The BeLongEng Project - Baseline report

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Acknowledgement of participants

Dear participants,

On behalf of the Project Team and the broader engineering and education communities, thank-you for your time and dedication to the project.

The engineering profession will benefit from you sharing your career story, and without you, realising these benefits would not be possible.

We look forward to hearing from you again in 2023!

Yours sincerely,

Assoc. Prof. Enda Crossin

University of Canterbury | Te Whare Wānanga o Waitaha

Acknowledgement of supporters and institutions

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- Australian Council of Engineering Deans *
- ACE New Zealand *
- Engineers Australia *
- Engineering New Zealand *
- Engineers Without Borders Australia
- IEEE (Australia)
- IPWEA (Australia)
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- Minerals Council of Australia
- New Zealand Council of Engineering Deans
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* Represented on the Project Advisory Board.

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- The University of Adelaide, Australia
- The University of Auckland, New Zealand
- The University of Melbourne, Australia
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- The University of Western Australia
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- University of Canterbury, New Zealand
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- University of Southern Queensland, Australia
- University of Technology Sydney, Australia
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Contents

1   About the BeLongEng Project

Engineering practice and the contexts in which engineers work is ever-evolving. It has been forecast that Australian school leavers will change careers five times and will have worked with 17 different employers by retirement (Foundation for Young Australians and AlphaBeta, 2016, 2017; McRindle Research, 2014). The rise of automation is forecast to impact on the engineering profession (Frey & Osborne, 2013), with engineers spending less time undertaking routine technical tasks, and more time engaging with industry partners and undertaking strategy and decision-making work (Foundation for Young Australians and AlphaBeta, 2017). These factors are coupled with continued pressure for engineers to possess and maintain strong professional skills, including active learning, interpersonal skills, time management and problem-solving skills (Prinsley & Baranyai, 2015). It has been suggested that engineers of the future will need to be adaptable, flexible, resilient and creative to manage the challenges associated with globalisation (Crosthwaite, 2019). Finally, engineers of the future will likely demand increased work-life balance, translating in the need for flexibility in the way, where and how they work (PricewaterhouseCoopers, 2017).

Forecasts of the skills needed for engineers are not new, and some forecasts have not changed in decades, e.g. the need for collaboration skills (Bates, Martinelli, Lloyd, Stradling, & Vines, 1992; Lloyd, Ferguson, Palmer, & Rice, 2001). Concurrently, researchers have recognised a misalignment between engineering education and practice (Mazzurco et al., 2021; Trevelyan & Williams, 2019).

Engineering practice research seeks to understand the work that engineers do and their work contexts and is a fundamental aspect underpinning engineering education reform (Stevens et al., 2014). Despite this fundamental importance, the empirical research on engineering practice, including how practice has changed, remains sparse (Mazzurco et al., 2021; Stevens et al., 2014; Trevelyan, 2007).

Some engineering practice studies are cross-sectional in nature, typically comparing the differences in practice between groups of engineers, for example graduates and experienced engineers (Pons, 2015). Other engineering practice studies are longitudinal in nature, tracking engineers over time (Brunhaver et al., 2015). However, such longitudinal studies have historically focused on early-career engineers, and have terminated within 5 years post-graduation, limiting the insights into the long-term changes occurring in engineering practice.

The lack of empirical evidence of engineering practice, and how changes to engineering practice, was the catalyst for the BeLongEng Project. The BeLongEng title is intended to capture the longitudinal nature of the project, the focus on engineering, as well as what it means to be an engineer and belonging. The BeLongEng Project aims to provide evidence for policy change in engineering practice and education; addressing the lack of empirical research on engineering practice.

This report provides a brief history of the BeLongEng Project, methods, and highlights and descriptive statistics for the baseline survey.

2   Background to the BeLongEng Project

2.1   History

The BeLongEng Project was developed in Melbourne, Australia at Swinburne University of Technology (SUT). In 2017, SUT established a new academic unit called the Engineering Practice Academy. The Engineering Practice Academy were tasked with a project to develop a new undergraduate engineering programme, the Bachelor of Engineering Practice (Honours).

One of the broader objectives for the Bachelor of Engineering Practice (Honours) project was to ensure that the programme's curriculum was responsive to changes in engineering practice. Academics within the Engineering Practice Academy undertook research relating to engineering practice; the study of what engineers do and the contexts within which they work. As part of this research, Dr. Andrea Mazzurco, Assoc. Prof. Enda Crossin, Dr. Siva Chandrasekaran, Dr. Scott Daniel, and Dr. Giovani Radhito Putra Sadewo completed a systematic review examining the body of knowledge of engineering practice (Mazzurco et al. 2021). This systematic review confirmed the lack of empirical evidence on what engineers do, and identified that the empirical evidence for changes in engineering practice was even more sparse.

An additional factor that shaped the project was ongoing concern related to the career outcomes of graduate engineers in Australia; several researchers (e.g. Trevelyan & Tilli, Palmer) report that many graduate engineers do not work in engineering occupations, and may never even enter the profession.

In mid-2019, the Australian Council of Engineering Deans (ACED) released the first of a series of reports from its Engineering 2035 report, titled "Engineering Futures 2035: A scoping study" (Croswaithe). Within this report, ACED recommended further research into recent graduates, including their work contexts, career transitions, knowledge, skills and attributes (competencies) needed for employment, and equity and diversity in the workforce, to name just a few. This further reinforced the critical need for the project.

Inspired by the lack of empirical evidence for changes in engineering practice, and longitudinal studies elsewhere, including the University of Otago's Dunedin Study and the BBC television series Seven-Up, the Principal Investigator, Assoc. Prof. Enda Crossin, thought "What if we could track engineers through time to better understand how and why engineering is changing?".

In late 2019, Assoc. Prof. Crossin spoke with engineering practice researchers about the need for a longitudinal project at the Australasian Association for Engineering Education's 2019 annual conference in Brisbane. Assoc. Prof. Crossin moved to New Zealand in February 2020 to take up a position within the Faculty of Engineering at the University of Canterbury. The Project Team was established early in 2020, which included Associate Professor Anne Gardner, Professor Les Dawes (QUT), Professor Sally Male (The University of Melbourne), Dr. Andrea Mazzurco (formerly Swinburne University) and Professor Gerard Rowe (The University of Auckland).

Discussions between the Project Team and several engineering peak bodies in 2020 added to the need for the project. An action that emerged from these discussions was the need to

include organisational psychology expertise to the Project Team. With this, Professor Katharina Näswall from the University of Canterbury joined the Project Team.

A project was completed by a psychology student, Jessica Richards, in the summer of 2020-21, and following this, Jessica completed a Master of Science, of which included the development and trial of a survey instrument for the baseline survey. Dr. Fleur Pawsey, joined the Project Team as one of Jessica's supervisors.

Shaylee Bright worked with the Project Team in early 2022 to support marketing for recruitment. Recruitment for the baseline survey started in early 2022, which included electronic and print-media advertising, and invitations to participates sent out by 24 tertiary engineering institutions from Australia and New Zealand.

Dr. Dru Norriss worked with the Project Team in late 2022 to support data coding and analysis. Data coding for the baseline survey was completed in November 2022.

The BeLongEng Proejct is on-track to be the biggest ever longitudinal study of engineering practice ever undertaken.

2.2   What's next?
The next data wave for the BeLongEng Project is scheduled for May 2023. Over time, the BeLongEng Project will help inform the engineering industry, engineering education and other stakeholders on multiple facets of engineering practice, including the experiences of engineers in the workforce, the work that they do, their careers, and how these facets change over time.

The Project Team are considering a follow-up study, the BeginEng Project, which would track a cohort of graduate engineers over time. This second study would be dependent on external funding.

2.3   Opportunities for accessing research
There are two mechanisms for external parties to access additional BeLongEng research. These are to:

1. Commission research directly via the principal investigator. For this mechanism, please email the principal investigator: enda.crossin@canterbury.ac.nz . Payment will be sought for this research, with any residual funds (after overheads) retained for to support expenses to run the BeLongEng project.
2. Apply for an external researcher application. Details of this process will be made available on the project website: www.BeLongEng.org.

3 Demographic highlights from the Baseline Survey

A total of 889 participants completed the baseline survey. Some of the demographic highlights in the baseline survey include:

- About ¼ of the participants are women or female. This number is higher than the broader engineering population (approximately 15%).
- Close to 70% of participants were born in either Australia (36%) or New Zealand (33%), with over 17 different ethnicities represented.
- Most participants reside in Australia (51%) or New Zealand (39%).
- The majority of participants have no dependent children.
- The majority (78%) of participants are the first engineers in their family.
- About 50% of participants have between 0-9 years' experience after their highest qualification.
- 90% of participants were satisfied that their highest engineering qualification prepared them for their career.
- Approximately ⅓ of participants have a non-engineering qualification, with the most popular non-engineering qualification being in the business and management field of study.
- 12% of participants are studying, with most studying in the field of business and management
- A large majority of participants (99%) are working, with most participants working between 40-49 hours per week.
- Most participants work in organisations with 100+ employees.
- Nearly one in four participants left their job at least once in the last 12 months. Of these, most indicated "more opportunities elsewhere" as the reason to leave.
- Over ½ of participants are members of an engineering professional society
- The largest engineering discipline represented was project management, with most participants identifying multiple engineering disciplines.
- Just under ⅓ of participants had a mentor in the last 12 months.

Further descriptive statistics from the baseline survey are reported in Section 5.

4 Methods

4.1 Baseline survey

The BeLongEng Project is a prospective longitudinal cohort study. Data will be collected over a 20 year time period, with the baseline recruitment survey in 2022, with follow-up surveys at 1, 3, 5, 7, 10, 15 and 20 years after the baseline.

The population of interest is people with engineering qualifications, who have either graduated from a tertiary institution, or who are immigrants, in Australia and New Zealand. The formal participant criteria for the baseline survey were 1. Participants must have a) a 2-, 3-, or 4- year engineering qualification from an Australian or New Zealand tertiary institution; or b) a postgraduate engineering qualification from Australia or New Zealand; or c) recognition as having equivalent standing to at least a graduate level through membership to a professional engineering society in Australia or New Zealand, or d) live in Australia or New Zealand and be eligible for membership to Engineers Australia or Engineering New Zealand, and 2. Participants must expect to be working for at least the next 10 years. The first criterion is our definition of an engineer, which was derived by considering working definitions from peak bodies. The second criterion was imposed to ensure the recruitment of participants who would likely to be working through the majority of the study period.

