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Age Discrimination in Hiring: An Experimental Study in Italy

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Abstract. This paper examines age discrimination in hiring against elderly workers in Italy. By means of a role-game laboratory experiment, we estimated the effect of age and certain important mediating factors, such as job experience and training, on hiring decisions, by considering also social influence and stereotypes. Our findings indicate that age discrimination against older people does exist even when candidates have comparable characteristics. Results suggest that although the Italian population has one of the highest life expectancies worldwide, health stereotypes are the most important determinant of this effect. However, we found that experience and up-to-date training by elderly workers could counterbalance this negative effect.

Keywords: Age discrimination, Hiring, Experiment, Job position, Inequality

Introduction

Ageing populations are a key global challenge for all economies and societies of the twenty-first century (Phillipson, 2013). The combination of low fertility rates and increasing life expectancy in many countries is posing urgent challenges to the sustainability of the welfare states, with important implications on the labor market regulation and pension provision (e.g., United Nations, 2013). On the one hand, these pressures have been tackled with drastic reforms to increase pensionable age, especially in countries with pay-as-you-go retirement systems, which aimed to decrease the pressure on the social security and pension funds (OECD, 2015). On the other hand, this has caused pressures on labor markets as older people are disadvantaged on specific job positions against younger ones, often considered less flexible and requiring training investments (e.g., Johnson and Neumark, 1996; Peng and Kleiner, 1999; Shen and Kleiner, 2001; Lahey, 2005).

This also raised concerns on age discrimination (e.g., Riach and Rich, 2006, 2007; Albert et al., 2011). According to Lucas, discrimination "entails distinction made on grounds of natural or social categories, which have no relation either to individual capacities or merits, or to the concrete behavior of the individual person, but is, instead, based in a limiting view of some types of persons" (Lucas, 2008, p.179). While research is ample on gender and racial discrimination, age discrimination has received less attention, especially in the European countries. It is worth noting that while in the United States, age discrimination has been forbidden since the sixties, it was only in 2000s that age discrimination was formally prohibited in all European countries (Kapp, 2013).

Age discrimination is more subtle and nuanced than gender and race discrimination, due to the lack of clear definitional boundaries and the link between training, experience and age. Disentangling age-related preferences based on objective facts from discriminatory attitudes

is often difficult. Even the official documents prohibiting any form of discrimination, make a stipulation as to age discrimination. For instance, the fact that certain job specificities require given periods of employment typically motivate to set up upper-age limits (Council Directive 2000/78/EC, Article 6.1 (c)).

While empirical research has tried to disentangle certain determinants of age discrimination in real contexts (e.g., Hassell and Perrewé, 1983; Wood et al, 2004; Garstka et al., 2005; Kunze et al., 2011; Bayl-Smith and Griffin, 2014), only experimental research can help to understand the nuanced effects of perceptions and behaviors on age discrimination by creating idealized decision contexts. In this paper, we present results of a role-game laboratory experiment based on a sample of students of the University of Brescia, Italy, and conducted in April and May 2018. The design was built to examine the existence of age discrimination by looking at recruiters' decisions about older (aged 50+) and younger (aged 35-38) candidates.

Our results showed that even when they have similar, comparable characteristics, older people are penalized. This effect is mitigated by higher experience and up-to-date training, which could even advantage older candidates. In case of blue-collar jobs, older candidates were discriminated even more, with health stereotypes potentially explaining these differences. We also found a perfect correspondence between individual perceptions and social expectations about other's decisions.

Although with all caveats due to the limited sample, our study makes three important contributions. Firstly, we complemented the vast empirical research on age discrimination, which is often descriptive, with a laboratory experiment that helped us to test certain hypotheses in controlled settings. Secondly, the experiment was conducted in Italy where the study of age discrimination against older workers has not been sufficiently developed, even though Italy is one of the countries with the highest life expectancy worldwide, with continuous debates about retirement age and active ageing (OECD, 2017), with official average effective retirement age being considerably below normal retirement age (OECD, 2017). Finally, by manipulating rewards, we also tested the correlation between individual and social expectations, which is difficult in empirical research.

