



The role of employers opinions about skills and productivity of older workers: example of Poland

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Abstract

Purpose – The purpose of this empirical paper is to investigate the employers' perception of productivity of older workers in Poland with comparison to the younger ones. The paper examines whether various factors including employee's skills and company policies play a role. The findings were compared with situation in the Netherlands, discussing the differences.

Design/methodology/approach – Data come from 2009 representative survey (CATT) of 1,037 Polish companies. Supervisor' rating method was used for assessment of workers skills and productivity. Primary analysis are linear regression models with employer's assessment of productivity of older and younger workers as dependent variables.

Findings – In case of older workers, higher assessment of soft skills is the most influential factor for explaining the assessment of productivity, while hard skills play smaller, yet not minor, role. In case of younger workers the relation is reversed. Age management aiming at improvement of older workers' job performance correlates with higher rating of their productivity.

Research limitations/implications – Cross-sectional researches in the case of age-group comparison may be biased by the cohort effect.

Practical implications – The paper brings forth important implications for policy makers and employers who will have to deal with the challenge of an aging and shrinking workforce. They refer to lifelong learning, system of public health, age management. The most important conclusion concerns the negative influence of age-related stereotypes for the labor market situation of older workers.

Originality/value – The paper presents data from the first research aimed at employers' views of older workers in Poland. The paper extends the knowledge about relation of employers' opinions, their actions and situation of older workers.

Keywords Skills, Poland, Productivity, Age management, Employers, Older workers

Paper type Research paper

1. Introduction

From an employer's standpoint, one of the worker's key values is his or her productivity. Even if age does not directly and straightforwardly influence job performance, older age is usually perceived as a phase of lower productivity (Silverstein, 2008). If work performance is indeed low and the costs of older workers are high, the employer faces a situation of so-called "wage-productivity gap" where workers are paid higher than their job performance level. It was the subject of many



studies in the past and the most important explanations for the growing divergence between wages and productivity in older age were proffered by: the classical human capital theory (e.g. Mincer, 1958; Becker, 1964/1993; Ben-Porath, 1967); the so-called “Lazear contracts” (Lazear, 1979; Medoff and Abraham, 1980, 1981; Hutchens, 1987); or seniority rules (Medoff and Abraham, 1980, 1981; Carmichael, 1983; Hutchens, 1987, 1989; Dustmann and Meghir, 2003).

And yet, despite these explanations, the growing disproportion between productivity and wages in older age negatively affects both the labor demand and labor supply side. Notwithstanding their real potential and performance, negative employer opinions (or stereotypes) can have an impact on the situation of older workers in firms and they are often seen as the crucial barrier against employment (Munnell and Sass, 2008). Employers preferring younger and/or mid-age (usually cheaper) workers would neither invest in the development of older workers nor in long-term age management, career planning or training programs (Taylor and Walker, 1994, 1998). Reduction in the number of older employees may be considered an effective way of dealing with company problems and a tool for cutting labor costs. For older employees, the unfavorable attitude of employers can negatively influence the overall work atmosphere in the firm and workers’ well-being, and may result in a lack of interest, drop in motivation and productivity, and as a consequence, the decision to retire (Harper *et al.*, 2006). It may also lower the chances in the labor market for older persons seeking a job. The problem gains particular significance when the eligible and effective retirement age is to be postponed by public policy reforms (Skirbekk, 2004; Van Dalen *et al.*, 2010).

In light of an aging and shrinking workforce, the analysis of productivity and its conditioning is especially important. Productivity was usually considered an economic indicator of individual or group performance at work (Neal and Hesketh, 2001). We will look at it from a wider perspective, as an outcome not only of individual capabilities but also work type, management and work environment. Thus, in the following paper, we investigate the attitudes of employers toward older workers and how they see their skills and productivity. We also analyze its relation to the age management strategies implemented in a company. The findings may lead to drawing up implications for managing an aging workforce at the company level and the shape of public policy toward older workers in aging societies.

We focus on data for Poland, based on the first representative research aimed at gauging employers’ views of older workers in Poland, conducted in 2009. However, an important phase would be a comparison of our results with research from the Netherlands by Van Dalen *et al.* (2010) that used a very similar methodology. It will help us consider if the observed trends are specific to Poland’s post-transitional labor market or similar to the situation in a relatively older western European country like the Netherlands, where the labor market situation of older people presents much better options than that of Poland.

The paper begins with the presentation of a conceptual framework and theories on the relationship between age, skills and job performance. The next part deals with the methodology and data, followed by the presentation of the results and discussion.