4.1.1 Survey design

Determinants and outcomes of interest were identified through workshops with the project team members, coupled with interviews with practicing engineers in a pilot study, described elsewhere (Richards, 2021). The identified determinants and outcomes included demographics, education background, work experience, attrition and retention factors for those in, and who have left, the engineering profession, social capital, mentorship, workplace culture, continual professional development, work characteristics, stress and well-being, standing in the profession, activities at work, satisfaction, adaptability, and sense of identity. An aspirational time limit to complete the survey was set to 45 minutes, based on the time to complete similar longitudinal surveys.

The baseline survey included four sections; demographics, work characteristics, psychometric measures and engineering activities.

Survey questions relating to demographics and job characteristics were developed using existing measures from longitudinal studies (Tustin et al., 2012), Australian and New Zealand classification systems, census, labour workforce survey, and validated instruments on workplace flexibility and disability status. The gender variable is from the Australian Bureau of Statistics (2021), and includes binary sex identifiers. Questions relating to continuous professional development (CPD) were developed from CPD categories defined in Engineers Australia and Engineering New Zealand's CPD systems. New questions were developed for the nature of mentee support based on (reference). Where possible, data are coded to existing Australian and/or New Zealand classification systems, including for ethnicity, country, first language, study field, occupation, industry, and for Māori participants, iwi (tribe) and hapū (clans or descent groups) affiliation. For fields with standard classifications (e.g. occupation, industry), participants chose from an auto-fill list or

entered in a free-form response. Free-form responses will be subsequently coded to the classification systems.

The engineering discipline classification system was derived by compiling lists of disciplines from different sources, including from Australian and New Zealand education and industry classification standards, and lists of disciplines commonly recognised by professional bodies. Lists of engineering tertiary institutions and engineering qualifications were developed by compiling lists of institutions offering current or past accredited 2-year (Dublin Accord), 3-year (Sydney Accord) or 4-year (Washington Accord) engineering programmes, and the name of each qualification. Similar qualification endorsements were clustered, for example Chemical Systems, Chemical, and Chemical Technology were combined to Chemical (including Systems and Technology).

Most psychometric measures and the engineering activities used 5-point Likert scales. Psychometric measures were based on existing instruments. The activities comprised of 86 generic engineering activities, collapsible into a set of 21 generic activity descriptors. The engineering activities and descriptors were developed from the O*Net classification system for engineering jobs, coupled with a review of empirical engineering practice literature. Engineering activities were measured using 5-point Likert scales for frequency and importance.

A pilot survey (n = 40) was used to test face and content validity (Richards, 2021). A summary of the determinants and outcomes of interest are reported in Table 1. The full data dictionary, including references for the different measures, are available on the project website and the UC Research Repository (Crossin et al., 2022).

Table 1: Summary of determinants and outcomes in survey

Demographics	Work characteristics	Psychometrics	Engineering activities
• Year of birth	• Employment and labour force status	• Role overload	• Getting Information
• Age	• Hours worked	• Technology	• Monitoring processes, materials or surroundings
• Gender	• Employee or employer	• Techno-insecurity	
• Ethnicity	• Occupation	• Techno-productivity	• Inspection processes, materials or surroundings
• Māori descent	• Industry	• Workplace mistreatment	
• Iwi/hapū affiliation	• Income	• Organisational support	
• Aboriginal or Torres Strait Islander descent	• Employer size	• Meaningful work	• Handling and moving objects
• Country of birth	• Location of work	• Organisational psychological safety	• Interacting with equipment
• Residency characteristics	• Language at work (other than English)	• Work life balance	• Estimating characteristics
• Number of child and adult dependants	• Work patterns	• Career aspirations	
• First language	• Working away from home	• Job security	• Judging the qualities of things, services or people
• English proficiency	• Workplace flexibility	• Perceived external employability	
• Family background		• Wellbeing	• Processing and evaluating information
• Highest engineering qualification	• Job departure characteristics	• Stress	
• Other highest qualification	• Professional society membership	• Engineering identity	• Analysing data or information
• Study characteristics	• Chartered Professional status	• Career satisfaction	• Making decisions and solving problems
• Disability status		• Workplace flexibility	
	• Registered engineering status	• Belonging	• Thinking creatively
		• Five factor personality	• Updating knowledge
		• Career commitment	
		• General Self-Efficacy	
		• Work locus of control	
		• Turnover intentions	
		• Innovation and flexibility	

Demographics	Work characteristics	Psychometrics	Engineering activities
	• Engineering discipline • Mentee (protégé) characteristics • Continuing professional development	• Global engineering competency (behavioural)	• Managing inventories and waste • Documenting and recording information • Communicating with others • Resolving conflicts and negotiation • Training and teaching others • Guiding, directing and motivating others • Providing advice to others • Planning and organising • Other activities

4.1.2 Recruitment

The baseline recruitment data wave was deployed from February 2022 to June 2022. Additional data waves on the same cohort of participants will occur in May of 2023, 2025, 2027, 2029, 2032, 2037 and 2042, with a 6-week survey period. Recruitment pathways included paid advertising in engineering peak-body magazines and e-zines, paid social media advertising (LinkedIn), articles published by the project's peak body supporters, and invitation emails via 24 tertiary institutions in Australia and New Zealand. We did not track the mode by which participants joined the study. No monetary incentives were used for participants. Participants could choose to join a participant club to attend networking events hosted after each data wave.

Participants joined the study by following a link to an anonymous Qualtrics survey, and, following a consent process, by passing the participant criteria and entering personal information. Participants then progressed to the remainder of the project survey. Participants who did not complete the survey were sent a reminder email within two weeks

before the end of the recruitment period. Participants who completed and submitted the survey were included in the baseline study.

4.2 Ethics and data management

The pilot study was granted ethics approval by the University of Canterbury Human Ethics Committee (HREC Reference 2021/41). An ethics application for the main study was subsequently reviewed and approved by the University of Canterbury's Human Research Ethics Committee (HREC Reference 2021/157). Participants consented to joining the project through an online form at the start of the survey.

The main risks for participants pertain to disclosure of sensitive demographics (e.g. ethnicity, gender), psychological, social and sensitive issues. These risks were managed by allowing participants to opt-out of answering sensitive questions (e.g. ethnicity, stress), and by providing participants with details for support services. The social risks were associated with a likelihood that some participants will be known by the researchers. This risk is mitigated through de-identification of data, described below.

Participants were assigned a unique identifier during their completion of the survey. After the survey period closed, data were de-identified by removing identifiable information from the database. The personal identifiable data linked to the unique identifier are stored in a separate location to the de-identified data, and are only accessible by the principal investigator.

4.3 Data suppression and threshold for reporting

In this report, data are supressed where the number of participants contributing to an outcome is below 5. Random errors may have been introduced to the data, or totals may have been excluded, to minimise the possibility of re-identification of individual respondents. Discrepancies between totals for different measures may be associated with the random error, or due to null or responses which could not be readily coded.

4.4 Limitations

Readers should be wary of drawing conclusions between the results documented in this report with other BeLongEng publications; e.g. between outcomes from a specific institution, relative to two different samples. Differences between results may not be statistically significant. The sample of participants in this report may not be representative of the broader engineering population, or engineering sub-populations. There are several potential biases associated with the reported sample, including survivorship bias (the sample may be over-representative of people who have stayed within the engineering profession), self-selection bias (participants with certain characteristics may have been attracted to participation than others), undercoverage bias (there may be engineers who were hard to recruit, for example, immigrant engineers), and advertising bias. Results have not been weighted to account for potential bias. The use of the descriptive statistics, therefore, should be treated as being representative of the sample, not of the broader engineering population.

4.5 Exclusions of psychological outcomes

Most psychological measures have been excluded from this study to protect participants' data.

5   Baseline descriptive statistics

A total of 889 completed and submitted responses to the baseline survey. Descriptive statistics for the baseline are reported below. Responses are generally collected in response to questions relating to the last 12 months.

5.1   Age

AGE_T0		
Age	***n***	**Percent**
20-24	63	7%
25-29	184	21%
30-34	165	19%
35-39	113	13%
40-44	98	11%
45-49	108	12%
50-54	80	9%
55+	78	9%
Total	889	

5.2   Gender

GEN_T0		
Gender	***n***	**Percent**
Man or male	633	73%
Woman or female	240	27%
Other (multiple classifications)	<5	-
Total	873	

5.3 Ethnicity

ETH1_T0 to ETH_5_T0		
Ethnicity	*n*	**Percent**
Australian	347	32%
New Zealand European	292	27%
Chinese nfd	87	8%
English	68	6%
Indian nfd	59	5%
Irish	20	2%
Māori	20	2%
Scottish	19	2%
Italian	12	1%
Filipino	11	1%
Indonesian	9	1%
Sri Lankan nfd	9	1%
New Zealander	7	1%
Greek	6	1%
Fijian Indian	6	1%
German	5	0%
Southeast Asian nfd	5	0%
Other (less than 5 participants per classification)	116	11%
Total	1098	

5.4 Country of Birth

Country of birth	*n*	**Percent**
Australia	320	36%
New Zealand	293	33%
India	43	5%
England	27	3%
China (excludes SARs and Taiwan)	27	3%
Malaysia	20	2%
Fiji	13	1%
Hong Kong (SAR of China)	12	1%
South Africa	12	1%
Philippines	11	1%
Indonesia	10	1%
Sri Lanka	9	1%
Singapore	8	1%
United States of America	7	1%
Other (less than 5 participants per classification	77	9%
Total	889	

5.5 Country of residence

RCOU_T0		
Country of residence	***n***	**Percent**
Australia	451	51%
New Zealand	349	39%
United States of America	20	2%
England	9	1%
Singapore	8	1%
Canada	7	1%
Other (less than 5 participants per classification	45	5%
Total	889	

5.6 Residency status

Residency status	***n***	**Percent**
Citizen	747	84%
Permanent resident	77	9%
International citizen visa	64	7%
Total	888	

5.7 Years first in country

Years since first in country (for participants with permanent resident or international citizen visa)	***n***	**Percent**
0-4	51	36%
5-9	44	31%
10-14	17	12%
15-19	12	9%
20-24	7	5%
>25	10	7%
Total	141	

