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# SKILLS REQUIRED IN THE LABOUR MARKET: USING JOB ADVERTISEMENTS TO IDENTIFY SKILLS REQUIREMENTS IN THE LABOUR MARKET

## PILOT STUDY REPORT

Rīga, 2018



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## INTRODUCTION

Young people's skills development is vital in today's globalised world and post-industrial era, however we are facing an information gap as regards to which skills are in fact required in today's business world and job industry. World is changing faster than ever – industries are rising, evolving and crashing, technology leading to more efficient, effective ways of doing things, globalization interconnecting us all, and, importantly, a whole new generation emerging and entering the workforce – how do we best ensure young people are prepared to the freelancer generation challenges and world of work from here forward?

### About the project

The study on the skillset requirements is conducted within the Erasmus+ strategic partnership project "Youth BIZ Skillset" implemented starting from September 2017 till February 2019.

The objective of the project is to facilitate development of business mind-set and skills among young people by creating methodological tools and by training young people and youth workers.

To achieve this objective, the following activities are planned:

- 1) Elaboration of the study on skillset requirements for business and employment.
- 2) Development of the toolkit on business idea development and starting a business.
- 3) Development of the methodological guidelines for youth workers to consult and to inspire young people to develop their business ideas.
- 4) Training visit in Spain on global economic and technology trends that challenge and drive nowadays' era and life of young people.
- 5) Training seminars for young people.
- 6) Coaching seminars for youth workers.

### About the project implementers

The project implementation is based on the strategic partnership where leading partner is the non-governmental organisation New Entrepreneurs Center "Jobs & Society" whose aim is to support entrepreneurship development in Latvia through professional start-up advice to people thinking about starting a business.

The partnership includes the Estonian Business School that is one of the biggest private universities in the Baltic countries, teaching entrepreneurship and business administration at all academic levels.

In the project implementation also Spanish private company "IN&S Comunicación e innovación sostenible" is involved whose aim is to help SMEs and entrepreneurs to develop their projects in the fields of communication, innovation and sustainability.

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## About the research

The aim of the study was to learn about skills needs in today's world of work. The study was carried out using online job advertisements in Latvia and Estonia. Online job advertisements are a valuable source of information learning about the skills required in different jobs. There is a variety of unique terms used in job ads, and the skills include types of knowledge, abilities, behaviours and work activities.

The study was done in such steps:

- 1) Collecting job advertisements. The dataset contained job advertisements placed by online job portal [www.cv.lv](http://www.cv.lv) in Latvia and [www.cv.ee](http://www.cv.ee) in Estonia on November 2017. In total 1 529 job advertisements in Estonia and 2 439 in Latvia were extracted.
- 2) Coding, grouping and clustering job advertisements. All vacancy requirements defined within the job advertisements were classified in the thematic groups: basic skills, language skills, computer skills, communication, interaction skills, technical skills and knowledge, personal skills and personality, education level and field, specific skills and knowledge, and other requirements. In total 24 732 information units (skills, abilities and knowledge in job advertisements) were coded – 9 406 in Estonian job advertisements and 15 326 in Latvian job advertisements.
- 3) Data analyses. Based on coded skills, abilities and knowledge an in-depth analysis of skillset in particular professional groups and certain professions were conducted. Additionally, cluster analysis was also carried out, analysing what skill combinations are most commonly required in job advertisements.

The study results aims to raise awareness of the wider audience of young people currently at school desk, university or kick-starting the first steps in their careers or start-up development, and of youth workers, teachers, educators involved in daily work with young people, as well as policy makers and experts who are working on the systemic reform of the learning and teaching approach in Latvia and Estonia.

Research working group	
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## SUMMARY OF THE RESEARCH

- » Using the content of job advertisements to identify skills required in the labour market has been and are being used in several foreign and international research projects. One of the aims of this project was to carry out a pilot study to find out what methodological limitations and benefits of using content of job advertisement encounter within such analyses. Within the pilot study, in November 2017, from the portal [www.cv.lv](http://www.cv.lv) in Latvia and [www.cv.ee](http://www.cv.ee) in Estonia in total of 2 439 and 1 529 job advertisements were collected respectively. Relatively more often, respectively 38% and 29% job vacancies for senior professionals were represented, as well as job vacancies (23% and 15%) for specialists. The third most represented profession group was services and trade workers – 13% in Latvia and 19% in Estonia. Less-skilled professions are relatively uncommon in job advertisements. The data sets of the two countries are similar and their data are fully comparable in the core group of professions and partly at 2-digits level.
- » The need for specific personal skills, characteristics is mentioned more often than certain education, technical or basic skills (77% of advertisements in Latvia and 84% in Estonia). The second most common requirement is language knowledge (77% and 73%, respectively). Almost as often the prior work experience (75% and 69%) is required. Specific knowledge and skills are mentioned in 63% of advertisements in Latvia and 54% in Estonia, and approximately so often communication and interaction skills (59% and 57%) are required. Particular education is required in 53% of vacancies in Latvia and 39% in Estonia. Computer skills are mentioned in 38% of advertisements in Latvia and 40% in Estonia. In turn, the relatively rarest requirements are basic skills (16% and 25%) and technical skills (15% and 18%).
- » The detailed analysis of the skills requirements shows that the most common job advertisements include the requirement for prior work experience (75% in Latvia, 69% in Estonia). The national language requirement is mentioned 52% of advertisements in Latvia and 48% in Estonia. English language skills, meanwhile, is required 55% of advertisements in Latvia and 47% in Estonia. The need for Russian language skills is mentioned in 32% of advertisements in Estonia, but in Latvia – 42%. Prior work experience and language skills are the requirements that are specifically indicated in more than the half of all job advertisements.
- » In the analysis of the mutual combinations of requirements included in job advertisements, it can be observed that the need for prior work experience, language skills, knowledge in the specific field, communication skills and the sense of responsibility (in the case of Latvia – also higher education) are the requirements demanded the most in the advertisements.
- » When analysing the requirements included in the advertisements in the breakdown of the occupational groups, it can be observed that one part of the requirements are expressed in almost all groups of professions, but some part of the requirements are specific. As horizontal requirements (repeated in all or almost all groups of professions) can be identified – prior work experience, national language skills, responsibility and accuracy. English language skills are required for higher qualification vacancies, but less frequently – for lower qualification. Similarly also Russian language skills. Communication and interaction skills requirements are also more often required in higher qualification workplaces.

## Most frequently mentioned skills in job advertisements in Latvia and Estonia

Requirements mentioned >10% in all job advertisements in Latvia and Estonia

LAT	EST
<b>PERSONAL SKILLS, PERSONALITY</b>	
<b>77%</b>	<b>84%</b>
Responsibility/ high sense of responsibility (35%)	Responsibility/ high sense of responsibility (33%)
Accuracy/ attention to details (19%)	Accuracy/ attention to details (23%)
Ability to work independently/ self-discipline (22%)	Stress persistence (23%)
Good nature/ positive attitude (16%)	Ability to work independently/ self-discipline (18%)
Desire to develop/ to learn (13%)	Accuracy/ organisation (16%)
Orientation on results/ purposefulness (12%)	Honesty (15%)
Stress persistence (10%)	Courtesy/ kindness (15%)
	Initiative/ proactivity (14%)
	Good nature/ positive attitude (13%)
	Orientation on results/ purposefulness (13%)
	Desire to develop/ to learn (10%)
<b>LANGUAGE SKILLS</b>	
<b>77%</b>	<b>73%</b>
English (55%)	English (47%)
National language (52%)	National language (48%)
Russian (42%)	Russian (32%)
<b>SPECIFIC KNOWLEDGE/ SKILLS</b>	
<b>63%</b>	<b>54%</b>
Knowledge/ skills in particular field (37%)	Knowledge/ skills in particular field (31%)
Customer service skills/ orientation to customer (16%)	Customer service skills/ orientation to customer (18%)
<b>COMMUNICATION, INTERACTION SKILLS</b>	
<b>59%</b>	<b>57%</b>
Communication/ interaction skills (36%)	Communication/ interaction skills (40%)
Teamwork skills/ collaboration skills (29%)	Teamwork skills/ collaboration skills (28%)
Organizational/ planning skills (10%)	
<b>EDUCATION</b>	
<b>53%</b>	<b>39%</b>
Higher education/ incomplete higher education (31%)	Higher education/ incomplete higher education (15%)
Business and administration (12%)	
<b>COMPUTER SKILLS</b>	
<b>38%</b>	<b>40%</b>
MS Office (15%)	Computer skills (unspecified) (19%)
Computer skills (unspecified) (12%)	Programming and scripting skills (10%)
<b>BASIC SKILLS</b>	
<b>16%</b>	<b>25%</b>
Analytical thinking/ analytical skills (13%)	Analytical thinking/ analytical skills (15%)
<b>TECHNICAL SKILLS/ KNOWLEDGE</b>	
<b>15%</b>	<b>18%</b>
Driving licence (category B) (11%)	Driving licence (category B) (14%)
<b>OTHER</b>	
<b>82%</b>	<b>86%</b>
Prior work experience (75%)	Prior work experience (69%)
	Interest in the sector/ profession/ work (25%)

## RESULTS OF THE STUDY

### Job advertisements as an indicator of skills required in the labour market

Using the content of job advertisements to identify skills required in the labour market has been and are being used in several foreign and international research projects. For example, in 2017 the European Centre for the Development of Vocational Training (Cedefop) launched an international project “Big Data Analysis from Online Vacancies”<sup>1</sup>, aiming at developing a solution for the collection and analysis of information published on online job advertisements in all European Union countries by 2020. The innovation foundation NESTA in the UK is also carrying out various studies based on the content of the job advertisements. Together with the Economic Statistics Centre of Excellence, a methodology for classifying professions and occupations has been developed using requirements included in job advertisements<sup>2</sup>. The foundation has also developed a prototype for an automated “Skills Map”<sup>3</sup> that would regularly collect information from job advertisements and visually display the skills required for certain occupational groups and professions, the increase or decrease in the frequency of their mentioning, and would allow to identify similar professions/ occupation by their requirements.<sup>4</sup> It should be noted that the use of the content of job advertisements for research purposes is not a new trend – such studies have been conducted already in the 1970s in the UK. The development of new technologies and machine learning allows essentially to shorten the time required for the collection and analysis of such data and to process much larger data array.

One of the aims of this project was to carry out a pilot study to find out what methodological limitations and benefits of using content of job advertisement encounter within such analyses. As a pilot study, it has a number of limitation related to limited time and financial resources for the implementation of the study, such as the analysis of job advertisements available just at the certain time at the certain portals, collection and analyses of the content of advertisements included requirements and professions/ occupations, but did not include additional information (geographical location of the workplace, remuneration (where indicated), employer’s characterization (by sector, size, etc.), and other indicators).

It is also necessary to point out a number of other challenges related to the use of the content of job advertisements and to which the authors of studies carried out abroad also indicated. Firstly, it should be taken into account that not all vacancies are placed on the job advertising portals. As concluded in the study “Identifying the Specific Regional Challenges of the Labour Market and Developing Measures to Strengthen the Competitiveness of the Regional Labour Market”<sup>5</sup>, employers are frequently looking for employees using the recommendations of relatives, friends or acquaintances (70% of cases where employees without qualification are searched, 77% — with low qualification, 68% — with high qualification), while advertisements on the Internet are used 25%, 34% and 41% cases respectively. This means that, in the case of such studies, it is possible to speak not about the entire labour market but to the part of the labour market that looks for employees through job advertisements (in this regard, the additional limitation of this study is that only one specific portal of job advertisements has been used). Secondly, it is possible to collect and analyse only the content indicated in the job advertisements, but that does not necessarily mean that all skills have been identified therein. Foreign study authors often underline that job advertisements often do not mention skills that are assumed *a priori*, particularly with regard to basic skills. Thirdly, the content of the advertisements is differently structured – the requirements are not similarly defined, sometimes it is an enumeration, but sometimes

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<sup>1</sup> More information about the project: <http://www.cedefop.europa.eu/en/events-and-projects/projects/big-data-analysis-online-vacancies>

<sup>2</sup> Report is available: <https://www.escoe.ac.uk/wp-content/uploads/2018/03/ESCoE-DP-2018-04.pdf>

<sup>3</sup> Skills Map is available: <http://data-viz.nesta.org.uk/skills-map/index.html>

<sup>4</sup> Description of the prototype is available: <http://www.nesta.org.uk/blog/uk-needs-skills-map>

<sup>5</sup> Research is available: [http://nva.gov.lv/docs/28\\_53abbd7c02ee19.16060069.pdf](http://nva.gov.lv/docs/28_53abbd7c02ee19.16060069.pdf)

– a descriptive text. This potentially can result in offsetting data by differently interpreting the provided information. In the context of this study, this aspect was essential when the advertisement text provided a description of the required skills, but no specific information was available to allow them to be interpreted thematically (for example, indicating the need for higher education in the field, but researchers did not have access to information about the sphere, as employers' sectors were not collected within the study). Such restrictions apply to a small part of the analysed job advertisements. Fourthly, a particular challenge is linked to the need for applying different classifications for professions and for required skills to be understood and logically structured and then analysed. Consequently, not always the information indicated in the advertisements is precisely relevant to the classifications that lead to the risks of inappropriate interpretation. In the framework of this pilot study, the classification of professions was carried out after the Classification of Occupations used in Latvia, which is based on the classification of the International Standard Classification of Occupations (ISCO-08), which could also be used in the analysis of Estonian data. While, the requirements for obtained education were classified according to the International Standard Classification of Education (ISCED-F 2013). The collection and analysis of other information was carried out through a two-step coding procedure – firstly coding in detail each of the skills requirements, then grouping them in thematic groups. All these and other more specific challenges and constraints should be taken into account for analysing the content of job advertisements and for making conclusions and elaborating recommendations.