2. Productivity, skills and age

As mentioned in the introduction, many researchers have indicated that general work ability, job performance and productivity often decrease with old age, which can result in the wage-productivity gap (Becker, 1964/1993; Lazear, 1979; Medoff and Abraham,

1980, 1981; Hutchens, 1987). However, older age does not have to be a period of lower effectiveness. The individual's work performance does not depend only and directly on age, but is rather mediated by different factors that may vary along with the processes of aging (Skirbekk, 2004, 2008; Engelhardt *et al.*, 2010; Silverstein, 2008). Such a perspective requires a broader approach. We will interchangeably use the terms individual productivity, job performance, effectiveness and efficiency to describe the ratio of outputs produced by employees to resources required to produce it (for more, see Neal and Hesketh, 2001). The focus will, however, be directed to the sources of productivity: both individual capabilities and situational factors like work type, age management and work environment. Such a perspective is closer to the notion of work ability (Ilmarinen and Tuomi, 1992; Ilmarinen, 2001, 2009). It is the outcome of a set of individual and situational factors, i.e. a combination of individual capabilities, formal education, values, attitudes and motivation with work demands, management and work environment.

Since the 1970s, psychology and medicine have broadened the understanding of individual determinants of productivity and changes in the functioning of the human body and brain at different stages of life. Scientific studies evidenced decreasing age-trends in various abilities (Kalwij and Vermulen, 2008; Kenny *et al.*, 2008). There is no doubt that general health, physical strength and flexibility, sensory abilities, speed and many other physical functions decrease with age. Nevertheless, the importance of physical work is declining in the contemporary economy. Instead, cognitive abilities become more important. Some cognitive abilities tend to decrease with age, what may be associated with structural changes in the brain, while others are relatively stable or may even increase (Arking, 2006). Warr (1994), Skirbekk (2004, 2008) and others refer in this context to the Cattell-Horn theory of intelligence which differentiates between crystallized and fluid abilities (Cattell, 1943; Horn, 1967). The first one, accumulated throughout life, concerns knowledge and skills in terms of the meaning of words, reading comprehension, the ability to retrieve familiar information, verbal skills and size of vocabulary. These abilities are accumulated during the whole lifecycle by learning and experience, and therefore it is the main source of effective intellectual functioning in older age. Fluid abilities include learning abilities, perceptual speed and reasoning abilities. Contrary to the previous one, it is significantly reduced in older age.

The major productive asset of older workers is experience, representing generally: job knowledge (Blakemore and Hoffman, 1989), practical knowledge (Sternberg, 1984, 1985), tacit knowledge (Polanyi 1958/1962; Sternberg and Horvath, 1999; Collins, 2010), expertise (Warr, 1994) or specific human capital (Becker, 1964/1993). Experience helps with functioning in a known environment, understanding problems, dealing with everyday tasks and making use of mechanisms ruling this environment. It always covers, however, a limited field of specialization, outside of which it may be useless. Workers tend to become domain-specific experts with tenure, but when it comes to significantly new settings or new duties (e.g. fast technological changes) requiring high learning and adjustment abilities, they may experience more problems and perform worse than younger individuals (Munnell and Sass, 2008).

Productivity does not depend on individual characteristics alone – it can also be supported or limited by external factors. Warr (1994) distinguished four types of work which can influence positively, negatively or neutrally productivity in older age. What is even more important is that appropriate age management and measures may enable a better use of the employee's potential, increase motivation and loyalty as well as general performance in older age (Casey *et al.*, 1993; Walker, 1998). Here, we come to

the role played by the employer's opinion. Employers, like all human beings, often act based on presumptions, experience, intuition or – sometimes – stereotypes. Stereotyping is a natural work-saving practice of the human mind, but may lead to false beliefs and unjustified generalizations, even prejudices. Negative stereotypes about the abilities and productivity of older workers compared with younger workers are critical barriers to the employment prospects of older workers (Van Dalen *et al.*, 2009), may influence employers' decisions, and can have an impact on age management practices (Warr, 1994). Loretto and White (2006) found both positive dimensions in the opinions of Scottish employers toward older workers (like enthusiasm, commitment, better work ethic, superior interpersonal skills and scarce skills) and negative ones (ill-health and lower productivity). They assume a causal link between negative employers' attitudes toward older workers and their discriminatory practices. However, positive attitudes toward older workers did not often translate into positive practices (Taylor and Walker, 1998). According to the theory of age-typed jobs by Oswick and Rosenthal (2001), workers are judged by employers according to the fit between their assumed attributes and the requirements of a particular job. Employers' ageist attitudes may result in the assumption of a "lack of fit" between the abilities of older workers and the job requirements, what is reflected by discriminatory practices toward older workers. However, some jobs requiring, for instance, stability, loyalty or experience could be considered more appropriate for older employees.

