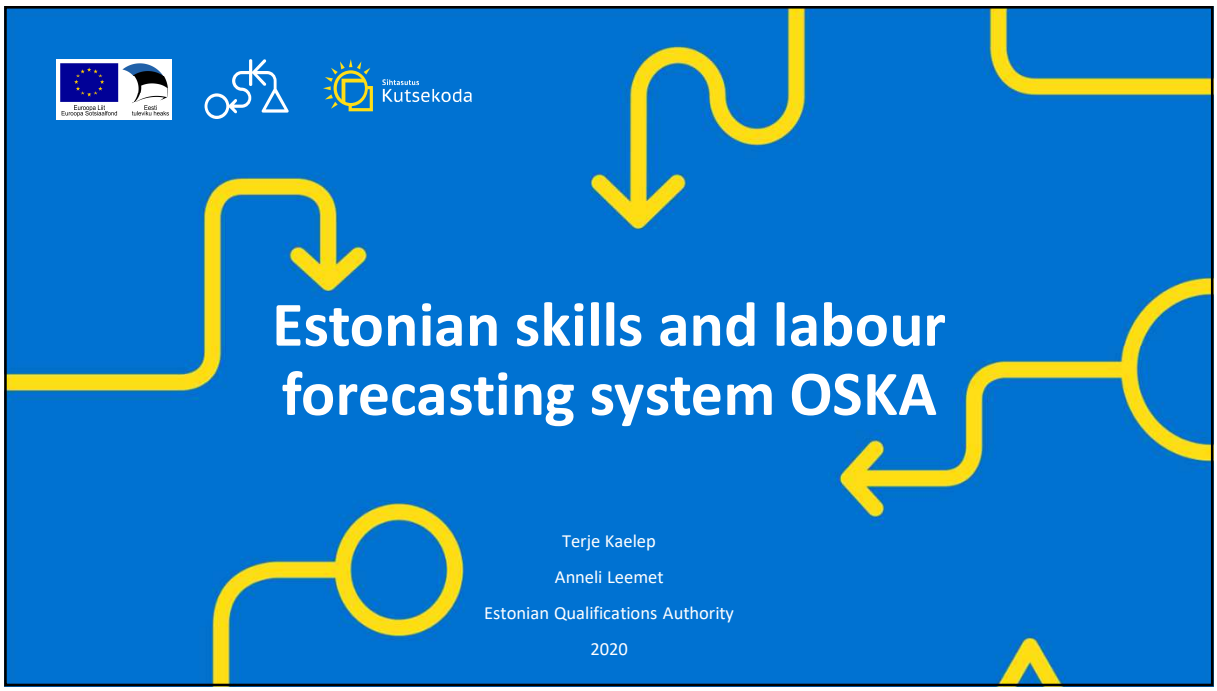


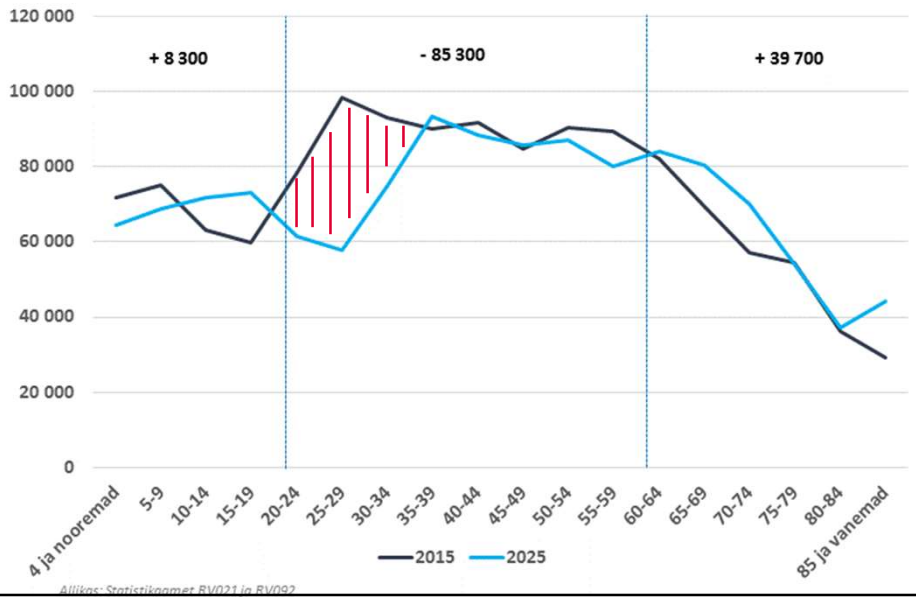
1

Background for the need to establish skills anticipation system (OSKA)

- **Lack of qualified labour force** named as the main hindering factor of growth by Estonian entrepreneurs
- Rapidly **aging society** and **declining working age population** (2015-2040 forecasted decline of 20-64 population by 12% and growth of 65+ population by 32%)
- 51% of jobs at high **risk of automation** in Estonia (S. Sikkut 2015/Frey-Osborne 2013)
  - Or: 46% of jobs at risk of automation (McKinsey 2017) / 12% (OECD 2016)
- **High skills mismatch** due to rapid changes in the society during the last 30 years (since gaining independence from Soviet Union)

2

Estonian population by age groups in 2015 and prognosis for 2025



Allikas: Statistikaamet RV021 ja RV092

3

Policy problem: lack of skilled labour force

- The **proportions of graduates** from different fields of education not in line with job opportunities
- **Curricula** are not always up-to-date and streamlined with the needs of society and economy
- Need for a **common platform** to connect education system and economy/entrepreneurs
- **Public Employment Service** lacks foresight of labour and skills needs by sector and occupation
- Need for evidence-based **migration** policy