In November 2017, from the portal [www.cv.lv](http://www.cv.lv) in Latvia and [www.cv.ee](http://www.cv.ee) in Estonia in total of 2 439 and 1 529 job advertisements were collected respectively. Relatively more often, respectively 38% and 29% job vacancies for senior professionals were represented, as well as job vacancies (23% and 15%) for specialists. The third most represented profession group was services and trade workers –13% in Latvia and 19% in Estonia. Less-skilled professions are relatively uncommon in job advertisements, and this comes in line with the above-mentioned study findings that lower-skilled staff are less frequently searched using job advertisements on the Internet, but highly qualified are on contrary – more often. Although there are differences in professions represented in the occupational core groups in Latvian and Estonian job advertisements, however, in a detailed division of professions (4-digits level) the differences are insignificant (see detailed data in the annex of the report) – in Latvian job advertisements programmers were searched by 7% more frequently and advertising and marketing senior specialists – by 5% more frequently, while in the job advertisements in Estonia web pages and multimedia products creators, as well as store sellers and sellers' assistant were searched by 5% more frequently. Differences in the number of other professions do not exceed 3%. This, in turn, shows that the data sets of the two countries are similar and their data are fully comparable in the core group of professions and partly at 2-digits level (in more detail division of each particular profession the number of advertisements is insufficient for the implementation of statistical analysis (= > 30)).

**Professions represented in the job advertisements**  
**according to the International Standard Classification of Occupations (ISCO-08)**  
 Number of job advertisements of particular occupational groups in Latvia and Estonia

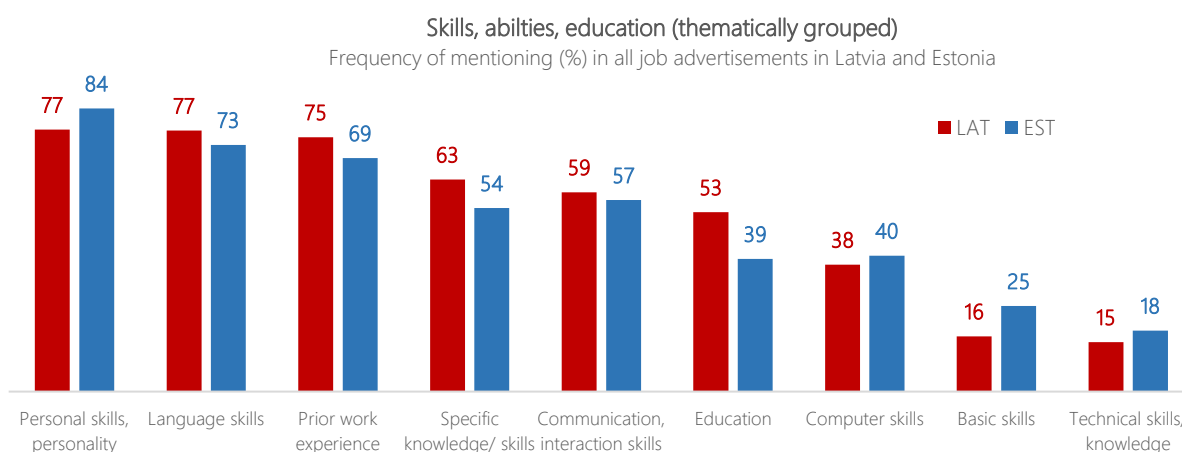
Core groups	LAT	EST
2 Professionals	929	446
3 Technicians and associate professionals	569	234
5 Services and sales workers	324	285
4 Clerical support workers	227	95
1 Managers	158	187
7 Craft and related trades workers	112	104
9 Elementary occupations	81	101
8 Plant and machine operators and assemblers	37	70
6 Skilled agricultural, forestry and fishery workers	2	4
0 Armed forces occupations		3



## Thematic groups of the most common requirements

According to the analysis of job advertisements data, the need for specific personal skills, characteristics is mentioned more often than certain education, technical or basic skills (77% of advertisements in Latvia and 84% in Estonia). The second most common requirement is language knowledge (77% and 73%, respectively). Almost as often the prior work experience (75% and 69%) is required. Specific knowledge and skills are mentioned in 63% of advertisements in Latvia and 54% in Estonia, and approximately so often communication and interaction skills (59% and 57%) are required. Particular education is required in 53% of vacancies in Latvia and 39% in Estonia. Computer skills are mentioned in 38% of advertisements in Latvia and 40% in Estonia. In turn, the relatively rarest requirements are basic skills (16% and 25%) and technical skills (15% and 18%).

The differences in the data sets of two countries are not very explicit. The greatest difference in data is observed in education – it is mentioned by 14% more frequently in Latvia. By 8% more frequently, Latvian job advertisements indicate requirements for specific knowledge and skills, but by 6% more often – the requirement for prior work experience. In the case of Estonian job advertisements, the need for basic skills is mentioned by 9% more frequently, personality skills, personality traits – by 6% more often.



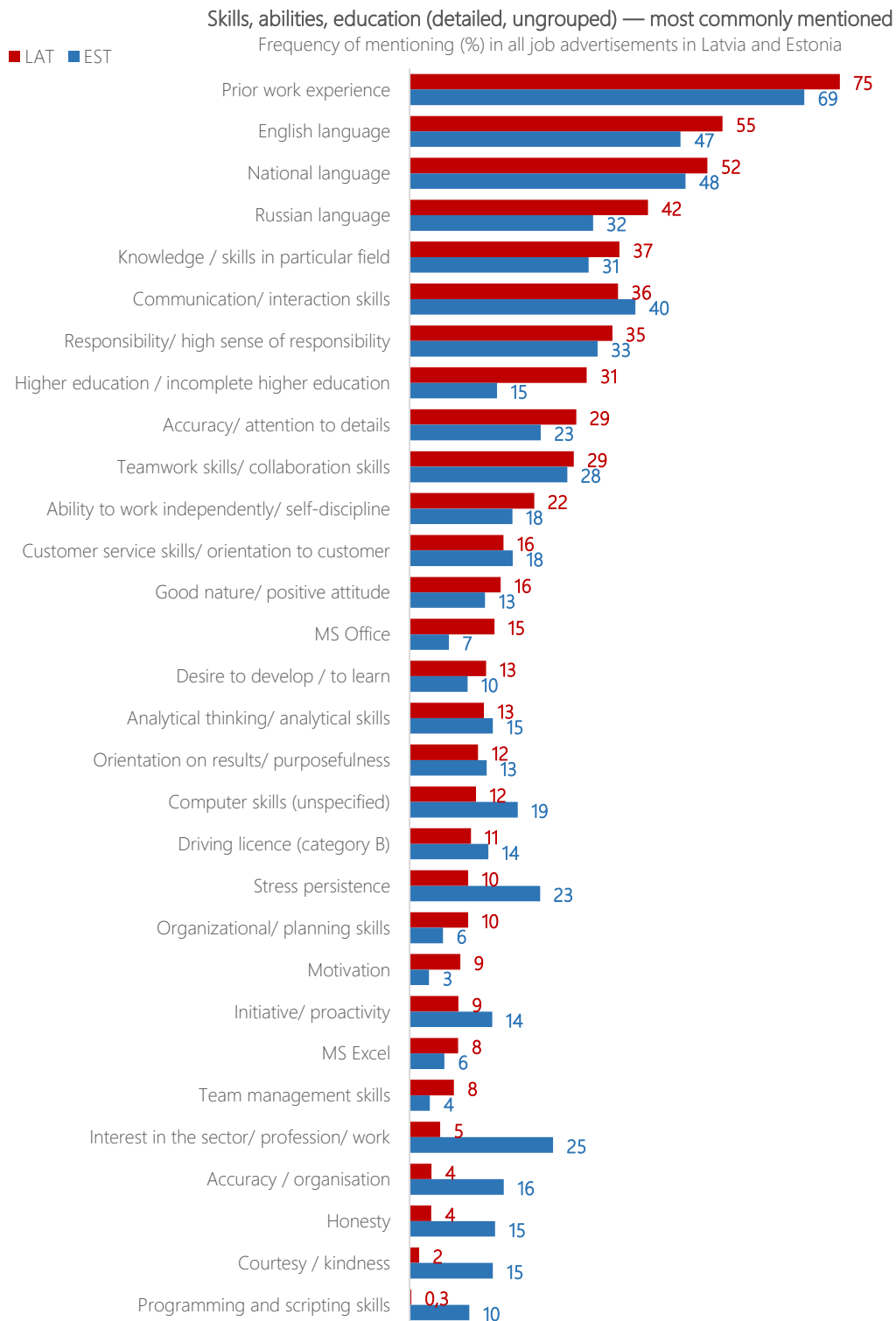
## Most common particular requirements

A detailed analysis of the skills requirements shows that the most common job advertisements include the requirement for prior work experience (75% in Latvia, 69% in Estonia). The national language requirement is mentioned 52% of advertisements in Latvia and 48% in Estonia. English language skills, meanwhile, is required 55% of advertisements in Latvia and 47% in Estonia. The need for Russian language skills is mentioned in 32% of advertisements in Estonia, but in Latvia – 42%. Prior work experience and language skills are the requirements that are specifically indicated in more than the half of all job advertisements.

A secondary requirement group is made of such requirements as knowledge in the specific field (37% in Latvia, 31% in Estonia), communication and interaction skills (36% and 40%), responsibility, high sense of responsibility (35% and 33%), the necessity for higher education (31% and 15% (explicitly less mentioned in Estonia), accuracy (29% and 23%), and teamwork skills (29% and 28%).

While the third importance group consists of other personality features, as well as there are requirements for specific skills as, for example, *MS Office* skills, computer skills, driving licence, basic skills for programming.

In the assessment of the differences in requirements in Latvian and Estonian job advertisements, it can be observed that in Estonia more often than in Latvia the advertisements include such requirements as interest in the sector (+20%), courtesy, kindness, friendliness (+13%), accuracy, organisation (+13%), stress persistence (+13%), honesty, reliability (+11%), basic programming skills (+10%). While higher education requirements (+16%), Russian language skills (+10%), *MS Office* skills (+8%) are more common in Latvia than in Estonia. In absolute majority, the frequency of mentioning these skills in both countries is low and does not exceed the 5% level.



**Skills, abilities, education (detailed thematic groups) —  
all requirements mentioned in job advertisements in Latvia and Estonia**

Frequency of mentioning (%) in all job advertisements in Latvia and Estonia  
Thematic groups sorted in descending order following the frequency of listing in Latvia

	LAT	EST
<b>PERSONAL SKILLS, PERSONALITY</b>	<b>77</b>	<b>84</b>
Responsibility/ high sense of responsibility	35	33
Accuracy/ attention to details	29	23
Ability to work independently/ self-discipline	22	18
Good nature/ positive attitude	16	13
Desire to develop/ to learn	13	10
Orientation on results/ purposefulness	12	13
Stress persistence	10	23
Motivation	9	3
Initiative/ proactivity	9	14
Problem/ complex situation solving skills	7	7
Vigory	6	
Ability to take decisions, decisiveness	6	6
Ability to work intensively	5	3
Ability to think/ respond/ work quickly	5	5
Flexibility	4	4
Accuracy/ organisation	4	16
Honesty	4	15
Creativity	4	5
Ability to prioritize	4	
Ability to learn quickly	3	6
Ambitions	3	1
A focus on quality/ process improvement	2	
Ability to take the responsibility	2	3
Leadership skills	2	3
Ability to see business opportunities/ business orientation	2	1
Ability to work with multiple tasks at the same time	2	2
Responsiveness	2	1
Practical approach to work	2	
Courtesy/ kindness	2	15
Professionalism	1	
Good sense of time/ time planning	1	4
High concentration ability	1	0,3
Desire to share knowledge/ train	1	
Loyalty	1	2
Ability to perform physical work	1	5
Ethicalness	1	1
Ability to adapt to company/ management	1	
Ability to see the big picture	1	2
Ability to respect instructions	1	1
Patience	0,5	1
Design orientation	0,5	
Ability to perform homogeneous work protractedly	0,4	3
Mobility	0,4	
Good self-expression skills	0,4	6
Without bad habits	0,3	1
Attractiveness	0,2	
Ability to observe confidentiality	0,2	0,2
Ability to perform work at increased temperature	0,1	
Ability to perform work at height	0,04	0,1
Other	0,4	7
<b>LANGUAGE SKILLS</b>	<b>77</b>	<b>73</b>
English	55	47
National language	52	48
Russian	42	32