3. Methodology

Measurement

In this research, we investigated employers' opinions about productivity and skills of their younger and older workers. We adopted the approach of Van Dalen *et al.* (2010), who investigated opinions and stereotypes of Dutch employers about older workers. They distinguished two types of skills: hard and soft. Hard skills include creativity, mental and physical abilities, capacity to deal with workload, willingness to learn new skills and adapt to new technology, and flexibility. Soft skills include such elements of job performance as social skills, reliability and commitment, accuracy, and customer-oriented skills. Their method referred to the approach of a subjective supervisor's or employer's rating adopted from Taylor and Walker (1994, 1998), which has since been extensively applied in various forms (Henkens, 2000; Chiu *et al.*, 2001; McGregor and Gray, 2002; Harper *et al.*, 2006; Loretto and White, 2006; Kluge and Krings, 2008; Wei and Richardson, 2010). Naturally, individual perception of skills and productivity of other employees may not reflect their real abilities, and may be biased by personal relations, ignorance or stereotypes. This, however, does not represent a disadvantage that may discard its explanatory potential in studies over workers' situation if the aim is to investigate the opinions of employers.

In our research, we asked respondents for an evaluation of ten abilities (including productivity) of their workers with the following questions: "To what extent, in your view, do the following characteristics apply to workers aged 50 years and older?" with answer (1) no/low extent (2) some extent, (3) high extent and (4) very high extent. The same question was asked concerning the perception of younger workers aged < 35.

Sample

We used data from a nationwide and representative quantitative survey of Polish companies conducted in 2009 within the project Activating Senior Potential in Ageing Europe (ASPA), financed by the EU under the 7th Framework Programme[1]. This was

the first such broad study among Polish employers on population aging and the situation of older workers in the labor market. The Polish survey was conducted between June and July 2009 via the use of telephone interviews (CATI) by TNS OBOP on a national representative sample of 1,037 companies and institutions in both the private and public sector, employing a minimum of ten people. The sector included segments of production, trade and services, as well as public services[2]. Agriculture was not included. In all, 41 percent of the surveyed companies belonged to the public sector, while 59 percent belonged to the private sector. Totally, 83 percent of the respondents were directors, deputy directors, owners, human resources managers, chief accountants or other high-positioned people in companies. The response rate (for valid sample units) was 38 percent[3]. We used weights for different probabilities of inclusion, non-responses and post-stratification to resemble the number of Polish companies. Detailed sample characteristics are presented in Table I.

4. Findings

Hard and soft skills

Among companies examined in the ASPA research (hiring a minimum of ten workers), the average share of employees aged 50 + equaled 22 percent. A higher percentage was

Category	%	<i>n</i>
<i>Sector (ownership)</i>		
Public	41	430
Private	59	608
<i>Size</i>		
10-49	68	709
50-249	28	286
250 +	4	41
<i>Sector of primary activity</i>		
Production (C-F ^a)	39	405
Services and trade (G-K ^a)	38	395
Public services (L-O ^a)	23	237
<i>% of workers 50 +</i>		
≤0	9	92
1-5	13	133
6-25	43	444
26-50	26	272
51 +	8	81
<i>Age of respondent</i>		
≤35	27	283
36-49	37	385
50 +	34	351
<i>Position of respondent</i>		
Human resources manager/HRO	46	480
Head of a department/deputy director/chief accountant	19	195
Director/CEO/CFO	18	188
Administration employee/accountant/HR employee	16	162
Other	1	10
Total	100	1,036

