

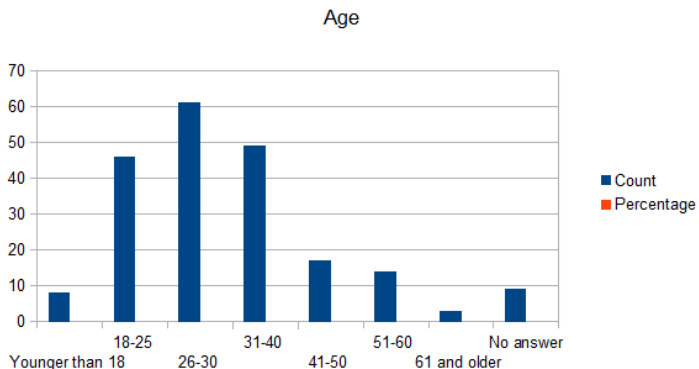
Estonian citizens' math education needs

NGO Innova Estonia

Citizens survey results

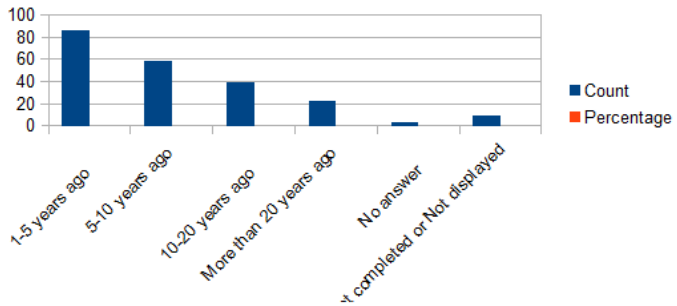
Questionnaire is conducted along Estonia people, in order to investigate their level of mathematic skills and how they think about needs in mathematic knowledge in everyday life, at working place, home and so on.

It was asked 219 persons in Estonia: 52% women and 42% men. Age of these persons, participated in the questionnaire was absolutely different: younger than 18 and more than 61 years old. The most active were participants of 26-30 years old. This category of people composes 29% of all participants, 31-40 years old are 23% and from 18 to 25 years old are 22% of persons asked.



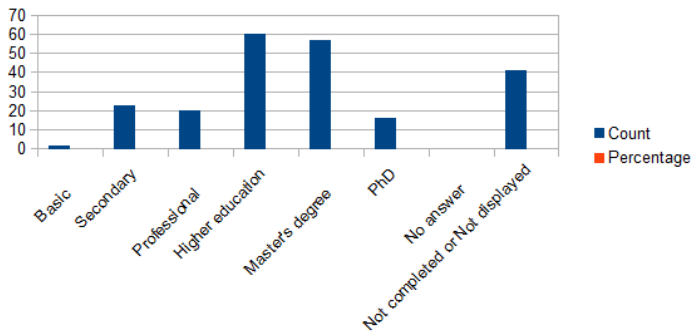
39% people received education 1-5 years ago; 30% of participants received education 5-10 years ago; 18% people received education 10-20 years ago.

When did you graduate from the last education institution?



Most of participants are employees – this group is 33%, 21% – students, 14% – employers, managers of department/company are 13%, and FIE, unemployed, housewives – every group is less than 10%. Level of education is different. Survey results show that highly educated people category is 28%, not completed education in universities – 19%. This is an index, how many students break study in universities. It is a negative situation for a small country like Estonia. There are 12% masters, doctorates are 7%, 10.5% have the second education, 9% of persons have education of professional college and others.

