

# High work ability in the scientific activity of older and experienced academics

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**Abstract.** At present the health of people in their 60s is the same as in their 50s around fifty years ago. Using older academics is a topical problem for universities in remaining efficient. Data regarding academics' scientific productivity at universities were collected and questionnaires compiled in the Faculty of Economics and Business Administration of Tallinn University of Technology in Estonia. Studies showed that the productivity of academics at university increases as they grow older (into their 60s). These academics are valuable to the university. The choice of academics should be made according to the candidates' knowledge and ability to work.

Keywords: ability to work, research, academics

## 1. Introduction

Medical experts report that at present the health of people in their 60s is the same as in their 50s around fifty years ago. As people are living longer, they must work for more years. This is easier for white-collar workers: they retain their ability to work until an older age than blue-collar workers. Using experienced white-collar workers is one way of remaining efficient in the contemporary world of work, where the average age of the population is rising and people want to enjoy more years of health and happiness.

There is often a mandatory retirement age in public sector e.g. at state universities. It is generally the same as for blue-collar workers, or a little later (65-70 years). The mandatory retirement age at universities has some advantages:

- it facilitates planning; and
- it creates easy opportunities for promotion.

Some younger professionals are interested in the mandatory retirement of others in leading posts – directors, department leaders, professors et al. – as they are looking to fill the posts themselves. Some like early mandatory retirement as they are afraid of competition. Some older people are interested in having more free time and fulfilling their dreams,

and eagerly await retirement. Some older academics also have health problems, so retirement is a good solution.

Private companies remain effective without mandatory retirement. In some countries, for example the United States, there is no mandatory retirement in universities. The abolition of mandatory retirement laws began in colleges and universities in America in 1994. Very common is the fear that older academics are less effective than their younger colleagues. In the mid-20<sup>th</sup> century it was often thought that mandatory retirement at 60-70 made positions available to younger specialists who needed the work. In fact, statistical data from developed countries show that a low employment rate among older people does not correlate with a high employment rate among the young.

What the working ability of older academics is compared to younger age groups represents a very interesting question.

## 2. Method

Data regarding academics' scientific productivity at university were collected and questionnaires compiled in the Faculty of Economics and Business

Administration of Tallinn Technical University in Estonia. The questions considered different aspects of working conditions, health, motives for working, efficiency and plans for the future including activities at pension age. All 97 faculty academics received anonymous questionnaires, 57 of which were returned (58.8%). There were fewer data about academics who were more than 65 years old, as they were retired.

### 3. Findings

33 respondents (57.9%) have a PhD degree. 10 are professors and 19 are associate professors. The average length of employment at the university is 14.3 years. The biggest age group (one-third of all academics) is 56-65 years old. The age groups <26 and 66+ were relatively small. The most important motives for working were developing self-identity, interesting work and possibilities for self-fulfilment. Communication with students and salary were also important. A shortage of time was ranked first among factors affecting work. The possibility of a career was the least important. Many significant ( $p \leq 0.05$ ) correlation coefficients (Pearson) were found. A significant correlation existed between a lack of time and the intensity of mental stress (0.64), between the intensities of depression and sleep disturbances (0.46), noise and sleep disturbances (0.43) and lack of time and no control over activities (0.40). The intensity of bodily symptoms among older academics was similar to the intensity of these symptoms among younger academics. There was no correlation between disturbances of health and age. However, older lecturers publish more articles per year than younger academics, probably in connection with their experience. It is likely that the fact they have already solved many typical problems of young people connected with love, family life, children and home are reasons here. The 56-65 age group showed the highest productivity. Academics in this age range were also the most effective as supervisors of Master of Science and PhD students. There was a positive correlation between age and a wish to work at the university at pension age. 85% of these academics are hoping to continue to work after they reach pensionable age. Nearly half (42%) of the academics were interested in working full time, 28% half time, 5% quarter time and 9% at home at pension age.

### 4. Discussion

At present, older academic personal mostly work using computers (at home or in an office). Their working conditions are relatively good. Classrooms with computers, Internet, video/data projection and sound systems are widely used. Much attention in the scientific literature of occupational health has been paid to the negative aspects of computer work for academics, particularly uncomfortable working (sitting) positions. There are also occasionally other negative factors at universities: time pressure and stress; intense visual strain; decreasing recreation time and recreation activities; chronic fatigue and burnout; and respiratory infections (from contact with many other people). However, professional work is not too hard for academics. There are more positive factors: interesting work; self-paced work; academic freedom; mental stimulation; work with young people; relatively high salaries (and thus better food and housing conditions); and better than average knowledge related to prevention.

Most academics are younger than 60. There is a danger of paying too much attention to the physical ills of older specialists and too little attention to their knowledge and productivity. After the age of 20 there is a constant decline in many physiological functions, but also constant accumulation of knowledge in the field of the subject activity (competence), especially tacit knowledge (skills and knowledge by acquaintance). This is the main extent of specialists' knowledge, despite the fact that some tacit knowledge may be obsolete. Older academics have more crystallized intelligence: knowledge and skills that have accumulated over a lifetime. Social environment and mental activity are important protective factors against cognitive decline. Older specialists can be wiser decision-makers compared to younger adults because they have collected much more information. Therefore they can propose more fruitful ideas.

Literature data show that the peak age of academics scientific activity largely depends on the specific situation, although often it is around the age of 60. The mean peak age for the citation stock for six samples was 59, which was similar to our data [2]; Diamond (1986) studied academics from several universities and obtained similar results [3].

77% of American professors who continue to work say that they do so mainly because they enjoy their work [4]. However, there are not many older professors who want to continue working into their

70s or 80s. After the elimination of compulsory retirement, the retirement rates of those aged 70 and 71 were comparable to those aged 69 [1].

The best solution is an age-diverse workforce at the university or research institution. Such a workforce has various advantages: a wider pool of labour; a wider range of experience and expertise; and reduced labour costs.

As researchers' activities require more knowledge and are not subject to time pressure, it is likely that older and more experienced academics will be better suited to it.

## 5. Conclusions

1. Productivity of academics at Tallinn Technical University increases up to their 60s. Therefore experienced and older academics in their 60s are valuable to the university.
2. The selection of academics should be based on the candidates' knowledge and ability to work.
3. Mandatory retirement age can be adverse to the efficiency of research at the university.
4. The best solution is an age-diverse workforce at the university.
5. Most academics in Tallinn want to continue working at the university beyond the traditional pension age.
6. Experienced academics should be used, first and foremost, for students' instruction (at the MSc and PhD level) and on research.

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