5.8 Dependant children

DEPC_T0		
Dependant children	***n***	**Percent**
0	543	61%
1	133	15%
2	148	17%
3	52	6%
4+	13	1%
Total	889	

5.9 Dependant adults

DEPA_T0		
Dependant adults	***n***	**Percent**
0	759	85%
1	89	10%
2	25	3%
3	11	1%
4+	5	1%
Total	889	

5.10 English as first language

LENG		
English as first language	**n**	**Percent**
Yes	723	81%
No	166	19%
Total	889	

5.11 Language other than English

LANGNG		
Language other than English (for participants whose first language is not English), Narrow Group	**n**	**Percent**
Chinese	49	30%
Indo-Aryan	44	27%
Southeast Asian Austronesian Languages	12	7%
Middle Eastern Semitic Languages	11	7%
Iberian Romance	7	4%
Dravidian	6	4%
Dutch and Related Languages	5	3%
Other (less than 5 participants per classification)	28	17%
Total	162	

5.12 English fluency

LANGF_T0		
English fluency (for participants whose first language is not English)	**n**	**Percent**
Not at all fluent to somewhat fluent	5	3%
Moderately fluent	31	19%
Very fluent	130	78%
Total	166	

5.13 Use of language other than English at work

LAWB_T0		
Use of a language other than English at work	***n***	**Percent**
Yes	47	5%
No	842	95%
Total	889	

5.14 Other languages spoken at work

LAWNG_T0		
Other languages spoken at work (Narrow Group)	***n***	**Percent**
Chinese	10	22%
Southeast Asian Austronesian Languages	6	13%
Pacific Austronesian Languages	6	13%
Other (less than 5 participants per classification	24	52%
Total	46	

5.15 Other language at work fluency

LAWF_T0		
Other language at work fluency	***n***	**Percent**
Not at all fluent to Somewhat fluent	10	21%
Moderately fluent	10	21%
Very fluent	27	57%
Total	47	

5.16 Number of primary caregivers growing up

FCG		
Number of primary caregivers when growing up	***n***	**Percent**
1	83	9%
2	773	87%
3	22	2%
4	10	1%
Total	888	

5.17 Highest level of education of caregivers

FCGEDU_1 to FCGEDU_4		
Highest level of education completed by caregivers (participants may have nominated multiple caregivers)	***n***	**Percent**
Did not attend secondary school	43	3%
Some or all of secondary school	487	28%
Trade/National/Vocational Certificate Level 1-4	198	12%
Diploma below Bachelors level, Advanced Diploma, National Certificate Levels 5 - 6, Associate Degree	207	12%
Bachelor Degree or Diploma at Bachelors level	376	22%
Bachelor Degree with Honours, Postgraduate Diploma, Postgraduate Certificate	183	11%
Masters Degree	151	9%
PhD or Doctorate Degree	70	4%
Total	1715	

5.18 First engineer in family

FIF		
First engineer in family	***n***	**Percent**
Yes	695	78%
No	194	22%
Total	889	

5.19 Highest level of engineering qualification (A/NZQF)

EANZQ_T0		
Level of highest engineering qualification (A/NZQF)	*n*	**Percent**
Diploma (Australia)	<5	-
Advanced Diploma (Australia), Associate Degree (Australia), Diploma (New Zealand)	14	2%
Bachelor Degree	34	4%
Bachelor Degree (Honours), Bachelor Degree (4 year degree from Australia or New Zealand, graduated before conversion to BE Hons), Postgraduate Certificate, Postgraduate Diploma, Graduate Diploma	569	65%
Master Degree	161	18%
PhD or Doctoral degree	63	7%
Not applicable (i.e. outside of AQF or NZQF)	34	4%
I don't have an engineering qualification	<5	-
Total	875	

5.20 Highest level of engineering qualification (generic)

EQL_T0		
Level of highest engineering qualification	n	**Percent**
Trade/National/Vocational Certificate Level 1-4, Diploma below Bachelors level, Advanced Diploma, National Certificate Levels 5 - 6, Associate Degree	17	2%
Bachelor Degree or Diploma at Bachelors level	39	4%
Bachelor Degree with Honours, Postgraduate Diploma, Postgraduate Certificate	575	65%
Master Degree	185	21%
PhD or Doctorate Degree	73	8%
I don't have an engineering qualification	<5	-
Total	889	

5.21 Country of highest engineering qualification

EQCOU_T0		
Country of highest engineering qualification	*n*	**Percent**
Australia	427	48%
New Zealand	421	47%
England	10	1%
India	8	1%
United States of America	6	1%
Other (less than 5 participants per classification)	16	2%
Total	888	

5.22 Discipline of highest engineering qualification

EQDIS_T0		
Discipline of highest engineering qualification	***n***	**Percent**
Mechanical	135	15%
Civil (inc. Systems)	87	10%
Electrical and Electronics	74	8%
Civil and Environmental	44	5%
Software	35	4%
Chemical and Materials	29	3%
Civil and Construction	27	3%
Engineering Science	25	3%
Civil and Structural	24	3%
Computer (inc. Systems or Technology)	22	2%
Mechatronics (inc. Systems)	21	2%
Civil and Infrastructure	19	2%
Electrical	17	2%
Management	16	2%
Civil and Environment and Water	16	2%
Chemical and Process	15	2%
Chemical (inc. Systems and Technology)	15	2%
Civil and Geotechnical	13	1%
Biomedical	12	1%
Mechatronics and Robotics	11	1%
Mechanical and Mechatronic	11	1%
Environmental	10	1%
Civil and Transport	8	1%
Mining	7	1%
Mechanical and Manufacturing	7	1%
Electrical and Computer / Computing	7	1%
Natural Resources	6	1%
Engineering Technology	6	1%
Chemical and Environmental	6	1%
Telecommunications (inc. Systems)	5	1%
Electronic (inc. Systems or Technology)	5	1%
Electrical Power	5	1%
Other (less than 5 participants per classification)	146	16%
Total	886	

5.23 Years of experience after highest engineering qualification

EQYEX_T0		
Years of experience after highest engineering qualification	**n**	**Percent**
0-4	271	30%
5-9	181	20%
10-14	124	14%
15-19	87	10%
20-24	80	9%
25-29	71	8%
30-34	52	6%
35-39	17	2%
40+	6	1%
Total	889	
Average	12	

5.24 Preparation of highest engineering qualification

How well did the highest engineering qualification prepare you for…	EQCAR_T0 Your career		EQTEC_T0 Technical aspects in engineering		EQHU1_T0 Social issues in engineering		EQHU2_T0 Human aspects in engineering	
	n	Percent	*n*	Percent	*n*	Percent	*n*	Percent
Not at all well	17	2%	11	1%	83	10%	103	12%
Slightly well	75	8%	72	8%	199	23%	194	22%
Moderately well	298	34%	190	22%	322	37%	324	37%
Very well	314	36%	398	45%	191	22%	180	21%
Extremely well	179	20%	210	24%	75	9%	71	8%
Total	883		881		870		872	
% Satisfaction (moderately well to extremely well)	90%		91%		68%		66%	

5.25 Accord level of highest engineering qualification

EQAC_T0		
Accord level of highest engineering qualification	**n**	**Percent**
Dublin Accord	5	1%
Sydney Accord	34	4%
Washington Accord	614	69%
Equivalency through professional membership or chartered status	105	12%
Don't know / not determinable	131	15%
Total	889	

5.26 Non-engineering qualification

OQ_T0		
Has non-engineering qualification	***n***	**Percent**
Yes	317	36%
No	570	64%
Total	887	

5.27 Level of non-engineering qualification

OQL_T0		
Level of non-engineering qualification	***n***	**Percent**
Trade/National/Vocational Certificate Level 1-4	14	5%
Diploma below Bachelors level, Advanced Diploma, National Certificate Levels 5 - 6, Associate Degree	30	10%
Bachelor Degree or Diploma at Bachelors level	109	36%
Bachelor Degree with Honours, Postgraduate Diploma, Postgraduate Certificate	46	15%
Master Degree	95	31%
PhD or Doctorate Degree	12	4%
Total	306	

5.28 Field of non-engineering qualification

OQDNF_T0		
Field of non-engineering qualification (narrow field)	***n***	**Percent**
Business and Management	107	34%
Computer Science	14	4%
Chemical Sciences	13	4%
Other Management and Commerce	13	4%
Law	13	4%
Teacher Education	12	4%
Physics and Astronomy	11	3%
Other Natural and Physical Sciences	11	3%
Mathematical Sciences	9	3%
Language and Literature	9	3%
Other Information Technology	8	3%
Architecture and Urban Environment	8	3%
Environmental Studies	8	3%
Earth Sciences	6	2%
Building	6	2%
Banking, Finance and Related Fields	6	2%
Economics and Econometrics	6	2%
Accounting	5	2%
Other (less than 5 participants per classification)	50	16%
Total	315	

5.29 Preparation of other qualification

OQCAR_T0		
How well did this other, non-engineering qualification prepare you for your career	***n***	**Percent**
Not at all well	7	1%
Slightly well	75	9%
Moderately well	298	34%
Very well	314	36%
Extremely well	179	21%
Total	873	
% Satisfaction (moderately - extremely)	91%	

5.30 Currently studying

ST_T0		
Currently studying	**_n_**	**Percent**
Yes, full-time	84	9%
Yes, part-time	30	3%
No	775	87%
Total	889	

5.31 Country where currently studying

STCOU_T0		
Country where currently studying	**_n_**	**Percent**
Australia	67	59%
New Zealand	37	32%
Other (less than 5 participants per classification)	10	9%
Total	114	

5.32 Level of current study

STQL_T0		
Level of current study	**_n_**	**Percent**
Trade/National/Vocational Certificate Level 1-4	10	9%
Diploma below Bachelors level, Advanced Diploma, National Certificate Levels 5 - 6, Associate Degree	11	10%
Bachelor Degree or Diploma at Bachelors level, Certificate of Proficiency	5	4%
Bachelor Degree with Honours, Graduate Diploma, Postgraduate Diploma, Postgraduate Certificate	13	12%
Master Degree	46	41%
PhD or Doctorate Degree	28	25%
Total	113	