Education level



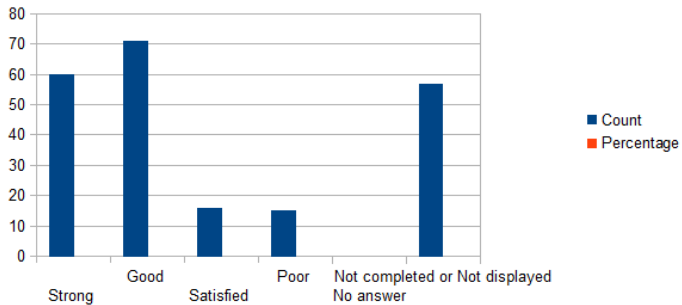
Education is very important to be successful in life. In

mainly, survey participants work in education field (17%); computer technology (12%); natural subjects (10%); unfortunately, engineering has small index (9%), that also reflects not positive situation with this specialists in Estonia society, we can see that technical specialists are reduced in quantity and this is negative tendency for development of economics, because as a rule namely technical specialists have strong mathematic skills, generate new ideas and move innovations to society; entrepreneurs (8%); services, trade, business (7,8%); social subjects (6%); art/architecture (5,5%); technology (4,7%) and so on.

All these groups consider that mathematic skills are needed in definite volume, for example grouping of information, tasks for presents calculation, medium means/mistakes, evaluation of medium statistic deflections, statistic methods and analysis of information, graphical presentations of information, market analysis, proposals and requirement analysis, calculations of field and volume, approximate calculations, probability theory and others. These mathematic skills need for proper work. In such way people answers.

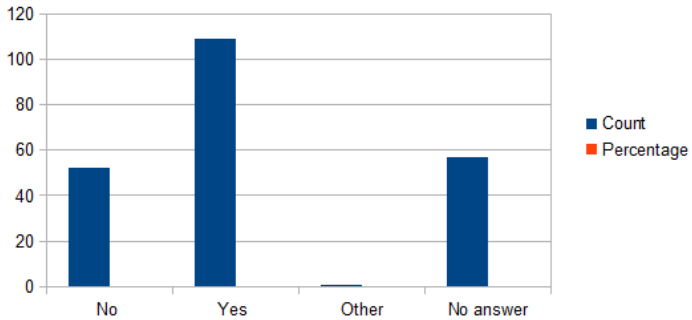
The most people work by profession, for which they receive education (51%). 27% have strong mathematic skills, 32% - good, 7% - satisfactory, 6% - poor skills in mathematic field, but many persons could not give answer about their mathematic skills (26%).

How do you value your basic competence in mathematics?



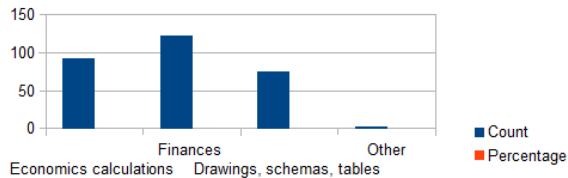
Many persons consider, that mathematics was favourite subject for them (63%), some persons agree that mathematics, which they studied in school (university, college, high/professional school and so on) could be more complicate (16%), some person do not like mathematics at all (7%) and this can be connected with different reasons, such as not understanding, laziness, not motivation and not wish, but 10% persons do not understand the most part of mathematics. 50% people considers that mathematic skills influence to everyday life, but 24% do not see mathematics as needed, 26% do not know how to answer to this question.

Does mathematics knowledge influence your everyday life?



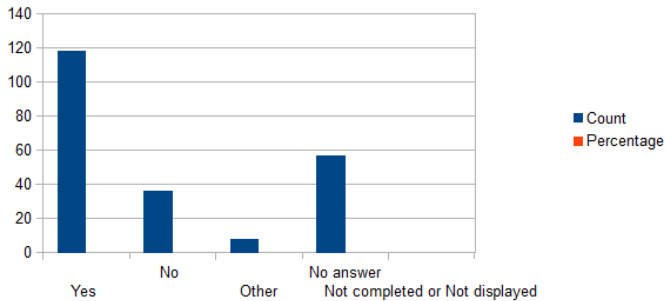
In mainly Estonia people use at working places and home the following parts of mathematics: finances 42%, economic calculations 32%, drawings, schemes, tables and so on, which composes 26%.

Which mathematics elements do you use at work or home?



