

The UK and Ireland Engineering Workforce Study



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Foreword

TOWERS WATSON 



IMechE Services Ltd

Engineers in the UK play a vital role in ensuring the UK remains competitive and encouraging innovation in the form of new ideas, businesses and even entire industries. Yet it is also a sector that suffers from skills shortages, and engineering organisations across the country have to fight to attract those with engineering, mathematics, science, and technology backgrounds to consider moving into the industry.

In late 2014, The Institution of Mechanical Engineers (IMechE) teamed up with global HR consulting organisation Towers Watson to examine the state of the industry from a talent perspective, and how IMechE organisations in particular fare when compared to other engineering businesses in the UK as a whole.

The research revealed some interesting findings around what these organisations do well, the challenges they face and, fascinatingly, how the sector as a whole perceives itself. There are some very strong positives: most IMechE engineers feel engaged with, and derive a sense of personal accomplishment from, their work and are prepared to work beyond what is required to help their organisation succeed. In general, they perceive their organisation as having strong leadership and a good understanding of what customers believe is important.

Yet there is a minority who are less satisfied, particularly when it comes to their own rewards and recognition, and there is a feeling that organisations could do a better job at holding on to their best people. The sector also suffers from something of a lack of self-confidence, concerned those outside the industry do not value them or the contribution they make to society and the wider economy.

The study also examined what skills engineers require, both today and in the future, including how this differs with age. The real challenge for employers is to ensure they engage people throughout their careers through better manager skills and more effective career planning. This is particularly vital for women and those who are mid-career, and organisations need to focus if they are to attract and retain the talent they need to flourish in the future.

The Institution of Mechanical Engineers (IMechE) is the fastest growing professional engineering institution in the UK. The Institution has over 110,000 individual members working at the heart of the most important and dynamic industries throughout the world.

By working with leading companies, universities, professional firms and think tanks, we create and share knowledge and understanding to provide businesses, individuals and the general public with fresh thinking and authoritative guidance on all aspects of mechanical engineering.

The Institution is dedicated to encouraging careers in engineering and committed to helping its members to flourish in their careers as professional engineers.

There is a well-publicised skills gap in engineering, and organisations need to do all they can to attract and retain suitably qualified individuals into engineering jobs. This is important not only for the companies concerned but also for the ongoing competitiveness of the UK economy.

We are pleased to be working with Towers Watson and to provide insight into current views regarding those working in engineering. The findings do provide some reasons to be cheerful, particularly around optimism and dedication to the profession. There are also areas, identified by this research, where improvements can be made – and companies should take note.

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Executive summary

Global research carried out by Towers Watson together with the IMechE has helped to give a fresh perspective on what it is like to be a mechanical engineer in the UK and Ireland today, and how well the companies that employ them handle the people issues that are so pivotal to their long-term success.

Towers Watson was able to benchmark the opinions of engineers who are members of the IMechE around a range of criteria, both against average employee opinions in the UK and against a global engineering index. On the whole, the results were extremely positive and pleasing for the sector, although there are a number of issues that companies with a focus on mechanical engineering would do well to watch; key headline findings include:

- Some 75% of engineers feel engaged with their work. This is 10 percentage points above the global engineering index and four points higher than the UK national norm.
- Leadership is another strong area; 70% of those questioned feel their organisation has strong leaders, compared to 63% in the global engineering index and 60% in the country as a whole.
- The sector also fares well around company culture; 64% give a favourable score in this area, five percentage points over the global engineering index and seven points above the UK norm.
- Other areas are more average, although still impressive, with 57% feeling good about being able to progress in their organisation, 10 points above the national figure and five above the global engineering score.
- The role played by managers in supervising people is also largely favourable, at 53%, and is 10 points up on the UK norm and nine points on the global engineering index.
- If there is a surprise in these headline findings, it is reward, about which just 53% felt positive. This is only one point above the global engineering norm, although still 12 points above the UK norm.

Many of these individual results are drawn out elsewhere in this report, but it is worth

mentioning the top three areas where organisations fare best:

1. There is a widespread view, shared by 90% of people, that organisations have a deep understanding of what customers believe is important. About two-thirds are very positive about specific aspects of the culture at their company, which they describe as a place where: people are encouraged to share ideas; continuous improvement is expected; people can strike a healthy balance between work and personal life, and engineers are held in high regard. Yet, two aspects of the culture need to be reinforced in their view, which is to hold individuals more accountable for their performance and move more quickly from ideas to implementation.
2. In terms of engagement, 86% say they are willing to work beyond what is required to help their company succeed and 78% say their work provides them with a sense of personal accomplishment. However, the sector does not feel it is held in high regard by the country as a whole, with just 24% saying this is the case, and only 38% think their organisation does a good job in moving from ideas to implementation.
3. From a talent perspective, the fact that 43% of people feel they need to move from their current employer to obtain a higher-level job is an obvious area of concern. All these issues are examined in more detail later on.

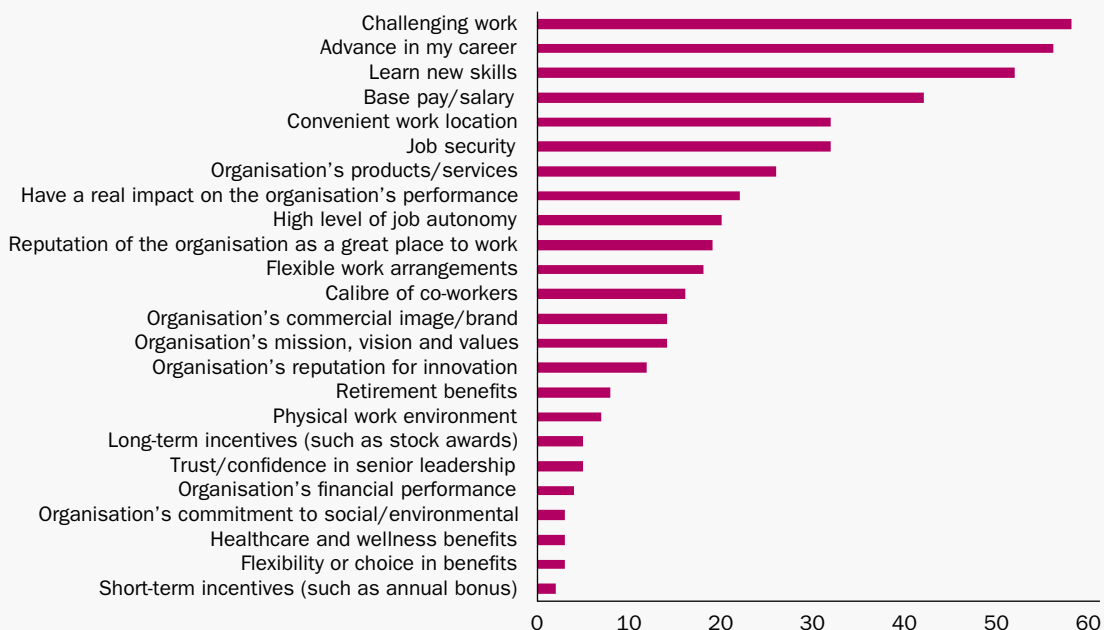
The survey collected almost 3,000 responses from engineers in the UK and Ireland, working in a range of sectors. The most prominent of these were in power (19%), manufacturing (18%) and aerospace (15%), but many others were also represented, including automobile, construction and process. The biggest proportion of responses came from those employers with more than 10,000 people (38%), but there was a fairly even spread of organisations below that level. Some 11% of respondents were female, while 42% fell into the 'professional' category and 20% worked in a team leader or manager position. There was a good age spread, with 34% aged under 30 and 25% over the age of 50.

