
Age is certainly more than a number when it comes to the workplace. It shapes every aspect of what we do and how we go about it.

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HUMAN RESOURCES • WORKPLACE STRATEGY • PROPERTY

Age, office type, job satisfaction and performance

Age is everything but a number, as it covers individual changes in physical, mental, social and societal aspects; factors that influence people's perceptions and expectations in life. This research focuses on ageing in an environment which normally covers a long period of time in life: the workplace. The aim of this study is to get insight into the influence of age in relation to the experience of the office environment and job performance. A differentiation will be made between traditional cellular offices with assigned places and flexible office concepts (i.e. more open layouts with non-assigned places and multiple age groups will be distinguished).

It is important to emphasize the effects of ageing on an individual performance level as well as on an organizational performance level. The results can help organizations to anticipate the possible difficulties people from different ages encounter in general in their work environment. Also, these findings can give organizations insight into how the preferences of employees of different ages can be taken into account.

The results will lead into suggestions for making the work environment attractive for employees of all age groups and to recruit or retain talented and valuable employees. Overall, the outcomes will be supportive for decision-making regarding optimization or adaptation of the current or new office environment.

Changing environment

The world population is ageing rapidly. The proportion of the world's population over 60 years old will increase between 2000 and 2050 from about 11% to 22% (WHO, 2013). Ageing in The Netherlands is mainly a consequence of the post war baby boom and the following increase in births until around 1970. At present, the number of people from 50 to 65 years old is growing rapidly; and this increase in the number of elderly people sets up some interesting challenges within the work field, at least in the short term. Likewise, in the long term, the retirement of the baby boom generation will probably lead to other

challenges, like a temporary shortage of employees, vitality for the other generation expecting a higher retirement age (67 or plus), the demand for young and talented people and the need to sustain a quality knowledge base within the organization.

In 2010, 60% of the public organizations in The Netherlands are expected to encounter problems with attracting enough suitable employees as a result of the ageing population (Netwerk Organisatie & Vergrijzing, 2010). The largest ageing related problems people foresee in public organizations are the loss of knowledge, lack of motivation and willingness to change with respect to older employees, lack of internal mobility and a loss of younger employees (related to the lack of internal mobility). As almost every organization has to deal with this insurmountable phenomenon, it is important to face these ongoing issues.

At the same time, technological and strategic developments trigger shifts within the workplace environment. Reasons that give cause to these changes, are mostly related to 'always positive' expectations of increased revenues (e.g. the employee productivity, satisfaction, image)

and expected reduction of costs (e.g. facility and building related costs, IT, traveling expenses) (Baane, 2010). These issues translate to the workplace in such a way, at least in the Netherlands, that currently a shift is going on from traditional cellular offices (a combination of the cell office and small shared room office, in which all employees have an assigned desk) to more open and transparent offices with activity based workplaces, meaning that people use workspaces according to their presence and activities. As a consequence, increasingly people must be able to work in a flexible manner while no longer using a personal desk.

The flexible office is an innovative office type with an open and transparent character. Yet, it is not comparable to an open-plan office since it is based on a mix of spaces (e.g., open and half-open spaces, additional open and enclosed "back up" areas for individual concentrated work, telephone calls and for a variety of communication and conference activities). Possibilities for communication often include enclosed formal

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meeting rooms, open informal meeting areas, coffee corners and lounge seats.

There are also shared facilities, like printing areas and lockers. Generally the number of available places per FTE is between 0,7 – 0,9. This means that there are no assigned workstations anymore and people are expected to clear their desk every time they leave a workstation for more than a few hours, so that their colleagues can make use of it.

The flexible office concept is very popular in the Netherlands, since it does account for an efficient use of office space (as defined in square metres). Other motivations that are often heard are related to an expected improvement of communication and social interaction, and a positive effect on productivity and innovation. The development goes hand-in-hand with technological developments which make it possible to work at any place you want, within the office but as well as outside the office.