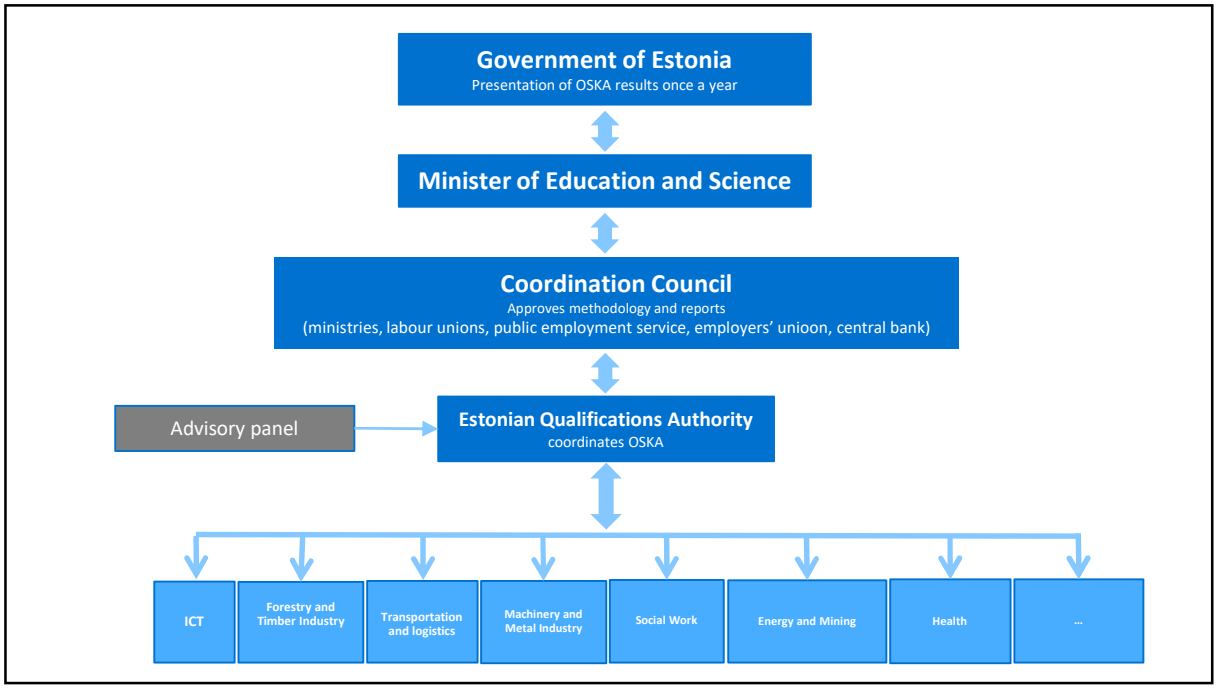
4

How it all started

- Quantitative labour demand and supply forecast by Ministry of Economic Affairs and Communications – since 2005
- 2012-2014 OSKA roadmap prepared in Government Office
- 2014 the establishment of OSKA agreed in the Government
- 2015 financing of OSKA agreed (ESF)
- 2016 first results

- Programme is coordinated by Estonian Qualifications Authority (Kutsekoda)

5



6

Bodies in OSKA governance

Coordination Council

11 members (high-level representatives):
- Ministry of Education and Research
- Ministry of Economic Affairs and Communications
- Ministry of Social Affairs
- Ministry of Finance
- Ministry of the Interior
- Bank of Estonia (*Eesti Pank*)
- Estonian Employers' Confederation
- Estonian Chamber of Commerce and Industry
- Estonian Service Unions' Confederation (TALO)
- Estonian Trade Union Confederation
- Estonian Unemployment Insurance Fund

Sectoral expert panels

24 panels, 20-30 sectoral experts each

½ employers, ¼ educational institutions, ¼ policy makers

Participate in sectoral study process and follow-up

OSKA Panel of Advisers

„unofficial body"
Ca 40 members
- Partners from ministries and public sector
- Employers' organizations, sectoral associations
- Trade unions
- Think tanks and research organizations
