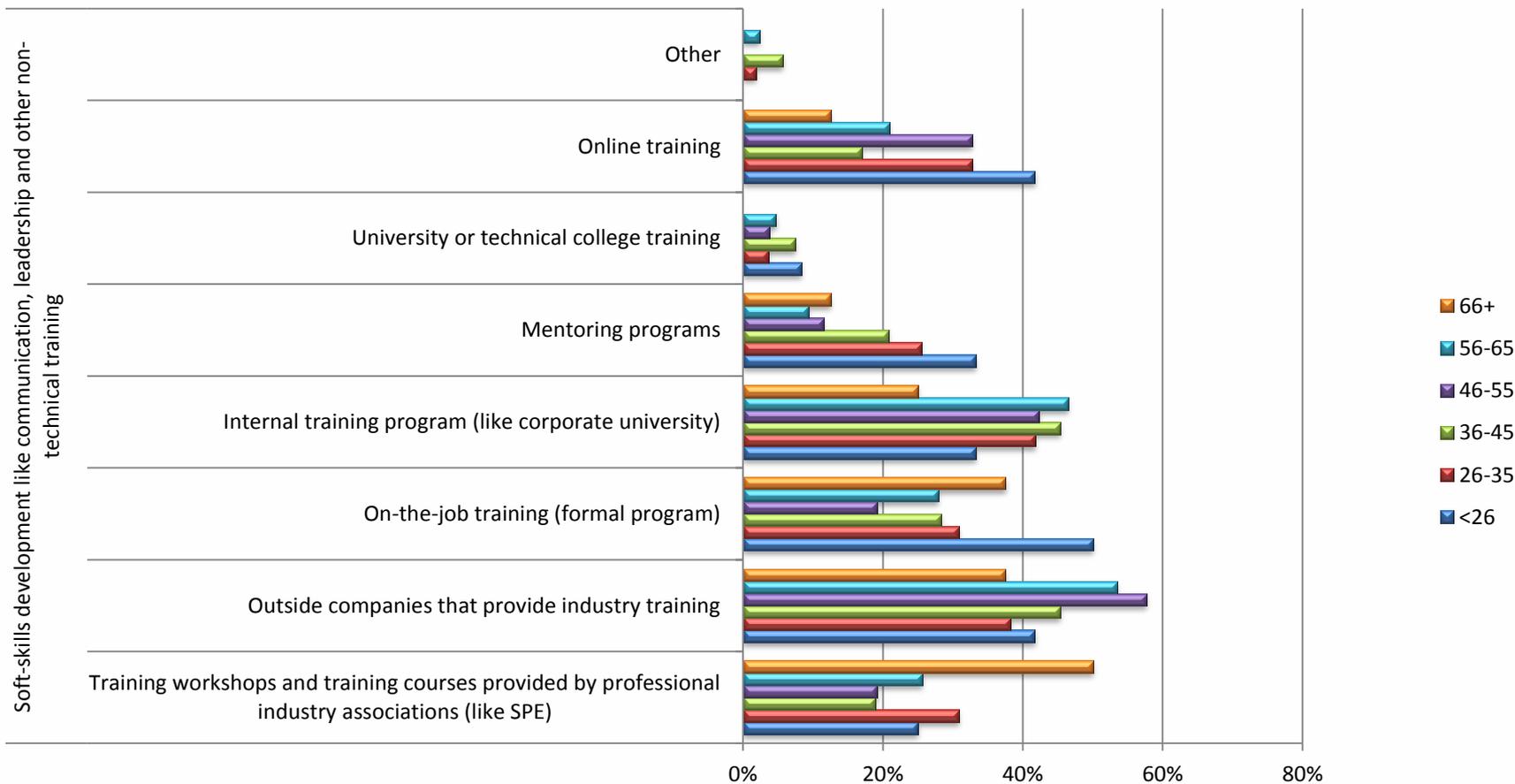
- More experienced professionals rely on hands-on methods for Management and Finance training.



Base: Varies by selection

# Soft Skills

- While most age groups prefer soft-skills training internally, on-the-job, or by an outside company, older professionals are still more likely to attend a professional association workshop or training course. Younger prefer online soft skills training.

