

# Biological and behavioural elements of the mechanism for retention of age-dependent personnel efficiency potential

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**Abstract.** The paper attempts to substantiate the possibility of maintaining the efficiency of elderly staff through the formation of a mechanism focused on preventing and overcoming the risks of medical, biological and behavioural nature. The authors give a definition of the mechanism that allows one to maintain the desire and the ability to continue productive activities. The characteristics of success potential of aged staff, that are different from those of other age categories, have been identified. The triad of phases in the vital labour cycle is characterised from relevant medical and biological points of view, organisational requirements as well as individual challenges and needs. The biological component of human life is presented through the markers of its dynamics. The work – private life balance components have been explored. The main reasons of role conflicts substantiating the imbalance of elderly workers' work and private life have been identified. The risks of weakened competitiveness of elderly workers and reduction of their endurance capacity have been characterised. Some concepts for mitigating the situation of work – private life imbalance through time management, health management and social support have been developed. The influence of medico-biomedical risk factors on retention of elderly employees' performance has been demonstrated. The reasons causing risks in achieving ageing staff's success have been grouped, and the subjects initiating these risks have been identified.

**Keywords:** Mechanism for maintaining work efficiency potential · Elderly workers · Work – private life balance.

## 1. Introduction

The well-known expression stating that it is not intentions, but capabilities that matter has taken on special significance in the modern society. The specificity of the situation is accounted for by the demographic factors, scientific and technological progress, the transformation of values of the new generation, the significantly changed behaviour, capabilities and intentions of elderly workforce. The paradigm of auspicious ageing has, firstly, contributed to the formation of the evidence base indicative of inadequacy of the societal stereotypes about poor success of ageing employees, leading to ageism on the part of employers and younger staff. Secondly, it confirmed the possibility of transition to the paradigm of maintaining the required economic potential of aged employees- professionals who possess, in addition to accumulated competences and experience, “tacit” knowledge that can only be transferred in the process of labour-specific communication with younger employees. The

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compensation for “losses” in human body structure and ageing employees’ behaviour is possible through formation of a mechanism that allows to preserve and update a specialist’s competences, simultaneously maintaining his/her involvement in work, which represents overall demonstration of the person’s confidence and motivation.

Respectively, the article proposes to implement one of the possible approaches justifying the concept of maintaining aged workers’ success potential through the development of integrated mechanism that includes some biological and behavioural elements taking into account the markers characteristic of dynamics of the biological component of behavioural life and its significance, along with the reasons engendering risks in achieving aged personnel’s efficiency.

## 2. Materials and Methods

1) The efficiency potential of ageing workers, while being much the same for all staff categories, still has some inherent differences. Firstly, it depends on the dynamics of fluid and crystallised intelligence (Baltes et al., 1999), the extent of differences in biological and functional age, as driven by physical and mental health. Secondly, it is backed by the worker’s act of will, his/her desire and initiative for its realisation, confidence and motivation in achieving and replication of high performance. Thirdly, it presupposes a certain health reserve. Fourthly, it is predominantly subject to preservation and maintenance rather than development.

2) The labour life cycle triad of phases (18-39; 40-55/60; over 60) can be justified in terms of relevant biomedical positions, organisational requirements and individual challenges and needs. The phase boundaries are justified by physiological and psychosocial functions characterising a person’s ability to exist, to participate in labour process. The dynamics of the biological component of human life is represented by such markers as cognitive abilities or presence of diseases that allow or prevent realisation of certain types of labour (Lazebnik and Konev, 2020).

3) It was revealed that the employee’s expectations of his/her role at work and at home change with aging; equally the employers’ expectations concerning the role of ageing staff in the organisation change as well. Three components of the balance ‘work – private life’ were investigated: the balance as such, work and private life. The balance, considered as a ratio of interrelated activity or process indicators, does not necessarily describe the equality of parties in the considered process, but represents a scenario describing their harmony, the ways to find a healthy, balanced measure making it possible to maintain due quality of life.