- Universities

Methodological discussions, change of information, discussing preliminary/final study results

7

What is OSKA ?

OSKA helps to learn and teach the right skills

OSKA analyses the needs for labour and skills necessary for Estonia's economic development over the next 10 years

8

OSKA = anticipation and monitoring system for labour and skills demand

OSKA analyses the needs for labour and skills necessary for Estonia's economic development over the next 10 years

- How many people and which skills are needed in our labour market today and tomorrow?
- Where and how to aquire those skills?
- What should be changed in today's educational system and in lifelong learning system to meet the future needs?

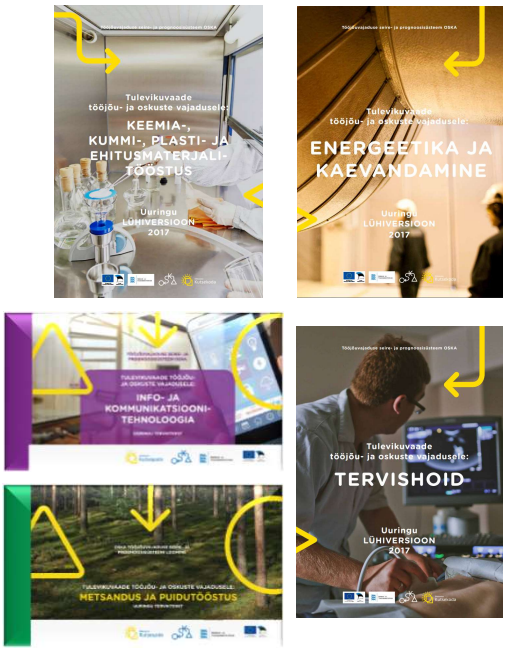
9

Linking research with policy

10

OSKA sectoral studies of labour and skills needs – since 2015

- Reports on 5 economic sectors every year
- Aim to cover all sectors in 5 years (and continue the 5 years cycle)
- Similar methodology applied to all sectors – comparable results
- Forecast horizon 5-10 years
- Combining qualitative and quantitative methods
- Sectoral expert panels (½ employers, ¼ educational institutions, ¼ policy makers)
- Analyze qualifications across all levels of education
- Follow-up of results and recommendations