In conclusion, the questionnaire shows that mathematics play important role in people life. Many persons want to improve their mathematics skills (54%) for personal development and own interests, but not many for professional increase, because mathematics knowledge is not asked by businessmen and does not give better and higher salary. If mathematics courses will be free of charge, people agree to attend at these ones (58%).

Would you like to improve your mathematics knowledge / skills?

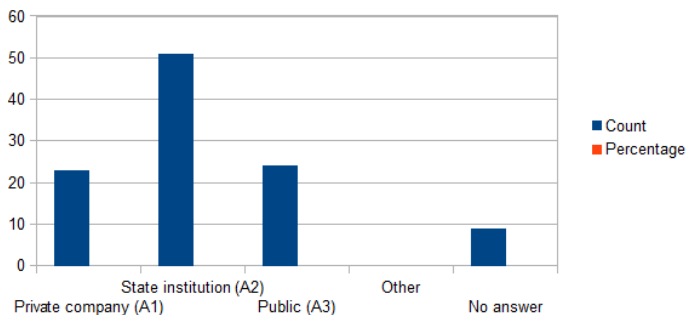


Employer survey results

This questionnaire is conducted along Estonia people, in order to know level of mathematics skills, needed for employers and their personnel.

It is asked 107 employers. The most survey participants have work in the state institutes - 48%; non-profit activity - 22%; private companies - 22% and persons, who did not answered to this question - 8%.

Your institution's legal status:

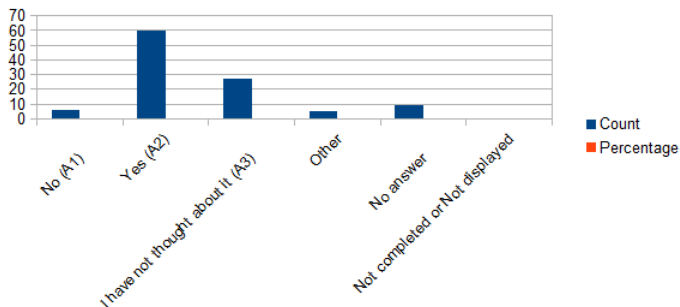


Popular firms of this survey, which work in manufacturing or environment field – 9%, construction – 9%, architecture – 6%, food industry – 4% and so on.

Number of employees in these companies is 25-50 persons (30%), 50-100 persons are 23%, more than 100 persons are also 23% and 1-25 persons as well 23%. Competence of employees is essential, because according to answers this composes 56%, many employers (25%) do not think about this and do not ask this from employees, 7% employees are not competent or other (14%).

Employees themselves improve their competence at the working place according to company/institute requirements (36%), professional development of employees is personal responsibility at many enterprises (20%), but some enterprises pay for professional education and development and send them to proper courses, education and so on.

Is your employees' professional competence is sufficient?



For employees the following is needed at the working places: Excel in different calculations (9%), grouping of information (16%), tasks of per cent calculations, calculations of medium values (8%), evaluation of statistic relations (10%), statistic methods of information analysis (9%), graphical presentation of information (5%) and so on, market analysis – calculation of proposals and demands (16%), calculation of square and volume (12%), approximate calculations (7%) and probability theory (4%) – all these subjects are needed for different specialists for

fulfilment of their working responsibilities. Employers consider that mathematic logics is necessary for specialists to be successful and this composes 20%, decision taking in non-definite conditions, definite and risk conditions (modelling of alternative choose by mathematics formula of conditions and so on), which is important part for specialists – 10%, description statistics (grouping of information, tasks of per cent calculation, medium values, mistakes, evaluation of statistic relations, graphical presentation of information and so on) – this composes 7%. This is considered as most important for specialists.

In conclusion, we can say, that specialists use mathematics knowledge, but not in much volume at their working places. In mainly specialists use the proper and prepared computer programs, which require only know instruction for users. For example in wide uses such programs as market analysis, grouping of information and others like these ones (banks, trade, services and so on).