	LAT	EST
German	5	2
Chinese/ Arabic/ Japanese	1	0,1
Scandinavian	1	2
French	1	1
Turkish	1	
Portuguese	1	0,1
Spanish	1	0,4
Italian	0,5	0,3
Polish	0,4	0,2
Lithuanian	0,2	
Dutch	0,2	
Czech	0,04	
Finnish		7
Foreign language skills (unspecified)	1	4
<b>SPECIFIC KNOWLEDGE/ SKILLS</b>	<b>63</b>	<b>54</b>
Knowledge/ skills in particular field	37	31
Customer service skills/ orientation to customer	16	18
Team management skills	8	4
Sales skills	6	6
Knowledge/ ability to navigate sector-specific laws and regulations	4	
Knowledge and skills in technologies	3	3
Project management skills	3	2
Ability to work with a large amount of information, data	3	1
Data, information gathering/ processing/ analysis skills	2	
Ability to motivate, inspire	2	1
Record keeping skills	2	1
Drawing and scheme reading skills	1	2
Ability to read/ write technical documents	1	
Reporting skills	1	0,1
Ability to observe labour safety, hygiene and other standards and regulatory requirements	1	
Knowledge/ skills related to EU funds/ funding/ EU funded project management	1	
Good grammar skills	0,5	
Research skills	0,5	
Change management	0,4	0,1
Knowledge/ skills in the field of public procurement	0,3	
Information search skills	0,2	
Good orientation skills in specific regions/ cities	0,2	
Shooting/ video capture skills	0,2	
Moderation Skills	0,04	
<b>COMMUNICATION, INTERACTION SKILLS</b>	<b>59</b>	<b>57</b>
Communication/ interaction skills	36	40
Teamwork skills/ collaboration skills	29	28
Organizational/ planning skills	10	6
Argumentation skills/ persuasiveness skills	6	2
Presentation skills	5	3
Intercultural communication skills	3	1
Negotiation management skills	3	4
Ability to explain simply difficult/ technical matters	1	1
Ability to communicate with people at various levels (by job position)	1	0,4
Conflict resolution skills	1	0,2
Business communication/ etiquette skills	0,5	0,2
Networking skills	0,2	1
Good listening skills	0,2	
<b>EDUCATION</b>	<b>53</b>	<b>39</b>
Education level	45	29
Higher education/ incomplete higher education	31	15
Vocational secondary education	7	3
Secondary education	5	7
Academic higher education/ bachelor's degree	4	5

	LAT	EST
Master's degree	3	2
Vocational training/ vocational education	3	1
2nd level higher vocational education	2	0,1
Doctoral degree/ doctorate student	2	0,3
1st level higher vocational education	1	0,1
Primary education	0,5	1
Higher vocational education	0,4	1
<b>Education field</b>	<b>35</b>	<b>21</b>
Education	0,3	0,5
Teacher training	0,3	0,5
Teacher training	0,3	0,5
Arts and humanities	1	0,3
Arts	0,6	0,1
Design	0,5	0,1
Fine arts	0,2	
Humanities	0,4	0,3
Literature and linguistics	0,2	0,3
Humanities (unspecified)	0,1	
Social sciences	15	7
Social and behavioural sciences	8	4
Economics	7	3
Social and behavioural sciences (unspecified)	0,5	1
Political sciences and civics	0,1	
Psychology	0,1	0,3
Journalism and information	1	0,3
Journalism and information	1	0,3
Library, information and archival studies	0,04	
Business and administration	12	4
Finance, banking and insurance	7	2
Business and administration	5	2
Accounting and taxation	3	1
Marketing and advertising	1	1
Wholesale and retail sales	1	0,2
Secretarial and office work	0,1	0,1
Law	3	1
Law	3	1
Natural sciences, mathematics and information and communication technologies	8	7
Biological and related sciences	1	0,2
Biology	1	0,2
Physical sciences	1	0,1
Chemistry	1	0,1
Physics	0,1	
Mathematics and statistics	1	1
Mathematics and statistics	1	1
Information and Communication Technologies (ICTs)	6	6
Information and Communication Technologies (ICTs)	6	6
Engineering, manufacturing and construction	10	8
Engineering and engineering trades	7	5
Motor vehicles, ships and aircraft	4	3
Electronics and automation	2	2
Mechanics and metal trades	0,4	0,3
Other engineering	1	1
Manufacturing and processing	1	0,4
Food processing	0,4	0,3
Materials (glass, paper, plastic and wood)	0,2	
Manufacturing and processing (not specified)	0,1	0,1
Architecture and construction	3	2
Building and civil engineering	2	2

	LAT	EST
Architecture and town planning	0,3	
Agriculture	1	0
Agriculture, forestry, fisheries	0,3	0,1
Agriculture	0,2	
Forestry	0,2	0,1
Veterinary	0,3	0,2
Veterinary	0,3	0,2
Health and welfare	2	1
Health	2	1
Medicine	1	1
Pharmacy	1	0,3
Nursing and midwifery	0,5	
Public health	0,2	
Welfare	0,0	0,1
Social care	0,04	0,1
Services	4	1
Personal services	3	1
Hotel, restaurants and catering	3	0,5
Sports	0,1	0,1
Transport services	1	1
Transport services	1	1
Environment protection	1	0
Environment and water management	0,4	0,1
Environmental science and management	0,3	0,1
Civil and military protection	0,1	
Labour protection and safety	0,1	
<b>Certificates</b>	<b>4</b>	<b>4</b>
Certificate in IT field	1	
Certificate of construction manager	1	
Electrical safety/ fire safety certificate	1	
Engineering/ designing certificate	1	
Certificate of continuing education	0,5	
Certification/ diploma of beauty care providers	0,2	
Security certificate	0,1	
Qualification/ certificate of welder	0,1	0,1
Certificate for performing geodetic work	0,1	
Qualification certificate of masseur	0,1	
Other certificate		4
<b>COMPUTER SKILLS</b>	<b>38</b>	<b>40</b>
Basic computer skills	22	13
MS Office	15	7
MS Excel	8	6
MS Word	4	2
Internet	1	0,3
MS PowerPoint	1	1
MS Outlook	1	1
E-mail	1	0,2
Social networks	0,4	0,3
MS Project	0,3	
Windows	0,2	1
MS Access	0,2	0,1
MS Office Suite	0,1	
LibreOffice	0,04	
Digital clouds	0,04	0,1
MD Office	0,04	
Lotus Notes	0,04	
Other basic computer skills	0,1	
Graphic design softwares	4	4
AutoCad	2	2

	LAT	EST
Adobe Photoshop	1	1
Adobe Illustrator	1	1
SolidWorks	0,4	
Revit	0,4	
SketchUp	0,4	
3D programs/ graphic images/ designing programs (unspecified)	0,4	
Adobe InDesign	0,3	
CorelDRAW	0,2	
Visio	0,1	0,1
Other graphic design softwares	0,1	2
3D Max	0,1	
CAD 3D	0,04	0,1
<b>Accounting softwares and resources/ business management systems</b>	<b>5</b>	<b>3</b>
SAP	1	1
ERP systems	1	
1C	1	0,3
Dynamics Navision	1	0,1
Fidelio (hotel management system)	0,5	0,5
Microsoft Axapta	0,3	0,1
Horizon	0,2	
Jumis	0,2	
Zalktis	0,04	
Solcraft	0,04	
Other accounting softwares and resources/ business management systems	0,2	
Accounting software (unspecified)	1	0,3
<b>Other computer or IT skills</b>	<b>13</b>	<b>32</b>
BI tools (Tableau, QlikView, Power BI)	0,5	1
Google Analytics, Google Adwords etc.	0,2	
Statistical programs (SPSS, SAS, R, Stata)	0,1	
Other softwares	1	9
Programming and scripting skills	0,3	10
Ability to work with databases	0,4	
Computer skills (unspecified)	12	19
<b>BASIC SKILLS</b>	<b>16</b>	<b>25</b>
Analytical thinking/ analytical skills	13	15
Logical thinking	2	1
Strategic thinking	1	2
Structured thinking	1	5
Technical thinking	1	6
Mathematical thinking/ ability to work with data/ numbers	1	3
Ability to draw conclusions	1	
Critical thinking	0,2	1
Conceptual thinking	0,1	0,1
Reading		0,2
Writing		1
<b>TECHNICAL SKILLS/ KNOWLEDGE</b>	<b>15</b>	<b>18</b>
Driving licence (category B)	11	14
Skills to work with office equipment	2	0,5
To work with cash registers	1	0,2
Professional vehicle driving category (95th code)	1	
Truck driving licence (category CE)	1	0,5
Truck driving licence (category C)	1	2
Driver` card (chip)	0,5	0,1
Tractor-type machinery driving licence	0,4	
High-lift industrial truck driving licence	0,4	1
Dangerous goods transport certificate (ADR)	0,1	
License for work on maritime transport/ aircraft	0,1	
Weapon license	0,1	
Bus driving licence (category D)	0,04	0,2

	LAT	EST
BE category	0,04	0,3
Motorcycle driving licence (A)	0,04	0,1
International cargo & passenger (CPC) Certificate	0,04	
Certificate for motor-tool qualification	0,04	
Forestry machine operator license	0,04	
Technical knowledge (unspecified)	1	3
<b>OTHER</b>	<b>82</b>	<b>86</b>
Prior work experience	75	69
Interest in the sector/ profession/ work	5	25
Ability to work flexible hours	4	7
Possibility to go on business trips	3	4
Scientific/ research work experience	2	
Compliance with the requirements of the relevant laws	2	
Registration in the sectoral register of employees	1	
Experience in public administration	1	
Personal car	0,4	3
Sanitary book	0,4	
Pleasant/ well-groomed appearance	0,3	1
Getting started as soon as possible	0,3	
No work experience required	0,3	0,1
Good reputation	0,3	
Contacts	0,2	
EU citizenship	0,2	1
Appropriate age	0,1	6
Readiness to work in a specific place (city/ state)	0,1	
Possibility to charge invoices for the work done	0,1	
Other	0,1	9

## Contextual groups of requirements

In the analysis of the mutual combinations of requirements included in job advertisements, it can be observed that the need for prior work experience, language skills, knowledge in the specific field, communication skills and the sense of responsibility (in the case of Latvia – also higher education) are the requirements demanded the most in the advertisements. As secondary requirements are identifiable – accuracy/ attention to details, teamwork skills/ collaboration skills, ability to work independently/ self-discipline (in the case of Estonia – also stress persistence, interest in the sector/ profession/ work). All these requirements constitute a combination of requirements which in such or other reciprocal context appear in the most of the job advertisements.



Skills, abilities, education (detailed, ungrouped) — mutual combinations of the most frequently identified requirements in Latvia

Frequency of mentioning (%) in job advertisements in Latvia

Red-coloured requirements mentioned >50% of cases, green – 30%-49%, yellow – 20%-29%

	All job ads	Prior work experience	English	Latvian	Russian	Knowledge/ skills in particular field	Communication/ interaction skills	Responsibility/ high sense of responsibility	Higher education/ incomplete higher education (undergraduate student)	Accuracy/ attention to details	Teamwork skills/ collaboration skills	Ability to work independently/ self-discipline	Customer service skills/ orientation to customer	Good nature/ positive attitude	MS Office	Desire to develop/ to learn	Analytical thinking/ analytical skills	Orientation on results/ purposefulness	Computer skills (unspecified)	Driving licence (category B)	Organizational/ planning skills
Prior work experience	75		80	79	81	82	78	78	84	77	77	85	82	68	83	77	87	80	70	87	83
English language	55	58		60	71	61	70	49	73	54	56	67	56	38	71	41	75	71	62	60	63
National language	52	55	57		89	37	66	72	68	68	61	62	64	73	72	54	53	69	65	73	64
Russian language	42	45	54	71		32	60	53	58	45	37	58	49	39	62	32	47	66	62	72	54
Knowledge/ skills in particular field	37	40	41	26	28		33	22	36	25	32	36	27	15	29	34	50	35	24	26	38
Communication/ interaction skills	36	38	46	46	53	32		40	45	41	47	47	55	35	58	29	53	65	55	52	58
Responsibility/ high sense of responsibility	35	37	32	49	45	21	39		42	77	51	49	40	60	45	46	30	38	43	44	45
Higher education/ incomplete higher education (undergraduate student)	31	35	41	41	43	30	38	36		37	29	43	25	15	49	25	45	42	34	44	47
Accuracy/ attention to details	29	30	29	38	32	20	33	63	35		43	36	39	48	42	39	32	27	34	20	37
Teamwork skills/ collaboration skills	29	29	29	34	26	25	37	41	27	43		40	39	53	31	37	41	33	28	28	31
Ability to work independently/ self-discipline	22	25	27	26	30	22	28	30	30	27	30		20	15	33	19	28	33	20	38	28
Customer service skills/ orientation to customer	16	18	17	20	19	12	25	18	13	22	22	15		35	15	28	12	25	20	11	18
Good nature/ positive attitude	16	14	11	22	15	6	15	27	8	26	30	11	34		9	32	6	19	17	13	14
MS Office	15	16	19	21	22	12	24	19	24	22	16	22	14	8		8	16	21	0	31	30
Desire to develop/ to learn	13	14	10	14	10	12	10	17	11	18	17	11	23	27	7		13	9	9	11	8
Analytical thinking/ analytical skills	13	15	18	13	15	18	19	11	19	14	19	17	9	5	14	12		19	10	12	20
Orientation on results/ purposefulness	12	13	16	16	19	11	21	13	16	11	14	18	18	14	17	8	17		15	27	22
Computer skills (unspecified)	12	11	13	14	17	7	18	14	13	14	11	11	14	12	0	8	9	14		21	16
Driving licence (category B)	11	12	12	15	18	7	15	13	15	7	11	19	7	9	22	9	10	24	19		17
Organizational/ planning skills	10	11	12	13	13	11	16	13	15	13	11	13	11	9	21	6	16	18	14	16	