So far so good, it seems. But do such developments in the work environment match up with the assumptions, and with the experiences of all employees? It is questionable if a flexible office is the right environment for everyone. According to the person-environment fit theory, people will achieve a higher level of satisfaction and mental and psychical well-being when they experience a match with their environment (e.g. Holland, 1997).

Research shows that individuals are satisfied with, and adjust most easily to, jobs when they are congruent with their own career-relevant personality types (Spokane, 1985; Tinsley, 2000). It is known that job content characteristics leads to more job satisfaction and motivation, which lead to better performance (Hackman & Oldham, 1975; Morgeson & Humphrey, 2006). How do the different office concepts fit employees of different age groups? Also, design questions need to be asked about the supply of workplace solutions that support the broad diversity of employees' demands.

Challenges of ageing at work

With the phenomenon of ageing come additional issues related to the workplace. What are the possible challenges people can encounter on the work floor as a result of ageing, and in what perspective does that place the popular flexible office concept?

It is not as easy as it seems to define 'young' and 'aged'. A distinction can be made in chronological, functional and psychosocial age. A definition of chronological age which is often used in studies, is one based on the Age Discrimination in Employment Act (ADEA). Herein workers aged 40 and older are protected against age discrimination. However, there are

studies in which ages from 55 or even 65 years are used to define 'aged' people.

The difference in these numbers reflects the fact that it is very difficult to identify a specific age on which individuals are older. One of the reasons is that the needs, values, skills and health of older people can differ widely (Baltes & Baltes, 1990). Besides that, they often vary greatly in response to ageing. Many of the older workers remain fully functioning in the workplace (Hursh, Lui & Pransky, 2006). Often the terms "successful" and "normal" ageing are mentioned to describe the ageing process of people. The people who are ageing successfully, generally experience a low probability of disease, high cognitive and physical functioning and an active participation in life (Rowe and Kahn, 1997).

A study by Cleveland and Shore (1992) shows that age may be a predictor of performance in a negative way, but that age usually only explains a small part of the total variance. The problems which come along with ageing don't seem to influence the overall work performance directly (e.g. McEvoy & Cascio, 1989). Apparently, many of the elderly are able to adapt or compensate for age-related challenges (Hansson, Robson & Limas, 2001). According to Schkade and Schultz (2003, see Moyers & Coleman, 2004) the ability of older workers to properly deal with the challenges in the workplace depends primarily on the total experience of the person in order to successfully adapt.

However there might be differences in ageing between people, we cannot escape from the fact that the cognitive functioning of people generally declines during a lifespan. For example, there is a relationship between sustained attention and age (Mani, Bedwell and Miller, 2005). Both older and younger subjects performed worse on a task when exposed to noise in comparison to subjects who were sitting in a quiet room. However, it turned out that with increasing age a poorer performance outcome occurred on the attention task.

Also, people over 62 years old are more sensitive to auditory distraction than young adults (Hasher et al., 2007; Horváth et al., 2009) and older people have poorer speech understanding than young people when experiencing a similar level of background noise (Wegman & McGee, 2004). In some cases, older people are more sensitive to visual distraction as well. In correspondence with the former results a study revealed that elderly are easier distracted while reading than younger subjects (Li et al., 1998).

Youngsters have a natural goal to gain knowledge, in friendships (O'Reilly, Chatman & Caldwell 1991), but they also find this an indispensable attribute when they are looking for a job (Corporaal, Riemsdijk, Kluijtmans & Vuuren, 2012). The latter