5.33 Field of current study

STQD_T0		
Field of current study (detailed field)	**_n_**	**Percent**
Business and Management	36	32%
Other Engineering and Related Technologies	16	14%
Civil Engineering	13	11%
Electrical and Electronic Engineering and Technology	8	7%
Other (less than 5 participants per classification)	41	36%
Total	114	

5.34 Job in the last 12 months

WORK_T0		
Job in the last 12 months	**n**	**Percent**
Yes, worked for payment or profit	866	99%
Yes, but absent for 12 months on holidays, on paid leave, on strike, or temporarily stoody down	<5	-
Yes, unpaid work in a family business	<5	-
Yes, other unpaid work	<5	-
No, did not have a job	12	1%
Total	878	

5.35 Hours worked

	JMH_T0		JOH_T0		JHR_T0	
Hours worked	**Main job**		**Any other jobs**		**All jobs**	
	n	**Percent**	**n**	**Percent**	**n**	**Percent**
0-9	13	1%	798	91%	10	1%
10-19	15	2%	44	5%	12	1%
20-29	26	3%	5	1%	24	3%
30-39	165	19%	7	1%	122	14%
40-49	512	58%	14	2%	501	57%
50-59	126	14%	<5	-	131	15%
60+	27	3%	<5	-	73	8%
Total	884		878		877	

5.36 Main occupation

JOCMI_T0		
Main Occupation (3 digit minor group)	**n**	**Percent**
Engineering Professionals	390	44%
Construction, Distribution and Production Managers	139	16%
Business and Systems Analysts, and Programmers	74	8%
Chief Executives, General Managers and Legislators	47	5%
Miscellaneous Specialist Managers	45	5%
Tertiary Education Teachers	26	3%
Information and Organisation Professionals	24	3%
Natural and Physical Science Professionals	17	2%
ICT Network and Support Professionals	12	1%
Sales, Marketing and Public Relations Professionals	11	1%
Business Administration Managers	9	1%
ICT Managers	9	1%
Legal Professionals	5	1%
Other (less than 5 participants per classification)	69	8%
Total	877	

JOCSM_T0		
Main Occupation (2 digit sub major group code)	**n**	**Percent**
Design, Engineering, Science and Transport Professionals	412	47%
Specialist Managers	208	24%
ICT Professionals	90	10%
Chief Executives, General Managers and Legislators	47	5%
Business, Human Resource and Marketing Professionals	41	5%
Education Professionals	33	4%
Office Managers and Program Administrators	6	1%
Legal, Social and Welfare Professionals	5	1%
Other (less than 5 participants per classification)	29	3%
Total	871	

5.37 Main occupation – engineers and others

JOCNG_T0		
Main Occupation (4 digit narrow group code)	*n*	**Percent**
Civil Engineering Professionals	157	18%
Other Engineering Professionals	124	14%
Engineering Managers	96	11%
Industrial, Mechanical and Production Engineers	51	6%
Electrical Engineers	28	3%
Electronics Engineers	14	2%
Chemical and Materials Engineers	10	1%
Mining Engineers	6	1%
ICT Support and Test Engineers	<5	-
Telecommunications Engineering Professionals	5	1%
Not "engineers, engineering professional"	382	44%
Total	873	

5.38 Industry of main job

Industry of main job (subdivision code)	*n*	Percent
JBSUB_T0		
Professional, Scientific and Technical Services (Except Computer System Design and Related	375	43%
Heavy and Civil Engineering Construction	57	7%
Tertiary Education	43	5%
Public Administration	39	4%
Computer System Design and Related Services	36	4%
Machinery and Equipment Manufacturing	35	4%
Publishing (except Internet and Music Publishing)	23	3%
Finance	20	2%
Electricity Supply	18	2%
Construction Services	18	2%
Defence	16	2%
Oil and Gas Extraction	15	2%
Water Supply, Sewerage and Drainage Services	10	1%
Food Product Manufacturing	9	1%
Basic Chemical and Chemical Product Manufacturing	9	1%
Furniture and Other Manufacturing	8	1%
Building Construction	8	1%
Primary Metal and Metal Product Manufacturing	7	1%
Transport Equipment Manufacturing	7	1%
Coal Mining	6	1%
Metal Ore Mining	6	1%
Non-Metallic Mineral Mining and Quarrying	6	1%
Machinery and Equipment Wholesaling	6	1%
Rail Transport	6	1%
Medical and Other Health Care Services	6	1%
Other Transport	5	1%
Transport Support Services	5	1%
Telecommunications Services	5	1%
Public Order, Safety and Regulatory Services	5	1%
Preschool and School Education	5	1%
Other (less than 5 participants per classification)	54	6%
Total	868	

5.39 Employees at main job

JBEMP_T0		
Employees at main job's business or employer (across all sites, including any international offices)	**n**	**Percent**
1–5 people	44	5%
6–9 people	26	3%
10–19 people	48	5%
20–49 people	61	7%
50–99 people	70	8%
100+ people	628	72%
Total	877	

5.40 Income in main job

JIAE_T0		
Income in main job (including superannuation, bonuses). Values are reported in AUD (2022), and may have been converted.	**n**	**Percent**
Less than $50,000	38	5%
$50,000 - $59,999	79	10%
$60,000 - $69,999	45	6%
$70,000 - $79,999	45	6%
$80,000 - $89,999	48	6%
$90,000 - $99,999	64	8%
$100,000 - $109,999	60	7%
$110,000 - $119,999	53	7%
$120,000 - $129,999	48	6%
$130,000 - $139,999	45	6%
$140,000 - $149,999	34	4%
$150,000 - $159,999	34	4%
$160,000 - $169,999	20	2%
$170,000 - $179,999	19	2%
$180,000 - $189,999	22	3%
$190,000 - $199,999	18	2%
$200,000 - $209,999	21	3%
$210,000 - $219,999	13	2%
$220,000 - $229,999	8	1%
$230,000 - $239,999	8	1%
$240,000 - $249,999	6	1%
$250,000 and above	74	9%
Total	802	

5.41 Place time spent in main job

JLOC_T0		
Place time spent in main job	***n***	**Percent**
In my organisation's office	418	48%
At home	353	41%
At worksite(s) or fieldwork	89	10%
In a shared work (coworking) space away from my organisation	7	1%
Total	867	

5.42 Days regularly worked in one week

JDAY_T0		
Days regularly worked in one week	***n***	**Percent**
1	8	1%
2	6	1%
3	26	3%
4	30	3%
5	739	85%
6	46	5%
7	12	1%
Total	867	

5.43 Work patterns

	JSH_T0		JNI_T0		JOT_T0	
Does the job include the following	**Shiftwork**		**Nightwork**		**Overtime (paid or not paid)**	
	n	**Percent**	***n***	**Percent**	***n***	**Percent**
Never	779	90%	653	75%	456	56%
Sometimes	60	7%	187	22%	270	33%
Regularly	30	3%	27	3%	83	10%
Total	869		867		809	

5.44 Nights away from home

JAFH_T0		
Nights away from home	***n***	**Percent**
None	449	52%
1 to 10	269	31%
11 to 30	88	10%
31 to 60	29	3%
61 to 90	7	1%
91+	25	3%
Total	867	

5.45 Work flexibility options

Work flexibility options used in main job	FLWA1_T0 Flexible work hours/Flexitime		FLWA2_T0 Work from home / offsite/telecommuting		FLWA3_T0 Job share		FLLA1_T0 Leave without pay		FLLA2_T0 Accessing long service leave		FLLA3_T0 Purchase additional leave		FLLA4_T0 Long service leave on half pay		FLLA5_T0 Parental leave	
	n	Percent	*n*	Percent	*n*	Percent	*n*	Percent	*n*	Percent	*n*	Percent	*n*	Percent	*n*	Percent
Yes	677	78%	780	89%	25	3%	144	16%	41	5%	44	5%	<5	<5	70	8%
No	194	22%	96	11%	847	97%	729	84%	833	95%	834	95%	868	-	808	92%
Total	871		876		872		873		874		878		868		878	

5.46 Number of times left or lost a job

LJ_T0		
Number of times left or lost a job	**n**	**Percent**
None	677	76%
Once	186	21%
Twice or more	26	3%
Total	889	

5.47 Reason(s) left job

Reason(s) left job (can be multiple reasons)	n	Percent
More opportunities in another role	133	20%
Lack of opportunties for promotion or progression	70	10%
Unsatisfactory pay	61	9%
Unsatisfactory or unintersting work activities/tasks	56	8%
Unsatisfactory work arrangements	52	8%
Dissatified with workplace supervision	47	7%
Unsastifactory hours	39	6%
My unique skills at work are not valued or recognised	35	5%
Not technical enough	32	5%
Dissatisfied with co-workers	27	4%
Job ended/Temporary/Seasonal job	20	3%
Family reasons – (Get married/Children/Look after others/Holiday/Move location/Spouse transferred)	14	2%
Discrimination or harassment	14	2%
Lost job – (Retrenched/Made redundant /Employer went out of business /No work was available)	13	2%
Relocated	13	2%
To start own or new business	10	1%
Covid-19 related reasons	11	2%
Enrolled in education / training	6	1%
Own ill health or injury	6	1%
Holiday job/Returned to studies	5	1%
Other	7	1%
Total	671	

5.48 Membership to engineering professional society(s)

Membership to engineering professional society(s)	*n*	**Percent**
Yes	498	56%
No	391	44%
Total	889	

5.49 Professional societies

Membership to engineering professional society(s) (participants can have multiple)	*n*	**Percent**
Engineers Australia (IEAust)	226	29%
Engineering New Zealand (formerly IPENZ)	185	24%
Institute of Electrical and Electronics Engineers (IEEE)	41	5%
Institution of Chemical Engineers (IChemE)	26	3%
Institute of Public Works Engineering Australasia (IPWEA)	24	3%
Professionals Australia (formerly APESMA)	24	3%
Structural Engineering Society of New Zealand (SESOC)	21	3%
ACE New Zealand	14	2%
Institution of Civil Engineers (ICE)	12	2%
Australasian Association for Engineering Education (AAEE)	9	1%
Project Management Institute (PMI)	9	1%
Institution of Mechanical Engineers (IMechE)	8	1%
Water New Zealand	8	1%
American Society of Civil Engineers (ASCE)	6	1%
Board of Professional Engineers of Queensland (BPEQ)	6	1%
Australian Computer Society (ACS)	5	1%
International Council on Systems Engineering (INCOSE)	5	1%
Australasian Institute of Mining and Metallurgy (AusIMM)	5	1%
Other (less than 5 participants per classification)	133	17%
Total	767	