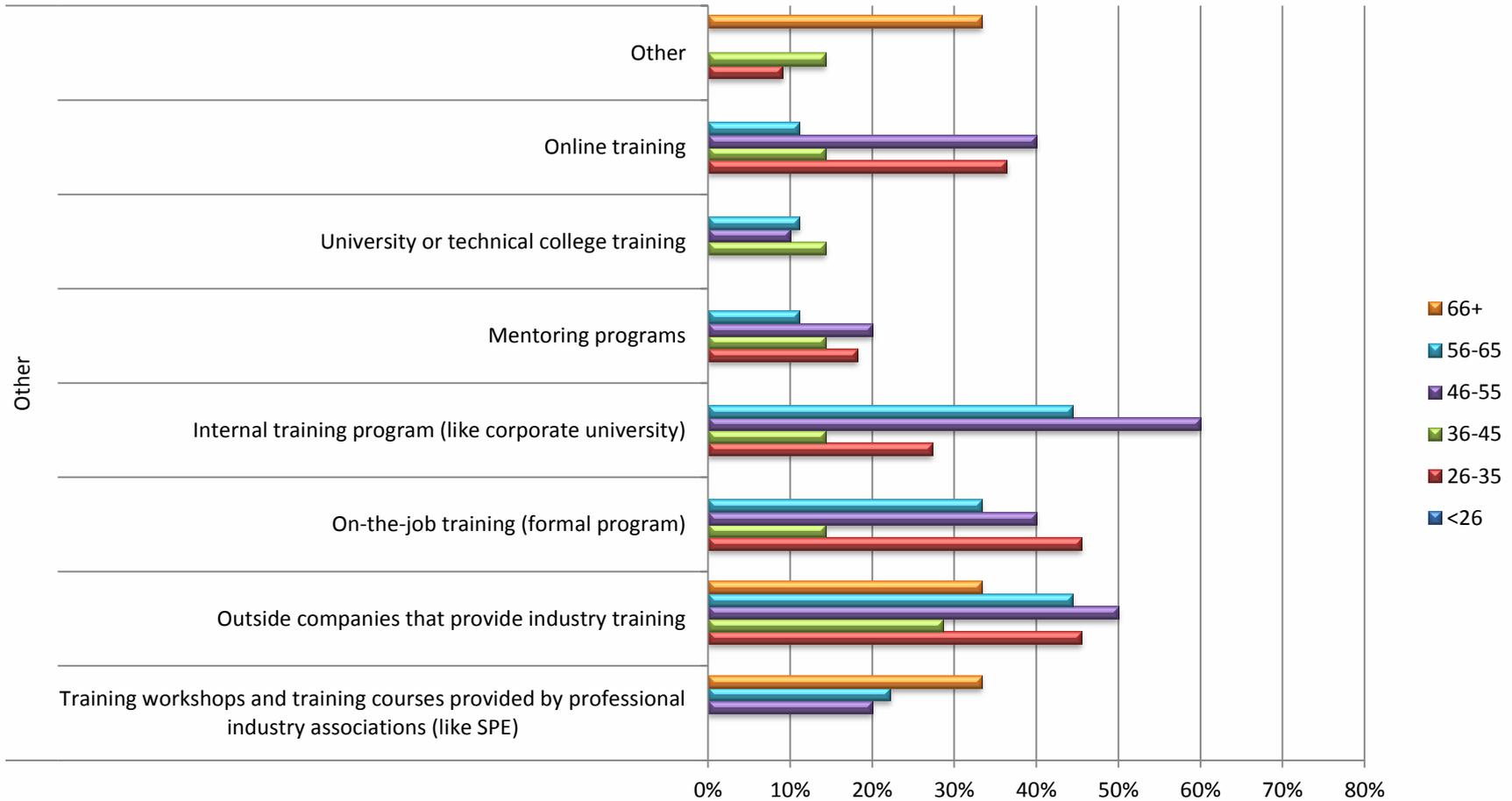


Base: Varies by selection



# Other Training

- Most age groups preferred to have in house or professional training companies provide other types of training, or engage in training online.



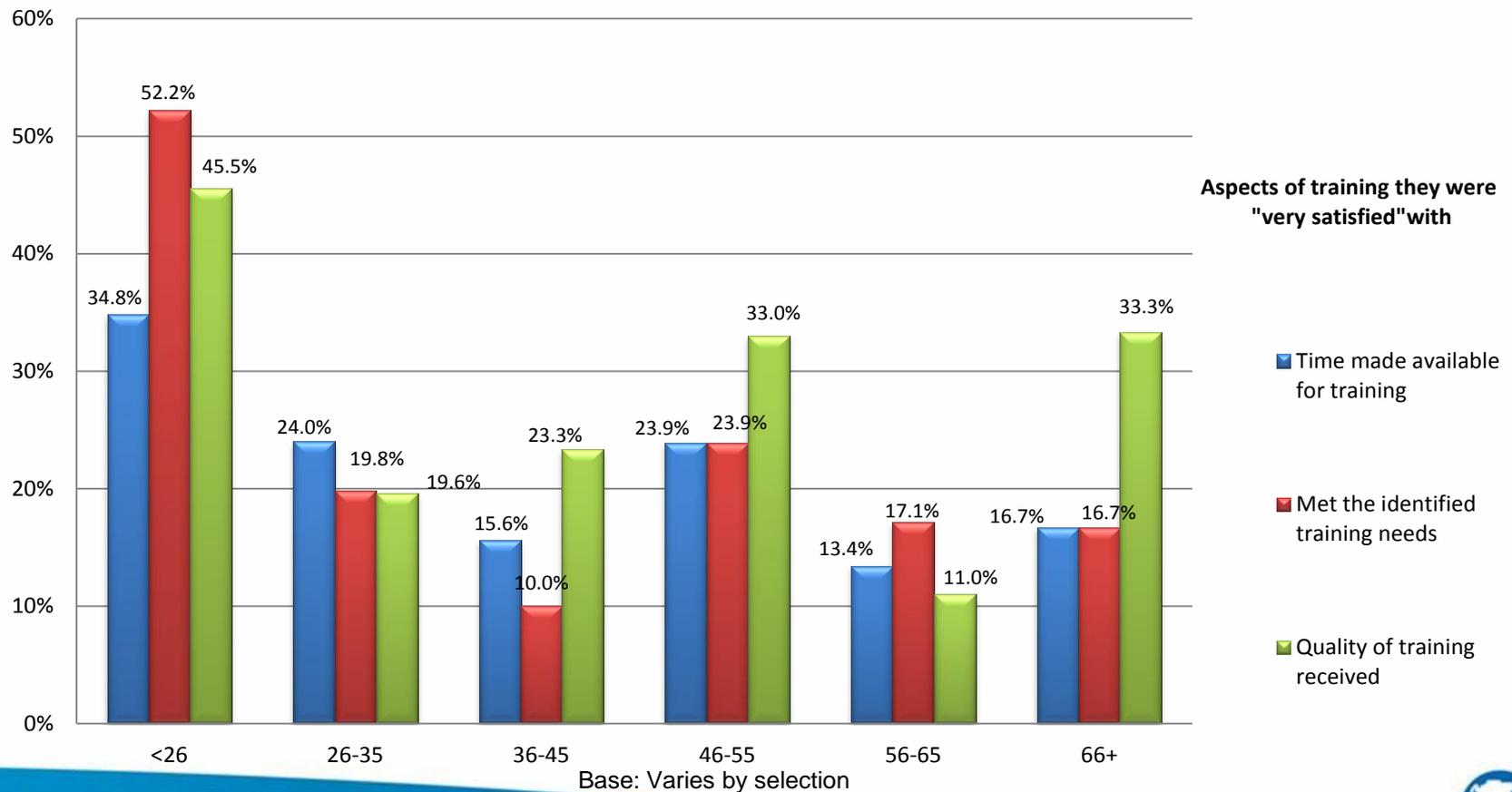
Base: Varies by selection



# Satisfaction with the level of training received in their current role

- Differences in satisfaction with training they currently receive were greatest in the quality of the training they receive in their current roles, time allowed for training, and getting training that meets their needs.
- While more than half (52.2%) of those under age 26 indicate that their current training meets their needs, over half (51.7%) also indicated that lack of training and development opportunities would cause them to consider leaving an employer. This could be an indication that companies are recognizing that training and development is valued by young employees and factors in their retention. Only about a quarter of the highest age groups would consider changing jobs for lack of training and development opportunities.