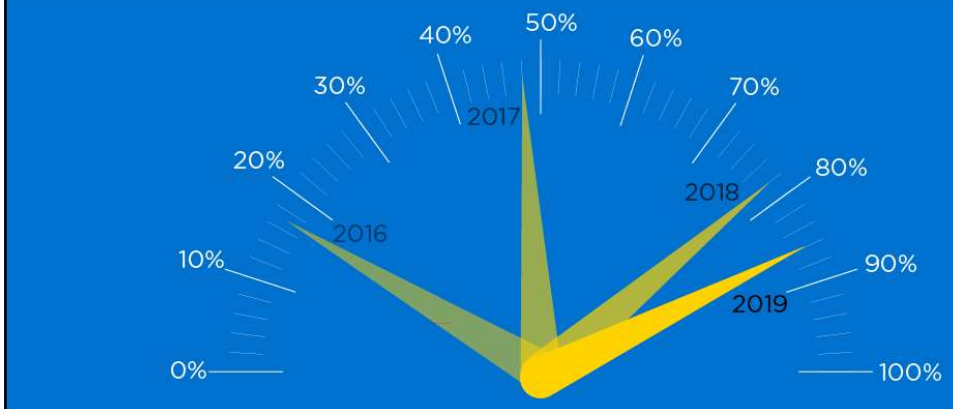
11

Has OSKA succeeded?

- OSKA intelligence is **used in policy-making and more**
  - For planning **VET curricula** and commissioning study places since 2016
  - As one input for adjusting **university curricula** (obligatory since 2017)
  - Feeds directly into several **active labour market policy measures**
  - No 1 data source for **career counselling** service providers
  - For a government project to **popularize growth occupations**
  - For **digital up-skilling** project of industry workers (target group 3,000 persons)
  - As input to **other forecasts**
  - As background and source information for adjusting **sectoral strategies**

12

The progress of OSKA – % of occupations covered by sectoral studies (elementary occupations excluded)



Allikas: OSKA uuringud, Eesti tööjõu-uuring, autori arvutused

13

Trends affecting most the labour and skills needs in the future

- Demographic changes
- ICT immersing in all fields of life and economy
- Rise of smart machines and systems
- Use of big data
- New media ecology
- Social innovation, social entrepreneurship
- New modes of organisations and work
- Globalisation
- Climate change

(Future Work Skills 2020, Phoenix Institute)