5.50 Chartered or registered engineer status

Are you a …	CPE_T0 Chartered engineer		RENG_T0 Registered engineer	
	n	Percent	*n*	Percent
Yes	150	17%	162	18%
No	739	83%	727	82%
Total	889		889	

5.51 Intention for chartered or registered engineer status

Do you intend to become a … in the next 12 months	CPEI_T0 Chartered engineer		RENGI_T0 Registered engineer	
	n	Percent	*n*	Percent
Yes	247	33%	173	24%
No	297	40%	307	42%
Don't know	195	26%	247	34%
Total	739		727	

5.52 Engineering discipline

Engineering discipline (multiple choices possible)	*n*	Percent
Project Management	196	8%
Civil	183	8%
Management	137	6%
Software	135	6%
Mechanical	107	4%
Construction	100	4%
Water/Wastewater	92	4%
Manufacturing	91	4%
Electrical	83	3%
Infrastructure	80	3%
Systems Engineering	75	3%
Structural	68	3%
Transportation	67	3%
Asset Management	59	2%
Information and Communications	59	2%
Environmental	58	2%
Renewable Energy	57	2%
Electronic	56	2%
Process	55	2%
Industrial	48	2%
Building Services	38	2%
Chemical	36	1%
Materials	36	1%
Mechatronic	31	1%
Geotechnical	27	1%
Rail	27	1%
Computer Hardware	26	1%
Biomedical	25	1%
Aerospace	23	1%
Mining	22	1%
Maritime or Naval	19	1%
Robotics	19	1%
Food	17	1%
Petroleum	16	1%
Automotive	14	1%
Health and Safety	14	1%
Minerals processing	13	1%
Subsea / Ocean	9	0%
Agricultural	7	0%
Architectural	7	0%
Fire	6	0%
Sustainability	6	0%
Data (inc. data science, artificial intelligence, machine learning, optimisation)	5	0%
I do not practice engineering	83	3%
Other (less than 5 participants per classification)	71	3%
Total	2403	

5.53 Disability level

WSGS_T0		
Washington Group Disability Level	**n**	**Percent**
0	611	70%
1	175	20%
2	69	8%
3	18	2%
4	<5	-
Total	873	

5.54 Mentor

MEN_T0		
Has mentor	**n**	**Percent**
Yes	273	31%
No	616	69%
Total	889	

5.55 Nature of mentor relationship

Nature of mentorship relationship	MENC_T0		MENP_T0	
	Career-related support for advancement, for example through sponsorship, exposure and visibility, coaching, protection and challenging assignments.		**Supports my sense of competence, identity and effectiveness, for example through role modelling, acceptance and confirmation, counseling and friendship.**	
	n	**Percent**	**n**	**Percent**
Yes	171	63%	209	77%
No	102	37%	64	23%
Total	273		273	

5.56 Completion of engineering CPD

PD_T0		
Completion of engineering-related continuing professional development	***n***	**Percent**
Yes	477	54%
No	412	46%
Total	889	

5.57 CPD activities

PDT01_T0 to PDT13_T0, and PDT77_T0		
Type of CPD activity (for participants who completed CPD)	***n***	**Percent**
Undertaken self-directed learning, including reading, online forums, podcasts, YouTube videos etc	364	15%
Attended a technical presentation	335	14%
Completed a course or workshop, internal to your organisation	283	12%
Attended a professional networking event	237	10%
Attended a conference	214	9%
Completed a course or workshop, exernal to your organisation (other than formal postgraduate study)	204	9%
Participated in a mentoring or coaching session	171	7%
Gave a technical presentation	163	7%
Volunteered for the profession (including on committees, boards etc.)	124	5%
Attended a technical site visit	135	6%
Postgraduate study	64	3%
Attended an exhibition	49	2%
Other (<3 not elsewhere classified)	11	0%
Total	2354	

5.58 Hours of CPD

PDH_T0		
Hours of CPD (for participants who completed CPD)	***n***	**Percent**
1 to 24 hours	92	19%
25 to 50 hours	164	34%
51 to 75 hours	94	20%
76 to 100 hours	68	14%
101 and 125 hours	15	3%
126 to 150 hours	9	2%
More than 150 hours	34	7%
Total	476	

5.59 CPD preparation

Overall, how well did this CPD prepare you to:	PDTC_T0 Maintain your technical competence		PDEF_T0 Retain and enhance your effectiveness in the workplace		PDHE_T0 Help, influence and lead others by example		PDCH_T0 Successfully deal with changes in your career		PDCO_T0 Better serve your community	
	n	Percent	*n*	Percent	*n*	Percent	*n*	Percent	*n*	Percent
Not at all well	9	2%	9	2%	23	5%	28	6%	36	8%
Slightly well	57	12%	46	10%	61	13%	75	17%	100	23%
Moderately well	170	36%	162	34%	140	30%	153	35%	142	32%
Very well	165	35%	184	39%	165	36%	121	28%	110	25%
Extremely well	72	15%	69	15%	74	16%	63	14%	49	11%
Total	473		470		463		440		437	
% Satisfaction (moderately well to extremely well)	86%		88%		82%		77%		69%	

5.60 Engineering identity

ENGID_T0		
When I think of myself as a person, I see myself as an engineer	**n**	**Percent**
Strongly disagree	24	3%
Somewhat disagree	203	24%
Neither agree or disagree	319	38%
Somewhat agree	225	27%
Strongly agree	78	9%
Total	849	

5.61 Belonging to the profession

	BEL6_T0		BEL7_T0	
Belonging to the profession	**In this profession, I feel as though I fit in**		**It is important to me to feel I belong in the engineering profession**	
	n	**Percent**	**n**	**Percent**
Strongly disagree	6	1%	14	2%
Somewhat disagree	17	2%	57	6%
Neither agree or disagree	71	8%	70	8%
Somewhat agree	355	40%	323	37%
Strongly agree	430	49%	413	47%
Total	879		877	

5.62 Organisational support – supervisors

ORGSS_T0		
I can count on my supervisor for support when I need it	**n**	**Percent**
Strongly disagree	30	4%
Somewhat disagree	39	5%
Neither agree or disagree	58	7%
Somewhat agree	250	31%
Strongly agree	434	54%
Total	811	

5.63 Organisational support – co-workers

ORGSC_T0		
I can count on my co-workers for support when I need it	**n**	**Percent**
Strongly disagree	8	1%
Somewhat disagree	25	3%
Neither agree or disagree	48	6%
Somewhat agree	335	41%
Strongly agree	432	53%
Total	848	

5.64 Meaningful work

Meaningful work	MW1_T0 The work I do serves a greater purpose		MW2_T0 I know my work makes a positive difference in the world		MW3_T0 I feel that my career is meaningful	
	n	percent	n	percent	n	percent
Strongly disagree	18	2%	14	2%	14	2%
Somewhat disagree	40	5%	25	3%	39	4%
Neither agree or disagree	111	13%	123	14%	109	13%
Somewhat agree	401	46%	429	49%	385	44%
Strongly agree	301	35%	280	32%	324	37%
Total	871		871		871	

5.65 Turnover intentions

TI_T0		
Turnover intentions		
How often have you seriously considered leaving your current job?	*n*	*Percent*
Never	146	17%
Almost never	272	31%
Sometimes	298	34%
Many times	116	13%
All of the time	42	5%
Total	874	

5.66 Work Self-Efficacy

SE_T0		
Work Self-Efficacy **Continuous variable calculated from 10 sub-items**	*n*	**Percent**
>=1 & <2	<5	-
>1 & <3	17	2%
>3 & <4	349	41%
>4 & <=5	494	57%
Total	860	

5.67 Effect of COVID on work

COV1_T0		
To what extent do you think that your work has been impacted by the COVID-19 pandemic? **Continuous; not impacted at all (1) to impacted a great deal (5)**	*n*	**Percent**
1 (not impacted at all)	61	7%
2	175	20%
3	156	18%
4	280	32%
5 (impacted a great deal)	202	23%
Total	874	

5.68 Proportion of time spent on individual activities vs interacting with others

ATIME_T0		
Proportion of time at work spent on individual activities (0) vs interacting with others (100)	***n***	**Percent**
0%	7	1%
11%-20%	50	6%
21%-30%	127	15%
31%-40%	97	11%
41%-50%	126	15%
51%-60%	89	11%
61%-70%	124	15%
71%-80%	105	12%
81%-90%	85	10%
91%-100%	34	4%
Total	844	

5.69 Activities – Getting information

Getting Information							
Collecting feedback, opinions or information from customers, consumers or stakeholders		Gathering information about organisational behaviour, processes, or performance		Gathering information about technology		Investigating criminal, ethical or legal matters	
AGI1FT0		AGI2FT0		AGI3FT0		AGI4FT0	
Frequency / *n*	*Percent*	*n*	*Percent*	*n*	*Percent*	*n*	*Percent*
Not relevant — 108	12%	171	20%	99	11%	450	52%
Once per year or less — 87	10%	87	10%	76	9%	215	25%
More than once per year — 136	16%	168	19%	165	19%	123	14%
More than once per month — 199	23%	211	24%	243	28%	49	6%
More than once per week — 216	25%	153	18%	181	21%	17	2%
Daily — 124	14%	80	9%	107	12%	16	2%
Total — 870		870		871		870	

	AGI1IT0		AGI2IT0		AGI3IT0		AGI4IT0	
Importance	*n*	*Percent*	*n*	*Percent*	*n*	*Percent*	*n*	*Percent*
Not relevant	108	12%	171	20%	99	11%	450	52%
Not at all important	20	2%	31	4%	20	2%	75	9%
Slightly important	77	9%	86	10%	84	10%	115	13%
Moderately Important	119	14%	179	21%	217	25%	95	11%
Very important	300	35%	253	29%	283	33%	81	9%
Extremely important	244	28%	148	17%	166	19%	52	6%
Total	868		868		869		868	