The rest of the paper is structured as follows. In Section 2, we present a brief literature review with particular attention to age discrimination in the labor market. In Section 3, we present our research questions and hypotheses, while in Section 4 we illustrate our experimental design and study sample. In Section 5, we present our findings, while the final section discusses both the results and the limitations of our study.

Theoretical Background

The definition of discrimination provided by Lucas (2008, p. 179) mentioned above indicates that individuals are discriminated if they are denied something or treated negatively only due to their belonging to a certain group and not due to their personal traits and/or abilities. On the one hand, discriminative practices or choices would reflect discriminators' "tastes", as suggested by the idea of a taste-based discrimination originally formulated by Becker (1971): "if someone has a taste for discrimination, he must act as if he were willing to forfeit income to avoid certain transactions" (Becker, 1971, p. 14). On the other hand, as suggested by other scholars, they could also reflect "statistical discrimination" (Phelps, 1972; Arrow, 1973; Aigner, Cain, 1977), according to which employers who could not observe the real

abilities of their potential employees would use ethnic, age or other characteristic as proxies for these abilities in order to avoid potential losses from hiring someone unfit for the job.

In any case, inferring individual characteristics from social categories — either for intentionally avoiding interactions with certain persons or predicting individual propensities or abilities — reveals the strength of stereotypes and/or prejudices. Stereotypes are "qualities perceived to be associated with particular groups or categories of people" (Schneider, 2005, p. 24), while prejudices are aversive or hostile attitudes toward a person who would inherit "objectionable qualities ascribed to the group" (Allport, 1979, p.7) he/she belongs. These types of attitudes and practices are crucial also when age is involved. Compared to other forms, such as gender or racial/ethnic discrimination, age discrimination has gained momentum only relatively recently for a number of reasons.

Firstly, life expectancy has increased in almost every country in the last decades, with implications on extended retirement, active ageing and long-life training programs. On average, in 1950, the life expectancy in developed countries was 65 years, by 2010-2015 it was estimated at 78, and by 2050 is expected to increase to 83 (United Nations, 2013, p. 6). In 2010-2015, women were expected to spend in retirement on average 20.8 years, and this figure is expected to become 25.8 years by 2060-2065. For men, the figures are 17.4 and 21.9 years, respectively (OECD, 2015, p. 155).

Secondly, the birthrate has significantly decreased in all Western societies. Thus, there are fewer young people in the labor market. For countries with the redistributive pension systems, it means a higher tax burden on the working population as the ratio of the working population to elderly retired population is decreasing. For example, "for the OECD as a whole, the dependency ratio of older people (i.e. those aged 65 and over as a proportion of those aged 20-64) will rise from the current figure of 22%, to 46% in 2050" (Official OECD website).

This scenario inducted many countries to put in place reforms to increase the retirement age (OECD, 2015). This, in turn, called for reconsideration of the position of elderly workers in the labor market, who could potentially face employment problems. Indeed, previous research showed that employers often tend to consider elderly workers less productive, less able to master innovative methods, less healthy, and even less motivated than their younger counterparts (e.g., Riach and Rich, 2007).

However, evidence about the (lack of) abilities of older workers to master new methods did not produce univocal results. People surely change while ageing and things become harder for them than before (e.g., Besedeš et al., 2012; Bertoni et al., 2015; Kang and Yoon, 2008; Luo and Craik, 2009; Wagner et al., 2014; Zancada-Menendez et al, 2015). Sometimes, aged persons need different learning approaches or slightly different work tools to be effective at work (e.g., Chaparro et al, 1999; Brooks et al, 2001; Lobjois and Cavallo, 2006; Schwerha et al., 2007). However, this does not mean that learning is compromised by ageing, whereas some studies have found that older workers may perform even better than younger ones in various conditions (Fyock, 1991; Rhodes, 1983).