Chapter one – Attraction and retention

In a sector where competitive advantage can come down to skills and innovation, attracting and retaining top talent is essential for engineering organisations.

Amongst the various reasons why IMechE engineers decide to join an organisation, the most common are about personal development: engineers are after challenging work (the top reason selected with 58%), opportunities to grow their careers (56%) and to learn new skills (52%). Of course, their choice is also influenced by the base salary on offer (42%). Other factors of importance include convenient work location (32%); job security (32%); the company's products and services (26%); the ability to influence business performance (22%); a high level of job autonomy (20%), the reputation of the company as a great place to work (19%); flexible working arrangements (17%); the calibre of co-workers (16%); its commercial image and brand (14%), and its mission, vision and values (14%). This is reflected in the chart shown in **Figure 01**.

Figure 01. Reasons for joining an organisation



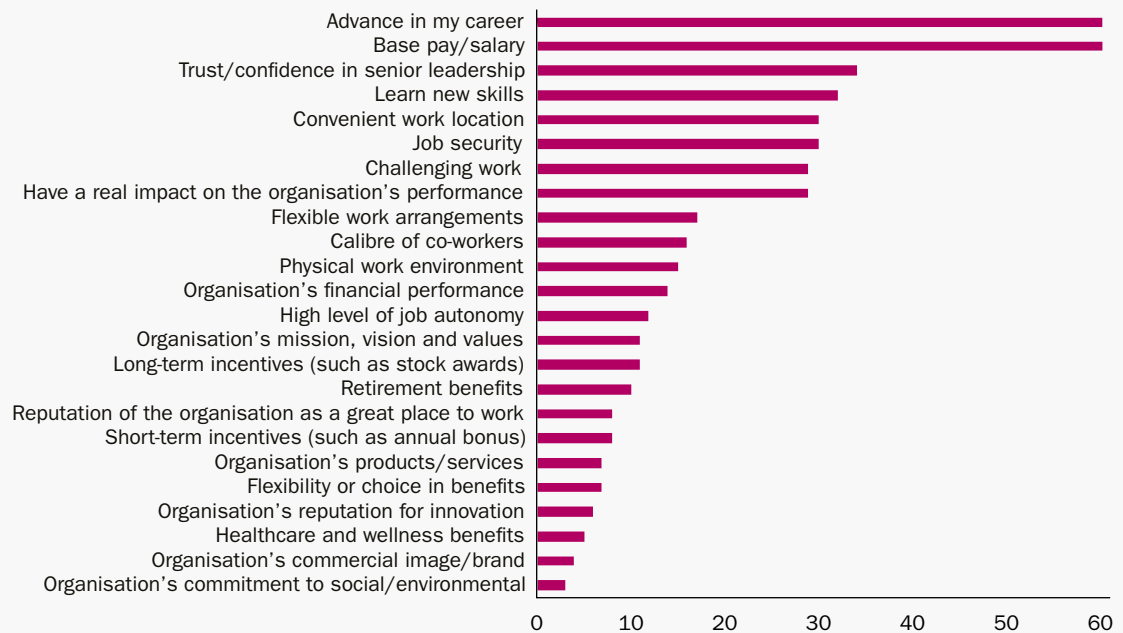
While this is useful information for employers who seek to attract talented and motivated engineers, the good news is that 64% of IMechE professionals feel their organisation already does a pretty good job of recruiting the right people for its future needs, with only 22% disagreeing. This is one percentage point higher than Towers Watson's global engineering norm, and eight points above the UK national norm. Yet it seems IMechE organisations are not so good at holding on to talent. Just 46% of respondents feel their company does a good job at this – some six points below the average figure for the global engineering sector as a whole, although three points above the UK average for the sector – and a further 15% were unsure.

As expected, the most commonly cited reasons why engineers would consider leaving their company – by some distance – are base pay and career advancement opportunities (60% of engineers selected these reasons).

Surprisingly however, a breakdown in trust and confidence in senior leaders is the next most cited reason (34%), followed by learning new skills (32%), working in a more convenient location (30%), finding a more secure job (30%), a more challenging role (29%) or having a real impact on the organisation's performance (29%). **Figure 02** gives some more detail on reasons to leave a company. Clearly, employers should keep in mind that crafting and communicating an employee value proposition (EVP), which combines competitive rewards, clear career development paths and tangible practices/policies to support employee well-being, is a necessary but not sufficient requirement for attracting and retaining talented engineers.

Once they have joined a company, engineers seek out evidence that their organisation is set up for sustainable growth, making them as secure as jobs can be in the new economy. While reinforcing confidence in the future of the business is of course part and parcel of the leadership role, the weight of that activity on engineers' decision to stay underlines how important it is for senior business leaders, internal communication and HR to work together to share clear, authentic and convergent messages about the state of the business. Leaders who understand the importance of adapting messages to their target workforce segments and of multiplying delivery channels without losing authenticity will generate higher levels of commitment.

Figure 02. Reasons for leaving an organisation



There is a general degree of satisfaction in how IMechE engineers look at their pay. Some 58% say they are paid fairly compared to people in other companies with similar jobs, 18 percentage points higher than the UK national norm and five points above the global engineering figure.

But there are differences in terms of company size here: those in smaller organisations with fewer than 200 people and the very largest businesses are more likely to feel they are well rewarded for the work they do. There are also variations across the UK: those in the South-East are more likely to be happy with how they are rewarded, while those in Ireland – where the economy has struggled – tend to be less so.

Despite this largely positive picture, however, less than half (48%) of the population believe high-performers are adequately rewarded. This is two points below the global engineering norm, although still six points higher than the UK national norm. "The message here is to find ways to differentiate better," says Yves Duhaldeborde, a director in Towers Watson's Organisational Surveys and Insights practice. "Top engineering talent are clearly disappointed when they see that people receive more or less the same pay rise, regardless of their performance on the job."

There are also some concerns over the extent to which individuals are held accountable for their performance. While 59% feel this is the case, this is four percentage points less than the global engineering norm and six below the UK national norm. There are significant variations in terms of company size here: 66% of those in organisations with fewer than 200 employees feel their colleagues are accountable for their performance, but this falls to just 54% in organisations with between 200 and 2,000 staff.

Work/life balance is one area where the sector scores favourably; 65% of people think their employer makes it easier to have a healthy mix of the two. This was 12 percentage points higher than the global engineering norm and a 14 point rise on the UK national norm. Given the importance attached to flexible working in the sector, this is one area where IMechE members can feel largely satisfied, although with 15% disagreeing this is the case there is still some room for improvement.

Chapter two – Innovation and productivity

How well IMechE organisations do in responding to new business opportunities in a timely manner is a cause for some concern. Just 38% of those surveyed think their company does a good job of moving quickly from creating ideas to implementing them, as seen in Figure 03, a huge 11 points below the global engineering average – the largest negative gap in the research – and one point below the UK national norm.