Features	<31 years	31-40 years	41-50 years	51-60 years	> 60 years
<i>Sharing own ideas about working environment</i>		- **	- **	- **	- **
<i>Accessibility of the building</i>		+ **	+ **		
<i>Architecture and appearance of the building</i>	+ **	+ **	+ **	+ **	+ **
<i>Subdivision and overall layout of the building</i>	+ **	+ **	+ **		
<i>Number and diversity of spaces</i>	+ **	+ **	+ **		
<i>Adjacency and locality of the spaces</i>		+ *		- **	- **
<i>Openness and transparency of environment</i>	+ **	+ **	+ **	- **	- **
<i>Functionality and comfort of the workspaces</i>	+ *		- **	- **	- **
<i>Interior design appearance and ambiance</i>	+ **	+ **	+ **	+ **	
<i>Privacy</i>	- **	- **	- **	- **	- **
<i>Opportunities to concentrate</i>		- **	- **	- **	- **
<i>Opportunities to communicate</i>	+ *		+ **	- **	- **
<i>Archive facilities</i>		- **	- **	- **	
<i>ICT and ICT supporting services</i>		- **	- **		
<i>Facility services</i>	+ *				
<i>Indoor climate</i>	- **				
<i>Light</i>	+ **				
<i>Acoustics</i>		- **	- **	- **	- **
<i>Opportunities for remote working</i>	+ *	+ **	+ **	+ **	
<i>Overall value office concept</i>	+ **	+ **	- *	- **	- **
<i>Overall value pleasant work environment</i>			- **	- **	- **
<i>Overall value support of productivity by environment</i>		- *	- **	- **	- **

*Overview of the ratings of respondents working in a flexible office concept, compared to the rating of respondents working in a cellular office concept. Meaning of signs: + flexible office higher rated than cellular offices, - flexible office lower rated than cellular offices. ** $p \leq 0,01$ * $p \leq 0,05$.*

also found that young people search for jobs that include the following favourable job characteristics; organizations have to offer challenges tasks, variability in activities, autonomy and flexibility regarding to time and place. When Dutch employers where asked for their vision towards younger workers, it turned out that they are characterized by skills with new technologies, physical capacity, flexibility, creativity and mental capacity (Dalen, Henkens and Schippers, 2007).

This general deterioration of prolonged attention might cause concentration problems for older employees in the flexible office concept, because the workspace is more open and transparent compared to that of a cellular office. At the same time, flexible office environments seem to fit quite well to the preferences and characteristics of younger employees.

Research Method - present study

This research work aims for an improved understanding of employee satisfaction and the importance of age and different office concepts. Two factors are of special interest for exploration of their influence in this study: 1) age, and 2) the office concept.

The Work Environment Diagnosis instrument (WODI) is an online questionnaire developed for measuring employee satisfaction with the working environment (Maarleveld, Volker & Van der Voordt, 2009). WODI was used in many case studies to measure satisfaction about a broad range of aspects of the physical work environment and perceived productivity support.

The employees of the participating organizations received an e-mail invitation to complete the online questionnaire. The questionnaire consists of 41 standardized items in total. In

some case studies additional questions were added if relevant to the concerning case study.

In this study, 19 items were used for analyses. Most of these items are about satisfaction with the lay-out of the building and direct working environment, privacy, concentration, communication, technical aspects, facilities, remote working and services. The items that were left out in the analyses are considered less relevant in the context of the current study or because they are case specific. The left out items are i.e. about the job description and department of the employees, the occupation and use of the available spaces and the importance that people attach to certain aspects of the office.

The following 19 items, about which the respondents were asked to rate their satisfaction levels, were used:

- Sharing ideas about the work environment.
- Accessibility of the office building.
- Appearance of the building's exterior.
- Most of these items are about satisfaction with

the lay-out of the building and direct working environment, privacy, concentration, communication, technical aspects, facilities, remote working and services.

- Number and diversity of the places.
- Lay-out of the spaces.
- Openness of the work environment.
- Privacy.
- Functionality and comfort.
- Ambience and interior design.
- Opportunities to concentrate at work.
- Opportunities for communication.
- Archive facilities.
- IT facilities.

- Facility services.
- Indoor climate.
- Light.
- Acoustics.
- Possibilities for remote working.

These questions were answered on a 5-point Likert scale ranging from very dissatisfied (1) to very satisfied (5). Three other items were used which gain insight into the overall evaluation of the total office concept, the pleasantness of the working environment and the extent to which the work environment supports productivity. The questions were answered on a 10-point scale ranging from a very negative evaluation (1) to a very positive evaluation (10).