Italy is not an exception in this sense. In Italy, the pensionable age is now rather high compared to other countries, and it will continue increasing up to almost 70 years old until 2050 (e.g., Sacchi, 2013). Yet, the situation of elderly workers in the labor market remains unclear. On the one hand, younger people have higher rates of unemployment than older ones (OECD, 2019) but mainly due to the 2008-2009 crisis (Choudhry et al., 2012) and flexibilization of the labor market (Barbieri and Scherer, 2009). On the other hand, there is

evidence of age discrimination against elderly workers (e.g., Segalla et al., 2001; Rymkevitch and Villosio, 2007; Lazazzara and Bombelli, 2011).

While it is often difficult to distinguish discrimination from inequality, as well as behavioral factors from social structural constraints, previous research has suggested many explanations of age discrimination. For instance, while Wood et al. (2008) provided a comprehensive reconstruction of various approaches to propose a coherent framework of analysis, it is often difficult to understand whether an unequal distribution of employees in certain jobs by age is due to social exclusion, self-selection, cultural norms, the cost structure of careers or effective discrimination. While Wood et al. (2008) considered all these reasons, the picture is more complicated.

For instance, if we suppose that age discrimination is due to the higher wages of older workers (e.g., O'Boyle, 2001, p. 960[1]), this would not explain whether and how recruiters intentionally value (or not) the experience and competence of workers who command lower wages compared to the older workers.

Moreover, let us assume that older workers do not engage enough in self-presentation and skill upgrading in the labor market and so would be uncompetitive against younger workers (e.g., Peng and Kleiner, 1999, p. 74; Shen and Kleiner, 2001, p. 25). This is typically explained as older workers would value flexibility in terms of working hours more than high salaries and competitive careers (e.g., Sargeant, 2001, p. 114). If so, deliberate choices by employees could not be considered due to discriminative practices from employers or recruiters, unless older workers were denied access to training (while the younger workers were not) or flexibility opportunities which could have been provided without productivity decrease.

The difficulty of establishing clear-cut conceptual distinctions between inequality and discrimination is also true for cultural explanations (e.g., Glover and Branine, 1997, p. 237; Macnicol, 2006, p. 11). Indeed, cultural norms that attach to "youth" and "elderly" different positive/negative meaning could reflect tastes-based, discrimination, which are linked to prejudices and negative stereotypes about elderly people. However, unless we could test decisions of the same employers in stereotype-neutral environments and find different results, we could not label their actions as discriminatory. The same problem holds for research suggesting that age discrimination may be tied to other pre-existing forms of discrimination, e.g., gender and employment penalties (Schuman and Kleiner, 2001; Evandrou and Glaser, 2004), social exclusion (Barnes et al., 2006) or job uncertainty (e.g., Boyes and McCormick, 2005).

All these explanations hardly disentangle objective decisions from subjective preferences. Indeed, it is difficult to measure individual motivations unless research benefits from a controlled setting in which decision-making of individuals takes place in alternative scenarios. This is where a properly constructed experimental setting can help while limiting at the same time the risk of surveys to build-in socially desirable responses (Keuschnigg and Wolbring, 2015).

[1] For age discrimination theories cited here, the reference is Wood et al. (2008).

Research Questions and Hypotheses

In our research, we have focused on two main questions regarding the role of age and other factors that could influence recruitment decisions and the social environment around recruiters.

1. Are there objective characteristics of a job vacancy (i.e., executive vs. supervised), objective characteristics of applicants (education; additional training; experience), objective characteristics (age, gender) or subjective attitudes of recruiters that influence age discrimination among job applicants?
2. Does an environment with pressure towards conformity increase the level of age discrimination?

While the former question builds on previous experimental research studying age discrimination, the latter aims to enlarge the perspective to look at the social context in which decisions take place.