Table I.
Sample characteristics

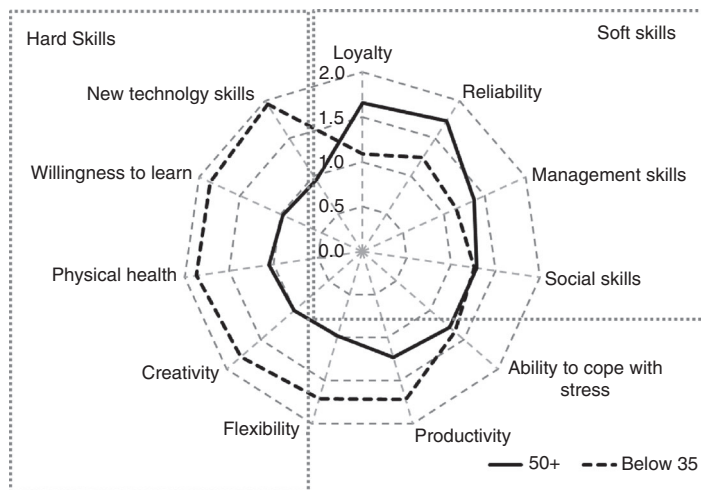
Note: ^aSectors according to NACE Rev. 1.1
Source: ASPA (2009)Poland Survey 2009

noticed in the public sector (28 percent) compared to the private sector (18 percent). Additionally, one third of employers expected an increase in the number of workers 50+ within the next five years.

According to Polish employers, the average age at which a person would be too old to work 20 hours or more (in a week) is roughly 64-65[4]. Whereas, the age at which a person would be too young to retire is considered on average to be 55[5]. Based on other analyses of the ASPA data, it may be assumed that most Polish employers are not advocates of extending the working life period. Only 20 percent would support an increase in the eligible retirement age, while almost half were against the limitation of early retirement privileges. Thus, an important question regarding the conditions that Polish companies offer to older workers is the employers' opinions over 50+ workers (Figure 1).

Employers' perception of older (50+) and younger (<35) workers' skills is not surprising, as most of the skills of the younger ones were rated significantly higher, i.e. new technology skills, willingness to learn, physical health, creativity, flexibility. On the other hand, workers 50+ were considered to have better management skills, more reliable and loyal. Social skills and the ability to cope with stress were rated similarly (no statistically significant difference). What is important is that the productivity of older workers was assessed significantly lower (about half a point in four-point scale) than for workers below 35.

In order to reduce the dimensions of skills and investigate if a similar pattern as in Dutch studies (Van Dalen *et al.*, 2010) occurs among Polish employers, we conducted a factor analysis. It revealed two clear dimensions, both for workers below 35 and 50+. The first one included: creativity, physical health, new technology skills, willingness to learn and flexibility. The second one comprised: social skills, management skills, reliability and loyalty[6]. They reflect, respectively, hard and soft skills dimensions, corresponding directly to the findings of the Dutch team. Table II presents the mean



Notes: The extent that skills apply to workers rated in four-point scale, where 0-no/low extent; 2-some extent; 3-high extent; 4-very high extent

Source: ASPA Poland Survey (2009)

Figure 1.
The average ratings of
skills of workers aged
below 35 and 50+ made
by employers

Table II.
Mean ratings of older and younger employees' skills (hard and soft skills scales are based on factors)

	Productivity (mean from 1 to 4)		Hard skills (mean from 1 to 4)		Soft skills (mean from 1 to 4)		<i>n</i>
	<35	50+	<35	50+	<35	50+	
Total	2.71	2.23	2.88	1.98	2.18	2.52	1,036
Sector							
Public	2.76	2.25	2.92	1.99	2.27	2.52	428
Private	2.66	2.21	2.84	1.97	2.10	2.53	608
Size							
10-49	2.70	2.23	2.84	1.98	2.22	2.49	710
50-249	2.69	2.26	2.89	2.00	2.17	2.53	284
250+	2.77	2.14	2.95	1.91	2.10	2.60	42
Sector of primary activity							
Industries (C-F)	2.66	2.17	2.81	1.93	2.14	2.44	404
Services (G-K)	2.68	2.30	2.86	2.02	2.15	2.59	395
Public sector (L-O)	2.80	2.26	2.99	2.01	2.28	2.58	237
Percentage of workers 50+							
≤0	2.82	2.11	2.93	1.93	2.11	2.53	92
1-5	2.65	2.17	2.85	1.98	2.15	2.51	133
6-25	2.71	2.27	2.88	2.01	2.20	2.56	444
26-50	2.71	2.20	2.88	1.94	2.17	2.51	271
51+	2.70	2.27	2.82	1.96	2.25	2.44	81
Age of respondent							
≤35	2.80	2.21	2.96	1.91	2.26	2.49	282
36-49	2.75	2.21	2.91	1.95	2.17	2.53	384
50+	2.59	2.26	2.77	2.05	2.13	2.54	350

Note: Unweighted data. All presented in-cells' differences are statistically significant with $p < 0.01$ (*t*-test for related samples)

Source: ASPA (2009) Poland Survey

ratings of scales based on the factors (soft and hard skills) and productivity by company characteristics and age of respondents (means from 1 to 4). We can see that older workers are generally assessed to be lower than younger ones with respect to productivity (2.23 against 2.71) and hard skills (1.98 against 2.88), but higher in soft skills (2.52 against 2.18).

