



The Aging Workforce

AN ERGONOMIC APPROACH AND THE SITUATION IN MALTA

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Europe and Malta are experiencing slowed population growth and accelerated population aging. Malta has one of the lowest employment rates for older adults in Europe. The current article explores how workplaces should be modified to cater for older adults whilst also exploring the current situation in Malta.

INTRODUCTION

Increased longevity and reduced fertility rates, often well below replacement levels, have resulted in the slowing of population growth and accelerated population ageing throughout Europe. In particular, the aging of the post-war baby boomer demographic is expected to result in rapid increases in the frequency of older adults in the coming decades (European Commission [EC], 2014). Malta is no exception, population projections indicate that the Maltese population will become increasingly aged in the coming decades (National Statistics Office [NSO], 2011). Amongst the challenges posed by an aging population is the shrinking labour force. In fact, Malta and the EU are projected to move from having four working-age

people for every person aged 65-plus in 2008, to a ratio of two working aged people for every person aged 65 or over in 2060 (Formosa, 2013), however this ratio may be influenced by other external issues such as migration. Only three out of every ten individuals in the 'pre-retirement' age cohort (60-64) in the EU27 are in employment. Additionally, Malta has one of the lowest employment rates for older workers (aged 55-64) amongst the European member states (Eurofound, 2012) but is expected to see amongst the largest increase in older individuals in the workforce (Millar & Culpin, 2014).

The aging European population is expected to have huge economic ramifications including the greater need for long-term care facilities, difficulty in sustaining pensions and increasing public debt (EC, 2014). In view of this, the European Union has been urging the need for improved employment opportunities for older workers as far back as the 1994 EU summit. Additionally, the European Commission published a number of recommendations in 2012 which included: linking retirement age to increased life expectancy; restricting early retirement schemes; supporting longer working lives via improved access to lifelong learning; adapting the workplace to a more diverse workforce; developing employment opportunities for older workers and supporting healthy aging (EC, 2014). An integrated policy in order to deal with the challenges posed by an aging workforce is thus called for (Belin, Dupont, Oules, & Kuipers, 2016).

One approach to engaging older workers is via the development of national policies and interventions. Eurofound (2012) identified a number of such policies that had been implemented around Europe. These included: raising the statutory pension age; pension reform; reducing incentives for early retirement; anti-discrimination and diversity policy; promoting lifelong learning and skills development; financial incentives to employers to maintain and/or assist the re-entry of, older workers into employment; financial incentives which encouraged employees to remain in employment for longer; phased retirement schemes; and awareness and information campaigns to challenge age-related negative stereotypes and ageism. Such policies however, need to be coupled with organisation-level policy and interventions. For employers, this holds a number of benefits including: preventing the loss of expertise and skills; offsetting labour shortages in view

of the shrinking labour market; improving employee health and wellbeing; maintaining/improving work productivity; preventing the costs associated with absenteeism and early retirement; and boosting corporate image (Belin et al., 2016). In-view of the benefits of organisation-level policies and interventions, the following section deals with the development of such interventions and is followed by a discussion of the situation in Malta.

AGE-RELATED CHANGES AND ERGONOMICS

Ergonomics is the study of understanding the interactions among humans and the other elements of a system in order to enhance human well-being and performance (International Ergonomics Association, 2017). Proponents of this applied science advocate that work tasks, the work environment and wider organisational factors should be matched to individuals' physical, cognitive and psychological attributes. An ergonomic approach is thus useful to ensure that older workers can continue contributing to the world of work. The application of a holistic approach in order to tackle the aging workforce is not a new concept, Ilmarinen (2007 in EC, 2014) for example, noted that the employability of older workers depended in-part on their workability and stated that this depended on health and functional levels (physical), levels of competence including knowledge and skills (cognitive), values which included work attitudes and motivation (psychological) and work related factors such as the work tasks, environment and leadership. In view of this holistic approach, the common changes associated with aging are now considered in turn, along with some brief considerations of how the work system could be moulded to either minimise the negative changes, whilst also taking advantage of the positive aspects of aging. Positive modification of the individual however, such as through exercise, is also considered where possible.

PERCEPTUAL ABILITIES

Perceptual abilities tend to degrade with age, with visual and auditory changes amongst the most relevant in work settings. Visual changes can include deteriorating ability to resolve detail, to focus on close objects, and to adapt to poor lighting conditions such as glare and darkness amongst others. These can however be largely countered by corrective personal

aids and medical procedures as well as work design considerations. For example, in an office environment consideration could be given to the position of display screens, the size of the text, and the provision of a correctly lit work environment.