Previous research suggested that older workers are often considered less motivated, competent and efficient, as well as less healthy than their younger counterparts (Riach and Rich, 2007; Kaufmann et al., 2015). This can probably explain the division between young-type and old-type jobs with older workers being less discriminated when applying for old-type jobs (Perry and Bourhis, 1998).

However, it is probable that the situation has changed today. On the one hand, people study longer and enter the job market later (e.g., Fernandes-Alcantara, 2018). On the other hand, the increasing life expectancy in most countries worldwide, the importance of off-the-job training and on-the-job experience and later retirement policies and plans could lead to two mechanisms. Therefore, the increase of the share of older people in the job market could have resulted in the enhanced age discrimination (Lozon and Barratt, 2013; Rippon et al., 2013). However, the various attempts at creating an ageing friendly society (e.g., WHO, 2002) could have made age differences even less relevant. Intriguingly, these mechanisms could also be at work at the same time (Takács et al. 2014).

For instance, health stereotypes can be important when the employer has to fill a vacancy that requires physical work and/or more intensive work effort, even if older workers have ways to compensate for age-related problems when working (e.g., Chaparro et al, 1998; Brooks et al, 2001; Lobjois and Cavallo, 2006; Schwerha et al., 2007).

This led us to formulate our Hypothesis 1.

Hypothesis 1. *For job vacancies with prevailing operative functions, if age is the only factor differentiating between two candidates, employers will choose younger candidates, thus systematically discriminating older applicants*.

However, this hypothesis may be typically reconsidered whenever the job requires potential candidates to have some managerial or supervision experience with entails familiarity with roles of autonomy and responsibility. Reaching supervisory positions usually requires years of professional work experience. To become an effective and reliable executive, an employee also needs to spend extensive time performing this role. Thus, more experienced older workers may be more competitive than younger workers for some positions.

This led us to formulate our Hypothesis 2.

Hypothesis 2. *For job vacancies with executive functions, if age is the only factor differentiating between two candidates, there will be no discrimination against either older workers or younger ones, i.e., decisions in favor of older or younger candidates will be equally distributed*.

Moreover, while previous research tended to show that no difference apart from age meant discrimination against older workers (e.g., Albert et al., 2011; Riach, 2015), some recent studies also proved that this discrimination was only an issue when older applicants had out-of-field employment and were inactive before. Considering research showing that employers often believe older people to be less motivated (Riach and Rich, 2007), we formulated our Hypothesis 3.

Hypothesis 3. *Higher experience and/or higher competence will outweigh the negative influence of age and decrease discrimination against older workers*.

However, these decisions often reflect the social context and it is reasonable to assume that individual perceptions are also informed by social norms, expectations and standards. Research in social psychology have insisted on the importance of social influence (e.g., social expectations and social standards of judgment) in individual decision-making (e.g., Cialdini and Goldstein, 2004; Muchnik et al., 2013) and hiring specifically (e.g., Takács et al., 2014; Dalal et al., 2015). Not only could employers be sensitive to prejudiced beliefs if these are supported by societal norms and values (Lucas, 2008), such as the image of older people being worse at the job than younger people; they could also compare their individual perceptions to social expectations as a form of justification of their biased decisions.

To elicit these pressures, we manipulated rewards for artificial recruiters by transforming hiring decisions in a 'prediction game'. In a treatment, recruiters were rewarded depending on how similar their decisions were to those of other previous participants.

The reward manipulation allowed us to add an endogenous pressure on participants intended to understand what participants would consider "the standard", "the habit", "the norm", in the hiring environment. On the one hand, we hypothesized that conforming to norms for the participants would reveal the consistency of individual preferences, perhaps by creating a tension between individual decisions and social standards of judgement, which could induce participants to avoid age discrimination. On the other hand, previous research found high level of age discrimination in labor market in Italy (Segalla et al., 2001; Rymkevitch and Villosio, 2007; Lazazzara and Bombelli, 2011) with age stereotypes that seem not to be considered as negative or discriminatory (Guaglianone and Ravelli, 2015).