Older workers are generally more positively assessed in the public and services sectors, in contrast to industries. The highest rates for soft skills are to be found in the biggest companies. Older respondents assessed the hard skills of workers 50+ at the highest level. The lowest rating of skills was made by males and by respondents below 35 years of age.

Productivity: regression models

Modeling productivity ratings was the final stage of analysis. We constructed linear regression models to test productivity as a dependent variable (Table III). Productivity was measured similarly as skills, and it included four categories indicating the extent to which it applied to workers: (1) no/low extent, (2) some extent, (3) high extent and (4) very high extent[7]. Models included several groups of independent variables: individual characteristics of respondents (age and gender), company characteristics (share of unskilled, high-skilled and older workers, sector and size), ratings of employee skills (hard and soft skills of older and younger workers) and personnel policies toward older workers (included in the model only for older workers). The last group of variables requires further explanation. Based on the same data set, we observed three policies being applied in Polish companies toward older workers, of which two were implemented in the analysis[8] (see Perek-BiaŁas and Turek, 2012 for more):

- policy focuses on increasing productivity of older workers (productivity)[9], including continuous career development, internal job mobility, training plans and ergonomic measures; and
- policy focuses on pushing out older workers (retirement)[10], including early-retirement schemes and part-time retirement.

These policies were incorporated in the models as dummy variables; a value of zero indicated no policy measures and a value of one indicated the organization uses at least one of the measures[11].

Employer ratings of worker skills were implemented as factor scores from a factor analysis to avoid multicollinearity of independent variables.

Perceptions of younger worker productivity depended primarily on perceptions of their skills (Model 1), and a considerably higher weight was given to hard skills. Age also influenced the assessment since older respondents assessed productivity of younger workers lower. Gender and company characteristics did not influence the dependent variable[12]. Models 2 and 3 tested ratings of older worker productivity, and here age, gender and size of establishment influenced ratings. Services sectors evaluated older worker productivity higher than manufacturing sectors did, but no such trend was observed for public sectors. Service seems to be a sector in which the capabilities in and work from employees 50 and older are most appreciated – skills of older workers were rated highest in this sector.

Some influence was observed from the share of older or high-skilled workers in Models 2 and 3, and from the percentage of unskilled workers in Model 4. All represent minor weightings on the threshold of statistical significance, but the directions of the

Table III.
Results of linear
regression models of
productivity of workers
aged below 35 and over 50
years old

Variables	Productivity of workers aged 50 +			
	Model 1	Model 2	Model 3	Model 4
Age of respondent (below 35 year = 0)				
36-49	-0.01 (-0.35)	-0.05 (-1.54)	-0.04 (-1.50)	-0.03 (-0.95)
50 and more	-0.06 (-2.00)*	-0.02 (-0.71)	-0.02 (-0.70)	-0.01 (-0.46)
Sex of respondent (Male = 0)	0.01 (0.38)	-0.07 (-0.27)	-0.00 (-0.09)	-0.02 (-0.95)
Percentage of workers 50 +	-0.03 (-1.28)	0.06 (2.25)*	0.05 (1.76)***	0.03 (1.16)
Percentage high-skilled workers	0.00 (-0.11)	-0.04 (-1.57)	-0.06 (-2.09)*	-0.04 (-1.29)
Percentage unskilled workers	0.01 (0.39)	0.04 (1.38)	0.04 (1.32)	0.06 (2.32)*
Sector of primary activity (industries C-F = 0)				
Services (G-K)	0.05 (1.66)***	0.06 (2.04)*	0.05 (1.79)***	0.07 (2.43)*
Public sector (L-O)	-0.01 (-0.36)	0.04 (1.34)	0.04 (1.31)	0.02 (0.71)
Size of establishment (10-49 = 0)				
50-249	-0.02 (-0.69)	-0.02 (-0.65)	-0.01 (-0.42)	0.02 (0.71)
250 +	-0.01 (-0.43)	-0.02 (-0.93)	-0.02 (-0.85)	-0.01 (-0.28)
Hard 50 + (factor)	-	0.37 (14.44)***	0.37 (14.43)***	0.28 (10.40)***
Soft 50 + (factor)	-	0.49 (18.93)***	0.50 (19.10)***	0.53 (19.21)***
Hard < 35 (factor)	0.52 (20.14)***	-	-	-0.02 (-0.62)
Soft < 35 (factor)	0.32 (12.42)***	-	-	0.26 (8.52)***
Policy - productivity (no policy = 0; any measure = 1)	-	-	0.09 (3.52)***	0.09 (3.26)***
Policy - retirement (no policy = 0; any measure = 1)	-	-	-0.07 (-2.41)*	-0.08 (-3.01)**
Productivity of < 35	-	-	-	-0.11 (-3.51)***
Constant (β)	2.78 (52.06)***	2.12 (38.42)***	2.20 (37.80)***	2.50 (23.22)***
Adjusted R^2	0.456	0.443	0.452	0.488
Test F significance	***	***	***	***
n	953	904	904	889