4) The risks of weakened competitiveness of elderly workers and decrement of their endurance ability take place owing to the deterioration of their physical health, psychosomatic illnesses, burnout syndrome, caused by the following reasons: the role of victim, debtor; permanent state of stress because of conflicts of interest at work and beyond it. The “enemy image” is shaped in perceiving one’s profession and workplace along with dissatisfaction with one’s realisation of off-work duties, which becomes more acute with time due to the emergence of new family roles or difficulty in realising them, when combining them with the functions at the organisation.

5) Three main causes of role conflicts that accompany the imbalance in elderly workers’ work and private life have been identified: time budget disruption because of the priority of one role over the others; stress and overload due to the need to perform several roles simultaneously; behavioural characteristics provoking role incompatibility. Accordingly, two conflict models were identified: “Work interferes with private life” and “Private life interferes with work” (Beham and Haller, 2015; Durakova, 2021).

6) Achieving a compromise between one’s work and private life is a complicated, unresolved challenge for elderly employees, especially in a situation of change in family models and collision of different cultures. The developed concepts aimed to mitigate the

situation of work / private life imbalance include a number of elements of time management justified by telecommuting; flexible work schedule; “three-days” policy; the elements of health management enabling one to balance the negative and to support the positive factors of physical and mental well-being; the elements of social support through the organisation of family services (Durakova, 2021).

7) The biomedical risk factors in retaining the elderly workers’ capacity may be due to a number of causes initiated by public health institutions, employers and the employees themselves.

#### Group 1. Public health actors.

The risk of poor monitoring of employees’ temporary disablement in assessing their health status. The risk is accounted for by three aspects. The employer does not receive information about the causes of employees’ disablement due to the changes in the system of recording disablement cases related, among other things, to enforcement of non-disclosure provisions. To reduce the risk of financial losses caused by absence from work due to illness, an employee is interested to conceal his/her illness and contribute to presenteeism statistics of the organisation (Ruhle and Süß, 2020). This aspect is particularly important for employees working in the “shadow” market who are not paid under a sick leave, as well as for employees subject to limited temporary disability allowance. In addition, owing to the changing economic situation and the need to optimise staffing levels, employers show poorly disguised negative attitude towards employees absent from work due to illness; in this case the employees have to conceal the reasons of their latent disability.

#### Group 2. Employers

The risk of incomplete information on employees’ health status, based on results of compulsory medical examination. The employer receives only the resulting medical report on employee’s fitness for his/her professional and job duties, which decrements the completeness of information for analysis and action. Compulsory psychiatric examination is only envisaged for certain categories of employees. When deciding on the scope of medical examination, job context class, including the presence of hazardous or unhealthy factors, is taken into account (Grigorov, 2021).

#### Group 3. Employees

3.1 The risk of loss of elderly workers’ ability to adapt quickly to new working conditions. The risk is conditioned by possible biorhythm disturbance, decreased visual acuity and hearing sensitivity, weakened aerobic capacity of the organism accompanied by lowered heart rate and increased blood pressure (Kotsis et al., 2017), age-related skin changes and consequently impaired heat exchange, which can lead to heat or cold shock.

3.2 The risk of growing amount of anonymised data on employees’ health in the relevant database. The risk is connected with the requirement for employee’s consent to sharing data with third parties.

Research methods: comparative analysis, classification and grouping, construction of tables.

### 3. Results

The mechanism, or a system, represents a sequence of articulated links in a chain in which, assuming the movement of one or more links relative to any of them, all the other links perform unambiguously identifiable movement. Using the category “mechanism” relative to the explored subject means that retaining the professional efficiency potential is possible on the condition of presence of some necessary elements that consistently transmit and maintain the impulse of desire, as well as possibility, to continue fruitful activity.

Taking into account the interplay of natural/biological and behavioural elements in the success potential retention mechanism, it is possible to vary the role of ageing staff in the organisation and to accelerate the transition from the category of exclusivity to the policy of inclusion and maintaining a due ecosystem (Table 1).