Skills, abilities, education (detailed, ungrouped) — mutual combinations of the most frequently identified requirements in Estonia

Frequency of mentioning (%) in job advertisements in Estonia

Red-coloured requirements mentioned >50% of cases, green – 30%-49%, yellow – 20%-29%

	All job ads	Prior work experience	Estonian	English language	Communication/ interaction skills	Responsibility/ high sense of responsibility	Russian language	Knowledge/ skills in particular field	Teamwork skills/ collaboration skills	Interest in the sector/ profession/ work	Accuracy/ attention to details	Stress persistence	Customer service skills/ orientation to customer	Ability to work independently/ self-discipline	Accuracy/ organisation	Higher education/ incomplete higher education (undergraduate)	Honesty
Prior work experience	69		67	81	66	58	72	82	78	61	76	63	45	79	80	86	53
National language	48	47		57	55	56	79	44	47	39	48	64	53	52	52	64	52
English language	47	56	56		57	32	63	58	60	42	42	42	45	65	48	69	28
Communication/ interaction skills	40	38	45	47		39	46	42	50	34	36	50	55	48	41	50	33
Responsibility/ high sense of responsibility	33	28	38	22	32		33	23	30	34	47	48	43	31	43	24	69
Russian language	32	33	53	43	37	32		27	33	29	34	40	30	36	37	40	35
Knowledge/ skills in particular field	31	37	29	38	33	22	26		41	31	29	26	17	41	33	44	24
Teamwork skills/ collaboration skills	28	31	27	35	35	25	28	36		26	31	33	24	44	29	41	24
Interest in the sector/ profession/ work	25	22	20	22	22	26	23	25	23		24	20	32	24	22	22	34
Accuracy/ attention to details	23	25	23	21	21	33	24	21	26	22		27	17	26	49	19	31
Stress persistence	23	21	30	20	29	33	29	19	27	18	26		32	21	28	23	38
Customer service skills/ orientation to customer	18	12	20	17	25	24	17	10	16	23	13	25		16	10	7	28
Ability to work independently/ self-discipline	18	21	19	25	22	17	20	24	28	17	20	17	16		27	27	14
Accuracy/ organisation	16	19	18	17	17	22	19	17	17	15	35	20	9	25		24	21
Higher education/ incomplete higher education	15	19	20	22	20	11	19	22	23	14	13	15	6	23	22		10
Honesty	15	11	16	9	12	31	16	12	13	21	20	25	23	11	19	9	

## Most common requirements in occupational groups

When analysing the requirements included in the advertisements in the breakdown of the occupational groups, it can be observed that one part of the requirements are expressed in almost all groups of professions, but some part of the requirements are specific. As horizontal requirements (repeated in all or almost all groups of professions) can be identified – prior work experience, national language skills, responsibility and accuracy. English language skills are required for higher qualification vacancies, but less frequently – for lower qualification. Similarly also Russian language skills (in Estonia there is an exception – Russian language is required for the senior specialists only about 1/5 cases). Communication and interaction skills requirements are also more often required in higher qualification workplaces. It is interesting that skills for teamwork and cooperation skills in Latvia are more frequently required for lower-qualification workplaces, but in Estonia - for higher qualification.

### Skills, abilities, education (detailed, ungrouped) — common requirements in the occupational groups in Latvia

Frequency of mentioning (%) in job advertisements in Latvia  
Red-coloured requirements mentioned >30% of cases

	All job ads	Managers	Professionals	Technicians and Associate Professionals	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Elementary Occupations
Prior work experience	75	92	78	75	61	75	88	44
English language	55	63	59	73	58	30	12	21
National language (Latvian)	52	63	37	63	61	70	43	65
Russian language	42	49	33	59	56	40	16	14
Knowledge/ skills in particular field	37	41	56	33	15	13	29	11
Communication/ interaction skills	36	45	32	52	56	25	8	4
Responsibility/ high sense of responsibility	35	35	20	41	46	48	63	54
Higher education/ incomplete higher education (undergraduate student)	31	54	36	41	26	13	2	
Accuracy/ attention to details	29	23	19	34	45	36	47	35
Teamwork skills/ collaboration skills	29	27	26	30	25	37	30	43
Ability to work independently/ self-discipline	22	18	23	31	17	15	14	11
Customer service skills/ orientation to customer	16	11	8	16	39	35	2	17
Good nature/ positive attitude	16	10	5	16	20	41	25	38
Team management skills	8	51	5	4	0,4	10	4	4

Not included Skilled Agricultural, Forestry and Fishery Workers and Plant and Machine Operators and Assemblers – there is insufficient number of advertisements for statistically based data analysis in these groups of professions.

### Skills, abilities, education (detailed, ungrouped) — common requirements in the occupational groups in Estonia

Frequency of mentioning (%) in job advertisements in Estonia  
Red-coloured requirements mentioned >30% of cases

	All job ads	Managers	Professionals	Technicians and Associate Professionals	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Plant and Machine Operators and Assemblers	Elementary Occupations
Prior work experience	69	89	80	74	62	40	84	67	50
National language (Estonian)	48	56	39	46	55	66	39	40	38
English language	47	66	60	61	49	31	25	21	12
Communication/ interaction skills	40	44	43	46	51	52	11	11	6
Responsibility/ high sense of responsibility	33	19	17	24	34	51	52	44	67

	All job ads	Managers	Professionals	Technicians and Associate Professionals	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Plant and Machine Operators and Assemblers	Elementary Occupations
Russian language	32	43	22	38	48	38	29	31	16
Knowledge/ skills in particular field	31	42	46	39	20	7	32	20	11
Teamwork skills/ collaboration skills	28	35	35	31	22	21	20	7	21
Interest in the sector/ profession/ work	25	27	23	25	23	31	22	19	22
Accuracy/ attention to details	23	21	21	22	38	12	36	30	38
Stress persistence	23	27	15	17	32	38	22	13	23
Customer service skills/ orientation to customer	18	13	9	18	25	49	2	3	3
Accuracy/ organisation	16	16	17	14	34	9	20	13	26
Courtesy/ kindness	15	3	4	7	17	43	13	9	24
Driving licence (category B)	14	16	8	21	16	6	17	40	13
Orientation on results/ purposefulness	13	34	16	14	11	7	5		2

Not included Skilled Agricultural, Forestry and Fishery Workers – there is insufficient number of advertisements for statistically based data analysis in these groups of professions.

### Skills, abilities, education (detailed thematic groups) — all mentioned requirements in occupational groups in Latvia

Frequency of mentioning (%) in job advertisements in Latvia

Thematic groups sorted in descending order following the frequency of listing in Latvia

	All job ads	Managers	Professionals	Technicians and Associate	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Elementary Occupations
<b>PERSONAL SKILLS, PERSONALITY</b>	<b>77</b>	<b>80</b>	<b>68</b>	<b>86</b>	<b>85</b>	<b>84</b>	<b>78</b>	<b>85</b>
Responsibility/ high sense of responsibility	35	35	20	41	46	48	63	54
Accuracy/ attention to details	29	23	19	34	45	36	47	35
Ability to work independently/ self-discipline	22	18	23	31	17	15	14	11
Good nature/ positive attitude	16	10	5	16	20	41	25	38
Desire to develop/ to learn	13	5	13	13	7	25	13	14
Orientation on results/ purposefulness	12	17	11	20	9	9	2	
Stress persistence	10	15	8	13	14	10	7	4
Motivation	9	4	6	12	4	18	3	23
Initiative/ proactivity	9	13	9	12	7	2	4	5
Problem/ complex situation solving skills	7	8	9	9	7	0,3	5	1
Vigourity	6	6	4	9	2	10	4	5
Ability to take decisions, decisiveness	6	19	5	8	6	2	4	
Ability to work intensively	5	4	2	8	5	9	4	20
Ability to think/ respond/ work quickly	5	6	3	8	6	2	4	2
Flexibility	4	4	5	5	7	2	1	2
Accuracy/ organisation	4	4	4	4	4	3	4	7
Honesty	4	6	2	4	4	4	6	11
Creativity	4	4	5	5	4	2		
Ability to prioritize	4	6	4	5	5	2		
Ability to learn quickly	3	1	5	4	6	0,3		
Ambitions	3	3	4	4	4	1		
A focus on quality/ process improvement	2	3	4	2	2	2	2	
Ability to take the responsibility	2	7	3	2	2	0,3		2
Leadership skills	2	10	2	1	1	4	2	
Ability to see business opportunities/ business orientation	2	8	3	2		1		
Ability to work with multiple tasks at the same time	2	4	2	3	4		2	

	All job ads	Managers	Professionals	Technicians and Associate	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Elementary Occupations
Responsiveness	2	1	0,3	3	5	4		1
Practical approach to work	2	4	3	1	0,4	1		
Courtesy/ kindness	2	1	0,2	2	7	3		2
Professionalism	1	1	0,3	2	6	2		
Good sense of time/ time planning	1		1	2	2	1		
High concentration ability	1		1	2	4			1
Desire to share knowledge/ train	1		1	0,4		3	2	1
Loyalty	1	2	0,1	1		2		1
Ability to perform physical work	1			1	3	1	3	5
Ethicalness	1	1	1	1				
Ability to adapt to company/ management	1	3	1	1		0,3	1	
Ability to see the big picture	1	1	1	0,4	0,4			
Ability to respect instructions	1		0,1	0,4	1	1	4	
Patience	0,5	1	0,1	1	1	0,3		
Design orientation	0,5		1	0,2		1		
Ability to perform homogeneous work protractedly	0,4		0,2	0,4	2			1
Mobility	0,4	1	0,3	1				
Good self-expression skills	0,4		1	1	0,4			
Without bad habits	0,3				0,4	1	1	4
Attractiveness	0,2		0,1	1				
Ability to observe confidentiality	0,2			0,4	1			
Ability to perform work at increased temperature	0,1					0,3	1	
Ability to perform work at height	0,04						1	
Other	0,4		0,4	1		0,3		1
<b>LANGUAGE SKILLS</b>	<b>77</b>	<b>80</b>	<b>65</b>	<b>91</b>	<b>92</b>	<b>87</b>	<b>52</b>	<b>84</b>
English	55	63	59	73	58	30	12	21
National language	52	63	37	63	61	70	43	65
Russian	42	49	33	59	56	40	16	14
German	5	6	2	5	7	5	4	9
Chinese/ Arabic/ Japanese	1		1	4	1			
Scandinavian	1	1	1	1	7	1		
French	1	3	1	1	4	1		1
Turkish	1			4	0,4			
Portuguese	1			4				
Spanish	1	1	0,2	1	2	0,3		
Italian	0,5	1	0,1	1	2	0,3		
Polish	0,4			1	2			2
Estonian	0,2		0,4		0,4	0,3		
Lithuanian	0,2		0,4	0,2	0,4			
Dutch	0,2		0,1	0,4	0,4			
Czech	0,04			0,2				
Foreign language skills (unspecified)	1	2	1	1	0,4	1		1
<b>SPECIFIC KNOWLEDGE/ SKILLS</b>	<b>63</b>	<b>78</b>	<b>73</b>	<b>59</b>	<b>54</b>	<b>56</b>	<b>42</b>	<b>32</b>
Knowledge/ skills in particular field	37	41	56	33	15	13	29	11
Customer service skills/ orientation to customer	16	11	8	16	39	35	2	17
Team management skills	8	51	5	4	0,4	10	4	4
Sales skills	6	5	5	14	3	2		
Knowledge/ ability to navigate sector-specific laws and regulations	4	9	4	3	1	6		
Knowledge and skills in technologies	3	1	6	2		0,3		
Project management skills	3	3	5	3		0,3		
Ability to work with a large amount of information, data	3	3	4	2	4			
Data, information gathering/ processing/ analysis skills	2	1	4	2	2		1	