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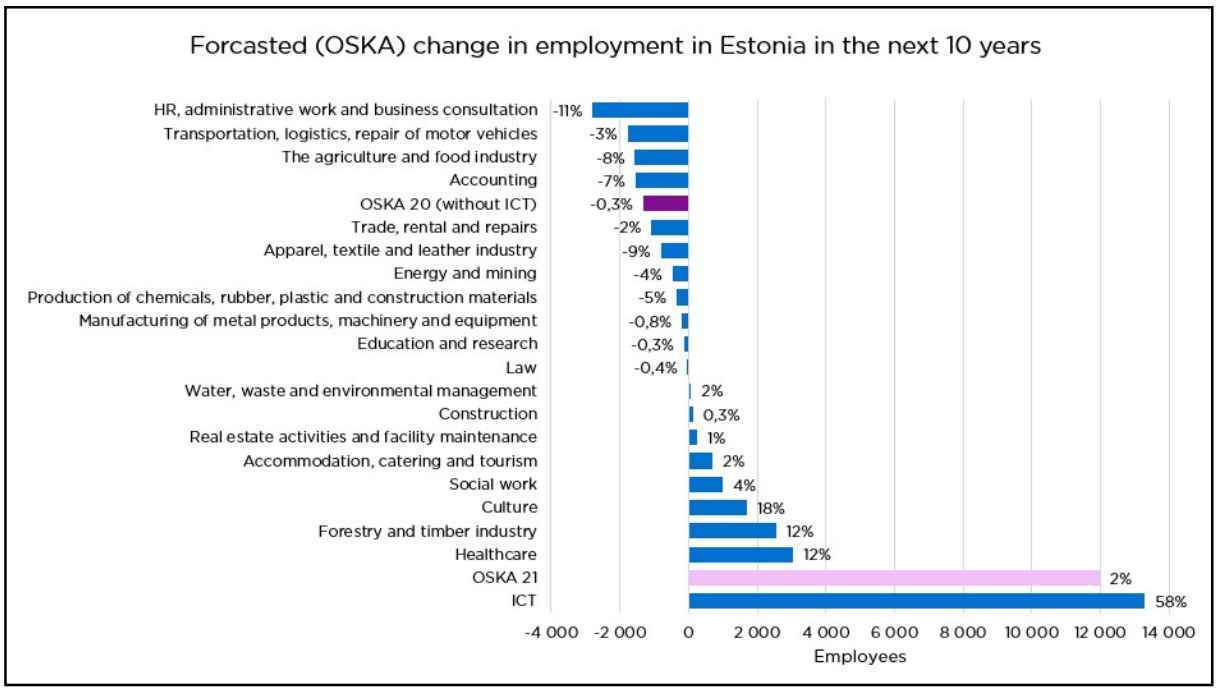
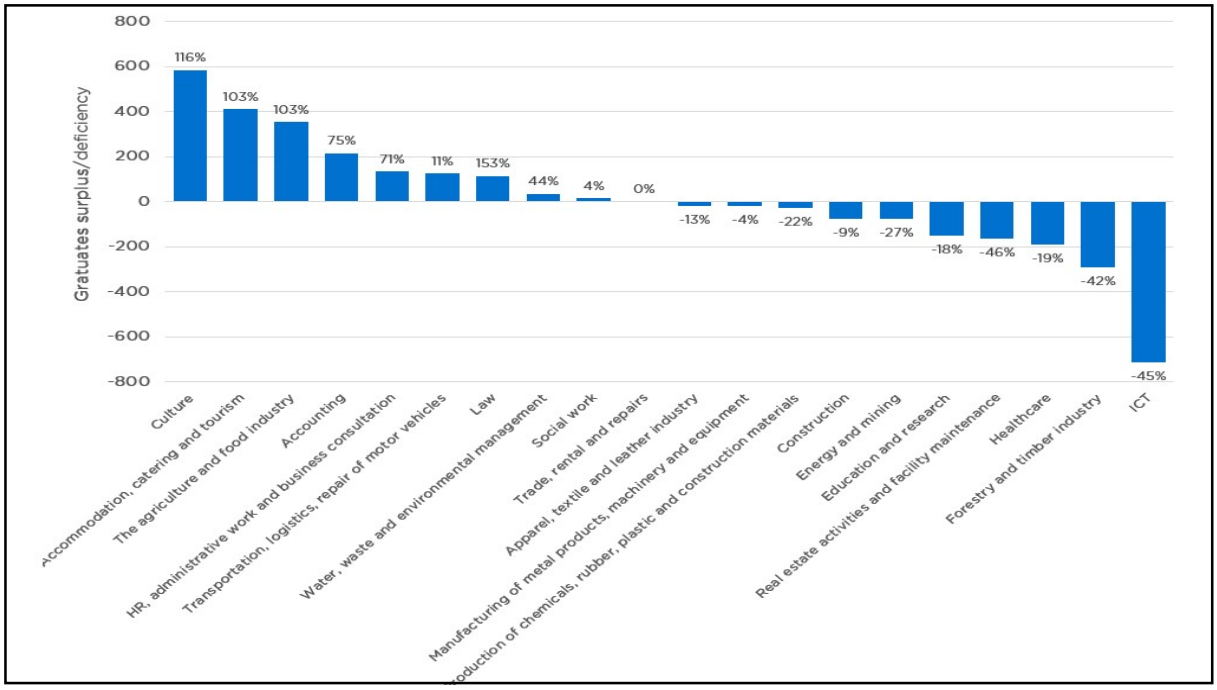