This is the third worst performing area for IMechE organisations in the entire survey, and suggests there could be something in the culture of engineering companies in the UK that thwarts their ability to quickly bring creative ideas to market.

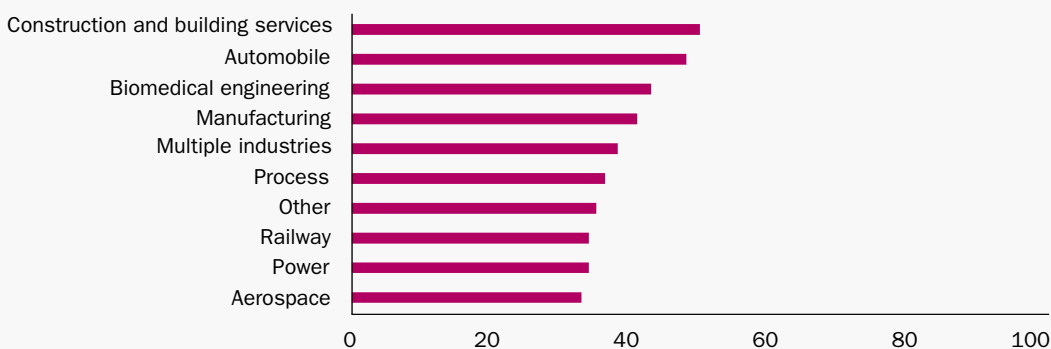
This was a common issue across engineering sectors, with construction (at 50%) the only one where at least half those surveyed feel that their employer does a good job in this space. The sectors where this is seen as the biggest issue are aerospace (33%), power (34%), railway (34%), and process (36%).

There could be a relatively simple explanation for this, however, suggests Colin Brown, engineering director at the IMechE. “Being too slow at moving from ideas to implementation might be for commercial reasons, rather than because of the engineers themselves,” he points out. An organisation’s reputation for innovation also features on the list of reasons as to why individual engineers might leave their employer, with 6% citing this as a possible cause for moving.

The relatively high percentage (21%) of engineers reporting that they experience substantial obstacles to doing their job well is also concerning, even if this score is pretty much in line with the UK national and engineering benchmarks. One would imagine such a pivotal group of individuals to work within an environment that enables them to consistently give their best effort. It seems, however, that many mechanical engineering companies in the UK are either not sufficiently leveraging their engineers’ insights on processes that could be optimised or rethought, or failing to adequately respond to these insights.

Closely linked to the ability to innovate and improve internal processes is how well organisations succeed at fluidly sharing ideas internally. Engineers’ views are quite positive here – an average of 62% report that their business does well in this area, which compares favourably to the global engineering norm (58%) and the UK national norm (47%) – however, there is a notable fall in satisfaction amongst engineers working in medium-sized organisations. Again, those in smaller firms with fewer than 200 people feel most positive, perhaps because their size makes it easier to instil a knowledge-sharing culture.

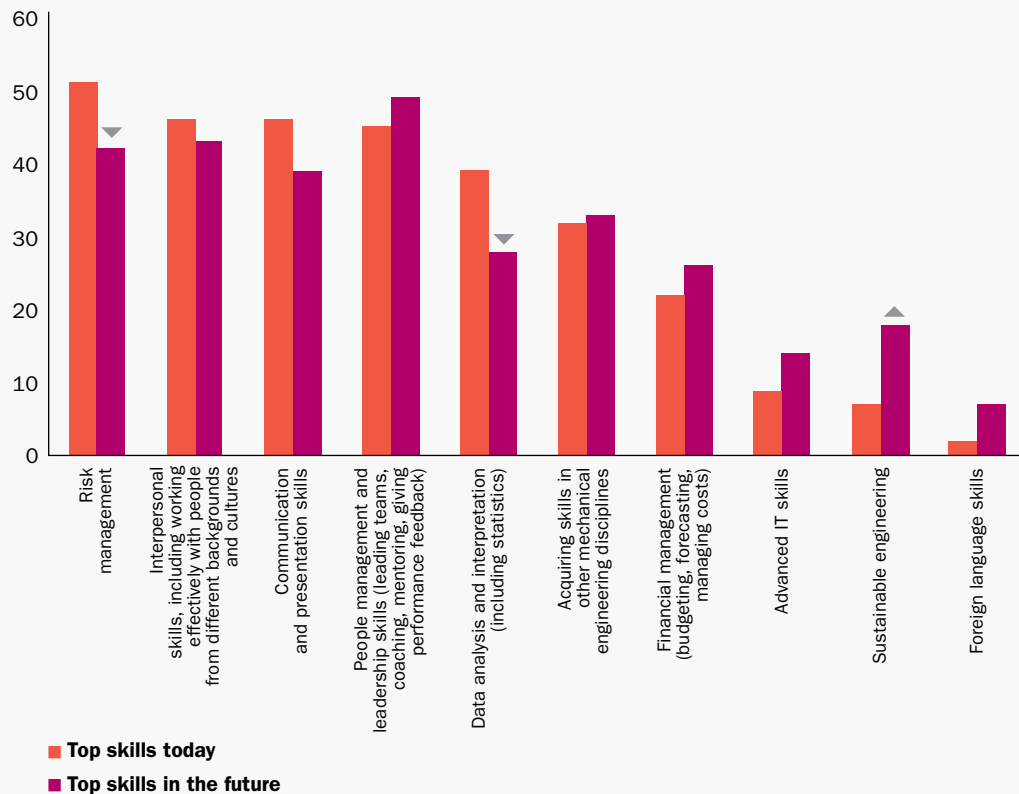
Figure 03. Speed of movement from ideas to implementation across industries



Chapter three – Future workforce

The Towers Watson/IMEchE study provided interesting insights into the skills the engineering sector needs, both today and in the future (**Figure 04**). The most important aspects today are seen as risk management (cited by 51%), interpersonal skills (46%), communication and presentation skills (46%), and people management and leadership skills (45%).