	All job ads	Managers	Professionals	Technicians and Associate	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Elementary Occupations
Ability to motivate, inspire	2	13	1	1		5		
Record keeping skills	2	1	1	3	3	0,3		
Drawing and scheme reading skills	1		1	1			17	
Ability to read/ write technical documents	1	1	3	0,2			2	
Reporting skills	1	3	2	0,4				
Ability to observe labour safety, hygiene and other standards and regulatory requirements	1		0,1	0,2		2	4	4
Knowledge/ skills related to EU funds/ funding/ EU funded project management	1		1	0,2				
Good grammar skills	0,5		1	1	1			
Research skills	0,5		1	0,4				
Change management	0,4	3	0,3	0,2				
Knowledge/ skills in the field of public procurement	0,3	1	1	0,2				
Information search skills	0,2	2	0,2	0,2				
Good orientation skills in specific regions/ cities	0,2				1			1
Shooting/ video capture skills	0,2		0,1	0,4	0,4	0,3		
Moderation Skills	0,04		0,1					
<b>COMMUNICATION, INTERACTION SKILLS</b>	<b>59</b>	<b>70</b>	<b>52</b>	<b>69</b>	<b>68</b>	<b>65</b>	<b>38</b>	<b>47</b>
Communication/ interaction skills	36	45	32	52	56	25	8	4
Teamwork skills/ collaboration skills	29	27	26	30	25	37	30	43
Organizational/ planning skills	10	27	8	10	14	9	4	10
Argumentation skills/ persuasiveness skills	6	14	7	9	4	1		
Presentation skills	5	12	6	6	1	1		
Intercultural communication skills	3	6	5	2	1	2		1
Negotiation management skills	3	5	4	2	1	1		
Ability to explain simply difficult/ technical matters	1	1	1	0,4	0,4			
Ability to communicate with people at various levels (by job position)	1	1	1	1				
Conflict resolution skills	1	1	0,3	1	1			
Business communication/ etiquette skills	0,5	1	0,4	1	0,4			
Networking skills	0,2		0,4	0,2				
Good listening skills	0,2		0,1	0,4	0,4	0,3		
<b>EDUCATION</b>	<b>53</b>	<b>74</b>	<b>56</b>	<b>57</b>	<b>43</b>	<b>39</b>	<b>68</b>	<b>31</b>
Education level	45	65	51	49	41	27	32	31
Higher education/ incomplete higher education	31	54	36	41	26	13	2	
Vocational secondary education	7	6	2	7	9	16	18	14
Secondary education	5		0,2	4	12	13	1	16
Academic higher education/ bachelor`s degree	4	5	9	2		1		1
Master`s degree	3	4	6	0,4				
Vocational training/ vocational education	3	3	0,4	2	3	2	23	4
2nd level higher vocational education	2	4	5	0,4			1	
Doctoral degree/ doctorate student	2	2	5	0,2				
1st level higher vocational education	1	1	1	2	0,4		1	
Primary education	0,5				1	0,3		10
Higher vocational education	0,4	1	1	0,2				
Education field	35	58	42	42	14	13	46	
Education	0,3	1	1	0,2				
Teacher training	0,3	1	1	0,2				
Teacher training	0,3	1	1	0,2				
Arts and humanities	1	1	2	1		0,3		
Arts	1		1	1		0,3		
Design	0,5		1	0,4		0,3		
Fine arts	0,2		0,2	0,4		0,3		

	All job ads	Managers	Professionals	Technicians and Associate	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Elementary Occupations
Humanities	0,4	1	1	0,4				
Literature and linguistics	0,2		1					
Humanities (unspecified)	0,1	1		0,4				
Social sciences	15	33	18	20	11	1		
Social and behavioural sciences	8	13	9	12	7	1		
Economics	7	12	8	11	7	1		
Political sciences and civics	0,1		0,1	0,4				
Psychology	0,1		0,2					
Social and behavioural sciences (unspecified)	0,5	1	1	1	0,4			
Journalism and information	1	3	1	0,2				
Journalism and information	1	2	1	0,2				
Library, information and archival studies	0,04	1						
Business and administration	12	28	12	17	11	1		
Finance, banking and insurance	7	16	6	11	7	0,3		
Business and administration	5	15	7	5	3	1		
Accounting and taxation	3	8	2	5	3			
Marketing and advertising	1	2	2	2		1		
Wholesale and retail sales	1	4	0,3	1				
Secretarial and office work	0,1			0,4				
Law	3	3	6	2	0,4			
Law	3	3	6	2	0,4			
Natural sciences, mathematics and information and communication technologies	8	8	15	7	0,4			
Biological and related sciences	1	1	2	0,4				
Biology	1	1	2	0,4				
Physical sciences	1	1	2	2				
Chemistry	1	1	1	2				
Physics	0,1		0,2					
Mathematics and statistics	1	1	2	0,4				
Mathematics and statistics	1	1	2	0,4				
Information and Communication Technologies (ICTs)	6	6	12	5	0,4			
Information and Communication Technologies (ICTs)	6	6	12	5	0,4			
Engineering, manufacturing and construction	10	21	12	12	1	2	29	
Engineering and engineering trades	7	9	9	8	0,4	2	28	
Motor vehicles, ships and aircraft	4	3	4	6	0,4	1	18	
Electronics and automation	2	1	3	2		0,3	8	
Mechanics and metal trades	0,4	1	0,3	0,2			4	
Other engineering	1	5	2	1		0,3		
Manufacturing and processing	1	1	1	2			2	
Food processing	0,4		1	1			1	
Materials (glass, paper, plastic and wood)	0,2	1		1			1	
Manufacturing and processing (not specified)	0,1			0,4				
Architecture and construction	3	13	3	3	0,4			
Building and civil engineering	2	13	2	3	0,4			
Architecture and town planning	0,3		1	0,2				
Agriculture	1		1	1		0,3		
Agriculture, forestry, fisheries	0,3		0,4	1				
Agriculture	0,2		0,3	0,4				
Forestry	0,2		0,3	0,4				
Veterinary	0,3		1	0,4		0,3		

	All job ads	Managers	Professionals	Technicians and Associate	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Elementary Occupations
Veterinary	0,3		1	0,4		0,3		
Health and welfare	2	3	3	3		0,3		
Health	2	3	3	3		0,3		
Medicine	1	2	2	2				
Pharmacy	1	1	2	2				
Nursing and midwifery	0,5	1	0,4	1		0,3		
Public health	0,2		0,4	0,2				
Welfare	0,04		0,1					
Social care	0,04		0,1					
Services	4	6	1	4	5	9	17	
Personal services	3	2	0,1	1	3	9	17	
Hotel, restaurants and catering	3	2	0,1	1	3	9	17	
Sports	0,1			1				
Transport services	1	3	0,2	2	2			
Transport services	1	3	0,2	2	2			
Environment protection	1	1	1	1				
Environment and water management	0,4	1	0,2	1				
Environmental science and management	0,3		1	0,2				
Civil and military protection	0,1		0,1	0,4				
Labour protection and safety	0,1		0,1	0,4				
Certificates	4	14	5	3		3	6	
Certificate in IT field	1	3	3	1				
Certificate of construction manager	1	8	0,3	0,4			1	
Electrical safety/ fire safety certificate	1		1	1		0,3	3	
Engineering/ designing certificate	1	1	1	0,4				
Certificate of continuing education	0,5	1	1	0,2		1	2	
Certification/ diploma of beauty care providers	0,2					2		
Security certificate	0,1	1				1		
Qualification/ certificate of welder	0,1						2	
Certificate for performing geodetic work	0,1		0,2					
Qualification certificate of masseur	0,1			0,4				
<b>COMPUTER SKILLS</b>	<b>38</b>	<b>40</b>	<b>31</b>	<b>57</b>	<b>65</b>	<b>19</b>	<b>13</b>	<b>11</b>
Basic computer skills	22	25	18	36	33	10	4	1
MS Office	15	20	12	22	25	9	4	1
MS Excel	8	8	8	15	11	2	2	
MS Word	4	4	4	8	6	2	2	
Internet	1	1	1	2	4			
MS PowerPoint	1		2	2	2			
MS Outlook	1		1	2	2	0,3		
E-mail	1		0,3	1	3	0,3		
Social networks	0,4		0,4	1				
MS Project	0,3	1	0,4	1				
Windows	0,2			1		0,3		
MS Access	0,2		1					
MS Office Suite	0,1		0,2					
LibreOffice	0,04			0,2				
Digital clouds	0,04			0,2				
MD Office	0,04		0,1					
Lotus Notes	0,04	1						
Other basic computer skills	0,1			0,4				
Graphic design softwares	4	9	6	4	1	0	4	
AutoCad	2	8	3	3	1	0,3	2	



	All job ads	Managers	Professionals	Technicians and Associate	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Elementary Occupations
Adobe Photoshop	1		1	1	0,4		1	
Adobe Illustrator	1		2	1	0,4			
SolidWorks	0,4	2	1		0,4		1	
Revit	0,4		1	0,2				
SketchUp	0,4		1	0,2		0,3	2	
3D programs/ graphic images/ designing programs (unspecified)	0,4		1	0,4				
Adobe InDesign	0,3		1	0,4				
CorelDRAW	0,2		0,2	0,2			1	
Visio	0,1		0,3					
3D Max	0,1		0,1	0,2				
CAD 3D	0,04			0,2				
Other graphic design softwares	0,1		0,2	0,2				
<b>Accounting softwares and resources/ business management systems</b>	<b>5</b>	<b>8</b>	<b>4</b>	<b>7</b>	<b>12</b>	<b>1</b>		<b>7</b>
SAP	1	1	1	1	1	0,3		7
ERP systems	1	1	1	1	0,4			
1C	1	2	0,2	2	2			
Dynamics Navision	1	1	0,3	1	2	0,3		
Fidelio (hotel management system)	0,5	1		0,4	3	0,3		
Microsoft Axapta	0,3	1	0,3	1	0,4			
Horizon	0,2	1		0,4	1			
Jumis	0,2			1	0,4			
Zalktis	0,04			0,2				
Solcraft	0,04	1						
Other accounting softwares and resources/ business management systems	0,2	1	0,1	0,4	1			
Accounting software (unspecified)	1	2	0,4	1	1			
<b>Other computer or IT skills</b>	<b>13</b>	<b>11</b>	<b>9</b>	<b>19</b>	<b>30</b>	<b>9</b>	<b>5</b>	<b>2</b>
BI tools (Tableau, QlikView, Power BI) (business data analysis and visualization)	0,5		1					
Google Analytics, Google Adwords etc.	0,2		0,2	1				
Statistical programs (SPSS, SAS, R, Stata)	0,1		0,2					
Other softwares	1		2	0,2	1	0,3		
Programming and scripting skills	0,3		1					
Ability to work with databases	0,4	1	1	0,4	0,4			
Computer skills (unspecified)	12	11	6	19	30	8	5	2
<b>BASIC SKILLS</b>	<b>16</b>	<b>28</b>	<b>23</b>	<b>18</b>	<b>9</b>	<b>2</b>	<b>6</b>	
Analytical thinking/ analytical skills	13	18	20	15	7	0,3	2	
Logical thinking	2		2	3	4	0,3		
Strategic thinking	1	6	2	1				
Structured thinking	1	4	1	2				
Technical thinking	1	1	1	1	0,4	1	4	
Mathematical thinking/ ability to work with data/ numbers	1	1	1	1	0,4		1	
Ability to draw conclusions	1	3	1	1	0,4			
Critical thinking	0,2		0,3	0,2	0,4			
Conceptual thinking	0,1	1	0,2					
<b>TECHNICAL SKILLS/ KNOWLEDGE</b>	<b>15</b>	<b>17</b>	<b>10</b>	<b>21</b>	<b>11</b>	<b>9</b>	<b>20</b>	<b>10</b>
Driving licence (category B)	11	16	9	18	4	4	17	5
Skills to work with office equipment	2	3	0,4	4	4			1
To work with cash registers	1			0,4	1	5		
Professional vehicle driving category (95th code)	1			0,2				
Truck driving licence (category CE)	1			0,2			1	
Truck driving licence (category C)	1	1		1		0,3	1	

	All job ads	Managers	Professionals	Technicians and Associate	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Elementary Occupations
Driver` card (chip)	0,5							
Tractor-type machinery driving licence	0,4			0,2			4	1
High-lift industrial truck driving licence	0,4				1		1	2
Dangerous goods transport certificate (ADR)	0,1							
License for work on maritime transport/ aircraft	0,1		0,1	0,4				
Weapon license	0,1					1		
Bus driving licence (category D)	0,04							
BE category	0,04							
Motorcycle driving licence (A)	0,04	1						
International cargo & passenger (CPC) Certificate	0,04							
Certificate for motor-tool qualification	0,04						1	
Forestry machine operator license	0,04							
Technical knowledge (unspecified)	1	1	1	1	0,4	0,3	1	
<b>OTHER</b>	<b>82</b>	<b>93</b>	<b>86</b>	<b>79</b>	<b>72</b>	<b>84</b>	<b>88</b>	<b>52</b>
Prior work experience	75	92	78	75	61	75	88	44
Interest in the sector/ profession/ work	5	2	6	6	7	7	1	
Ability to work flexible hours	4	1	1	4	13	8	1	9
Possibility to go on business trips	3	5	4	3		1	1	
Scientific/ research work experience	2	1	6					
Compliance with the requirements of the relevant laws	2	4	5	0,4				
Registration in the sectoral register of employees	1		1	1				
Experience in public administration	1	1	1	0,2				
Personal car	0,4	3	0,1	1		0,3		
Sanitary book	0,4	1		1		2		
Pleasant/ well-groomed appearance	0,3			1		1		
Getting started as soon as possible	0,3			0,2	2			2
No work experience required	0,3		0,2	0,2	1	0,3		
Good reputation	0,3	1	0,3			0,3		
Contacts	0,2		0,4	0,2				
EU citizenship	0,2		0,1	0,2	0,4			
Appropriate age	0,1			0,2		0,3		
Readiness to work in a specific place (city/ state)	0,1		0,2				1	
Possibility to charge invoices for the work done	0,1		0,2					
Other	0,1		0,1	0,4				

Not included Skilled Agricultural, Forestry and Fishery Workers and Plant and Machine Operators and Assemblers – there is insufficient number of advertisements for statistically based data analysis in these groups of professions.