**Table 1.** Stages in advancement of scientific thought and due practice in forming a mechanism for sustaining the success potential of ageing workers. *Source:* Compiled by the authors.

| Stages of change in the role of aged workers in the organisation | Characterisation of the stage   | Social acceptability of the situation   |
|--|---|---|
| Exclusivity  | Elderly employees, including those with health problems, disabilities, having no computer skills, are not covered by such HR management functions as training and development; they are barred from participating in presentation events and business trips.  | Such exceptions are deemed to be socially acceptable. The reason that makes such participation impossible is recognised as justified.   |
| Segregation (detachment, alienation)                             | Segregation, relative to elderly workers, means that this category qualifies as segregated or isolated in terms of human resource management, when it comes to promotion, development, participation in projects or new activities. At the same time, when segregated, employees with troublesome attributes are shifted to specific areas of activity covered by guaranteed individual support, for instance, state support.   | The role of ageing staff is to stay “overboard”, beyond the competitiveness matters; however they are admitted to professional participation in certain state-guaranteed areas of activity – as acceptable.   |
| Integration  | Production and social spheres are equally open to employees of all ages. They work jointly with regard for differing levels of talent, capability and stamina. The employees are guaranteed that they will not be subjected to unreasonable demands, deceit or being used for lucrative purposes. At the same time, integration allows for a form of internal differentiation. This means that employees are conditionally divided into two groups: those integrated and those who are to be integrated but have not yet been integrated. | Employees’ dissimilarity is perceived by the employer and the society for granted. Internal differentiation causes inequality, impairment of interests and discrimination. Using various methods of coercion, pressure, the “weak” group is forced to adapt to the ways of the “strong” community, their values and the existing conditions causing internal differences. Assimilation in this case leads not to diversity but to limitation. |
| Inclusivity  | Inclusive environment means manageable organisation of the society and an economic entity which enables equal participation in cultural, productive, educational campaigns and processes for all categories of citizens regardless of their race, nationality, religion, gender, age and health status.   | Diversity is recognised as a normal state of things. The publicly recognised formula voices: everyone is individual; together people are equal and have the same rights. This means that elderly employees, like others, having dissimilarity features, work in the organisation without being subjected to evaluation and acceptance of their difference from the others.  |

#### 4. Discussion

The majority of research articles dwelling on extension of labour capability of elderly workers investigate the biological and behavioural links autonomously; accordingly, the approaches practicing exclusivity and segregation, provoking ageism in organisations, become justified. The vector of modern developments is aimed at dual research oriented at personalisation of old age, among other issues (Krekula and Vickerstaff, 2020); comparison of objective and subjective measures of physical and psychological well-being (Johnston et al., 2009; Zacher, 2020); motivational self-management of aged workers (Kooij et al., 2019). The scope of investigation of the problem has encompassed the issues of the so-called “aesthetic wisdom” which, according to its well-grounded characteristics, can be reasonably transformed into labour skills (Niemi-Kaija, 2021). The transformation is more tangible

in case of arrangement of a modern workplace which motivates ageing employees for continuing the work for the organisation and secures a due possibility (Wainwright et al., 2018) in accordance with assigned roles (Gaurylieniė and Korsakiene, 2017), helping them to realise themselves in innovative projects (Rudolph and Zacher, 2022).

## 5. Conclusion

The research results confirmed the possibility of preserving the potential of elderly workers upon orientation of modern research and applied developments at the formation of appropriate integrated mechanism that would include natural/biological and behavioural elements. The mechanism makes it possible to cope with a tripartite objective: to compensate for the lack of “natural ardour” that fades with age; to actualise the professional competencies including knowledge and skills; to retain engagement in implementation of labour assignments. The engagement, as a cumulative manifestation of confidence and motivation, enables an employee to comply with assignments not only adequately, securing the intended result, but also to be efficient.

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