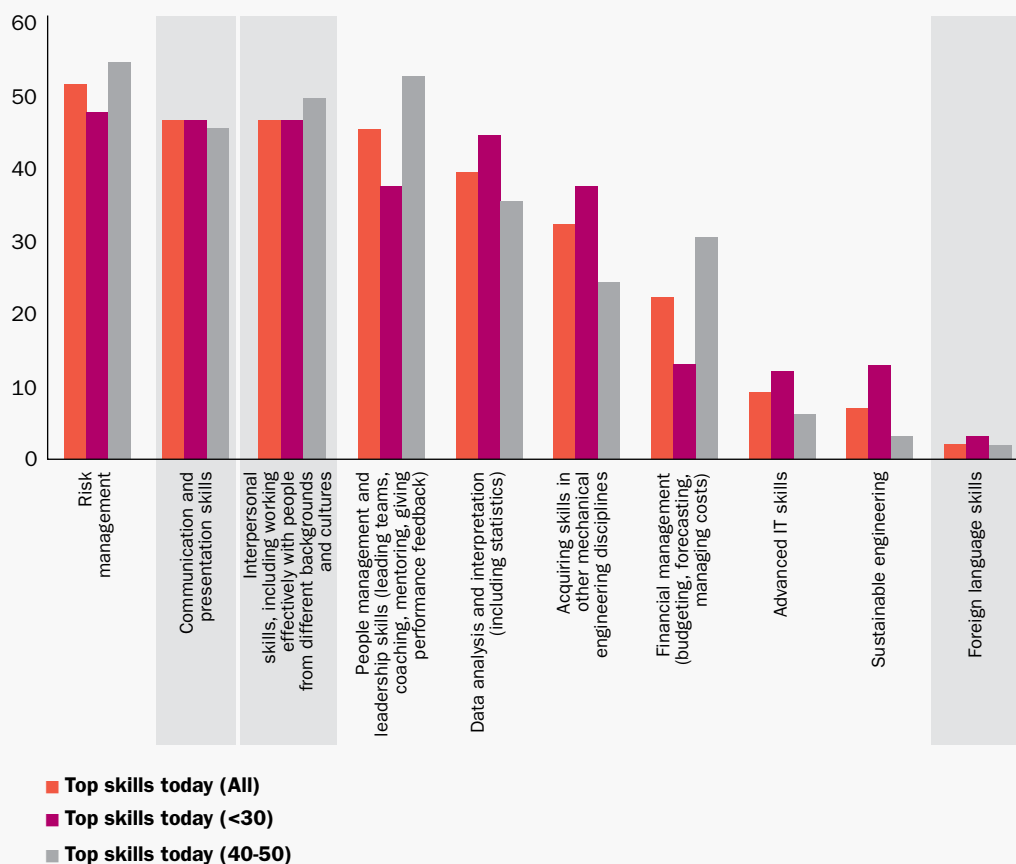
Figure 04. What skills do engineers need today?



But there are significant variations here by age (**Figure 05**); those aged under 30 put a high degree of emphasis on data analysis and interpretation, which is not seen as so important by those aged between 40 and 50. Younger engineers also put a much higher value on acquiring skills in other mechanical engineering disciplines, suggesting an awareness of the need to be able to adapt to changing requirements in the future. This is, perhaps inevitably, likely to be less of a concern for those coming towards the end of their careers.

Older workers in the 40-50 bracket, meanwhile, put more emphasis on risk management, people management and leadership skills, and financial management than their younger colleagues. It is worth noting, however, that both the younger and older age groups value the various skills required today broadly similarly, with any disparities more down to a change in emphasis rather than a fundamental disagreement over what is required.

The picture changes, however, when looking at the skills likely to be required in the future. Overall, people management and leadership skills continue to dominate and are also expected to become more important, with 49% highlighting these, as will acquiring skills in other mechanical engineering disciplines (33%) and financial management (26%), with interpersonal skills and communication and presentation skills falling back slightly in importance. The most significant shifts in importance are for sustainable engineering (+11 points) – factoring environmental and corporate social responsibility into designs and processes – as well as advanced IT skills (+5 points) and foreign language capabilities (also +5).

Figure 05. What skills do engineers need today (age variations)?

But here, too, there are differences according to age. Those aged under 30 put a stronger emphasis on the three areas mentioned above, as well as acquiring skills in other mechanical engineering disciplines. Those aged 40-50 are more likely to point to the main areas seen as important today, including people management and leadership skills, interpersonal skills, and risk management. This group also believes financial management will become much more important in the future; a view that is only partially reflected among younger colleagues.

IMechE members are broadly positive around the capabilities of managers, although there are some areas that require improvement. Four of the 10 lowest absolute scores in the survey related to the role of the immediate manager, including just 46% who feel their manager helps them with career planning and decisions. Just over half (51%) feel they make fair decisions around pay based on performance, and a similar figure (52%) say they help them to adapt to changes in the company and explain the implications for their job.

It is worth noting here that all these scores still compare extremely favourably with the UK national norm and the global engineering norm, but the fact that almost half the engineers questioned do not feel managers do a good job in these areas should be worrying for business and HR leaders. More positively, 65% feel their managers provide frequent recognition for a job well done, which is 16% above the global engineering norm and 12% above the UK national norm.

One potential issue for HR could be a lack of engagement among the manager population. Those aged between 30 and 39 – often the age at which individuals assume line manager responsibility – are significantly less engaged than the wider population, falling sharply from employees in their 20s. Some 45% of those in their 30s believe there are substantial obstacles to doing their job well compared to 35% of those aged under 30 and an average of 39% overall, while this group is also less likely to agree that work provides them with a sense of personal accomplishment or to say they are willing to work beyond what is required to help their company succeed.

The views around senior management are encouraging. Some 77% of those questioned agree that senior managers strongly believe respecting individual and cultural differences is important for their success – a huge 21 points above the global engineering norm and 17 points above the UK national norm – while 71% say senior management communicate a clear and compelling vision for the future, 1% and 6% above the global engineering and UK national norms respectively.

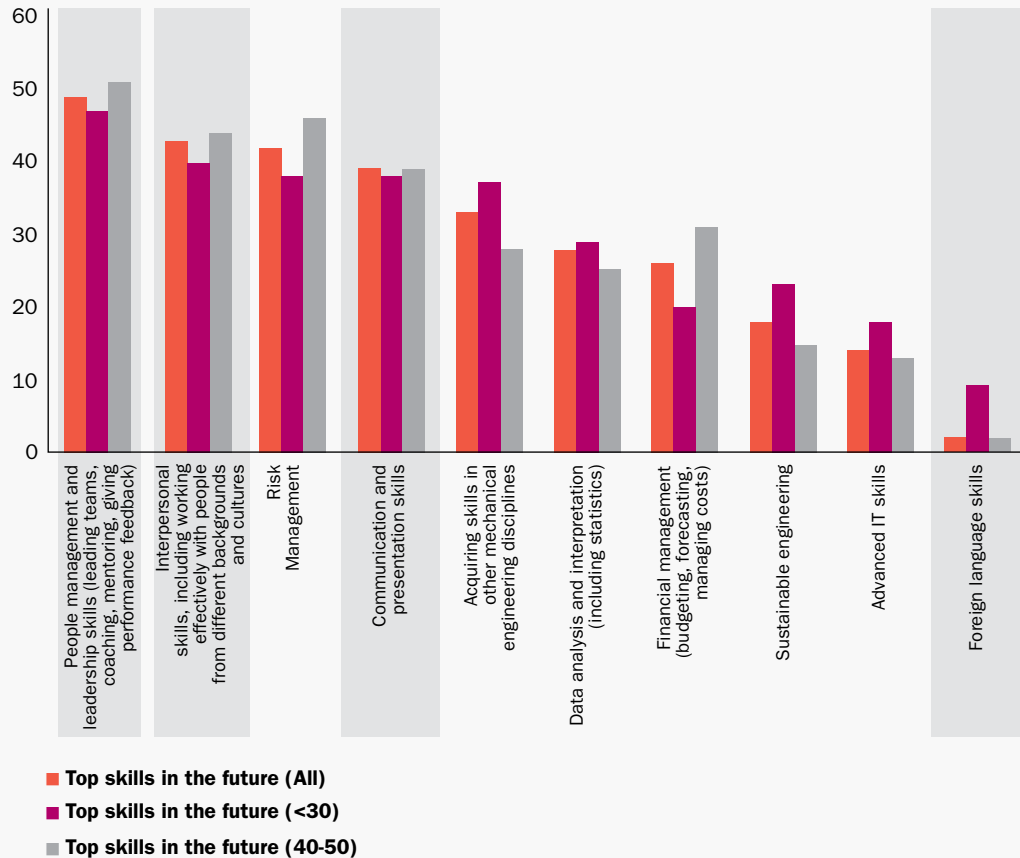
Further, 61% say senior managers consistently make rational and data-driven decisions that benefit the business in the long term. This is two percentage points below the global engineering norm but eight points above the UK national norm, although with 39% not convinced about this it is an area that should be focused on in the future.