Auditory abilities are also affected by age, with auditory acuity and localisation, particularly for higher frequency sounds, and the ability to perceive speech deteriorating. Hearing aids and design considerations however can largely reduce the impact of these changes. For example, the use of high frequency sounds, such as in alarms and auditory notifications, should be avoided, whilst interventions to reduce background noise can be particularly useful (Boot, Nichols, Rogers, & Fisk, 2012).

COGNITIVE ABILITIES

Two important cognitive aspects which are negatively affected by ageing are selective attention and attentional capacity. Selective attention refers to the ability to be able to focus on different goal-relevant stimuli whilst ignoring those considered irrelevant. Attentional capacity on the other hand, refers to the amount of information individuals can cognitively process at a time. Decrements in both aspect of attention however can be attenuated by task-relevant training, as well as design measures such as the removal of task-irrelevant stimuli (Boot et al., 2012).

Changes in memory have also been illustrated with age. Memory used to process information that is currently being attended to (working memory) often deteriorates with age, as does the ability to remember events (episodic memory) and the ability to remember to carry out future tasks (prospective memory) (Boot et al., 2012; Zacks et al., 2000). Work design considerations however can aid in attenuating these changes. For example, tasks can be re-designed to reduce the need to remember information during task performance, importance should also be given to ensure that workers are not overburdened and cues could be provided to remind workers of upcoming appointments (Boot et al., 2012). Whilst certain cognitive processes do often slow down with age, this does not necessarily have to impact work performance as they are often offset by greater levels of experience and knowledge (Crawford, Graveling, Cowie, Dixon, MacCalman, 2009). In fact, minimal age-related changes occur in the

memory of facts (semantic memory) and skills (procedural memory) (Zacks et al., 2000). Additionally, some individuals, such as those who are more healthy, have higher levels of education and have complex challenging jobs, are more resilient to cognitive aging (Bosma, van Boxtel, Ponds, Houx & Jolles, 2003). This suggests that encouraging older adults to engage in physical activity (Barnes, 2015) as well as cognitive exercise (Morgan, 2004) via workplace health promotion interventions may aid in preventing cognitive decline. Older adults' greater levels of knowledge also highlights that they are a valuable source of experience that should be harnessed to educate less experienced employees.

PSYCHOLOGICAL ABILITIES

Research findings indicate that with increased age, individuals are calmer and experience less negative emotions (Scheibe & Zacher, 2013), whilst older employees also report lower levels of burnout and interpersonal conflict. It has been suggested that this may be due to older employees focusing on positive work experiences and avoiding or ignoring negative ones (Ng & Feldman, 2010). Additionally, whilst personality traits were traditionally viewed as stable and unchanging patterns of thoughts, feelings and behaviours (McCrae & Costa, 1994), recent cross-sectional and longitudinal aging research challenges this and illustrates that personality traits continue to change in adulthood. Social vitality and social dominance, two aspects of extraversion, show opposing changes: whilst social vitality appears to decrease slowly with age, social dominance appears to increase over time, particularly in young adulthood. On average, individuals become increasingly agreeable with age, with the largest gains seen in late adulthood. Conscientiousness also appears to increase steadily from adolescence until late adulthood, emotional stability shows the greatest gains in adolescence and mid-life, but continues to increase until late adulthood, whilst openness to experience shows great increases in adolescence and then demonstrates similar falls in old age (Roberts & Mroczek, 2009). The results have since been largely replicated (Willie, Hofmans, Feys, & De Fruyt, 2014) and this suggests that older workers are generally more pleasant, self-disciplined, and stable individuals. Consistent with negative changes in openness to experience, older

employees have also been found to be less open to training and career development opportunities (e.g. Ng & Feldman, 2012), however conflicting evidence does exist (Crawford et al., 2009). Older individuals learn more slowly than younger ones and when developing training, it is important to ensure that both the type and methods of learning are relevant (Crawford et al., 2009). Lundberg and Marshallsay (2007) for example found that older individuals preferred practical and one-to-one learning, as well as mentorship by older individuals. Additionally they viewed 'train the trainer' courses positively in order to assist them in passing on their knowledge when mentoring younger individuals.