## Satisfaction



# Demographics

The greatest proportion of respondents is currently based in the United States (34.5%). The next largest representation comes from Canada (7.5%) and the United Kingdom (7.2%)

Country based and country of origin

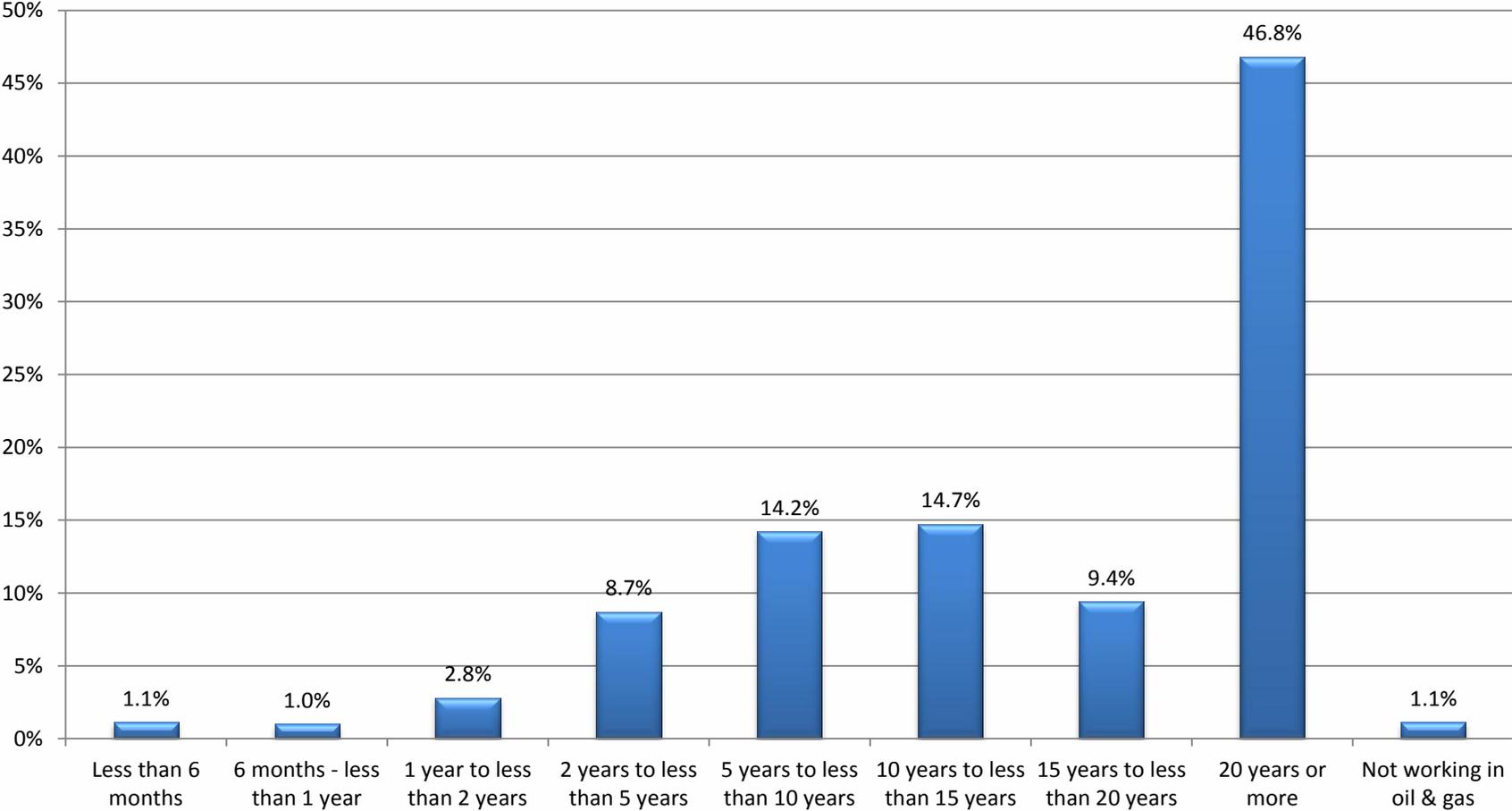
Country	Currently based	Country of origin
USA	34.5%	30.4%
Canada	7.5%	6.5%
United Kingdom	7.2%	7.5%
Australia	4.9%	3.5%
Nigeria	4.8%	7.0%
Norway	3.8%	3.2%
Malaysia	3.6%	2.3%
UAE	2.6%	0.3%
Russia	1.9%	1.8%
Brazil	1.8%	1.4%
Oman	1.6%	0.5%
Romania	1.4%	1.3%
Saudi Arabia	1.4%	0.5%
Columbia	1.3%	1.9%
Netherlands	1.2%	1.9%
India	1.2%	4.0%
Italy	1.2%	1.2%
China	1.0%	1.3%
Germany	1.0%	1.8%
Mexico	1.0%	0.9%
Argentina	0.9%	1.3%
France	0.9%	1.2%
Egypt	0.5%	1.3%
Venezuela	0.5%	1.9%

Base: n=773 respondents



# Majority of respondents have a great deal of experience of working in the oil and gas industry, with nearly half (46.8%) working in the industry for 20 years or more

