

**INNOVATIVE TECHNOLOGIES OF CUSTOMIZED FOOTWEAR FOR
ELDERLY AND PROMOTION OF ACTIVE AGING**

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This paper highlights the importance of designing and producing customized footwear for elderly while taking into account the profound demographic changes and considering the reduced functioning, capacity and performance, because of ageing changes of the feet. Functioning, capacity and performance are described according to ICF, WHO 2001 (The International Classification of Functioning, Disability and Health). The authors are analysing the phenomenon from an active ageing perspective. Neuromusculoskeletal and movement – related functions may be impaired by ageing itself or by certain health conditions which could make old people more vulnerable. Standing and walking are fundamental for the well-being and preserving the physiologic ranges of these functions is an important goal. The main feature of this domain is the multidisciplinary work of multiple professionals: physicians, rehabilitators, engineers, technical staff. The Active Ageing concept includes interventions and policies that aim to reduce premature physical ageing and to empower older people to live healthy, productive, participative and independent lives. Romania has devised the Strategy for Protection of the Elderly and Promotion of Active Ageing supported by the EU, as a part of The National Reform Program. Romania's commitment to Active Ageing concept is substantial for achieving Europe's 2020 strategical goals.

Keywords: active ageing, old foot, The International Classification of Functioning, Disability and Health

INTRODUCTION

Population aging is a process more and more evident in the contemporary society, both in the developed and developing countries. It appears on the agendas of the international meetings of all kinds.

Traditionally, aging is associated with decreased functional capacity and difficulties in coping with the changing of the environment, resulting in an increased vulnerability and making older people more susceptible to illness and disability .

From a more challenging perspective, the aging of population could offer unexpected opportunities for the society on the condition of encouraging and empowering the older people to live healthy, productive, participative and independent lives.

Documents on population aging issued by International organisations clearly state the guidelines for further actions : growing old in security and dignity, participation in social life as citizens with full rights, improvement of reciprocal intergenerational relations (United Nations, World Population Aging 1950-2050, Population Division).

Romania's Current Demographic Profile

The current demographic trends of the population of Romania, follows the trends recorded all over the world. Romania becomes, little by little an aging society,

according to the latest demographic statistics. Three main causes of the issue were identified: increased life expectancy, fertility rate decline, strong emigration flows.

Having these phenomena as a background, the projection of the statistic data for the next years, by 2060 (according to Eurostat population projection) shows that the share of population aged 65 and over is expected to double (from 15% to 30 %) while the working age population, aged 20 to 64 is decreasing (with 30% by the year 2060), displaying one of the deepest declines in Europe. In the same time, the strong net emigration reduced the cohort currently aged 25-30 by 20%.

The effects of the demographic phenomena mentioned above could be also estimated by projecting the *demographic dependency rate* over the same period. The *demographic dependency rate* is defined as the number of people aged 65 and over and those under 20 for every 100 people aged 20 to 64. The current value of the ratio is 55 but it is expected to rise dramatically and reach the value of 100 by the year 2055, showing a sharp reverse (INSSE Statistical DB Tempo. Romania).

All these phenomena result in negative effects on the economic growth and impact the health care systems and the sustainability of the pension schemes.

The increase of life expectancy is basically a positive issue and it means more years lived in the conditions of an active and productive life. But the reverse must not be neglected because more those more years could be associated with illness, disability vulnerability and dependency. Special attention needs to be paid for promoting harmonious, physiologic aging both by the health care and social assistance systems.

Harmonious, physiologic aging is defined by the capacity to maintain a low risk and vulnerability, high level of physical and mental performances and a high motivation for living (Donca, 2008).

The “Active Aging” Concept

The World Health Organisation introduced the Active Aging concept and it refers to a number of action plans aiming to prevent the negative economic and social effects of population aging.

In response to the WHO initiative, The European Union has taken the concept as a major objective for its own politics.

The WHO defined *Active Aging* as: “the process of optimizing the opportunities for health, participation and security in order to enhance the quality of life as people age both within the labour force through delaying retirement and within society through the participation in a range of social, economic, civic or cultural activities” (European Commission, 2012). The policies and strategies of the EU offer the framework for the practical approach of the concept. The goals of European Commission policies to encourage older people to remain active as long as possible, to delay retirement and to promote the social participation by civic engagement and volunteering.