### Skills, abilities, education (detailed thematic groups) — all mentioned requirements in occupational groups in Estonia

Frequency of mentioning (%) in job advertisements in Estonia

Thematic groups sorted in descending order following the frequency of listing in Estonia

	All job ads	Managers	Professionals	Technicians and Associate Professionals	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Plant and Machine Operators and Assemblers	Elementary Occupations
<b>PERSONAL SKILLS, PERSONALITY</b>	<b>84</b>	<b>87</b>	<b>79</b>	<b>80</b>	<b>87</b>	<b>89</b>	<b>82</b>	<b>77</b>	<b>95</b>
Responsibility/ high sense of responsibility	33	19	17	24	34	51	52	44	67
Accuracy/ attention to details	23	21	21	22	38	12	36	30	38

	All job ads	Managers	Professionals	Technicians and Associate Professionals	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Plant and Machine Operators and Assemblers	Elementary Occupations
Stress persistence	23	27	15	17	32	38	22	13	23
Ability to work independently/ self-discipline	18	26	23	23	14	9	9	11	9
Accuracy/ organisation	16	16	17	14	34	9	20	13	26
Honesty	15	12	6	9	17	25	21	26	30
Courtesy/ kindness	15	3	4	7	17	43	13	9	24
Initiative/ proactivity	14	26	17	18	16	9	6	6	4
Orientation on results/ purposefulness	13	34	16	14	11	7	5		2
Good nature/ positive attitude	13	7	10	16	11	25	5	10	12
Desire to develop/ to learn	10	8	15	14	7	3	10	10	9
Problem/ complex situation solving skills	7	10	12	7	5	4	6	3	
Good self-expression skills	6	9	11	7	9	2		1	
Ability to learn quickly	6	3	8	6	6	8	2	1	7
Ability to take decisions, decisiveness	6	12	6	6	4	5	5	3	1
Creativity	5	7	10	6	5	1	3		
Ability to think/ respond/ work quickly	5	6	4	4	2	4	11	6	16
Ability to perform physical work	5	1	1	1	4	5	12	13	26
Good sense of time/ time planning	4	6	7	6	7	0,4	2	1	
Flexibility	4	7	5	3	8	3	1	4	2
Motivation	3	6	7	3	2	1			1
Ability to work intensively	3	1	0,4	2	5	6	3		15
Ability to perform homogeneous work protractedly	3	6	2	4	2	1	4		10
Ability to take the responsibility	3	5	4	4	3	2	1	1	2
Leadership skills	3	10	2	4		0,4	1		
Ability to work with multiple tasks at the same time	2	3	3	3	12	1			
Ability to see the big picture	2	4	5	1	2				
Loyalty	2	2	1	1	2	2	3	3	1
Ambitions	1	2	2	2	2	1			
Ability to see business opportunities/ business orientation	1	3	3	1	1				
Patience	1	1	1	2	2		2	1	
Ability to respect instructions	1	1	1	0,4	2			4	1
Responsiveness	1			0,4		1	2	1	
Ethicalness	1		1	2					
Without bad habits	1	1		0,4		0,4	2	1	1
High concentration ability	0,3		1	0,4	1				
Ability to observe confidentiality	0,2	1			1				
Ability to perform work at height	0,1			0,4					1
Other	7	7	7	5	3	10	2	3	6
<b>LANGUAGE SKILLS</b>	<b>73</b>	<b>81</b>	<b>72</b>	<b>83</b>	<b>88</b>	<b>75</b>	<b>56</b>	<b>53</b>	<b>48</b>
National language	48	56	39	46	55	66	39	40	38
English	47	66	60	61	49	31	25	21	12
Russian	32	43	22	38	48	38	29	31	16
Finnish	7	7	4	11	8	11	6	6	5
Scandinavian	2	1	1	8	6	0,4			
German	2	1	2	2	4	0,4	1	1	
French	1	1	1	1	4	0,4			
Spanish	0,4	1	0,4	0,4	2				
Italian	0,3		0,4		2				
Polish	0,2		0,4	0,4					
Latvian	0,1		0,4						
Chinese/ Arabic/ Japanese	0,1	1			1				

	All job ads	Managers	Professionals	Technicians and Associate Professionals	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Plant and Machine Operators and Assemblers	Elementary Occupations
Portuguese	0,1				1				
Foreign language skills (unspecified)	4	3	4	4	8	3	1	1	3
<b>COMMUNICATION, INTERACTION SKILLS</b>	<b>57</b>	<b>68</b>	<b>62</b>	<b>62</b>	<b>63</b>	<b>66</b>	<b>30</b>	<b>20</b>	<b>23</b>
Communication/ interaction skills	40	44	43	46	51	52	11	11	6
Teamwork skills/ collaboration skills	28	35	35	31	22	21	20	7	21
Organizational/ planning skills	6	13	5	9	6	3	3	4	1
Negotiation management skills	4	15	3	4	7	2	1		
Presentation skills	3	9	4	4	1	0,4			
Argumentation skills/ persuasiveness skills	2	6	2	3	1	1			
Networking skills	1	3	2	1		0,4			
Ability to explain simply difficult/ technical matters	1	1	2	0,4					
Intercultural communication skills	1	2	0,4	1	2				
Ability to communicate with people at various levels (by job position)	0,4	1	0,2	1					
Conflict resolution skills	0,2		0,4	0,4					
Business communication/ etiquette skills	0,2	1		0,4					
<b>SPECIFIC KNOWLEDGE/ SKILLS</b>	<b>54</b>	<b>64</b>	<b>59</b>	<b>60</b>	<b>49</b>	<b>60</b>	<b>42</b>	<b>26</b>	<b>18</b>
Knowledge/ skills in particular field	31	42	46	39	20	7	32	20	11
Customer service skills/ orientation to customer	18	13	9	18	25	49	2	3	3
Sales skills	6	13	3	6	3	12	1		
Team management skills	4	16	3	3	1	1	2		
Knowledge and skills in technologies	3	2	6	2	5	1	1	3	
Project management skills	2	6	3	4	1	0,4			
Drawing and scheme reading skills	2	1	1	1	3		10	1	5
Ability to motivate, inspire	1	6	1	0,4	1		1		1
Record keeping skills	1	2	2	1			1		
Ability to work with a large amount of information, data	1		1		4				
Change management	0,1			0,4					
Reporting skills	0,1		0						
<b>COMPUTER SKILLS</b>	<b>40</b>	<b>41</b>	<b>68</b>	<b>46</b>	<b>41</b>	<b>18</b>	<b>13</b>	<b>13</b>	<b>13</b>
<b>Basic computer skills</b>	<b>13</b>	<b>18</b>	<b>16</b>	<b>19</b>	<b>24</b>	<b>7</b>	<b>3</b>	<b>1</b>	
MS Office	7	13	7	11	16	3	1	1	
MS Excel	6	9	8	8	11	4	2		
MS Word	2	8	1	2	6	1	2		
MS Outlook	1	2	1	1	2				
MS PowerPoint	1	1	1	1	1	0,4			
Windows	1	1	1	1				1	
Internet	0,3	1		0,4		1			
Social networks	0,3	1	0,4						
E-mail	0,2		0,2	0,4		0,4			
Digital clouds	0,1		0,4						
MS Access	0,1		0,2						
<b>Graphic design softwares</b>	<b>4</b>	<b>5</b>	<b>7</b>	<b>4</b>	<b>1</b>	<b>0,4</b>	<b>3</b>		
AutoCad	2	4	2	4	1				
Adobe Photoshop	1		2			0,4			
Adobe Illustrator	1		2						
Visio	0,1						2		
CAD 3D	0,1		0,2						
Other graphic design softwares	2	1	6	1		0,4	1		

	All job ads	Managers	Professionals	Technicians and Associate Professionals	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Plant and Machine Operators and Assemblers	Elementary Occupations
Accounting softwares and resources/ business management systems	3	1	8	1	2	0,4			1
SAP	1	1	3	0,4	1	0,4			
Fidelio (hotel management system)	0,5	1	1	0,4	1				
1C	0,3		1	0,4					
Microsoft Axapta	0,1		0,2						1
Dynamics Navision	0,1		0,4						
Accounting software (unspecified)	0,3		1	0,4					
Other computer or IT skills	32	33	56	35	21	15	10	11	13
BI tools (Tableau, QlikView, Power BI) (business data analysis and visualization)	1		3						
Other softwares	9	4	24	10	2	1	1	1	1
Programming and scripting skills	10	5	30	6	1		2		
Computer skills (unspecified)	19	25	22	23	19	15	9	10	12
<b>EDUCATION</b>	<b>39</b>	<b>54</b>	<b>54</b>	<b>45</b>	<b>36</b>	<b>21</b>	<b>23</b>	<b>36</b>	<b>8</b>
Education level	29	44	41	32	27	18	12	14	6
Higher education/ incomplete higher education	15	26	27	21	7	2	4		
Secondary education	7	9	1	8	8	13	7	10	4
Academic higher education/ bachelor`s degree	5	6	10	2	8	0,4			
Vocational secondary education	3	3	2	5	3	2	3	1	1
Master`s degree	2	3	6	1					
Vocational training/ vocational education	1		0,2	1		1	4	1	
Primary education	1				2	1	1	1	2
Higher vocational education	1	1	1						
Doctoral degree/ doctorate student	0,3	1	0,4	0,4					
1st level higher vocational education	0,1			0,4				1	
2nd level higher vocational education	0,1			0,4					
Education field	21	25	36	29	16	4	12	14	1
Education	0,5	1	1	1					
Teacher training	0,5	1	1	1					
Teacher training	0,5	1	1	1					
Arts and humanities	0,3	1	1	0,4					
Arts	0,1	1							
Design	0,1	1							
Humanities	0,3		1	0,4					
Literature and linguistics	0,3		1	0,4					
Social sciences	7	11	14	7	7	1	1		
Social and behavioural sciences	4	4	8	4	4	0,4	1		
Economics	3	3	6	3	2	0,4	1		
Psychology	0,3	1	0,4	0,4					
Social and behavioural sciences (unspecified)	1	1	1	2	2				
Journalism and information	0,3		1	0					
Journalism and information	0,3		1	0,4					
Business and administration	4	9	9	3	4	0,4			
Finance, banking and insurance	2	5	4	2	1				
Business and administration	2	5	3	1	3	0,4			
Marketing and advertising	1	1	2	0,4		0,4			
Accounting and taxation	1		2	0,4					
Wholesale and retail sales	0,2	1	0,2		1				
Secretarial and office work	0,1		0,2						

	All job ads	Managers	Professionals	Technicians and Associate Professionals	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Plant and Machine Operators and Assemblers	Elementary Occupations
Law	1	1	3	2					
Law	1	1	3	2					
Natural sciences, mathematics and information and communication technologies	7	5	16	6	4	0,4			
Biological and related sciences	0,2			0,4	1				
Biology	0,2			0,4	1				
Physical sciences	0,1			0,4					
Chemistry	0,1			0,4					
Mathematics and statistics	1	1	2	0,4					
Mathematics and statistics	1	1	2	0,4					
Information and Communication Technologies (ICTs)	6	5	15	5	3	0,4			
Information and Communication Technologies (ICTs)	6	5	15	5	3	0,4			
Engineering, manufacturing and construction	8	7	8	17	3	1	10	13	1
Engineering and engineering trades	5	4	7	9	2	1	10	13	
Motor vehicles, ships and aircraft	3	3	2	6	1	1	5	7	
Electronics and automation	2	1	2	3			4	6	
Mechanics and metal trades	0,3				1		3		
Other engineering	1	1	2	2					
Manufacturing and processing	0,4	1	0,4	1	1				
Food processing	0,3	1	0,2	0,4	1				
Manufacturing and processing (not specified)	0,1		0,2	0,4					
Architecture and construction	2	3	2	7					1
Building and civil engineering	2	3	2	7					1
Agriculture	0,3		1	0,4					
Agriculture, forestry, fisheries	0,1			0,4					
Forestry	0,1			0,4					
Veterinary	0,2		1						
Veterinary	0,2		1						
Health and welfare	1	1	1	1	2			1	
Health	1	1	1	1	1			1	
Medicine	1	1	1	1	1			1	
Pharmacy	0,3	1	0,2	1					
Welfare	0,1		0,2		1				
Social care	0,1		0,2		1				
Services	1	3	1	1	3	2	1		
Personal services	1		0,2	0,4		2			
Hotel, restaurants and catering	0,5		0,2			2			
Sports	0,1			0,4					
Transport services	1	2	0,2	0,4	3		1		
Transport services	1	2	0,2	0,4	3		1		
Environment protection	0,3	1	0,2	0,4					
Environmental science and management	0,1	1		0,4					
Environment and water management	0,1	1	0,2						
Certificates	4	4	4	4	2	1	5	19	1
Qualification/ certificate of welder	0,1						2		
Other certificate	4	4	4	4	2	1	3	19	1
<b>BASIC SKILLS</b>	<b>25</b>	<b>37</b>	<b>37</b>	<b>29</b>	<b>16</b>	<b>8</b>	<b>22</b>	<b>19</b>	<b>10</b>
Analytical thinking/ analytical skills	15	22	24	19	8	4	4	4	1
Technical thinking	6	5	4	6	1	2	17	17	8
Structured thinking	5	13	8	3	3	2		1	3