Length of time working in the Oil and Gas industry

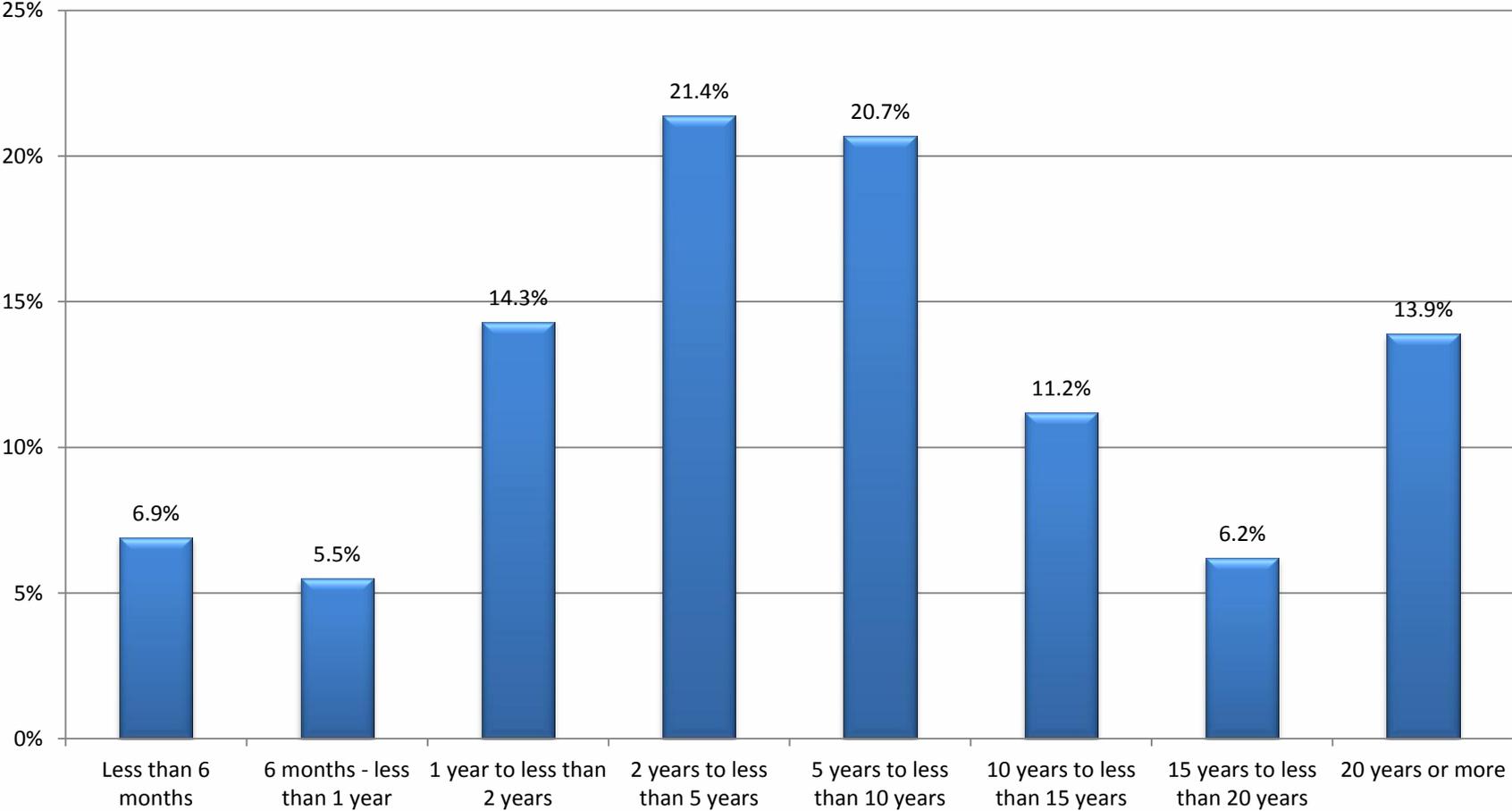


Base: n=709 respondents



# On average, respondents have been with their current employer for 8 years and 5 months

Length of time working with current employer

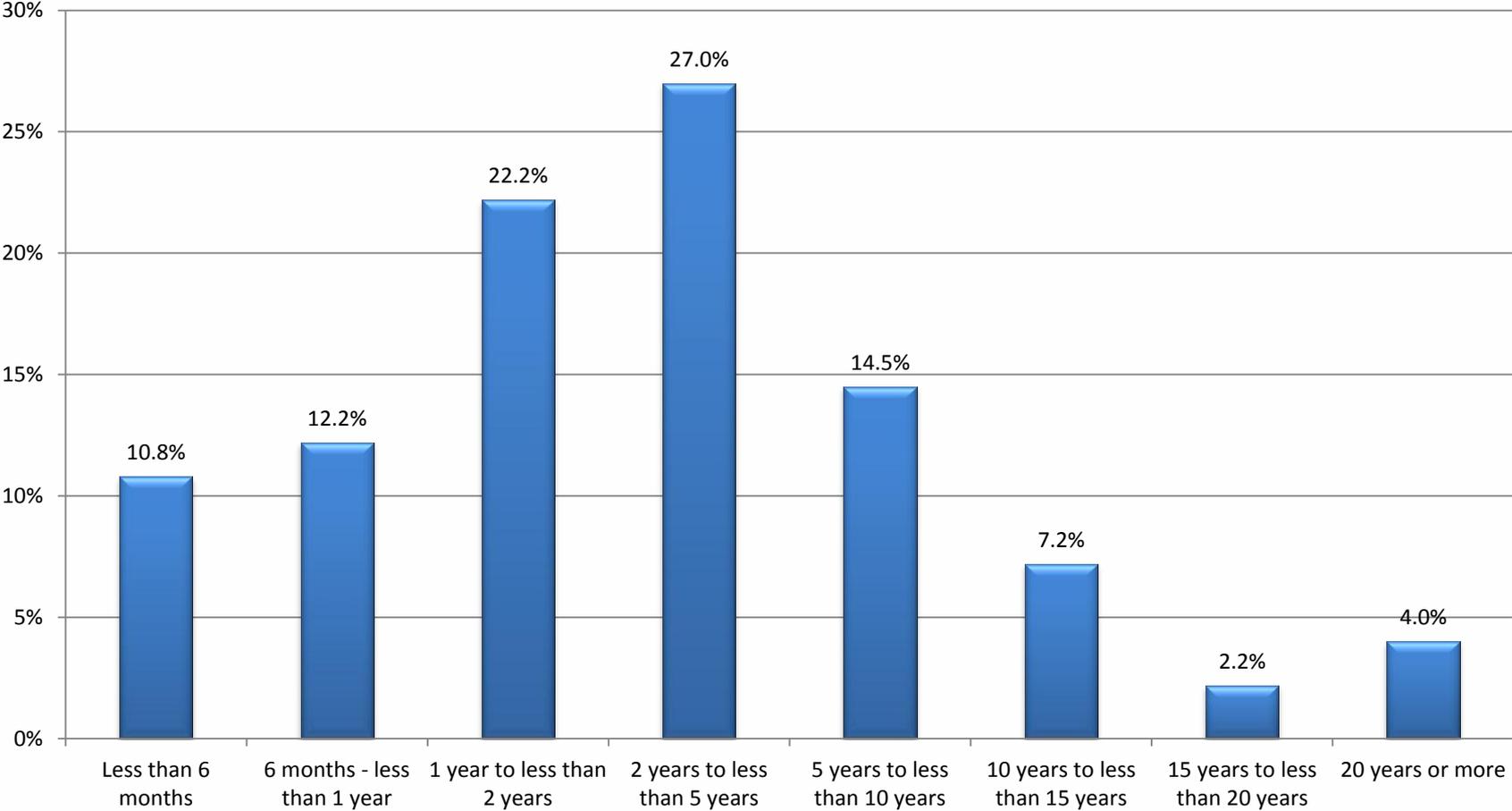


Base: n=697 respondents