In order to support the national agendas in the field of active aging The European Commission developed helpful statistical tools and a policy framework.

The special Euro barometer Survey#378 was aimed to understand people’s opinions and attitudes regarding old people. It also searches people’s readiness to adapt the new demographic conditions and to accept reforms in the field of active aging.

Developed by the European Commission and the United Nations Economic Commission for Europe (UNECE), the *Active Aging Index (AAI)* is a composite tool which attempts to evaluate the extent to which older people can reach their full potential in four domains: a) employment, b) social participation, c) long independent, healthy

and secure life, d) capacity an enabling environment for active aging. The index offers the opportunity to compare data from different countries, for each category.

CUSTOMIZED FOOTWEAR - FUNCTIONING VS. DISABILITY

Neuromusculoskeletal and movement-related function present impairments inevitably induced both by the aging process and to diseases to which older people are more vulnerable.

Standing and walking are fundamental functions and preserving their performance is an imperative demand for active aging. The main feature of this domain is the multidisciplinary which requires the work of multiple professionals: physicians, rehabilitators, engineers, technical staff.

Age-related changes of the feet affect the bones, the joints and the soft tissues (skin and muscles) as well. Impaired nervous coordination of ambulation and balance may cause difficulties to accomplish the activities of daily living, increase the frequency of falls, disability and dependence and a low quality of life.

Impaired biomechanics of the feet in geriatric population is caused by the changing of size and shape, degenerative alterations, arch flattening, orthopaedic problems such as tendonitis, osteoarthritis. Skin disorders (itchy rash, calluses, keratosis), changes in plantar tactile sensitivity and alteration in muscles tone makes walking and standing very difficult.

Impaired ambulation due to age-related changes of the feet might be prevented by designing and producing customized footwear for elderly, adapted to their demands and necessities of an active life.

From the perspective of The International Classification of Functioning, Disability and Health (ICF-WHO, 2001) aging is seen as a health problem which needs special approach and compensatory measures in order to prevent disability. The ICF states a framework and definitions in order to understand age-related disability.

The structural and functional loss induced by the aging process are *impairments*. When severe enough, impairments generate *activity limitation* and *participation restriction* in social life. The *disability* reveals the negative aspects of the interaction of the elderly with the environment.

The policy makers in health care and in social assistance should set as a main goal the maintaining or even increasing the *capacity* of the elderly (describes the individual's ability to execute a task or an action) and their *performance* as well (what the older people can do in their current environment).

Speaking of performing in real life environment, work at older ages is an important issue. The increased life expectancy is expected to affect the individual behaviour concerning the decision to remain employed longer. Professional longevity, "the greying of the workforce" could have positive effects both for the individuals and for the developing societal norms of more active lives at older ages. Professional longevity is related with more opportunities for employment for older people, with life-long learning and the ensuring of an healthy and age-friendly work environment.

Coping with work promotes a healthy and independent life and becomes more and more important as the work force is aging.

Walking and staying are essential for work and they are impaired by the aging process itself and by the health conditions associated with older ages. Developing researches an innovation in the field is a great challenge.

Changes of the traditional model of employment, becoming more flexible in accepting older people have a direct impact on the sustainability of pension schemes both public and private. Basically, the viability of an aging society relies on the adaptability of the labour market and the sustainability of pension schemes (Scardino, 2009).

Social participation in the form of civic engagement and volunteering are profitable forms for activating the elderly. The measure of the benefits are a good physical health, the lowering of the risk for depression and the increased longevity.

A new Strategy for the Protection of the Elderly and Active Aging ,was developed in the frame of Romania's National Reform Program, supported by European Structural and Investment Funds (ESIF. Romania's commitment to Active Aging Concept is a essential for achieving the goals of broader *Europe 2020 Strategy*. An important part of, this engagement aims to shape the attitudes and opinions of the Romanian society towards elderly and aging in general, to make it more permissive to new societal models, to challenging demographic, economic and social changing.

The guidelines of the new policies which define the Strategy are: to prolong life and achieve healthy living; to increase employment rates among the older population; to encourage the social participation of the elderly; to reduce dependence and the providing of long-term care.

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