Notes: β (t -test value). * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; **** $p < 0.1$

Source: ASPA (2009) Poland Survey

coefficients were stable. As expected, the higher share of workers 50 and older contributed to higher ratings of their productivity. Additionally, older worker productivity was valued higher in companies that had higher shares of unskilled workers and lower shares of high-skilled workers. In all models, skills ratings provided the most explanatory power for productivity assessment[13], but weights of soft and hard components differed. In the case of younger workers, the highest scores were observed for hard skills, while in the case of older workers, soft skills demonstrated considerably higher impact. These results accord with empirical and theoretical assumptions concerning the diminishing value of hard abilities and the increasing value of soft abilities with age.

Models 3 and 4 included whether a company incorporated two policy measures: keeping older workers in the company or pushing them out. Results suggest that a firm's personnel policies concerning an aging workforce influenced evaluations of older worker productivity. In companies that improve productivity of older workers, ratings of productivity were higher than in companies that did not use such a policy. Those companies with a policy of pushing older workers out evaluated productivity lower than companies without the policy. In Model 4, we included additional variables to control for the impact of opinions concerning skills and productivity of younger workers. Interpretation of the influences of all previous variables on the perception of older worker productivity remains similar, though some coefficients changed (e.g. the role of soft skills increased and hard skills decreased)[14].

5. Conclusions: discussion and limitations of the results

This paper considers the influence of employer opinions of older workers on the latter's standing in both the company and labor market, and we analyze the opinions of Polish employers concerning skills and productivity of older and younger workers. Based on data from the representative ASPA (2009) Survey of 1,037 Polish employers, we constructed regression models for skills and productivity ratings. Analyses support the hypothesis that job performance is a result of both individual and external factors (Warr, 1994; Taylor and Walker, 1998; Skirbekk, 2004; Silverstein, 2008). Productivity – according to Polish employers – depends primarily on individual characteristics (i.e. soft and hard skills) and partly on human resources policies (i.e. improving productivity or pushing older workers out), and is also a result of work type (e.g. in services sector, older employees were assessed more positively).

Data collected in Poland confirm findings from other researchers that older workers are valued more for soft skills (e.g. social skills, management skills, reliability and loyalty), and younger workers for hard skills (e.g. creativity, physical health, new technology skills, willingness to learn and flexibility), and ratings of these skills relate to assessments of productivity. In the case of older workers, higher ratings of soft skills were the most influential factor when explaining productivity ratings. Hard skills played a smaller, though not minor, role. In the case of younger workers, the relationship was reversed. These findings contradict findings from Van Dalen *et al.* (2010), who found that for Dutch employers, hard qualities carried much greater weight in evaluations of productivity not only for younger workers, but also older workers. This is surprising in the context of psychological and medical research, discussed earlier in this paper. An explanation should be sought for the varying situations of older generations in both countries.

The Netherlands has one of the most favorable labor markets for older workers in the EU. As much as 45 percent of Dutch companies have senior policies that retain

older workers. They are more proactive in their approaches to an aging workforce than, for example, Germany and Belgium companies, and use multiple arrangements to create flexible and secure conditions for older workers (Bredgaard and Troos, 2006). The 2011 employment rate for the group aged 55-64 in the Netherlands was 65.8 percent for men and 46.4 percent for women (Eurostat, 2011), and the average exit age from the labor market between 2006 and 2011 was 63.6 for men and 62.0 for women (OECD, 2011). Older workers continue to age and often participate in lifelong learning. Eurostat (2007) suggests 45 percent of people in the age range of 45-54 and 29 percent aged 55-64 participate in both formal or informal education or training (in Poland, it is 16 and 7 percent, respectively). This helps maintain and improve hard skills such as new technology skills, willingness to learn, flexibility and physical health, and as a result, they represent primary productivity assets in workers after age 50.