Investigating organisational or operational problems		Reading documents or materials to inform work processes		Reviewing legal documents		Seeking advice from others on business or operational matters	
AGI5FT0		AGI6FT0		AGI7FT0		AGI8FT0	
Frequency / *n*	*Percent*	*n*	*Percent*	*n*	*Percent*	*n*	*Percent*
Not relevant — 170	20%	42	5%	271	31%	108	12%
Once per year or less — 108	12%	37	4%	154	18%	56	6%
More than once per year — 162	19%	108	12%	192	22%	150	17%
More than once per month — 198	23%	237	27%	163	19%	243	28%
More than once per week — 135	16%	260	30%	67	8%	200	23%
Daily — 97	11%	187	21%	23	3%	112	13%
Total — 870		871		870		869	

	AGI5IT0		AGI6IT0		AGI7IT0		AGI8IT0	
Importance	*n*	*Percent*	*n*	*Percent*	*n*	*Percent*	*n*	*Percent*
Not relevant	170	20%	42	5%	271	31%	108	12%
Not at all important	28	3%	10	1%	64	7%	25	3%
Slightly important	93	11%	53	6%	148	17%	79	9%
Moderately Important	182	21%	175	20%	148	17%	207	24%
Very important	249	29%	359	41%	156	18%	288	33%
Extremely important	146	17%	229	26%	81	9%	160	18%
Total	868		868		868		867	

Seeking advice from others on educational or vocational matters		Seeking advice from others on environmental or sustainability matters		Seeking advice from others on own career		Seeking advice from others on technical matters	
AGI9FT0		AGI10FT0		AGI11FT0		AGI12FT0	
Frequency / *n*	*Percent*	*n*	*Percent*	*n*	*Percent*	*n*	*Percent*
Not relevant — 180	21%	185	21%	97	11%	26	3%
Once per year or less — 196	23%	176	20%	226	26%	19	2%
More than once per year — 242	28%	223	26%	338	39%	81	9%
More than once per month — 157	18%	183	21%	170	20%	278	32%
More than once per week — 69	8%	72	8%	34	4%	320	37%
Daily — 26	3%	31	4%	<5	-	146	17%
Total — 870		870		865		870	

	AGI9IT0		AGI10IT0		AGI11IT0		AGI12IT0	
Importance	*n*	*Percent*	*n*	*Percent*	*n*	*Percent*	*n*	*Percent*
Not relevant	180	21%	185	21%	97	11%	26	3%
Not at all important	92	11%	88	10%	67	8%	10	1%
Slightly important	203	23%	163	19%	200	23%	38	4%
Moderately Important	206	24%	176	20%	225	26%	139	16%
Very important	133	15%	172	20%	195	22%	371	43%
Extremely important	54	6%	84	10%	84	10%	284	33%
Total	868		868		868		868	

5.70 Activities - Monitoring processes, materials or surroundings

Monitoring processes, materials or surroundings					
	Managing risks associated with work activities, including health and safety, commercial, environmental etc.		**Monitoring external affairs, trends, or events**		**Monitoring the operation of systems, tools, assets or equipment**
	AMP1FT0		AMP2FT0		AMP3FT0
Frequency	***n***	**Percent**	***n***	**Percent**	***n***	**Percent**
Not relevant	118	14%	175	20%	133	15%
Once per year or less	71	8%	85	10%	66	8%
More than once per year	102	12%	165	19%	148	17%
More than once per month	222	26%	209	24%	205	24%
More than once per week	201	23%	150	17%	176	20%
Daily	155	18%	85	10%	141	16%
Total	869		869		869	
	AMP1IT0		AMP2IT0		AMP3IT0
Importance	***n***	**Percent**	***n***	**Percent**	***n***	**Percent**
Not relevant	118	14%	175	20%	133	15%
Not at all important	24	3%	36	4%	38	4%
Slightly important	76	9%	157	18%	114	13%
Moderately Important	120	14%	211	24%	207	24%
Very important	246	28%	200	23%	235	27%
Extremely important	285	33%	89	10%	141	16%
Total	869		868		868	

5.71 Activities - Inspecting processes, materials or surroundings

Inspecting processes, materials or surroundings		
	Inspecting physical systems, products, equipment or structures	
	AIE1FT0	
Frequency	***n***	**Percent**
Not relevant	231	27%
Once per year or less	85	10%
More than once per year	166	19%
More than once per month	176	20%
More than once per week	134	15%
Daily	78	9%
Total	870	
	AIE1IT0	
Importance	***n***	**Percent**
Not relevant	231	27%
Not at all important	68	8%
Slightly important	97	11%
Moderately Important	142	16%
Very important	203	23%
Extremely important	129	15%
Total	870	

5.72 Activities - Handling and moving objects

Handling and moving objects					
	Fabricating, constructing, or assembling physical systems, products, components, equipment or structures		**Installing, implementing or commissioning systems, equipment or structures**		**Preparing materials or equipment for processing, testing or use**
	AHM1FT0		AHM2FT0		AHM3FT0
Frequency	***n***	**Percent**	***n***	**Percent**	***n***	**Percent**
Not relevant	518	60%	457	53%	471	54%
Once per year or less	104	12%	109	13%	102	12%
More than once per year	82	9%	129	15%	115	13%
More than once per month	67	8%	100	12%	79	9%
More than once per week	61	7%	49	6%	62	7%
Daily	37	4%	25	3%	40	5%
Total	869		869		869	
	AHM1IT0		AHM2IT0		AHM3IT0
Importance	***n***	**Percent**	***n***	**Percent**	***n***	**Percent**
Not relevant	518	60%	457	53%	471	54%
Not at all important	64	7%	52	6%	59	7%
Slightly important	64	7%	58	7%	56	6%
Moderately Important	76	9%	96	11%	84	10%
Very important	88	10%	123	14%	118	14%
Extremely important	58	7%	82	9%	80	9%
Total	868		868		868	

5.73 Activities – Interacting with equipment

Interacting with equipment							
	Maintaining systems, tools, equipment or structures		**Operating systems, tools, or equipment**		**Programming computer systems or production equipment**		**Resolving computer problems**
	ARM1FT0		ACM1FT0		AIC1FT0		AIC2FT0
Frequency	***n***	**Percent**	***n***	**Percent**	***n***	**Percent**	***n***	**Percent**
Not relevant	397	46%	364	42%	405	47%	213	25%
Once per year or less	94	11%	78	9%	96	11%	73	8%
More than once per year	105	12%	87	10%	73	8%	180	21%
More than once per month	114	13%	116	13%	96	11%	203	23%
More than once per week	93	11%	108	12%	81	9%	119	14%
Daily	66	8%	116	13%	118	14%	81	9%
Total	869		869		869		869	
	ARM1IT0		ACM1IT0		AIC1IT0		AIC2IT0
Importance	***n***	**Percent**	***n***	**Percent**	***n***	**Percent**	***n***	**Percent**
Not relevant	397	46%	364	42%	405	47%	213	25%
Not at all important	31	4%	34	4%	42	5%	41	5%
Slightly important	68	8%	77	9%	73	8%	120	14%
Moderately Important	127	15%	126	15%	87	10%	144	17%
Very important	152	18%	152	18%	121	14%	197	23%
Extremely important	93	11%	115	13%	140	16%	153	18%
Total	868		868		868		868	

5.74 Activities - Estimating characteristics

Estimating characteristics					
	Assessing the characteristics of land or property		Estimating costs		Testing the characteristics of designs, materials, products, equipment, processes or systems
	AEQ1FT0		AEQ2FT0		AEQ3FT0
Frequency	*n*	**Percent**	*n*	**Percent**	*n*	**Percent**
Not relevant	530	61%	195	22%	273	31%
Once per year or less	67	8%	59	7%	84	10%
More than once per year	97	11%	189	22%	134	15%
More than once per month	79	9%	236	27%	181	21%
More than once per week	62	7%	133	15%	134	15%
Daily	34	4%	57	7%	63	7%
Total	869		869		869	
	AEQ1IT0		AEQ2IT0		AEQ3IT0
Importance	*n*	**Percent**	*n*	**Percent**	*n*	**Percent**
Not relevant	530	61%	195	22%	273	31%
Not at all important	40	5%	23	3%	35	4%
Slightly important	57	7%	100	12%	70	8%
Moderately Important	71	8%	161	19%	142	16%
Very important	107	12%	232	27%	218	25%
Extremely important	62	7%	157	18%	130	15%
Total	867		868		868	

5.75 Activities - Judging the qualities of things, services or people

Judging the qualities of things, services or people					
	Assessing the capabilities, needs, or performance of others		Evaluating programs, practices, proposals, projects or processes		Reviewing or editing the work of others
	AJQ1FT0		AJQ2FT0		AJQ3FT0
Frequency	*n*	**Percent**	*n*	**Percent**	*n*	**Percent**
Not relevant	167	19%	93	11%	52	6%
Once per year or less	81	9%	49	6%	29	3%
More than once per year	175	20%	156	18%	95	11%
More than once per month	196	23%	262	30%	242	28%
More than once per week	162	19%	221	25%	296	34%
Daily	89	10%	89	10%	157	18%
Total	870		870		871	
	AJQ1IT0		AJQ2IT0		AJQ3IT0
Importance	*n*	**Percent**	*n*	**Percent**	*n*	**Percent**
Not relevant	167	19%	93	11%	52	6%
Not at all important	19	2%	20	2%	10	1%
Slightly important	88	10%	80	9%	66	8%
Moderately Important	155	18%	197	23%	183	21%
Very important	289	33%	321	37%	314	36%
Extremely important	150	17%	157	18%	243	28%
Total	868		868		868	

5.76 Activities - Processing and evaluating information

Processing and evaluating information						
	Compiling and maintaining records		Assessing compliance with laws, regulations, standards or policies		Evaluating documentation for accuracy or compliance	
	API1FT0		AEI1FT0		AEI2FT0	
Frequency	**n**	**Percent**	**n**	**Percent**	**n**	**Percent**
Not relevant	76	9%	170	20%	104	12%
Once per year or less	43	5%	71	8%	45	5%
More than once per year	97	11%	155	18%	144	17%
More than once per month	230	26%	196	23%	237	27%
More than once per week	245	28%	160	18%	206	24%
Daily	178	20%	117	13%	133	15%
Total	869		869		869	
	API1IT0		AEI1IT0		AEI2IT0	
Importance	**n**	**Percent**	**n**	**Percent**	**n**	**Percent**
Not relevant	76	9%	170	20%	104	12%
Not at all important	15	2%	20	2%	5	1%
Slightly important	78	9%	90	10%	65	7%
Moderately Important	183	21%	144	17%	198	23%
Very important	329	38%	256	29%	276	32%
Extremely important	187	22%	188	22%	220	25%
Total	868		868		868	