# More than a quarter (27%) of respondents have been in their current role between 2 years to less than 5 years. The average amount of time spent in a role is 4 years and 8 months

Length of time working in current role

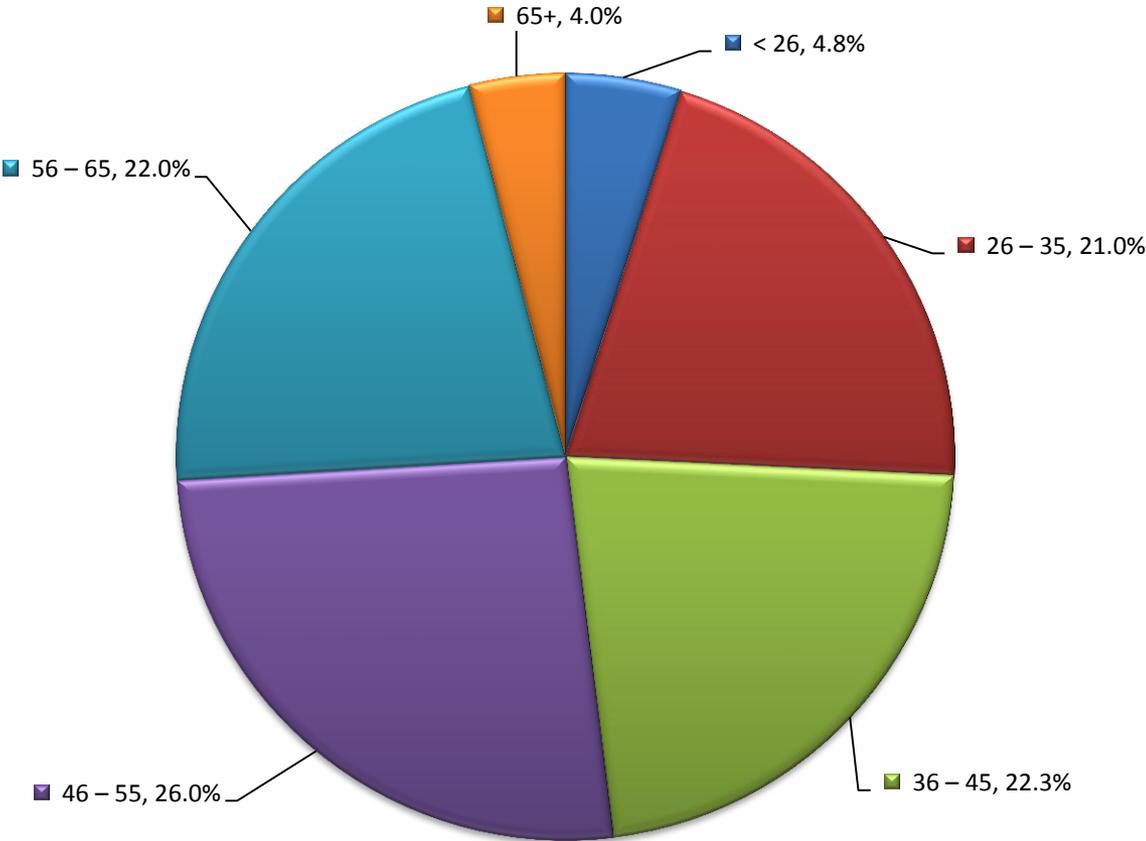


Base: n=697 respondents



The age profile of respondents is fairly evenly split between 26 and 65 years.  
The average age of respondents is 45 years