The manager and senior leader populations are feeling rather unloved, however. There is a general feeling among engineers that while they are valued internally – 58% believe this is the case – this is not so in wider society, where just 24% believe this.

This feeling becomes more prominent with age; 61% of those aged over 40 do not believe they are held in high regard in the country compared to an average of 54% and just 42% among those aged under 30.

There are some interesting geographical differences. Just 11% of engineers in the East Midlands – a hotbed of manufacturing – disagree that engineers are held in high regard, and this figure is only 5% in Scotland. Engineers most likely to feel they are not valued by wider society are found in Northern Ireland, Wessex, the North-East, North-West and the East of England. This is a more serious matter than it might initially appear: should senior engineers not feel valued, at least outside their organisation, such disillusionment could easily impact their own performance, and even drag younger employees down with them.

Figure 06. What skills are likely to be required in the future (age variations)?



Chapter four – Gender engagement

The area that perhaps provides the most cause for concern is the way in which female engineers feel about how they are treated and their career prospects. In general, women are less engaged than men, feel less of a sense of achievement in their work and are also less likely to be satisfied with their involvement in decisions that affect their work. In fact, women lag behind their male counterparts in seven out of the eight core areas examined by the study.

The proportion of women saying there were no substantial obstacles to doing their job is lower than men, with only 55% agreeing with this compared to 62% of men. Women are also less likely than men to say they are willing to work beyond what is required to help their company succeed, although this is still the case for the majority, at 82%.

More specifically, pay is a particular cause for complaint. Just 50% of female engineers feel they are paid fairly compared with people doing similar jobs in other industries, some 8% below the figure for their male counterparts. Dissatisfaction with reward in general is most marked for women aged between 30 and 39, often the age at which they are most likely to have children, and at which their male counterparts' careers take off.

Women are also more likely to feel their organisation is failing to do a good job of retaining talented individuals. Just 37% thought this was the case, compared to 47% of men. For women, the reasons behind joining a company and those that would make them consider leaving are different to men, and appear to change over their lifetime at a particular organisation.

Flexible working and an organisation's approach to social and environmental sustainability are important factors when joining a business (**Figure 09**), but it is a lack of opportunities and loss of trust in leadership that would push them to look for another position (**Figure 10**). "For many women, the availability of flexible work arrangements is an important point of consideration when joining a company. However, it is a lack of career progression that often weighs most heavily on the decision to leave their company," says Duhaldeborde.

Women are notably less likely to agree that senior management consistently makes rational, data-driven decisions that benefit the organisation in the long term, or that senior management believe that respecting individual and cultural differences can contribute to the business's success.

They also tend to expect more from their line managers, at least around how they handle the bigger issues. Only 46% of the women engineers felt their immediate manager makes fair decisions around how their performance links to pay, compared to 52% of men, while 47% say they help them adapt to changes in the company and explain what they mean for their job, as against 53% of men.

Interestingly though, women tend to rate their line managers higher than men when it comes to the key aspects of people management; 55% say their managers help coach members of the team to improve performance and 49% say they help them with career planning and decisions.

Both these figures are slightly above those for men but remain low in absolute terms. Clearly, engineering companies, just like organisations in other industry sectors, must continue their efforts to select, train and reward line managers who are not only great at leading their team and colleagues in the execution of tasks, but who can also guide individuals toward their personal success.

Figure 07. What skills are needed to be a top engineer today?

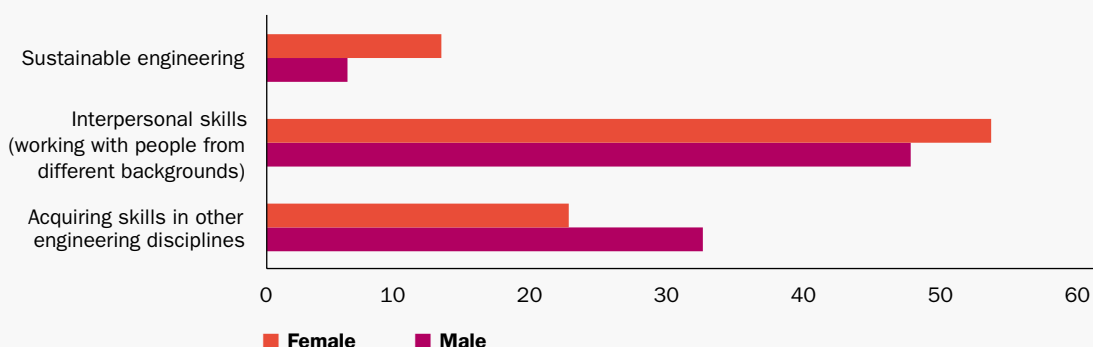


Figure 08. What skills are needed to have a successful career in the future?