	All job ads	Managers	Professionals	Technicians and Associate Professionals	Clerical Support Workers	Services And Sales Workers	Craft and Related Trades Workers	Plant and Machine Operators and Assemblers	Elementary Occupations
Mathematical thinking/ ability to work with data/ numbers	3	5	7	3	4	0,4	1		
Strategic thinking	2	5	2	2					
Logical thinking	1	2	3	1			2		1
Writing	1	1	1	0,4	1	0,4			
Critical thinking	1		1	1		0,4			
Reading	0,2		1						
Conceptual thinking	0,1		0,2	0,4					
<b>TECHNICAL SKILLS/ KNOWLEDGE</b>	<b>18</b>	<b>20</b>	<b>11</b>	<b>23</b>	<b>20</b>	<b>8</b>	<b>24</b>	<b>60</b>	<b>23</b>
Driving licence (category B)	14	16	8	21	16	6	17	40	13
Truck driving licence (category C)	2	1		1	1	2	1	11	1
High-lift industrial truck driving licence	1			0,4	5	1		3	9
Truck driving licence (category CE)	0,5	1			1			7	
Skills to work with office equipment	0,5		0,2		3		2	1	
BE category	0,3			0,4			1	1	
Bus driving licence (category D)	0,2		0,2					3	
To work with cash registers	0,2		0,2			0,4			1
Driver` card (chip)	0,1							3	
Motorcycle driving licence (A)	0,1			0,4					
Technical knowledge (unspecified)	3	3	2	1	2	1	7	7	4
<b>OTHER</b>	<b>86</b>	<b>95</b>	<b>89</b>	<b>89</b>	<b>79</b>	<b>73</b>	<b>95</b>	<b>86</b>	<b>87</b>
Prior work experience	69	89	80	74	62	40	84	67	50
Interest in the sector/ profession/ work	25	27	23	25	23	31	22	19	22
Ability to work flexible hours	7	4	3	4	8	9	12	17	15
Appropriate age	6	2	0,2	1	8	18	13	6	16
Possibility to go on business trips	4	10	2	7	3	1	1	1	5
Personal car	3	5	3	2	2	1	4	6	4
EU citizenship	1	1	1	1		1	1	7	1
Pleasant/ well-groomed appearance	1	1	0,2	3	1	1		1	
No work experience required	0,1					0,4			
Other	9	8	10	13	7	7	4	6	8

*Not included Skilled Agricultural, Forestry and Fishery Workers – there is insufficient number of advertisements for statistically based data analysis in these groups of professions.*

## OPINIONS OF EXPERTS ON THE RESULTS OF THE STUDY

### Aļona Tutova

Senior Expert of the Labour Market Policy Department of the Ministry of Welfare of the Republic of Latvia

The study data and conclusions are consistent with what has also been concluded in the labour market studies carried out by the Ministry of Welfare (LM) and the Employment State Agency (NVA). The indicated skills requirements also largely coincide with the types of training for job seekers in the framework of the NVA support measures.

It should be underlined that LM and NVA have been implementing a complex study approach for the modelling skills requirements in the labour market for several years now, including a model for forecasting the labour market needs. This includes information on skills requested in the labour market, and it is aimed at reducing the disparities between the supply of education and the demand of the labour market in the long term, including changes in general, vocational and higher education programmes.

### Anita Līce

Education and employment expert (Latvia)

It is interesting that the advertisements have so much emphasis on personal qualities and character traits – these are things that are difficult to test, they are more related to self-assessment. According to specific requirements (education, experience, technical skills), received job applications can be easily sorted, but in case of personal traits you need at least one personal meeting. Among other things, the time-consuming process of examining applications and difficulty in finding a suitable candidate with a set of preferred personal traits is often mentioned by employers as a reason why employees are not searched using job advertisements, but using personal contacts (friends and acquaintances).

The explicit requirement of three languages is not surprising. It reflects the real situation of the Latvian labour market, which sometimes runs counter to national language policy. That results in situation that Latvian young people rarely know Russian, while Russian-speaking young people are often poorly familiar with Latvian language.

It is also surprising that even managers and professionals are required relatively rarely higher education. This is likely to point to employers' attitude towards formal education, giving greater emphasis on specific skills and personal character traits and experience.

### Toomas Danneberg

Head of Masters Studies, Vice Rector for External Relations and Business Development of Estonian Business School

Data indicate that social skills become as equal as or more important than specific work-related skills and experience. This shows that employer market partly understand that the value of the personality,



social skill and capabilities determine the quality of the future workforce they can rely on. However, we see that still certain social and analytical skills score low.

In education market the most important insight is firstly to educate employer market about the required skills in coming decade as well to educate, build programs, life-long learning programs that focus in learning and teaching the top priority skills of the future, including creative thinking, which is not at all mentioned in the top list.

For young people these data provide an indication where the employer market moves and the profession alone and the prior work experience doesn't guarantee the ticket to the job market.

## Jānis Bergs

### JSC "SAF Tehnika" North American branch manager (Latvia)

The data of the study are not surprising, but reflect the existing labour market and business disparities between Latvia and Estonia – Estonia is more western-minded, while Latvia is unfortunately still soviet-minded. Estonian advertisements therefore highlight such requirements as honesty, orientation on customer, data and programming skills, while Latvian employers often require prior work experience, the presence of higher education and Russian language skills. The job advertisements of the United States of America (where I am currently managing the branch of Latvian company) would be closer to Estonia's example.

## Agnese Hermane

### Director of the Culture Sociology and Management Department of the Latvian Academy of Culture Academy, director of the Creative Industries Programme

Using job vacancies to identify labour market required skills is an unusual approach for Latvia. Although it has several methodological shortcomings, it certainly provides a view of the current needs and demands of the labour market.

It is surprising that the demand of the labour market is dominated by personality and character, but there is less emphasis on technical knowledge, computer skills, specific knowledge and skills. Similarly, it is surprising that the demand for higher education is relatively low – perhaps it points to still-existing non-compliance of education and labour market needs, or to substantial labour market changes where personal skills, characteristics and social skills dominate technical, specific skills. To some extent, it also points out that employers are primarily looking for employees who are able to incorporate their personality into a collective, existing working culture, but the specific skills are ready to teach themselves. At the same time, it must not be forgotten that education plays a major role in improving personality and, in this respect, it can be said that education provides the development of personalities that employers are willing to attract as employees.

When looking at the data, it was also surprising that rarely job advertisements indicate the skills that are defined as essential in the medium and long term academic literature and future studies - creativity, team work, and cooperation. This may imply further changes in demand of the labour market, with employers identifying and being aware of skills to be required in the future.

## Oksana Žabko

**Foundation „Baltic Institute of Social Sciences“ project director, youth employment researcher (Latvia)**

The study data certainly represents the short-term demand of the labour market, the most pressing needs at this moment. At the same time, the data do not have a very strong representation of the aspects of the labour market demand which are identified as essential indicators of the mid-term and long-term labour market forecasts and studies. It may indicate that the labour market is still only in the shifting process to identify and include future skills in their business models.

From the point of view of young people, this study data might not seem to be too attractive as they do not emphasize too highly the values and desires that young people express in terms of employment - a horizontal relationship in collective, team and project work, free work planning, etc. In advertisements, particularly in Latvia, the large emphasis is placed on technical, not social, skills - prior work experience, knowledge of languages, the presence of higher education.

It is interesting that in Latvia the presence of higher education is required more frequently than in Estonia, possibly indicating a different understanding of the place and value of higher education for promoting employment.

## Ragnar Siil

**Expert on cultural policy and creative industry strategies, founder of *Creativity Lab* (Estonia)**

On one hand, the results of the study are not surprising, they confirm the tendency in the past 5–10 years according to which employers are looking more for right type of people that suit their organisational culture, rather than experts in their field, because while expertise can be developed on-site, the suitability to the organisational culture is much more difficult to achieve. What surprised positively was the extent that this is true for Estonia and Latvia. Looking at the results more carefully, it seems that in Latvia, employers are looking slightly more for specific skills (language, technical, etc.), in Estonia, employers are looking for right attitude (initiative, honesty, courtesy, stress persistence, analytical skills, etc.).

As the 2016 report by the World Economic Forum on 21st-Century Skills clearly forecasted, the 4 key competences that help future professionals to approach complex challenges include critical thinking/problem solving, creativity, communication and collaboration. The character qualities expected from future professionals included curiosity, initiative, persistence, adaptability, leadership and social and cultural awareness. The overall results of the study indicate that Estonian and Latvian employers have understood this and there is a clear focus on more “soft” skills and attitudes described in the ads. Clearly this needs to be taken into account in developing curricula in the school system and universities. The curricula needs to take into account these changes and more emphasis should be placed on interpersonal communication and collaboration skills, creativity and analytical thinking (including design thinking).

The notion of jobs – what is expected and how to be prepared for any job – is rapidly changing. The only thing you can be sure of is that everything is moving and you need to be flexible and adaptable to meet these changes. Young people should be exposed to many different experiences and cultural context to be prepared in ever-changing employment environment. University education should not be seen as something which guarantees a good job in the future, rather, it is a platform or environment for testing, experimenting, cross-disciplinary collaboration, prototyping, etc.

## ANNEX

### Professions represented in job advertisements according to the International Standard Classification of Occupations (ISCO-08)

Number of occupational groups and job advertisements in Latvia and Estonia

	LAT	EST
<b>Sub-group on 2-digit level</b>		
25 Information and Communications Technology Professionals	406	208
33 Business and Administration Associate Professionals	377	111
24 Business and Administration Professionals	293	121
52 Sales Workers	229	214
21 Science and Engineering Professionals	153	46
42 Customer Services Clerks	130	36
51 Personal Services Workers	88	50
35 Information and Communications Technicians	81	54
31 Science and Engineering Associate Professionals	76	48
12 Administrative and Commercial Managers	75	99
43 Numerical and Material Recording Clerks	65	31
13 Production and Specialized Services Managers	63	51
26 Legal, Social and Cultural Professionals	45	41
93 Labourers in Mining, Construction, Manufacturing and Transport	44	65
72 Metal, Machinery and Related Trades Workers	43	33
75 Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	36	36
83 Drivers and Mobile Plant Operators	29	35
34 Legal, Social, Cultural and Related Associate Professionals	27	7
41 General and Keyboard Clerks	23	8
74 Electrical and Electronics Trades Workers	20	17
22 Health Professionals	19	16
91 Cleaners and Helpers	17	20
23 Teaching Professionals	13	14
14 Hospitality, Retail and Other Services Managers	11	21
94 Food Preparation Assistants	11	11
71 Building and Related Trades Workers (excluding Electricians)	10	11
11 Chief Executives, Senior Officials and Legislators	9	16
44 Other Clerical Support Workers	9	20
32 Health Associate Professionals	8	14
96 Refuse Workers and Other Elementary Workers	7	4
81 Stationary Plant and Machine Operators	6	18
54 Protective Services Workers	5	17
73 Handicraft and Printing Workers	3	7
53 Personal Care Workers	2	4
62 Market-oriented Skilled Forestry, Fishery and Hunting Workers	2	
82 Assemblers	2	17
92 Agricultural, Forestry and Fishery Labourers	2	
01 Commissioned Armed Forces Officers		2
03 Commissioned Armed Forces Officers		1
61 Market-oriented Skilled Agricultural Workers		4
95 Street and Related Sales and Services Workers		1
<b>Sub-group on 4-digit level</b>		
2512 Software Developers	271	126
5223 Shop Sales Assistants	144	173
2431 Advertising and Marketing Professionals	143	19
3322 Commercial Sales Representatives	124	37
4222 Contact Centre Information Clerks	84	22
2111 Physicists and Astronomers	48	
2422 Policy Administration Professionals	48	19
2521 Database Designers and Administrators	44	8
3341 Office Supervisors	43	25