Age Group

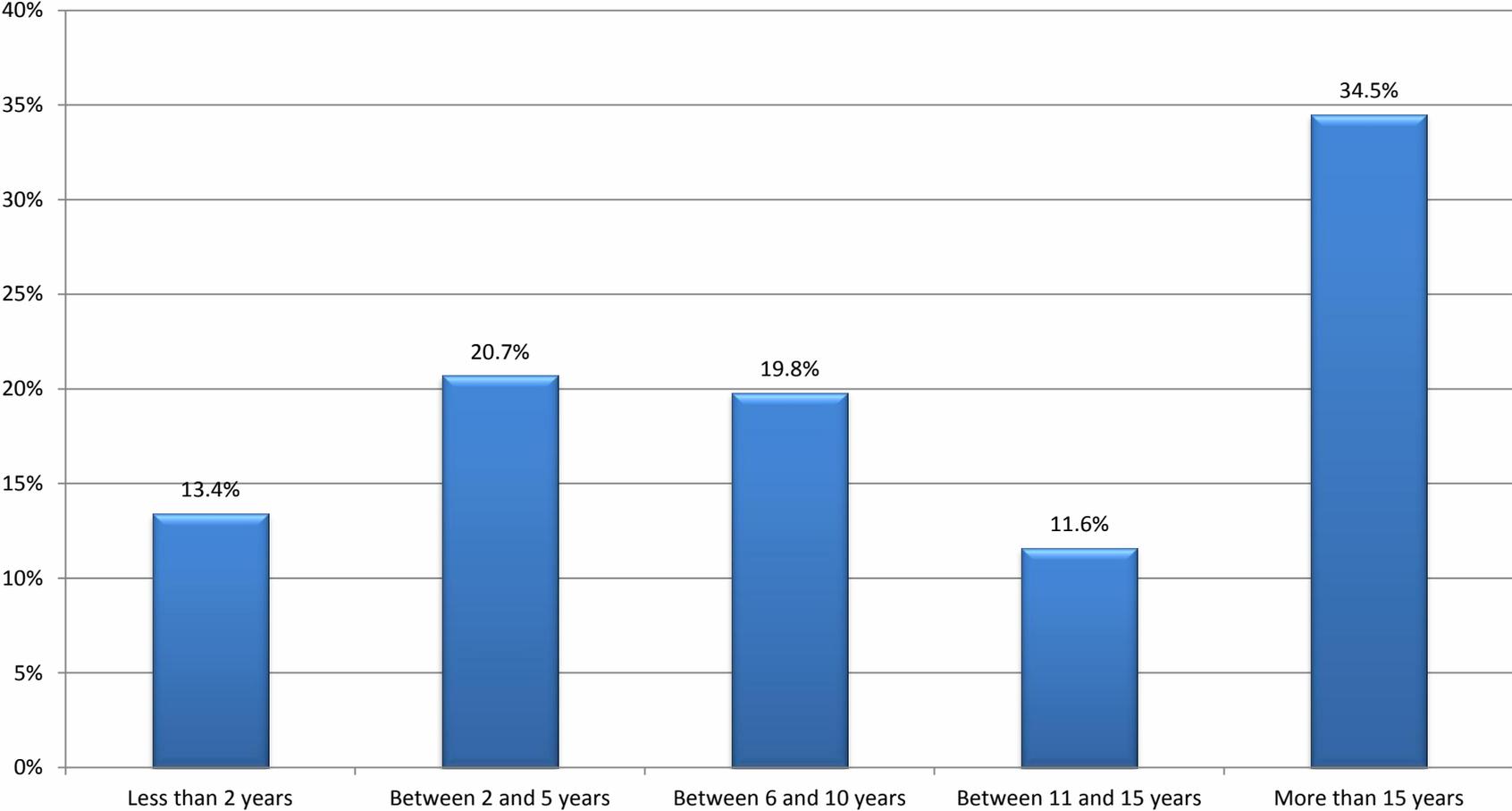


Base: n=605 respondents



# More than a third of respondents have been a member of SPE for more than 15 years. The average SPE membership length is 11 years