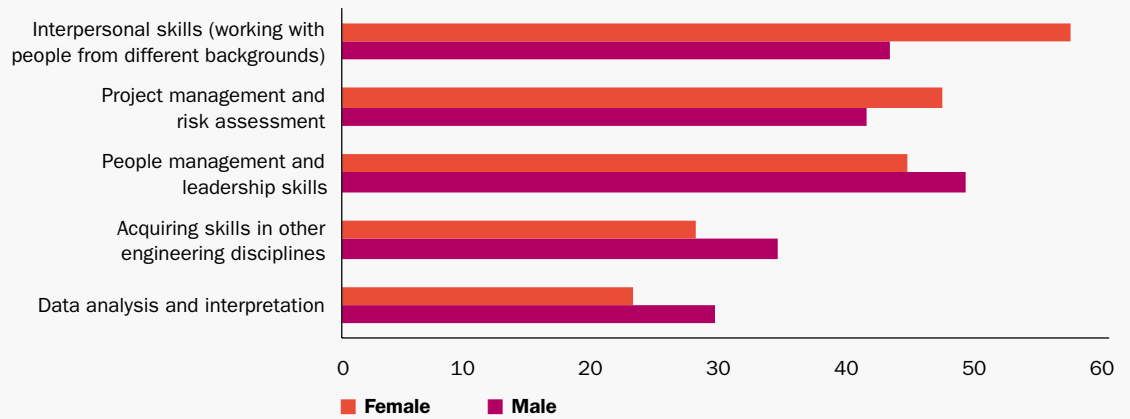


Figure 09. Top reasons to join an organisation

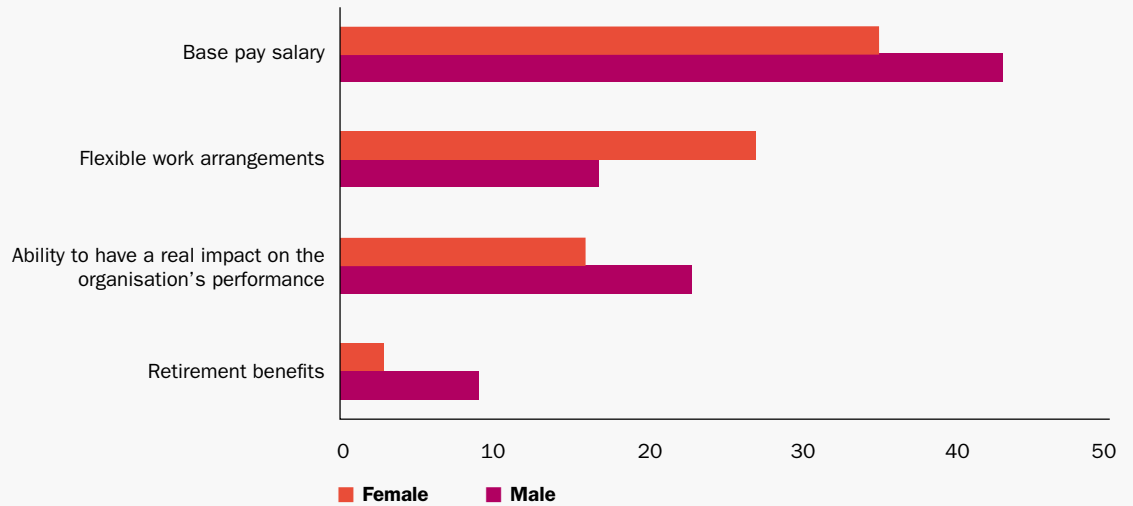
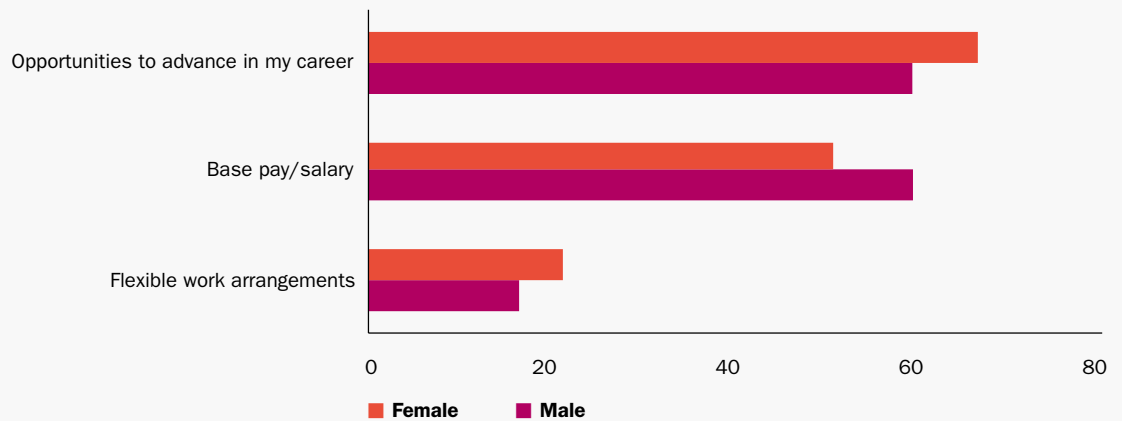


Figure 10. Top reasons to leave an organisation



Chapter five – Training and development

The experiences and perspectives of IMechE members in the area of training and development are particularly positive, as would perhaps be expected. Almost two-thirds (65%) of those surveyed say they have access to the training they need to be productive in their current position – 19 percentage points above the UK national norm and 11 points beyond the global engineering norm – and a similar number (64%) say they have opportunities for personal development, 14 points above the global engineering norm and 13 points higher than the UK national norm.

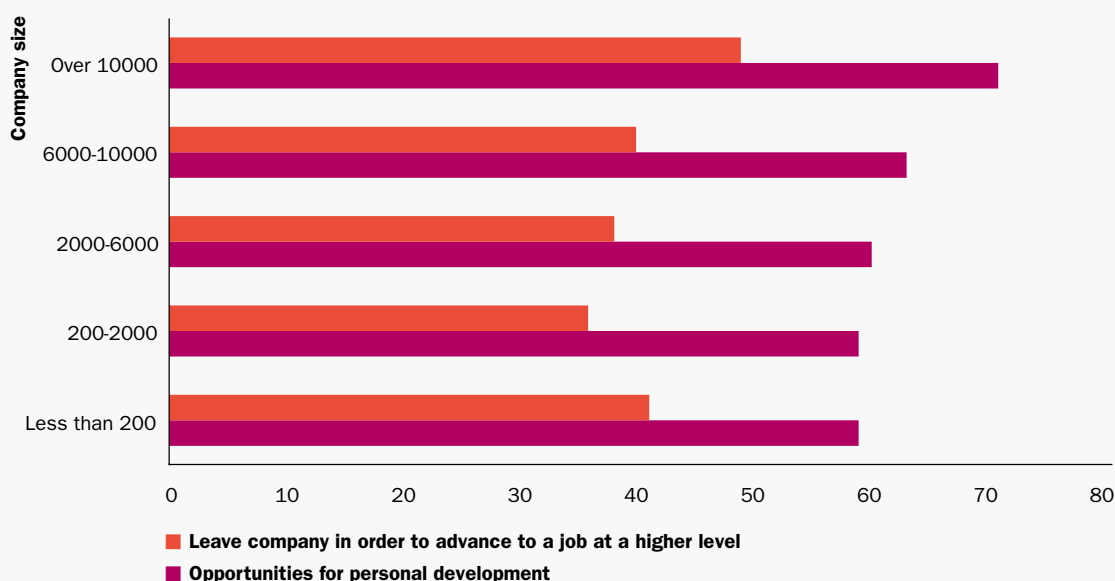
In all, 59% believe their company does a good job of developing people to their full potential – six points above the UK national norm – and 73% say their organisation has a culture of continuous learning and improvement. These views tend to be even more positive in larger companies, and within the older sections of the working population, possibly as a result of the introduction of compulsory continuous professional development by 2017. Clearly, companies that employ mechanical engineers understand how pivotal that segment of their workforce is to the sustainable growth of their business, and how important it is to keep engineers current with technological advances in order to maintain a competitive edge today.

It is not all good news, however. As mentioned earlier, there is more to do for organisations around retaining people – particularly women – within the business (54% think their company is not doing a good job here), and 43% believe they have to leave their organisation and join another company to progress to a higher-level job: an obvious cause for concern (**Figure 11**). It may be that despite opportunities to learn and develop, in many organisations senior positions are simply not becoming available as those currently in these stay put.

It is worth noting, too, that engineers at the largest organisations – those with more than 10,000 employees – are the least likely to feel the need to leave to progress, with only 28% agreeing this is the case compared to an average of 33%. In comparison, 41% of engineers working in medium-size companies of between 2,000 and 5,000 employees see no opportunity to advance if they stay with their current company.