The situation for Poland's older generation is one of the most senior-unfriendly in Europe in terms of both age management (Urbaniak, 2008) and lifelong learning (Szczycka *et al.*, 2012). The health statuses of Polish citizens are much worse in comparison to other western European countries. In Poland, the healthy life expectancy at age of 50, based on self-perceived health, in 2010 was 17.9 years for men and 20.6 for women, while in the Netherlands, it was 28.3 and 31.4 years, respectively (Eurostat, 2012). Poland is a young country in the EU, but it will soon experience the challenges of an aging population, similar to those now faced by other western European countries. The old-age dependency ratio in 2010 was about 19 percent, and is expected to reach 27 percent in 2020 and 56 percent in 2050 (Eurostat, 2010). In 2011, labor market participation of older generations in Poland was one of the lowest in the EU. Employment rates for people aged 55-64 was 47.8 percent for men and 27.3 percent for women (Eurostat, 2011), and the exit age from the labor market between 2006 and 2011 was 61.5 for men and 59.4 for women (OECD, 2011). Since the beginning of transition in 1989, Poland focussed on development of a free-market system, and tackled pressing economic problems. High unemployment, major system reforms, inflation and restructuring of companies seemed more important in the short run than demographic changes. The general governmental policy pushed older workers out of the labor market, enabling such workers to retire early (Szatur-Jaworska, 2000). Current policy encourages companies to neither consider aging workers nor develop age management policies (Perek-Białas and Turek, 2012). Today's 50 and older workers received their educations under a socialist regime, and their skills and knowledge are often inconsistent with current requirements of a free market. The labor market has changed substantially since 1989, but aging generations have not always kept up with it and improved their skills, resulting in significant differences between older and younger generations. Seniors are considered to be less equipped with hard skills than youths, and productive assets should then be found in soft skills, which usually improve with age. Employer perceptions of older workers are still based on simple labor cost analyses, and employers often expect workers to retire as soon as they are able to do so. These factors lead to the conclusion that hard skills may be maintained in the process of aging and are valuable to both younger and older workers, as observed in the Netherlands. This suggests important implications for policy makers and employers who will have to deal with the challenge of both an aging and shrinking workforce.

Three factors are necessary for hard skills development. From the perspective of policy makers, it represents lifelong learning that allows updating and improving of new technology skills, and maintains an ability to learn. Second, there must be a good system of public health, combined with related systems of health prevention and

promotion, which encourage healthy aging. The last factor relates to employers, emphasizing the value of age management. A proper long-term approach to an aging of workforce improves all hard skills while fostering use of older workers' potential. Age management, which improves job performance of older workers, correlated with higher ratings of productivity. Practices such as continuous career development, internal job mobility, training plans and ergonomic measures are not only age friendly, but also improve work ability and performance. A policy of pushing out older workers (e.g. toward retirement) with the intention of lowering costs has the opposite effect; such policies correspond to lower productivity ratings. Although regression models do not specify a clear causal relationship, the correlation between employer opinions and actions is meaningful. However, higher or lower ratings of productivity may result from age management; the effects of such management – or reflections of something else – represent a complex relationship.

Employer opinions or stereotypes concerning workers certainly matter in the implementation of an approach in a company, and perceptions of skills and productivity at old age play a crucial role in shaping the situation for older people in the labor market. In the case of older workers, hard skills may be as important a predictor of job performance as they are for younger generations. To achieve this, a company needs age management that improves skills and enables older workers to use this potential at work. A question remains concerning whether employer perceptions of older workers will change as aging in the workforce continues. Although interest in society's aging – and its consequences – has increased among Polish scientists, policy – makers and the media, age management practices are implemented rarely in Polish companies (MPiPS, 2008; Perek-Białas and Turek, 2012). If the professional working life is going to be extended, employers must learn to use the potential of older workers. A gradual increase in eligible retirement age is introduced in Poland, from 60 for women and 65 for men, up to 67. The policy can contribute to this by promoting age management among firms, and more importantly by creating a system of lifelong learning, improving the health system, and other actions (e.g. labor-market policies). Extending Silverstein's (2008) findings, we specify four reasons older workers – even those with diminished physical or cognitive functions – can continue to work. First, workers do not normally have to work at their highest levels of performance and physical limits, leaving a safe margin in which older workers may fit in as well as younger ones. Second, although many cognitive and physical abilities decrease with age (e.g. physical strength, health, flexibility, sensory ability, fluid intelligence, learning ability, perceptual speed and reasoning ability), these changes vary across individuals, and depend on both individual and external factors. Third, some important work-related capabilities improve or endure throughout life (e.g. crystallized intelligence, experience, expertise, practical and tacit knowledge, and other job-related abilities). Fourth, both the work environment and employer practices improve the skills and productivity of older workers.