Forcasted (OSKA) change in employment in Estonia in the next 10 years
HR, administrative work and business consultation -11%
Transportation, logistics, repair of motor vehicles -3%
The agriculture and food industry -8%
Accounting -7%
OSKA 20 (without ICT) -0,3%
Trade, rental and repairs -2%
Apparel, textile and leather industry -9%
Energy and mining -4%
Production of chemicals, rubber, plastic and construction materials -5%
Manufacturing of metal products, machinery and equipment -0,8%
Education and research -0,3%
Law -0,4%
Water, waste and environmental management 2%
Construction 0,3%
Real estate activities and facility maintenance 1%
Accommodation, catering and tourism 2%
Social work 4%
Culture 18%
Forestry and timber industry 12%
Healthcare 12%
OSKA 21 2%
ICT 58%
-4 000 -2 000 0 2 000 4 000 6 000 8 000 10 000 12 000 14 000
Employees

15


Graduates surplus/deficiency
800
600
400
200
0
-200
-400
-600
-800
116%
103%
103%
75%
71%
11%
153%
44%
4%
0%
-13%
-4%
-22%
-9%
-27%
-18%
-46%
-19%
-42%
-45%
Culture
Accommodation, catering and tourism
The agriculture and food industry
Accounting
HR, administrative work and business consultation
Transportation, logistics, repair of motor vehicles
Law
Water, waste and environmental management
Social work
Trade, rental and repairs
Apparel, textile and leather industry
Manufacturing of metal products, machinery and equipment
Production of chemicals, rubber, plastic and construction materials
Construction
Energy and mining
Education and research
Real estate activities and facility maintenance
Healthcare
Forestry and timber industry
ICT

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General conclusions from OSKA field studies

- the changing structure of the economy and the need to move up on the value chain → higher skills jobs; growing need for further training and retraining
- industrial workforce structure is changing: increasing need for top level specialists (engineers) and specialists (technicians); the skill level required from skilled workers will increase; less simple tasks
- field knowledge + the courage and skills to use technology
- young people have good knowledge of ICT, but tend to lack applying knowledge (eg. how to solve real life problems)
- T-shaped competency model (-> H-shaped competency model)

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Today I-competence is prevalent; In the future T- or H-competence is needed

The perfect future worker is T- or H-skilled: thorough knowledge in at least one field, but able to understand and combine different fields, and has high-level general skills

18

Half of graduates entering the labor market should have tertiary education, one in three vocational education

The number of young people graduating from vocational or higher education today, does not cover the labor force of tomorrow:

- too few students in vocational and higher education graduate from technology related fields
- critically few graduates to replace STEM teachers, speech therapists and social carers

There might not be enough professional jobs:

- for all young people who have studied car repair, tailoring and basic accounting
- for graduates in higher education, eg from social work, personnel and administration work

It is difficult to earn a steady income for following professions:

- craftsmen, material-based (leather, metal, wood, ceramics, etc.) designers, philologists

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Examples of level 5 education from OSKA field studies

- In the filed of accountancy – vocational education (5.th level) functions as in-service training and retraining of adults. Need for employees is declining.
- Sales managers in the field of retail – the number of jobs available is stable for next 10 years. Employers feel severe labour shortage.
- In the filed of car repair – growing need for diagnosticians. The level of skills needed is shifting form level 4 to level 5.
- In the filed of machinery and equipment – expectations of skills is shifting from level 4 to level 5 and from level 5 to level 6. Operators of benches have to obtain more skills to be able to set up and programm equipment. Devices will become more sophisticated (e.g industrial robots). The skills needed to repair and program those devices are growing.