Length of SPE membership

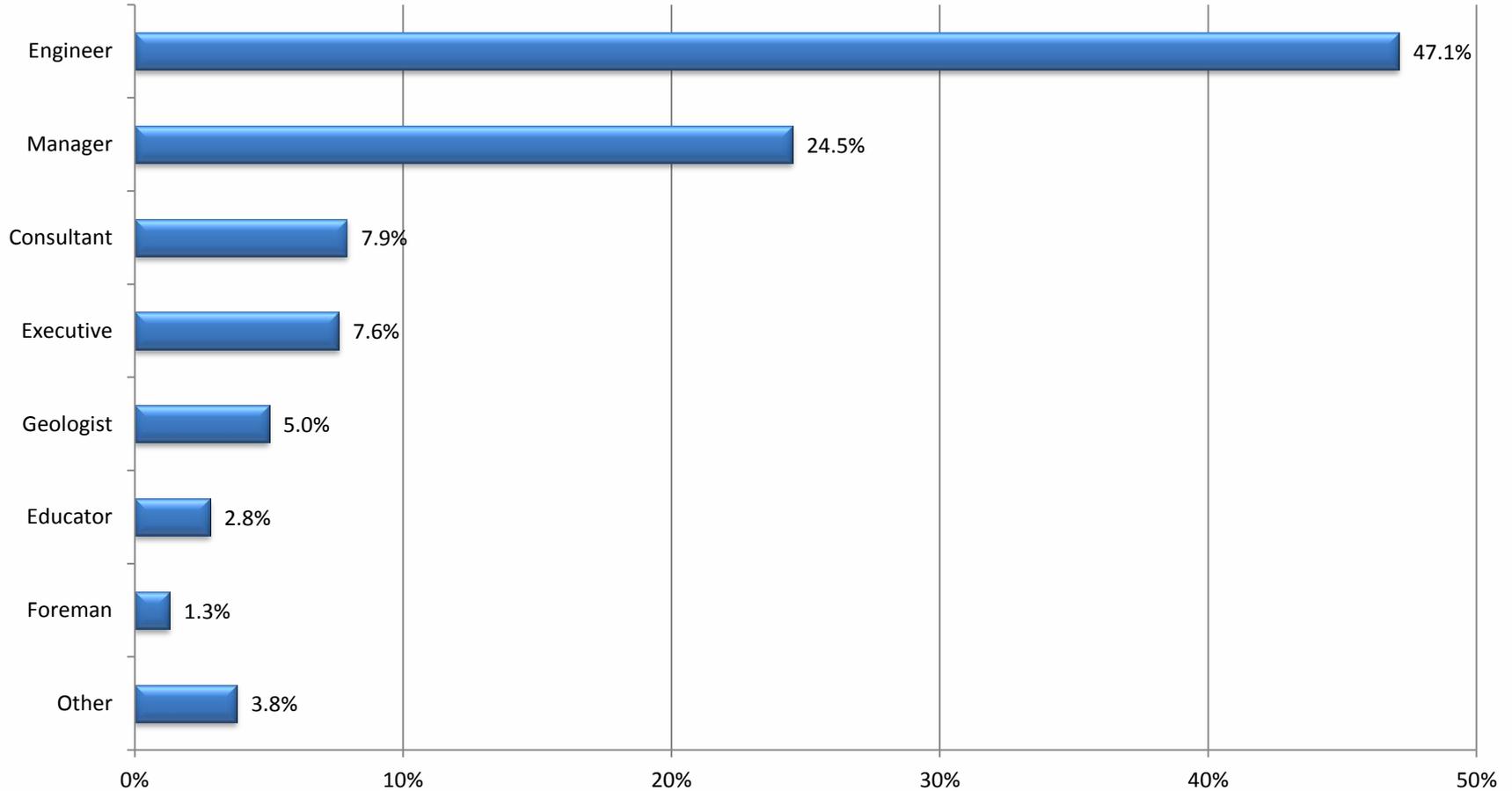


Base: n=605 respondents



# Majority of respondents are either Engineers (47.1%) or Managers (24.5%)

## Job Classification

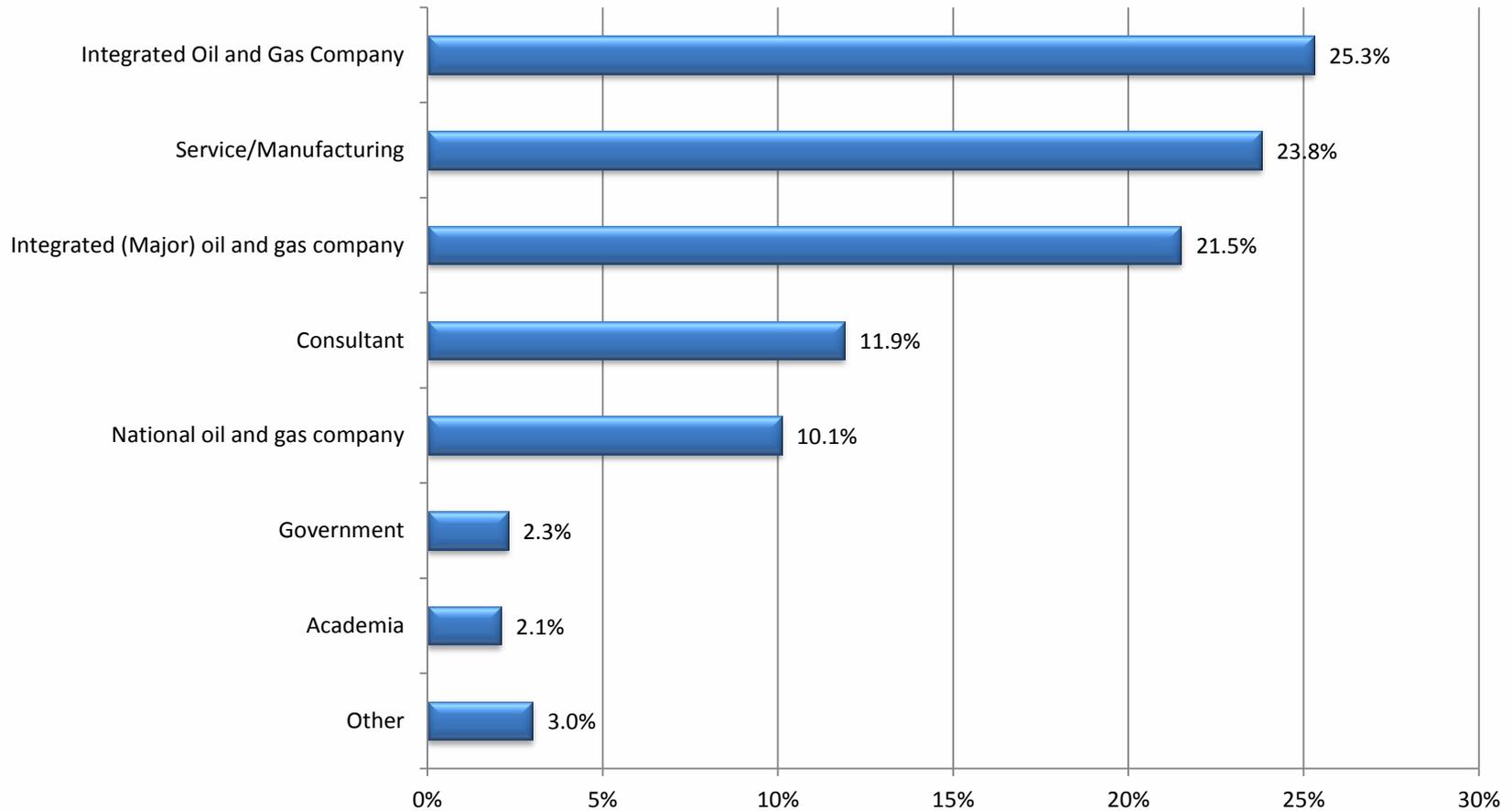


Base: n=605 respondents



# Respondents are mostly represented by three types of companies. Service/Manufacturing, Integrated oil and gas, and Integrated (Major) oil and gas companies make up two thirds (66.8%) of respondents