6. Limitations

The data and models presented in this paper do not allow for simple causal conclusions. Both theoretical assumptions and results point to complex hierarchical structures in relation to individual characteristics, work environments, employer practices and older workers' job performance. This suggests a problem in relation to the sole analysis of opinions concerning skills and productivity of workers instead of objective measures. For example, it is impossible to disentangle reciprocal

relationships between ratings and policy measures, so expanded confirmatory analyses or hierarchical modeling would be useful. The method used for employer ratings was not designed for studies of objective measures of skills and productivity; the real productivity potential of a worker may be quite different from the opinions of a supervisor. Ratings are highly subjective, requiring careful interpretation within a range of opinions and stereotypes. Finally, cross-sectional studies in terms of age-group comparisons may be biased by the cohort effect. This especially applies to Poland where variations in human capital and attitudes toward work and education are significant among generations. Newer generations enter old age with remarkably different background, potential and aspirations. These limitations suggest more studies on relationships among age, productivity and employer perceptions and actions are warranted.

Notes

1. In Poland, the project was carried out by the Institute of Sociology at the Jagiellonian University in Krakow between 2008 and 2011. The project involved eight countries: UK, Germany, France, Poland, Sweden, Denmark, Italy and the Netherlands (coordinator). More information: www.aspa-eu.com
2. I.e. segments C-O of NACE Rev. 1.1 classification.
3. In all, 23 percent for all sample units.
4. Mean = 63.9; SD = 5.29; Median = 65.
5. Mean = 54.6; SD = 5.04; Median = 55.
6. "Ability to cope with stress" was dropped from both factors as it was not well represented at all.
Evaluation of model for referring to workers below 35 years old: KMO measure = 0.851; total explained variance for two factors = 47 percent; varimax rotation; Cronbach's α = 0.829 for hard skills and 0.786 for soft skills.
Evaluation of model for referring to older workers: KMO measure = 0.871; total explained variance for two factors = 50 percent; varimax rotation; Cronbach's α = 0.766 for hard skills and 0.801 for soft skills.
7. Although linear regression was used with this ordinal scale, we compared results with ordinal logistic regression (PLUM) and logistic regression with recoded binominal dependent variables (0 = 1-2 and 1 = 3-4), and results were similar. However, we present the linear regression model to allow comparisons with results from Van Dalen *et al.* (2010), who used the same method.
8. The third policy focussed on accommodation and reduction of labor costs, including reductions of working time, demotions, workload decreases, extra leaves, flexible working hours and age-limited irregular work. Such policies were rare in Polish companies, and reliabilities were low (Cronbach's α = 0.491), thus we skipped them in the models presented here.
9. Cronbach's α = 0.604.
10. Cronbach's α = 0.609.
11. This transformation helped clarify the analysis, while more complicated transformations of policy measures (e.g. scales based on factors or sums of the number of implemented measures) offer nearly the same standardized coefficients.
12. Differences in ratings of older worker skills did not play a significant role, and do not appear in the table.

13. Skills ratings alone explained nearly half of the variance. In the case of younger worker productivity, a model with only hard and soft skills for age < 35 had an R^2 of 0.45; for older worker productivity, a similar model for age 50 and older had an R^2 of 0.48.
14. What is interesting is the influence observed from ratings of younger workers. Higher evaluations of younger employee soft skills – even when controlling for productivity ratings – contributed to higher values of the dependent variable. Additionally, the higher the ratings of younger worker productivity (or hard skills, which correlated strongly), the lower the ratings of older worker productivity. Detailed analysis points to mediation, suggesting demand for hard skills. Ratings of productivity of workers below 35 correlated strongly with hard skills, and after incorporating productivity of younger workers, the initial influence of the younger workers' hard skills disappeared. Employer ratings are highly subjective; they refer to the situation and requirements of the company and to experiences with various workers. Employers requiring soft skills may give higher productivity ratings to older workers, whose main advantage is in soft skills. Employers requiring hard skills (e.g. manufacturing sectors) prefer younger workers, resulting in perceptions of lower productivity in workers 50 and older.

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