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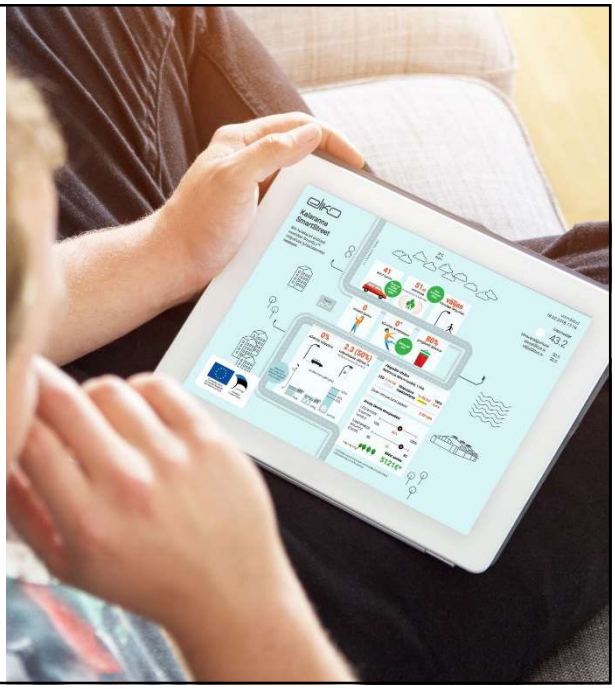

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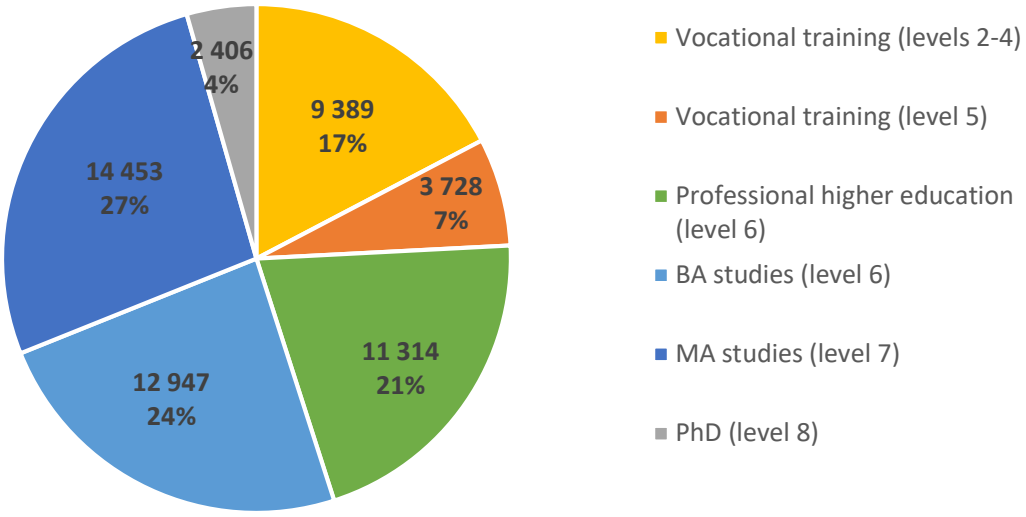
Additional statistics

Distribution of students (age20+) by levels of education, 2017/18-2019/20)