The survey also cast a degree of doubt on the ability of immediate managers to help improve the performance of individuals, with just over half (53%) feeling their line manager coaches team members to do this. This is two points below the global engineering norm, although some 11 points ahead of the UK national norm. Along with career planning (mentioned earlier), this is an obvious area of attention when it comes to developing manager skills to ensure organisations have a workforce ready for the challenges of tomorrow.

Figure 11. Top reasons for leaving an organisation



Recommendations

So what do these results mean for organisations that seek to attract, engage and retain top engineering talent? In our view, employers of mechanical engineers should leverage key findings from the Towers Watson/IMEchE study and consider implementing specific actions in three domains:

1. Review your employment brand and employee value proposition

The results of the study suggest that employers would have much to gain in identifying and communicating the differentiating elements of their 'employment brand' that resonate with talented engineers. These include aspects of the company culture, mission, vision, values and of the employment deal that make their organisation special. The aim should be for current employees, but also alumni, partners, suppliers and other stakeholders, to become true ambassadors for that 'employment brand'. Ultimately, employers should think of engineering talents as consumers, who will strongly rely on company reputation as they decide on whether to apply for a position and join. To be more precise, we recommend that employers consider engaging in the following activities:

- Use quality external benchmarks to determine how your pay and benefits packages compare to those offered by your peers and by organisations that compete with you for the same engineering talent.
- Look closely at the portfolio of rewards that are offered to employees, including base and variable pay, retirement and healthcare benefits, life and disability insurance, but also wellness programmes, training and development opportunities, flexible working programmes, mentoring programmes, and so forth and investigate whether the current allocation of investment in rewards funds across workforce segments adequately balances organisational and employee interests.
- Design an employee value proposition (EVP) – a description of the broader set of benefits that current employees receive in return for their engagement and their good work – highlighting the elements that differentiate you from companies that compete with you to attract engineering talent. Customise the EVP for different employee segments, using insights from this study but also internal employee survey results. Once your EVP has been communicated, evaluate how good a job the organisation is doing at executing each of the constituting elements.
- Given the importance that engineers give to flexible working arrangements, additional focus in that area may be useful. List the flexible arrangements currently offered across the company. Evaluate the extent to which these are being used, who uses them, how they fit with the current business strategy and core business requirements, and how much value different workforce segments attach to them. Consider other arrangements that other companies are using which you could potentially implement. Develop a revised mix and then equip managers to discuss these arrangements with members of their teams.
- Last but not least, our study shows how much continuous learning and career development matter to engineers. To adequately answer that need for personal growth, employers should ensure that their employees can access both robust, user-friendly technology and active line manager support to manage their careers. Job architecture and career maps, for example, can be used as a framework for communicating with employees and for exploring with them career opportunities tailored to their skills and experiences.

2. Grow inspiring leaders and effective people managers

As the study has highlighted, senior leaders and line managers have a big influence on the engagement of engineers and their intention to stay with their company.

Leaders and managers should keep in mind the importance of:

- Frequent and varied communications on the values of their organisation and why they matter to the success of the business, on the history of the organisation, its ambitions for the future and strategy for sustainable growth, and on how the products and services that the company provides contribute to improving society and to the environment.
- Modelling behaviours that engineers value, such as sharing ideas, collaboration, focus on customer needs, speed of execution when implementing new ideas and accountability.

Like most organisations in the engineering industry and beyond, making a robust investment in the development of line manager capabilities will also have a significant effect on engineers' engagement. To develop successful people managers, organisations should implement training programmes that seek to develop capabilities in the following domains:

- Communication: clarifying business objectives, reasons for organisational changes, and giving employees a line of sight between their role and the broader goals of the business. Positioning the EVP – expected behaviours and performance at work and what team members can expect from their employer in return.
- Goal setting: involving team members in defining performance goals and learning how to reinforce autonomy on how to deliver these goals.
- Performance management: giving timely, task-focused, action-oriented feedback. Coaching direct reports to help improve individual performance.
- Career management: identifying individual career goals, communicating opportunities, engaging employees in planning their future within the company.
- Self-reflection: reflecting on one's practice as a line manager. Learning to challenge their own assumptions and understanding what drives engagement within their team.

3. Support the development of women engineers

Today in the UK, there is wide agreement that the supply of graduates in engineering is not meeting demand and that the country's ability to draw more widely on the pool of female talent is critical to the growth of the UK economy. The Sixth Report of Science and Technology Committee of the House of Commons (January 2014), for example, states that 'the UK economy needs more skilled scientists and engineers and this need will not be met unless greater efforts are made to recruit and retain women in STEM [Sciences, Technology, Engineering and Mathematics] careers'. While the Towers Watson/IMechE study confirms that women are severely under-represented in the field of mechanical engineering, with only 11% of women in our sample, it also suggests that employers can play a major role to address that crucial issue. Indeed, the results show that employers are not only struggling to find and attract women engineers: engaging and retaining the talented women who have joined is also a major challenge for them. The following are various activities that are within your reach and that may, in the long term, motivate women not only to become mechanical engineers but also to progress in that field for the long term:

- Tap into female engineers' interest in sustainable development by emphasising the social and societal contributions of your company, instead of focusing essentially on the financial and technological aspects of business success.
- Show how diversity of perspectives and skills across genders within your body of engineers contributes to better business performance.
- If your industry allows, ensure that communications about engineering jobs within your company underline the fact that stereotypes related to the industrial world (for example difficult working conditions, long work hour standards, limited tolerance for personal circumstances) are not representative of today's reality.
- Understand how and under what circumstances women engineers have succeeded in their roles within your company. Increase the visibility of women in senior engineering roles within your organisation. Position them as role models.
- Train male and female mentors with an emphasis on successful mentoring across genders.
- Encourage and facilitate women engineers' contributions to 'career days' in local schools. Stories of how women progress into the mechanical engineering field can have a big influence on the choices of talented young women and can help dispel myths on the skills and attitudes required to succeed in that profession.
- Invite career advisers from target academic institutions that produce engineers who fit your organisation's needs to visit your company in order to better understand your organisation culture and values.
- Offer work placements and internships. Fund these internships.
- Collaborate with professional organisations whose purpose is to support and nurture women in engineering.
- Finally and most importantly, remember that lack of flexibility, respect and support are only some of the reasons why women engineers leave a company. Persistent wage inequalities and lack of opportunities to grow their careers are essential reasons why women engineers leave their company.