## Company category

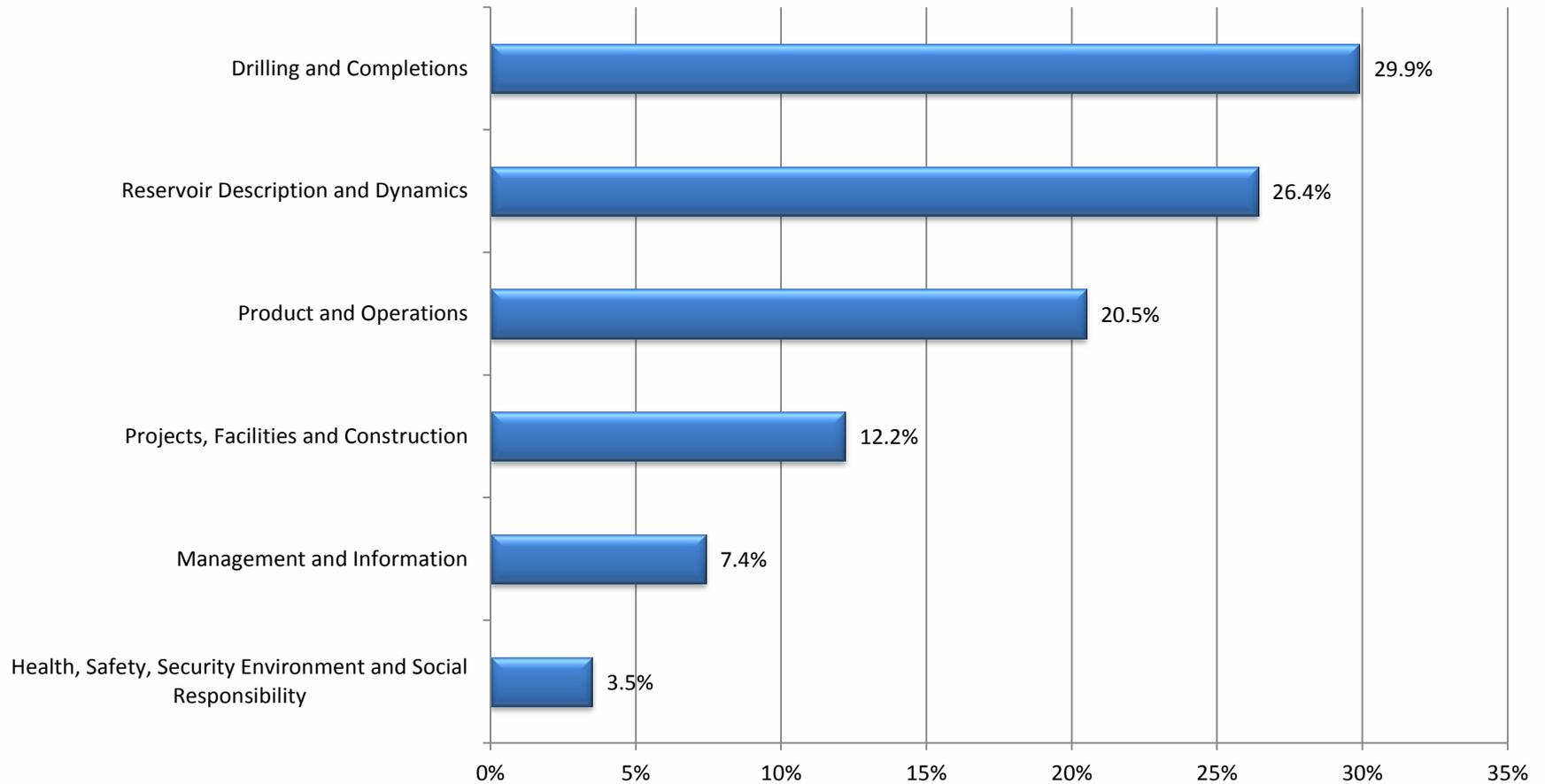


Base: n=605 respondents



# Drilling and Completions (29.9%), Reservoir Description and Dynamics (26.4%), and Production and Operations make up the main primary technical disciplines of respondents

## Primary technical discipline

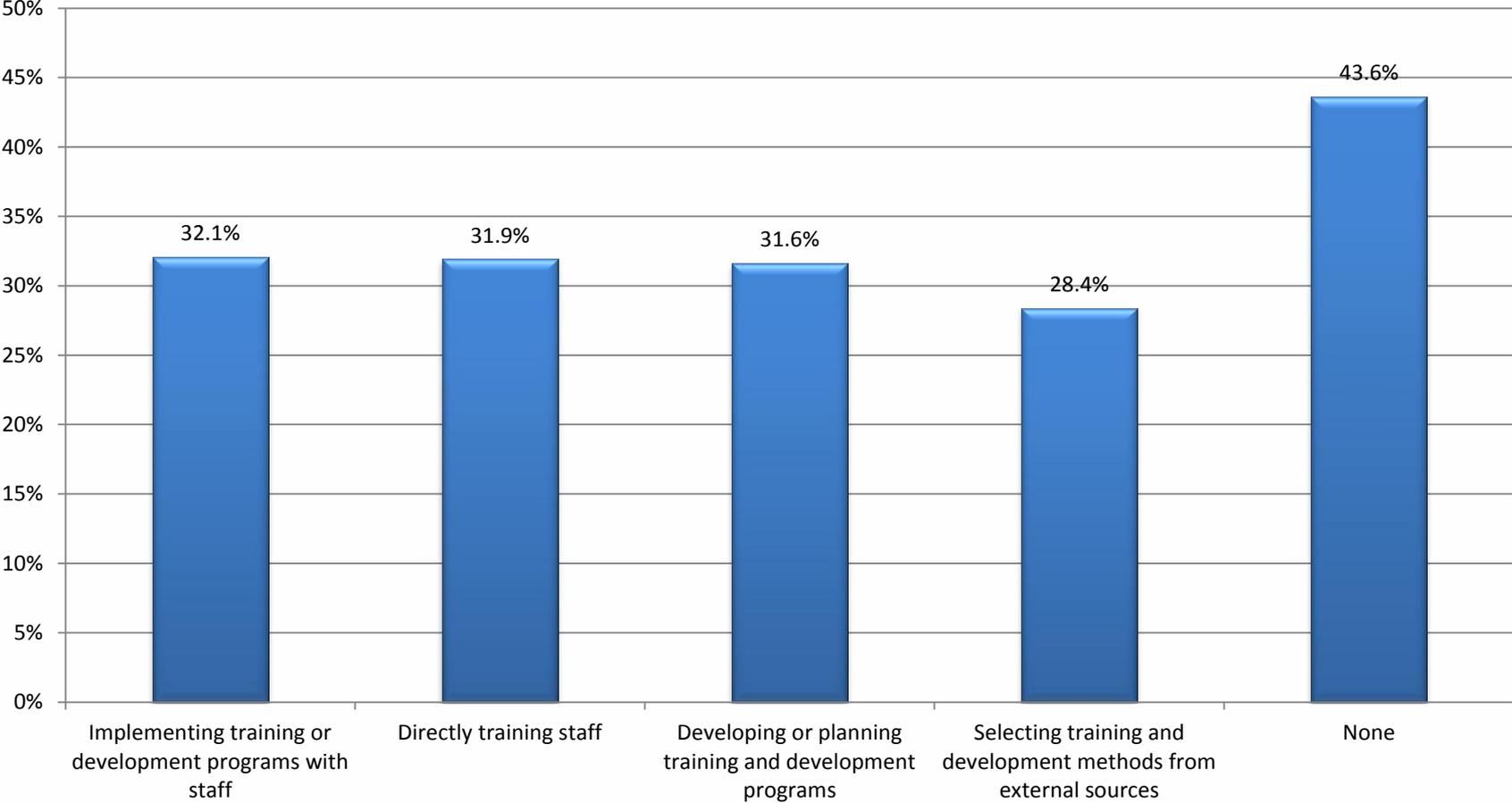


Base: n=605 respondents



# More than half (56.4%) of respondents are responsible for some form of training and development program with staff

## Responsibility for training



Base: n=605 respondents