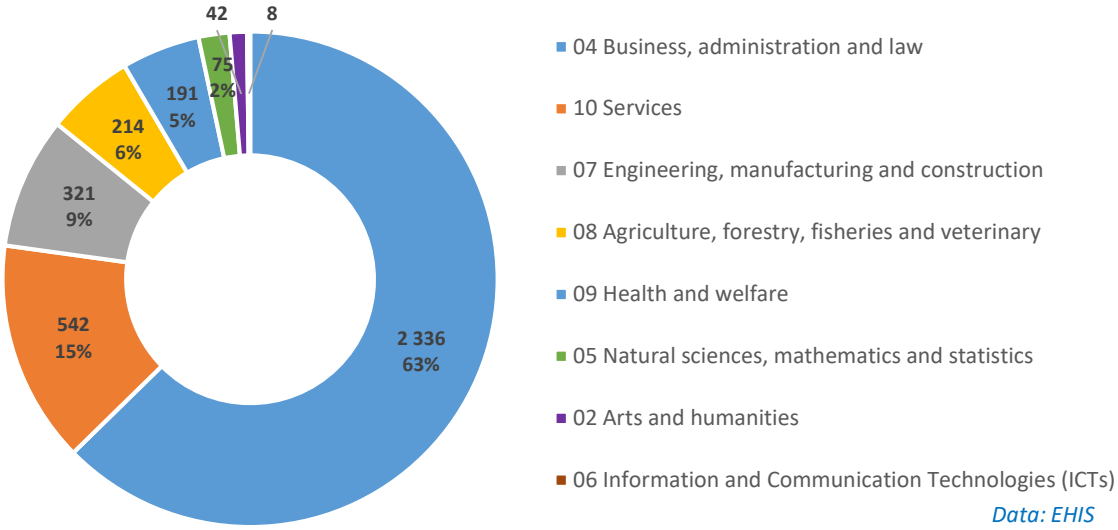


Data: EHIS

22

Additional statistics

Distribution of students on 5th level by broad fields of studies (2017/18-2019/20)

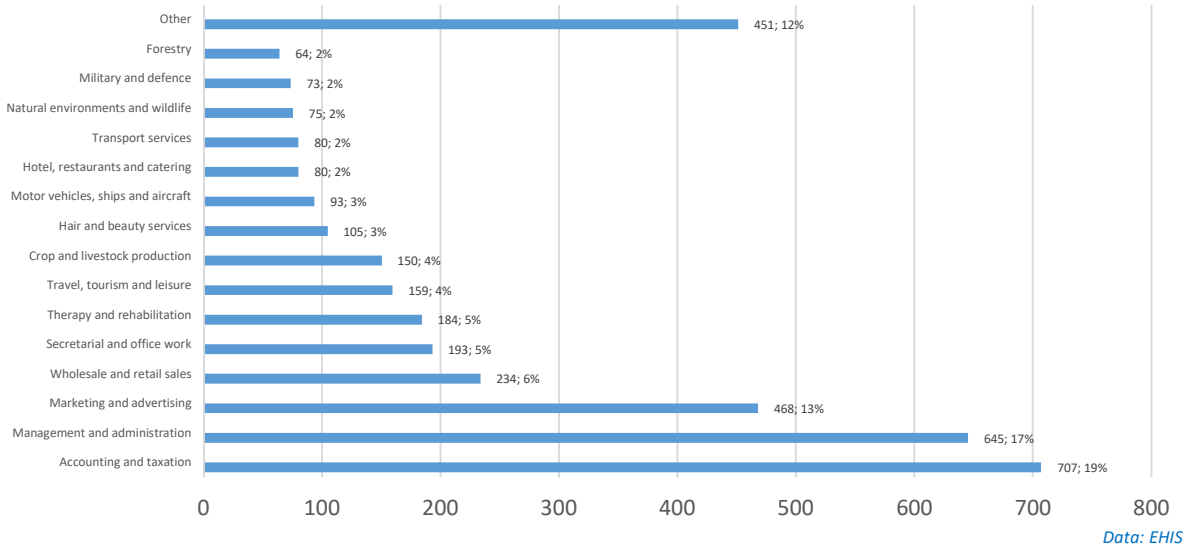


Data: EHIS

23

Additional statistics

Distribution of students on 5th level by detailed fields of studies (2017/18-2019/20)

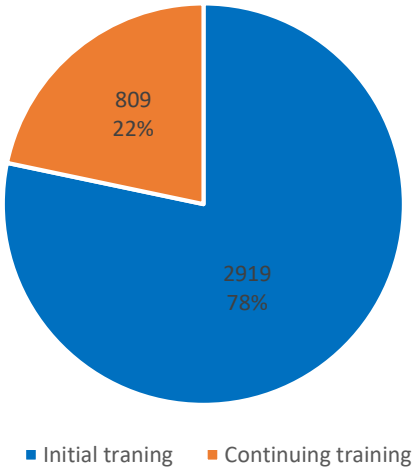


Data: EHIS

24

Additional statistics

Distribution of students on 5th level of vocational training by types of curricula (2017/18-2019/20)



Data: EHIS

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