	LAT	EST
4321 Stock Clerks	43	7
2413 Financial Analysts	42	6
2522 Systems Administrators	40	22
5222 Shop Supervisors	40	10
3311 Securities and Finance Dealers and Brokers	39	
3313 Accounting Associate Professionals	37	
2511 Systems Analysts	36	17
5120 Cooks	36	15
3339 Business Services Agents Not Elsewhere Classified	35	4
3512 Information and Communications Technology User Support Technicians	35	38
3323 Buyers	32	11
1323 Construction Managers	28	7
5230 Cashiers and Ticket Clerks	25	12
9334 Shelf Fillers	25	4
1211 Finance Managers	24	17
2423 Personnel and Careers Professionals	24	8
3514 Web Technicians	24	5
2142 Civil Engineers	22	22
4224 Hotel Receptionists	21	1
5131 Waiters	21	20
7512 Bakers, Pastry-cooks and Confectionery Makers	21	15
2611 Lawyers	19	8
1221 Sales and Marketing Managers	18	35
3122 Manufacturing Supervisors	18	5
3112 Civil Engineering Technicians	17	7
7223 Metal Working Machine Tool Setters and Operators	16	8
8332 Heavy Truck and Lorry Drivers	16	8
2141 Industrial and Production Engineers	15	4
2166 Graphic and Multimedia Designers	15	6
1330 Information and Communications Technology Services Managers	14	17
3343 Administrative and Executive Secretaries	14	10
3513 Computer Network and Systems Technicians	14	1
1212 Human Resource Managers	13	7
1219 Business Services and Administration Managers Not Elsewhere Classified	13	1
3115 Mechanical Engineering Technicians	13	4
3312 Credit and Loans Officers	12	5
3314 Statistical, Mathematical and Related Associate Professionals	12	
3334 Real Estate Agents and Property Managers	12	3
7233 Agricultural and Industrial Machinery Mechanics and Repairers	12	3
9112 Cleaners and Helpers in Offices, Hotels and Other Establishments	12	17
2144 Mechanical Engineers	11	4
4120 Secretaries (general)	11	7
4311 Accounting and Bookkeeping Clerks	11	
5244 Contact Centre Salespersons	11	6
7411 Building and Related Electricians	11	12
9412 Kitchen Helpers	11	6
2149 Engineering Professionals Not Elsewhere Classified	10	1
2310 University and Higher Education Teachers	10	1
3119 Physical and Engineering Science Technicians Not Elsewhere Classified	10	3
2411 Accountants	9	30
2412 Financial and Investment Advisers	9	10
3331 Clearing and Forwarding Agents	9	
4132 Data Entry Clerks	9	1
1120 Managing Directors and Chief Executives	8	9
2212 Specialist Medical Practitioners	8	4
2619 Legal Professionals Not Elsewhere Classified	8	
3432 Interior Designers and Decorators	8	

	LAT	EST
4212 Bookmakers, Croupiers and Related Gaming Workers	8	
5151 Cleaning and Housekeeping Supervisors in Offices, Hotels and Other Establishments	8	4
7231 Motor Vehicle Mechanics and Repairers	8	5
7412 Electrical Mechanics and Fitters	8	2
9321 Hand Packers	8	12
1321 Manufacturing Managers	7	9
2151 Electrical Engineers	7	
2642 Journalists	7	2
3434 Chefs	7	4
4313 Payroll Clerks	7	
5111 Travel Attendants and Travel Stewards	7	1
7212 Welders and Flame Cutters	7	5
7511 Butchers, Fishmongers and Related Food Preparers	7	5
1412 Restaurant Managers	6	4
2161 Building Architects	6	2
2433 Technical and Medical Sales Professionals (excluding ICT)	6	6
3411 Legal and Related Associate Professionals	6	
4211 Bank Tellers and Related Clerks	6	2
5132 Bartenders	6	8
9333 Freight Handlers	6	23
2424 Training and Staff Development Professionals	5	1
2514 Applications Programmers	5	1
2529 Database and Network Professionals Not Elsewhere Classified	5	7
2643 Translators, Interpreters and Other Linguists	5	6
3114 Electronics Engineering Technicians	5	10
3221 Nursing Associate Professionals	5	3
3511 Information and Communications Technology Operations Technicians	5	3
4214 Debt Collectors and Related Workers	5	6
4419 Clerical Support Workers Not Elsewhere Classified	5	3
5153 Building Caretakers	5	
5249 Sales Workers Not Elsewhere Classified	5	1
1324 Supply, Distribution and Related Managers	4	9
1345 Education Managers	4	2
1346 Financial and Insurance Services Branch Managers	4	
2145 Chemical Engineers	4	1
2152 Electronics Engineers	4	
2221 Nursing Professionals	4	
2421 Management and Organization Analysts	4	6
2631 Economists	4	4
3321 Insurance Representatives	4	2
4221 Travel Consultants and Clerks	4	3
5142 Beauticians and Related Workers	4	
5414 Security Guards	4	8
8322 Car, Taxi and Van Drivers	4	14
8341 Mobile Farm and Forestry Plant Operators	4	
8344 Lifting Truck Operators	4	6
1222 Advertising and Public Relations Managers	3	1
2262 Pharmacists	3	3
2432 Public Relations Professionals	3	8
2523 Computer Network Professionals	3	
3123 Construction Supervisors	3	11
3435 Other Artistic and Cultural Associate Professionals	3	
4131 Typists and Word Processing Operators	3	
4323 Transport Clerks	3	23
5245 Service Station Attendants	3	
7111 House Builders	3	4
7322 Printers	3	

	LAT	EST
7522 Cabinet-makers and Related Workers	3	5
7531 Tailors, Dressmakers, Furriers and Hatters	3	
9329 Manufacturing Labourers Not Elsewhere Classified	3	14
1213 Policy and Planning Managers	2	1
1223 Research and Development Managers	2	37
1411 Hotel Managers	2	1
1431 Sports, Recreation and Cultural Centre Managers	2	1
2113 Chemists	2	
2153 Telecommunications Engineers	2	1
2163 Product and Garment Designers	2	
2165 Cartographers and Surveyors	2	
2250 Veterinarians	2	3
2330 Secondary Education Teachers	2	1
2519 Software and Applications Developers and Analysts Not Elsewhere Classified	2	27
3113 Electrical Engineering Technicians	2	3
3116 Chemical Engineering Technicians	2	
3255 Physiotherapy Technicians and Assistants	2	
3422 Sports Coaches, Instructors and Officials	2	2
3522 Telecommunications Engineering Technicians	2	5
4226 Receptionists (general)	2	2
4412 Mail Carriers and Sorting Clerks	2	3
4415 Filing and Copying Clerks	2	1
6210 Forestry and Related Workers	2	
7123 Plasterers	2	
7127 Air Conditioning and Refrigeration Mechanics	2	
7523 Woodworking Machine Tool Setters and Operators	2	1
9129 Other Cleaning Workers	2	1
9214 Garden and Horticultural Labourers	2	
9313 Building Construction Labourers	2	8
9613 Sweepers and Related Labourers	2	
9621 Messengers, Package Deliverers and Luggage Porters	2	
1112 Senior Government Officials	1	5
1342 Health Services Managers	1	3
1349 Professional Services Managers Not Elsewhere Classified	1	2
1420 Retail and Wholesale Trade Managers	1	15
2120 Mathematicians, Actuaries and Statisticians	1	
2131 Biologists, Botanists, Zoologists and Related Professionals	1	2
2164 Town and Traffic Planners	1	
2261 Dentists	1	1
2263 Environmental and Occupational Health and Hygiene Professionals	1	1
2359 Teaching Professionals Not Elsewhere Classified	1	1
2656 Announcers on Radio, Television and Other Media	1	
2659 Creative and Performing Artists Not Elsewhere Classified	1	
3118 Draughtspersons	1	
3131 Power Production Plant Operators	1	
3132 Incinerator and Water Treatment Plant Operators	1	1
3133 Chemical Processing Plant Controllers	1	1
3151 Ships' Engineers	1	1
3154 Air Traffic Controllers	1	
3257 Environmental and Occupational Health Inspectors and Associates	1	1
3315 Valuers and Loss Assessors	1	2
3324 Trade Brokers	1	1
3333 Employment Agents and Contractors	1	
3342 Legal Secretaries	1	4
3423 Fitness and Recreation Instructors and Programme Leaders	1	
3521 Broadcasting and Audiovisual Technicians	1	2
4312 Statistical, Finance and Insurance Clerks	1	

	LAT	EST
5141 Hairdressers	1	
5246 Food Service Counter Attendants	1	1
5311 Child Care Workers	1	
5322 Home-based Personal Care Workers	1	1
5419 Protective Services Workers Not Elsewhere Classified	1	
7114 Concrete Placers, Concrete Finishers and Related Workers	1	
7121 Roofers	1	
7126 Plumbers and Pipe Fitters	1	1
7413 Electrical Line Installers and Repairers	1	
8122 Metal Finishing, Plating and Coating Machine Operators	1	4
8152 Weaving and Knitting Machine Operators	1	
8157 Laundry Machine Operators	1	
8160 Food and Related Products Machine Operators	1	3
8172 Wood Processing Plant Operators	1	3
8189 Stationary Plant and Machine Operators Not Elsewhere Classified	1	
8211 Mechanical Machinery Assemblers	1	3
8212 Electrical and Electronic Equipment Assemblers	1	12
8342 Earthmoving and Related Plant Operators	1	1
9111 Domestic Cleaners and Helpers	1	
9121 Hand Launderers and Pressers	1	
9122 Vehicle Cleaners	1	2
0110 Commissioned Armed Forces Officers		2
0310 Armed Forces Occupations, Other Ranks		1
1114 Senior Officials of Special-interest Organizations		2
1311 Agricultural and Forestry Production Managers		1
1344 Social Welfare Managers		1
2132 Farming, Forestry and Fisheries Advisers		1
2133 Environmental Protection Professionals		2
2211 Generalist Medical Practitioners		2
2240 Paramedical Practitioners		1
2264 Physiotherapists		1
2342 Early Childhood Educators		7
2352 Special Needs Teachers		2
2353 Other Language Teachers		1
2355 Other Arts Teachers		1
2434 Information and Communications Technology Sales Professionals		8
2621 Archivists and Curators		1
2632 Sociologists, Anthropologists and Related Professionals		3
2634 Psychologists		2
2635 Social Work and Counselling Professionals		5
2641 Authors and Related Writers		3
2651 Visual Artists		1
2654 Film, Stage and Related Directors and Producers		5
2655 Actors		1
3143 Forestry Technicians		1
3152 Ships' Deck Officers and Pilots		1
3211 Medical Imaging and Therapeutic Equipment Technicians		2
3212 Medical and Pathology Laboratory Technicians		3
3213 Pharmaceutical Technicians and Assistants		1
3252 Medical Records and Health Information Technicians		2
3258 Ambulance Workers		2
3332 Conference and Event Planners		2
3351 Customs and Border Inspectors		2
3353 Government Social Benefits Officials		1
3359 Government Regulatory Associate Professionals Not Elsewhere Classified		2
3412 Social Work Associate Professionals		1
4322 Production Clerks		1

	LAT	EST
4413 Coding, Proofreading and Related Clerks		2
4416 Personnel Clerks		11
5163 Undertakers and Embalmers		1
5164 Pet Groomers and Animal Care Workers		1
5211 Stall and Market Salespersons		6
5242 Sales Demonstrators		5
5312 Teachers' Aides		3
5411 Firefighters		8
5412 Police Officers		1
6113 Gardeners; Horticultural and Nursery Growers		4
7115 Carpenters and Joiners		2
7119 Building Frame and Related Trades Workers Not Elsewhere Classified		1
7131 Painters and Related Workers		2
7132 Spray Painters and Varnishers		1
7213 Sheet Metal Workers		1
7215 Riggers and Cable Splicers		2
7222 Toolmakers and Related Workers		9
7315 Glass Makers, Cutters, Grinders and Finishers		1
7318 Handicraft Workers in Textile, Leather and Related Materials		2
7321 Pre-press Technicians		1
7323 Print Finishing and Binding Workers		3
7421 Electronics Mechanics and Servicers		2
7422 Information and Communications Technology Installers and Servicers		1
7514 Fruit, Vegetable and Related Preservers		1
7533 Sewing, Embroidery and Related Workers		4
7534 Upholsterers and Related Workers		2
7542 Shotfirers and Blasters		1
7543 Product Graders and Testers (excluding Foods and Beverages)		2
8121 Metal Processing Plant Operators		1
8131 Chemical Products Plant and Machine Operators		3
8143 Paper Products Machine Operators		1
8181 Glass and Ceramics Plant Operators		1
8183 Packing, Bottling and Labelling Machine Operators		2
8219 Assemblers Not Elsewhere Classified		2
8311 Locomotive Engine Drivers		1
8321 Motorcycle Drivers		1
8331 Bus and Tram Drivers		1
8343 Crane, Hoist and Related Plant Operators		3
9312 Civil Engineering Labourers		4
9411 Fast Food Preparers		5
9510 Street and Related Services Workers		1
9622 Odd-job Persons		4
9629 Elementary Workers Not Elsewhere Classified	3	