For the analyses, a dataset collected by the Center for People and Buildings (CfPB) with the WODI was used. Only the respondents who work in a traditional cellular office or innovative flexible office were selected for the current analyses. This resulted in a dataset with 12,574 respondents derived from 83 different case studies, executed from 2007 until 2013. From the respondents, 6403 (50,9%) work in a cellular office type and 6171 work in a flexible office type (49,1%). All employees in question fulfilled white-collar functions, varying from administrative and supportive functions to research and management functions.

The 83 WODI Light case studies were conducted within 28 different organizations from which seven organizations in the public sector, eight organizations in the semi-public sector, seven higher educational institutions and six commercial organizations.

People were divided into five age groups: 'under 31 years', 'between 31 and 40 years', 'between 40 and 50 years', 'between 50 and 60 years' and 'over 60 years'. Furthermore, the respondents were assigned to one of the two office concepts that are distinguished in the study: traditional cellular structured office with assigned desks, and the innovative multi space office with flexible use of workspaces (hot-desking).

Results

When comparing respondents working in flexible offices versus cellular offices within a particular age group, we find that the youngest age group (< 31 years) evaluates the flexible office concept on most aspects more positively than the cellular office concept. So the younger respondents seem to favour the flexible office concept. For the older respondents, this is the other way around: they are generally less satisfied with the work environment when working in a flexible office concept compared to those working in a cellular office (table opposite page).

Overall we can see that aspects related to the architecture and layout of the building and workspaces, is rated neutral or more positively by people working flexible offices. However, we can also see that in all age groups, people in flexible offices are less satisfied about the aspect privacy. And except for the

youngest age group, this is also the case for the possibilities to concentrate, archive facilities, ICT, acoustics and the support of productivity by the work environment.

When comparing the scores of the respondents from different age groups working in a flexible office concept, results show that younger respondents generally have much higher scores compared to the older respondents. This is not at all true when it comes to the cellular office concept: both the youngest and oldest aged people are relatively satisfied with the work environment in this office type.

Conclusions

The results show that there are large differences in the assessment of the two office types between different age groups. Younger employees (<31 years) are more positive about the flexible office compared to the cellular office. While these younger respondents favour the flexible office type, they are however also quite satisfied about the cellular office type compared to the other age groups. The results show that the older the respondents are, the more negative they seem to get about the flexible office.

Overall, some general positive and negative points for both office types arise in each age group. The flexible office type scores highly in all age groups on aspects related to the architecture and layout of the building and workspaces. However, we can also see that privacy is a negative point in the flexible office according to respondents from all age groups.

And, except for the youngest age group, the respondents have lower scores in flexible offices on the possibilities to concentrate, archive facilities, ICT, acoustics and the support of productivity by the work environment.

When deciding about office type the organization could

use the flexible office as a factor to attract and retain young employees. When the organization's demographics show a larger proportion of younger employees, the change towards a flexible office type should not cause too many problems, while the additional space (and cost) reduction is an advantage to the whole organization.

When demographics show a considerable amount of older workers, the level of flexibility in the office design should be considered as a critical factor for the "penny wise pound foolish" - effect. In this effect a considerable loss of peoples' productivity has to be evaluated against a relatively minor cost reduction in rental cost.

To overcome this, we should design offices with the needs of the generations in mind. In flexible offices, attention should always be paid to aspects like privacy, possibilities to concentrate at work and acoustics, since these aspects are general points of concern in flexible offices, especially for older workers.

The second issue is the implementation process when changing office layout. The expectations of employees about the new working conditions might be indicators for the issues

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at stake. The 'why and how' questions need to be addressed. When changing to a flexible office concept, extra attention and assistance should be there to listen to and answer the needs of older employees.

This research points to certain issues that need to be taken care of, both in the design of office layouts and in the development of awareness when implementing other layouts and concepts of use. **W&P**

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Editor's footnote:
Commentators may focus on the impact of Generation Y on the workplace but the reality is far more complex as Wim shows here. The workplace of today and tomorrow is not only multi-generational but has a wider age range.