PHYSICAL ABILITIES

Physical changes also occur with age. Commonly, increasing age negatively impacts upon movement speed, control, strength, balance and aerobic capacity (Boot et al., 2012; Truxillo, Cadiz & Hammer, 2015). Morgan (2004) however noted that whilst older adults have slower reaction speed, they monitor their actions more closely in order to achieve higher accuracy rates. This increased rate of accuracy however could be lost when employers impose excessively high work rates on older workers with little autonomy for adjustment and thus should be avoided. The impact that age-related physical changes could have in the workplace also depends on the design of one's tasks. For example, software controls can easily minimise the impact of speed and control decrements in computer users, such as by increasing the size of icons (to compensate for less accurate movements) and by adjusting the speed of the cursor and the speed by which one needs to double click. Adjustments to the indoor and outdoor work environment, such as maintenance, choice of flooring materials and correct lighting, can minimise the chance of falls. Consideration to the products purchased, such as tools, and their maintenance as well as introducing technology to limit manual handling can minimise the impact of reducing levels of strength in a variety of workers. The introduction of health promotion initiatives should also be considered however as physical activity can prevent or reduce many of the physical changes attributed to aging such as reductions in strength and balance (Crawford et al., 2009).

Older individuals have a greater need for recovery; this is particularly true for those exposed to high physical and psychological demands, as

well as those engaging in monotonous work and working longer hours (Crawford, Graveling, Cowie, & Dixon, 2010). Considerations should therefore be given to providing adequate breaks, job rotation, flexible working hours as well as reducing the demands workers are exposed to. Older workers are also generally more susceptible to heat stress. Rather than age per se, it is likely that this intolerance to heat at work is secondary to states common in older adults such as certain diseases, such as diabetes, decreased cardiovascular capabilities and decreased physical ability. In fact, healthy and well acclimatised older adults perform similarly to younger individuals when subjected to hot conditions (Crawford et al., 2010; Pandolf, 1997). Despite this, interventions should be carried out to avoid work in excessively hot conditions and can be achieved via a number of methods such as cooling environments, providing shading or carrying out work at less hot times of day. Consideration however should also be given to conducting medical screening of employees to ensure that older individuals are medically fit to work in hotter environments.

THE SITUATION AND ORGANISATION-LEVEL INTERVENTIONS IN MALTA

A Eurobarometer report (EC, 2012) probed the state of active aging in Europe. The report suggested that Maltese individuals considered themselves as 'old' at 65.2 years, which was above the EU average of 63.9. Additionally, the percentage of the Maltese cohort who considered themselves as 'very satisfied' with their health, functional ability, life in general, personal relationships and living conditions was greater than the EU average, suggesting that the Maltese in general enjoy above average health and quality of life. Despite this however, the report also highlighted that the Maltese cohort felt that they could continue in their current job until the age of 57.3, which was not only lower than the EU average of 61.7, but was the lowest age in the EU. In view of the better than average health and perceived favourable aging reported by the same cohort, this result suggests that Maltese workplaces may not be providing an environment conducive for older workers to continue contributing and suggests the need for relevant ergonomic interventions. Additionally, the 6th European Working Conditions Survey (Eurofound, 2015) indicated that Maltese participants scored lower than the EU average on both the 'self-reported

ability to work until the age of 60 by respondents aged 55 and under', as well as the 'self-reported ability to work in five years' time by respondents aged 56 and over', further emphasising this point.

The same Eurobarometer study (EC, 2012) also analysed European individuals' perceptions of older workers. Overall the Maltese sample demonstrated favourable perceptions of older workers: 71% of individuals felt that people 55 years and over played a major role in the economy; 76% felt that individuals in this age group contributed as workers. Both of these scores were greater than the EU average. Additionally, compared to the EU average, a greater percentage of Maltese felt that compared to younger individuals, those aged 55 and above were more likely to be: experienced; reliable; find it easier to take decisions on their own; able to find solutions to problems; able to work well with other people; able to get on with people from different cultural backgrounds; and open to new ideas. However, the Maltese cohort scored below the EU average in their opinion of older workers' ability to: handle stress; productivity; flexibility; creativity; and up to date with technology, when compared to younger individuals (EC, 2012).

Twenty per cent of Maltese and EU respondents reported experiencing or saw age discrimination at work. When questioned on why individuals aged 55 and over may stop working, 75% felt that exclusion from workplace training was a reason (greater than EU average) whilst 70% stated that employers did not view older workers positively (equal to EU average). Furthermore, less Maltese than the EU average wanted to continue working once they reached pensionable age (23% versus 33%) and found a part-time job with a partial pension instead of full retirement appealing (47% versus 65%) (EC, 2012).