Figure 12. Gender spread of participants

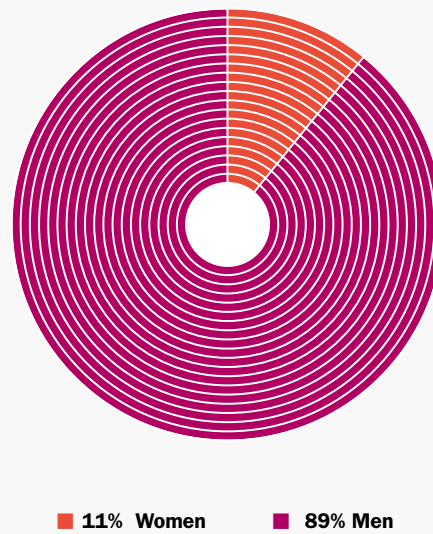


Figure 13. Sector spread of participants

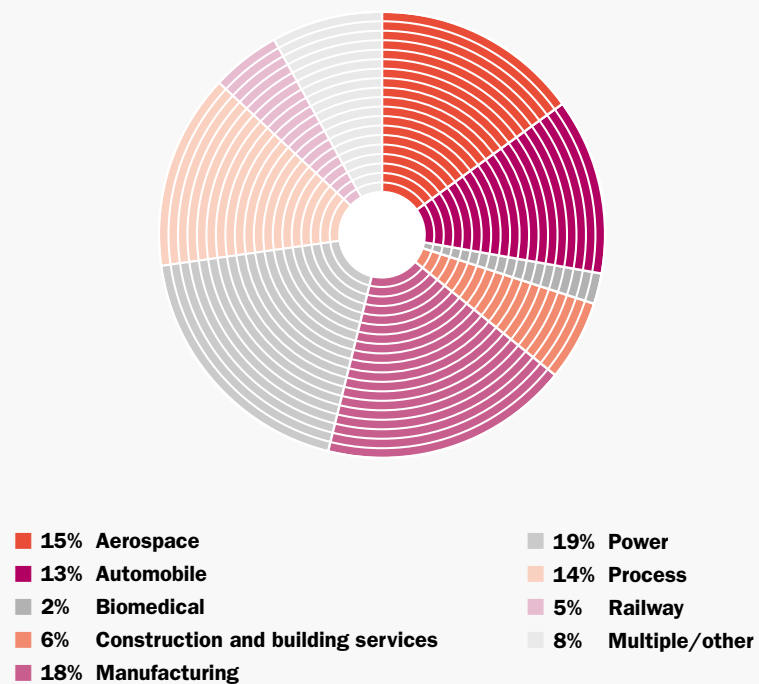


Figure 14. Age spread of participants

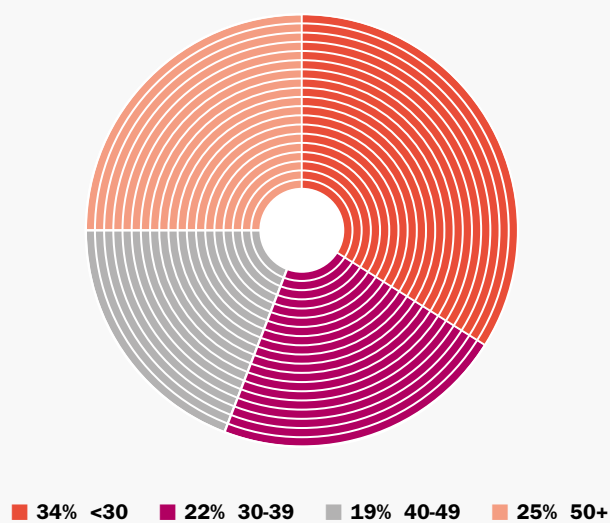
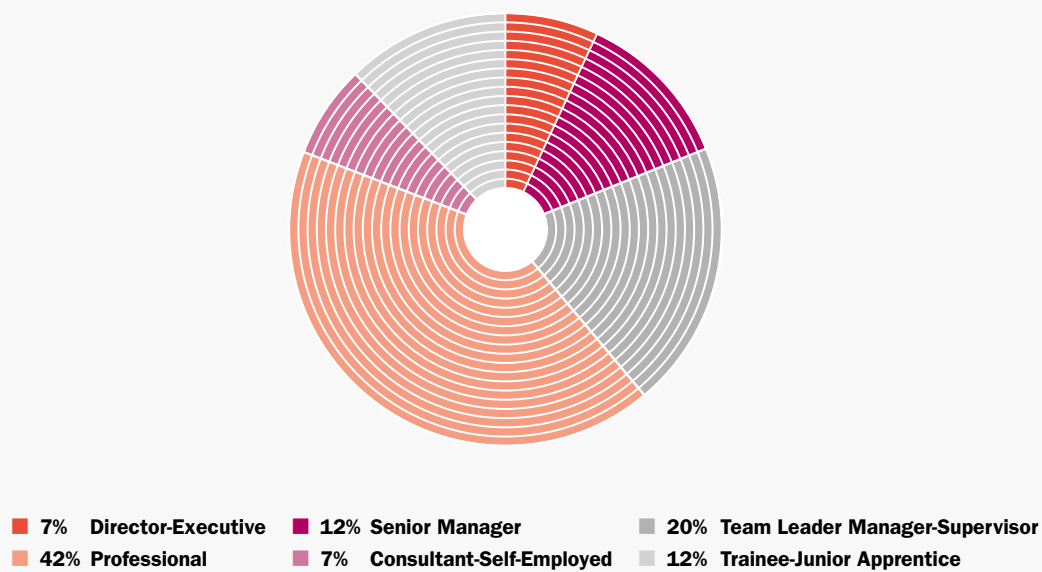


Figure 15. Job level spread of participants



Towers Watson overview

Towers Watson is a leading global professional services company that helps organisations improve performance through effective people, risk and financial management. With 15,000 associates around the world, we offer consulting, technology and solutions in the areas of benefits, talent management, rewards, and risk and capital management.

At Towers Watson, we can help you align your talent and rewards strategy with your business strategy to achieve long-term success. We rely on data, analytics and experience to pinpoint the talent and workforce needs that are vital to your overall performance. We develop strategies and design and implement programmes that address these needs, drive higher performance and ensure the right return on your investment in people. Backed by industry-leading technology, global workforce data, research and insights, we can help you quickly transform ideas into action.

Our full services include: Communication and Change Management, Global Data Services, Employee Surveys, Executive Compensation, HR Service Delivery, HR Technology, Rewards, Sales Effectiveness and Rewards and Talent Management.

Towers Watson Employee Surveys

Our survey practice was founded nearly 40 years ago to service large, multifaceted companies. We are still committed to that purpose. Last year, our dedicated staff of nearly 400 surveyed millions of employees. Our survey practice combines a project management protocol with proprietary processes and tools, developed and refined over decades in the field. Our survey professionals include native speakers of over 40 languages based in 20 countries worldwide. They are strong partners who know the local culture and speak the local languages. A dedicated, full-time staff provides measurable value when working with senior leaders, managers and HR.

Having long been at the forefront of employee engagement research, we have developed deep expertise in how to sustain engagement over the long term. We measure not only the building blocks of engagement, but also how to sustain engagement through a positive and energising work environment, and then how to translate this into high levels of individual performance through productive work conditions and supportive manager behaviours. We find that companies with high and sustainable levels of engagement have operating margins up to three times higher than companies with low or high but unsustainable levels of engagement. Carefully crafting surveys that reflect real trends and better serve an organisation's goals and vision takes years of experience. Towers Watson delivers a deep understanding of the employee survey process, powered by access to the world's largest database of employee opinions and industry norms. We help our clients develop meaningful surveys for sustainable change and enhanced performance.

We take a tailored approach to survey design. Clients receive individual attention to ensure survey content addresses their organisations' unique goals and cultures. Measurable results are observed using our robust benchmarks and validated frameworks. These include our next-generation concept of engagement and our research-based framework of cultural characteristics that predict success measured against each company's unique combination of strategic goals.

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About Towers Watson

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