5.77 Activities - Analysing data or information

Analysing data or information								
	Analysing business or financial data		Analysing technical data		Assessing characteristics or impacts of laws, regulations or policies		Evaluating designs, materials, products, equipment or systems	
	ADI1FT0		ADI2FT0		ADI3FT0		ADI4FT0	
Frequency	**n**	**Percent**	**n**	**Percent**	**n**	**Percent**	**n**	**Percent**
Not relevant	266	31%	67	8%	246	28%	113	13%
Once per year or less	89	10%	21	2%	125	14%	48	6%
More than once per year	97	11%	96	11%	198	23%	145	17%
More than once per month	183	21%	230	26%	176	20%	225	26%
More than once per week	147	17%	266	31%	89	10%	212	24%
Daily	88	10%	191	22%	36	4%	127	15%
Total	870		871		870		870	
	ADI1IT0		ADI2IT0		ADI3IT0		ADI4IT0	
Importance	**n**	**Percent**	**n**	**Percent**	**n**	**Percent**	**n**	**Percent**
Not relevant	266	31%	67	8%	246	28%	113	13%
Not at all important	41	5%	6	1%	29	3%	15	2%
Slightly important	107	12%	28	3%	124	14%	70	8%
Moderately Important	136	16%	148	17%	164	19%	163	19%
Very important	187	22%	358	41%	204	24%	296	34%
Extremely important	130	15%	262	30%	101	12%	211	24%
Total	867		869		868		868	

5.78 Activities - Making decisions and solving problems

Making decisions and solving problems						
	Determining resource needs for projects or operations		Determining values or prices of goods or services		Diagnosing system or equipment problems	
	AMD1FT0		AMD2FT0		AMD3FT0	
Frequency	**n**	**Percent**	**n**	**Percent**	**n**	**Percent**
Not relevant	128	15%	273	31%	250	29%
Once per year or less	47	5%	72	8%	86	10%
More than once per year	151	17%	151	17%	152	17%
More than once per month	230	26%	185	21%	178	20%
More than once per week	206	24%	124	14%	129	15%
Daily	108	12%	65	7%	74	9%
Total	870		870		869	
	AMD1IT0		AMD2IT0		AMD3IT0	
Importance	**n**	**Percent**	**n**	**Percent**	**n**	**Percent**
Not relevant	128	15%	273	31%	250	29%
Not at all important	20	2%	35	4%	26	3%
Slightly important	77	9%	99	11%	95	11%
Moderately Important	148	17%	144	17%	166	19%
Very important	311	36%	200	23%	200	23%
Extremely important	184	21%	117	13%	131	15%
Total	868		868		868	

	Implementing procedures, processes or systems		Selecting materials or equipment for operations or projects			
	AMD4FT0		AMD5FT0			
Frequency	**n**	**Percent**	**n**	**Percent**		
Not relevant	126	14%	268	31%		
Once per year or less	74	9%	73	8%		
More than once per year	190	22%	164	19%		
More than once per month	264	30%	180	21%		
More than once per week	142	16%	114	13%		
Daily	74	9%	71	8%		
Total	870		870			
	AMD4IT0		AMD5IT0			
Importance	**n**	**Percent**	**n**	**Percent**		
Not relevant	126	15%	268	31%		
Not at all important	15	2%	12	1%		
Slightly important	84	10%	90	10%		
Moderately Important	216	25%	153	18%		
Very important	301	35%	223	26%		
Extremely important	126	15%	123	14%		
Total	868		869			

5.79 Activities - Thinking creatively

Thinking creatively											
		Creating visual designs, drawings or displays		Designing computer or information systems, databases or applications		Designing physical systems, products, equipment or structures		Developing business or marketing plans	
		ATC1FT0		ATC2FT0		ATC3FT0		ATC4FT0	
Frequency		*n*	**Percent**	*n*	**Percent**	*n*	**Percent**	*n*	**Percent**
Not relevant		160	18%	370	42%	392	45%	374	43%
Once per year or less		76	9%	105	12%	98	11%	135	16%
More than once per year		159	18%	147	17%	114	13%	196	23%
More than once per month		240	28%	119	14%	124	14%	109	13%
More than once per week		158	18%	69	8%	71	8%	36	4%
Daily		77	9%	61	7%	70	8%	18	2%
Total		870		871		869		868	
		ATC1IT0		ATC2IT0		ATC3IT0		ATC4IT0	
Importance		*n*	**Percent**	*n*	**Percent**	*n*	**Percent**	*n*	**Percent**
Not relevant		160	18%	370	43%	392	45%	374	43%
Not at all important		33	4%	34	4%	37	4%	41	5%
Slightly important		150	17%	92	11%	76	9%	143	16%
Moderately Important		181	21%	131	15%	91	10%	139	16%
Very important		220	25%	127	15%	152	18%	107	12%
Extremely important		125	14%	115	13%	120	14%	63	7%
Total		869		869		868		867	
		Developing instructional or educational material		Developing models of systems, processes, structures or products		Developing organisational programs, policies, standards, systems or processes		Developing experiments, research plans or methodologies	
		ATC5FT0		ATC6FT0		ATC7FT0		ATC8FT0	
Frequency		*n*	**Percent**	*n*	**Percent**	*n*	**Percent**	*n*	**Percent**
Not relevant		214	25%	243	28%	255	29%	362	42%
Once per year or less		166	19%	113	13%	151	17%	137	16%
More than once per year		264	30%	221	25%	237	27%	154	18%
More than once per month		151	17%	171	20%	158	18%	146	17%
More than once per week		51	6%	69	8%	50	6%	44	5%
Daily		24	3%	53	6%	19	2%	27	3%
Total		870		870		870		870	
		ATC5IT0		ATC6IT0		ATC7IT0		ATC8IT0	
Importance		*n*	**Percent**	*n*	**Percent**	*n*	**Percent**	*n*	**Percent**
Not relevant		214	25%	243	28%	255	29%	362	42%
Not at all important		47	5%	27	3%	30	3%	38	4%
Slightly important		167	19%	91	10%	116	13%	107	12%
Moderately Important		224	26%	212	24%	223	26%	136	16%
Very important		135	16%	193	22%	167	19%	142	16%
Extremely important		81	9%	102	12%	77	9%	83	10%
Total		868		868		868		868	

5.80 Activities – Updating knowledge

Updating knowledge				
	Developing and maintaining a network of professional contacts		**Maintaining knowledge through continual professional development**	
	AUK1FT0		AUK2FT0	
Frequency	**n**	**Percent**	**n**	**Percent**
Not relevant	63	7%	46	5%
Once per year or less	101	12%	88	10%
More than once per year	213	25%	214	25%
More than once per month	279	32%	304	35%
More than once per week	148	17%	156	18%
Daily	65	7%	61	7%
Total	869		869	
	AUK1IT0		AUK2IT0	
Importance	**n**	**Percent**	**n**	**Percent**
Not relevant	63	7%	46	5%
Not at all important	31	4%	19	2%
Slightly important	131	15%	85	10%
Moderately Important	227	26%	205	24%
Very important	268	31%	315	36%
Extremely important	148	17%	198	23%
Total	868		868	

5.81 Activities - Managing inventories and waste

Managing inventories and waste				
	Managing inventories of materials, equipment, or products		Disposing of waste or debris	
	AMC1FT0		APG1FT0	
Frequency	**n**	**Percent**	**n**	**Percent**
Not relevant	484	56%	557	64%
Once per year or less	120	14%	103	12%
More than once per year	80	9%	85	10%
More than once per month	87	10%	57	7%
More than once per week	68	8%	37	4%
Daily	31	4%	31	4%
Total	870		870	
	AMC1IT0		APG1IT0	
Importance	**n**	**Percent**	**n**	**Percent**
Not relevant	484	56%	557	64%
Not at all important	38	4%	48	6%
Slightly important	98	11%	85	10%
Moderately Important	97	11%	70	8%
Very important	92	11%	67	8%
Extremely important	61	7%	43	5%
Total	870		870	

5.82 Activities - Documenting and recording information

Documenting and recording information						
	Writing financial documents, financial reports, or budgets		**Writing legal documents, including contracts, applications or permits**		**Writing proposals, tenders or grant applications**	
	ADR1FT0		ADR2FT0		ADR3FT0	
Frequency	**n**	**Percent**	**n**	**Percent**	**n**	**Percent**
Not relevant	332	38%	404	46%	299	34%
Once per year or less	87	10%	116	13%	95	11%
More than once per year	174	20%	166	19%	231	27%
More than once per month	167	19%	124	14%	154	18%
More than once per week	74	9%	38	4%	65	7%
Daily	36	4%	22	3%	26	3%
Total	870		870		870	
	ADR1IT0		ADR2IT0		ADR3IT0	
Importance	**n**	**Percent**	**n**	**Percent**	**n**	**Percent**
Not relevant	332	38%	404	47%	299	34%
Not at all important	26	3%	40	5%	22	3%
Slightly important	90	10%	104	12%	78	9%
Moderately Important	154	18%	125	14%	151	17%
Very important	164	19%	124	14%	175	20%
Extremely important	102	12%	71	8%	143	16%
Total	868		868		868	

	Writing technical documents		**Writing operational or technical policies, procedures, specifications or standards**			
	ADR4FT0		ADO1FT0			
Frequency	**n**	**Percent**	**n**	**Percent**		
Not relevant	132	15%	205	24%		
Once per year or less	67	8%	134	15%		
More than once per year	191	22%	220	25%		
More than once per month	230	26%	183	21%		
More than once per week	165	19%	95	11%		
Daily	86	10%	33	4%		
Total	871		870			
	ADR4IT0		ADO1IT0			
Importance	**n**	**Percent**	**n**	**Percent**		
Not relevant	132	15%	205	24%		
Not at all important	12	1%	18	2%		
Slightly important	71	8%	85	10%		
Moderately Important	174	20%	211	24%		
Very important	257	30%	224	26%		
Extremely important	222	26%	123	14%		
Total	868		866			