The findings of the Eurobarometer study indicate that older workers were thus generally perceived positively by the Maltese sample in terms of workplace contribution, experience and camaraderie. This mirrors the positive age-related changes previously discussed which included increased knowledge and positive changes in character. Negative stereotypes however were also evident with views that older workers were less able to handle stress, less up to date and less open. In a study of older aviation workers in Malta, Agius (2005) found that most felt that they did not lose their abilities, were not harder to train, and were not less productive. Most however, agreed that they were slower to adapt to change.

The low percentage of individuals who felt that they wished to continue working beyond pensionable age is interesting in view that Aristovnik and Jaklic (2013) found that Maltese older workers had the highest level of job satisfaction of all EU older workers, whilst a study of pharmaceutical workers in Malta identified that it was the older workers who were most work engaged (Jones, 2015). This negative view of working in older age may be linked to the perceived difficulty of doing so, in view that many did not feel capable of carrying out their current job beyond the age of 57.3, highlighting the need for workplace interventions, however it may also be due to perceptions that older adults were not well regarded by employers and were excluded from training. In fact, in a study of Maltese manufacturing employers, Spiteri (2012) reported that older employees were less likely to be trained in health and safety because employers felt they were already experienced or because they felt training was not suitable for them as they preferred hands-on training. Additionally employers felt that older employees were resistant to training. However a study of older aviation workers in Malta found that they were positive about undertaking training, however 76% did not feel that this was held at their pace (Agius, 2005). This is consistent with findings that older adults learn at a slower pace and thus training needs to be adapted to the learner. It appears that Maltese employers may not be giving this importance, resulting in older learners who are disappointed by learning events, whilst employers develop negative perceptions about older individuals' ability to learn.

Very few studies appear to have been carried out that analysed age-related organisational-level changes in Malta. Principi and Lamura (2009) found that Maltese companies that aimed to attract older workers primarily promoted flexible work practices and fostered positive cultural change by implementing training programmes including those which involved skill transfer programmes from older to younger individuals. The study however concluded that little had been done in terms of ergonomics, job re-design and health and safety. Spiteri (2012), who analysed how a small sample of manufacturing organisations tackled health and safety for older workers reported that older workers were sometimes offered reduced or part-time hours, whilst also reporting some examples of modified job equipment and job rotation.

CONCLUSION

Aging often presents older workers and their employers with some challenges, such as decrements in perceptual abilities, physical capabilities and certain aspects of attention and memory. These challenges however can be largely negated via holistic organisational-level interventions which match the capabilities of individuals with those of their tasks, environment and wider organisational factors. An effort should also be made to encourage employees to maintain and improve their level of health so as to minimise negative age-related changes as much as possible. Consideration should therefore be given to: the introduction of health promotional activities, such as exercise; the provision of personal aids such as spectacles; and the implementation of interventions which analyse and introduce task, environmental and wider organisational modification. Aging however is also associated with a number of advantages such as positive changes in personality, enhanced work experience and increased task accuracy. Employing and retaining older adults therefore may benefit organisations via the provision of skills which can be passed on to younger and less experienced employees, may aid in fostering a positive organisational climate, and may assist an organisation in boosting its performance and image.

Many of the modifications that benefit older workers benefit workers of all ages. All employees benefit from better lighting, the re-design of unnecessarily complex tasks, the avoidance of excessive heat, the provision of adequate breaks, the maintenance of tools and the environment amongst others. Engaging in holistic ergonomic changes therefore may not only allow older employees to continue contributing to a company, but may also boost general organisational performance, employee retention and make the organisation a more attractive employer.

Whilst studies suggest that the Maltese enjoy above average levels of health and quality of life, below average amounts of Maltese chose to continue working in older age. This may in-part be due to the need for organisation-level change. Few examples could be found of ergonomic change in Maltese workplaces and it is evident that in-view of Malta's aging population, the country as a whole would benefit from more consideration being given to age-related workplace modifications. These must not be

limited to the provision of equipment but must also include the re-design of work tasks in-view of age-related changes, the provision of a healthy work environment, relevant organisational policies such as flexible working, the provision of age- relevant training, and the introduction of anti-ageism policies and health promotion initiatives.

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