5.83 Activities – Communicating with others

Communicating with others								
	Conferring with clients to determine needs, rules or specifications		Conversing socially or informally with others		Coordinating activities with external clients, agencies, or organisations		Coordinating and negotiating with colleagues to resolve problems	
	ACS1FT0		ACS2FT0		ACS3FT0		ACS4FT0	
Frequency	*n*	Percent	*n*	Percent	*n*	Percent	*n*	Percent
Not relevant	109	13%	24	3%	114	13%	23	3%
Once per year or less	61	7%	6	1%	63	7%	8	1%
More than once per year	122	14%	41	5%	128	15%	42	5%
More than once per month	219	25%	91	10%	209	24%	139	16%
More than once per week	246	28%	236	27%	213	24%	324	37%
Daily	114	13%	473	54%	144	17%	334	38%
Total	871		871		871		870	
	ACS1IT0		ACS2IT0		ACS3IT0		ACS4IT0	
Importance	*n*	Percent	*n*	Percent	*n*	Percent	*n*	Percent
Not relevant	109	13%	24	3%	114	13%	23	3%
Not at all important	8	1%	21	2%	22	3%	<5	-
Slightly important	37	4%	101	12%	92	11%	26	3%
Moderately Important	86	10%	192	22%	167	19%	106	12%
Very important	314	36%	314	36%	255	29%	383	44%
Extremely important	315	36%	217	25%	219	25%	327	38%
Total	869		869		869		865	

	Interacting with scientists, scholars, or technical specialists for projects or research		Participating in meetings		Presenting information in legal proceedings		Presenting technical information	
	ACS5FT0		ACS6FT0		ACP1FT0		ACP2FT0	
Frequency	*n*	Percent	*n*	Percent	*n*	Percent	*n*	Percent
Not relevant	196	23%	10	1%	666	76%	106	12%
Once per year or less	106	12%	6	1%	104	12%	76	9%
More than once per year	154	18%	28	3%	53	6%	196	23%
More than once per month	164	19%	73	8%	26	3%	262	30%
More than once per week	146	17%	318	37%	9	1%	181	21%
Daily	104	12%	435	50%	13	1%	50	6%
Total	870		870		871		871	
	ACS5IT0		ACS6IT0		ACP1IT0		ACP2IT0	
Importance	*n*	Percent	*n*	Percent	*n*	Percent	*n*	Percent
Not relevant	196	23%	10	1%	666	76%	106	12%
Not at all important	30	3%	11	1%	46	5%	8	1%
Slightly important	123	14%	68	8%	46	5%	71	8%
Moderately Important	172	20%	192	22%	48	6%	189	22%
Very important	198	23%	312	36%	36	4%	301	35%
Extremely important	149	17%	275	32%	29	3%	195	22%
Total	868		868		871		870	

	Marketing products, services or programs	
	ASE1FT0	
Frequency	*n*	Percent
Not relevant	500	57%
Once per year or less	122	14%
More than once per year	119	14%
More than once per month	84	10%
More than once per week	27	3%
Daily	19	2%
Total	871	
	ASE1IT0	
Importance	*n*	Percent
Not relevant		
Not at all important		
Slightly important		
Moderately Important	Baseline data not available	
Very important		
Extremely important		
Total		

5.84 Activities - Resolving conflicts and negotiation

Resolving conflicts and negotiation				
	Negotiating contracts or agreements		**Resolving personnel or operational problems**	
	ARC1FT0		ARC2FT0	
Frequency	*n*	**Percent**	*n*	**Percent**
Not relevant	344	39%	195	22%
Once per year or less	128	15%	125	14%
More than once per year	182	21%	203	23%
More than once per month	144	17%	161	18%
More than once per week	54	6%	112	13%
Daily	19	2%	75	9%
Total	871		871	
	ARC1IT0		ARC2IT0	
Importance	*n*	**Percent**	*n*	**Percent**
Not relevant	344	40%	195	22%
Not at all important	23	3%	20	2%
Slightly important	67	8%	76	9%
Moderately Important	154	18%	159	18%
Very important	179	21%	256	29%
Extremely important	103	12%	163	19%
Total	870		869	

5.85 Activities - Training and teaching others

Training and teaching others				
	Mentoring others		**Teaching or training others**	
	ATT1FT0		ATT2FT0	
Frequency	***n***	**Percent**	***n***	**Percent**
Not relevant	135	15%	98	11%
Once per year or less	92	11%	78	9%
More than once per year	155	18%	180	21%
More than once per month	229	26%	253	29%
More than once per week	163	19%	165	19%
Daily	97	11%	97	11%
Total	871		871	
	ATT1IT0		**ATT2IT0**	
Importance	*n*	Percent	*n*	Percent
Not relevant	135	16%	98	11%
Not at all important	30	3%	22	3%
Slightly important	119	14%	111	13%
Moderately Important	174	20%	214	25%
Very important	268	31%	258	30%
Extremely important	142	16%	165	19%
Total	868		868	

5.86 Activities - Guiding, directing and motivating others

Guiding, directing and motivating others					
	Directing operations, activities or procedures		Managing budgets or finances		Managing human resources (e.g. recruiting staff, managing staff)
	AGD1FT0		AGD2FT0		AGD3FT0	
Frequency	**n**	**Percent**	**n**	**Percent**	**n**	**Percent**
Not relevant	207	24%	320	37%	363	42%
Once per year or less	74	8%	72	8%	97	11%
More than once per year	105	12%	103	12%	111	13%
More than once per month	141	16%	167	19%	129	15%
More than once per week	199	23%	126	14%	88	10%
Daily	145	17%	83	10%	83	10%
Total	871		871		871	
	AGD1IT0		AGD2IT0		AGD3IT0	
Importance	**n**	**Percent**	**n**	**Percent**	**n**	**Percent**
Not relevant	207	24%	320	37%	363	42%
Not at all important	18	2%	17	2%	19	2%
Slightly important	84	10%	64	7%	77	9%
Moderately Important	156	18%	148	17%	121	14%
Very important	273	31%	195	22%	173	20%
Extremely important	130	15%	124	14%	115	13%
Total	868		868		868	

	Managing resourcing of activities		Serving on organisational committees		Supervising work activities	
	AGD4FT0		AGD5FT0		AGD6FT0	
Frequency	**n**	**Percent**	**n**	**Percent**	**n**	**Percent**
Not relevant	212	24%	356	41%	198	23%
Once per year or less	64	7%	111	13%	75	9%
More than once per year	121	14%	118	14%	116	13%
More than once per month	194	22%	175	20%	165	19%
More than once per week	170	20%	79	9%	180	21%
Daily	110	13%	32	4%	137	16%
Total	871		871		871	
	AGD4IT0		AGD5IT0		AGD6IT0	
Importance	**n**	**Percent**	**n**	**Percent**	**n**	**Percent**
Not relevant	212	24%	356	41%	198	23%
Not at all important	10	1%	58	7%	15	2%
Slightly important	67	8%	146	17%	82	9%
Moderately Important	156	18%	127	15%	208	24%
Very important	283	33%	130	15%	247	28%
Extremely important	140	16%	51	6%	118	14%
Total	868		868		868	

5.87 Activities – Providing advice to others

Providing advice to others								
	Advising others on business or operational matters		Advising others on educational or vocational matters		Advising others on environmental or sustainability matters		Advising others on technical matters	
	APA1FT0		APA2FT0		APA3FT0		APA4FT0	
Frequency	*n*	**Percent**	*n*	**Percent**	*n*	**Percent**	*n*	**Percent**
Not relevant	223	26%	307	35%	360	41%	85	10%
Once per year or less	76	9%	137	16%	146	17%	27	3%
More than once per year	116	13%	187	21%	145	17%	115	13%
More than once per month	177	20%	153	18%	141	16%	253	29%
More than once per week	186	21%	57	7%	52	6%	257	30%
Daily	93	11%	30	3%	27	3%	134	15%
Total	871		871		871		871	
	APA1IT0		APA2IT0		APA3IT0		APA4IT0	
Importance	*n*	**Percent**	*n*	**Percent**	*n*	**Percent**	*n*	**Percent**
Not relevant	223	26%	307	35%	360	41%	85	10%
Not at all important	26	3%	46	5%	30	3%	6	1%
Slightly important	101	12%	181	21%	136	16%	62	7%
Moderately Important	199	23%	197	23%	163	19%	176	20%
Very important	229	26%	95	11%	119	14%	341	39%
Extremely important	91	10%	43	5%	62	7%	199	23%
Total	869		869		870		869	

5.88 Activities - Planning and organising

Planning and organising						
	Planning work activities, projects, programs or events		Organising professional network activities (e.g. professional development events)		Organising work social activities (e.g. morning teas)	
	AOP1FT0		AAD1FT0		AAD2FT0	
Frequency	*n*	**Percent**	*n*	**Percent**	*n*	**Percent**
Not relevant	104	12%	369	42%	289	33%
Once per year or less	51	6%	211	24%	201	23%
More than once per year	110	13%	152	17%	235	27%
More than once per month	240	28%	98	11%	105	12%
More than once per week	219	25%	23	3%	22	3%
Daily	145	17%	16	2%	16	2%
Total	869		869		868	
	AOP1IT0		AAD1IT0		AAD2IT0	
Importance	*n*	**Percent**	*n*	**Percent**	*n*	**Percent**
Not relevant	104	12%	369	43%	289	33%
Not at all important	23	3%	70	8%	94	11%
Slightly important	93	11%	163	19%	201	23%
Moderately Important	182	21%	152	18%	157	18%
Very important	287	33%	81	9%	91	11%
Extremely important	178	21%	32	4%	34	4%
Total	867		867		866	

5.89 Activities - Clerical activities

Clerical activities					
	Performing administrative or clerical activities (e.g. writing and responding to emails, scanning documents)		**Travelling to other work sites**		
	AAD3FT0		AAD4FT0		
Frequency	***n***	**Percent**	***n***	**Percent**	
Not relevant	58	7%	154	18%	
Once per year or less	14	2%	103	12%	
More than once per year	23	3%	248	28%	
More than once per month	64	7%	207	24%	
More than once per week	146	17%	116	13%	
Daily	566	65%	43	5%	
Total	871		871		
	AAD3IT0		AAD4IT0		
Importance	***n***	**Percent**	***n***	**Percent**	
Not relevant	58	7%	154	18%	
Not at all important	31	4%	67	8%	
Slightly important	116	13%	139	16%	
Moderately Important	219	25%	191	22%	
Very important	267	31%	205	24%	
Extremely important	177	20%	112	13%	
Total	868		868		

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