Such a tension led us to formulate our *Hypothesis 4*:

Hypothesis 4. *When considering other's decisions as a constraint, hiring will be more favorable towards younger applicants than towards older applicants*.

Experimental Design and Sample

Our experiment was founded on a role-based design aimed to simulate hiring decisions where participants were asked to consider themselves employees of an agency which had to hire workers for two vacancies[2]. The vacancies were for a job as electrician and managing director for mergers and acquisitions. The first job reflected more manual and physical tasks, with relevant age-related stereotypes, while still requiring knowledge and experience. The second one reflected more executive functions, thus, requiring high level of experience and competence, with relevant age-related stereotypes, especially in a country in which hierarchical positions reflect age-related advantages.

Participants were presented with the vacancy description and pairs of short CVs of the candidates, including information on age, gender, education, years of experience and any recent additional training. They made 24 pairs of choices in total. The vacancies were created based on the real vacancies on the job search websites.

To examine our questions and hypotheses, it was crucial to distinguish among objective characteristics of the job vacancies, as well as among certain subjective characteristics of the job applicants. Furthermore, it was important to control for formal training and work experience as recruiters could consider this while deciding among alternatives (Haefner, 1977; Locke-Connor and Walsh, 1980).

We also wanted to distinguish discriminative preferences from rational risk reduction under uncertainty. Thus, to control for possible confounding factors, we decided to simplify the recruitment process. Firstly, we assumed that all competing applicants had the same cost for the company who will eventually hire them (in terms of wages, social security payments, etc.). Secondly, all applicants were presented to recruiters with a short bio, without personal detail, pictures or more vivid CVs. Finally, recruiters were asked to choose between pairs of candidates instead of a list, so removing the impact of ordered sequence. While this is not what usually happens during real-life hiring processes, these simplifications helped us to minimize the potential influence of unobservable factors.

To explore *H4*, we divided our participants into control and treatment groups. The control group received an equal reward of 15 euros paid cash immediately at the end of the experiment. The treatment group was informed that there was a group of participants who already took part in this experiment. The participants of the treatment group were informed that for each decision that would match the majority of responses (i.e. more than 50%) made by the control group they will receive 80 cents; for each decision that would not match they would lose 80 cents. In case they lost more than gained, they would receive 5 euros for participating. Thus, they could earn between 5 and almost 25 euros.

At the end of the experiment, participants were presented with a questionnaire (see the appendix) whose purpose was to evaluate participants' attitude towards older workers (aged 50+) in terms of their personal traits, not related to their professional abilities, and in terms of their professional abilities. The questionnaire was based on the previously performed surveys (Power, 1987; Burdyak et al., 2015) conducted to study attitudes towards elderly people and/or workers.

[2] Conducted with the help of z-Tree software (Fischbacher, 2007).

The study included a sample of 121 students of the University of Brescia, Italy, who were randomly selected and aged from 18 to 34 (*M* = 22.4; *SD* = 2.5). 61 participants were part of the control group (from 19 to 27; *M* = 21.9; *SD* = 1.8), while 60 were part of the treatment group (18 to 34; *M* = 22.9; *SD* = 3.0). The uneven number of the participants in the control group was necessary for the correct testing of *H4* as we needed to avoid the possibility of having an equal distribution of responses. There were 70 females and 51 males with 36 and 35 in the control group and 34 and 26 in the treatment group respectively (see Table 1).

Table 1. Data description (age and gender)

	Age				Gender	
Group	Min	Max	Mean	Std. Dev.	Females	Males
Control	19	27	21.9	1.8	36	25
Treatment	18	34	22.9	23.0	34	25
Whole sample	18	34	22.4	2.5	70	51

Among all participants, 43.8% had professional experience working with people aged 50 and more (44.5% and 55.7% in the control group and 43.3% and 56.7% in the treatment group respectively). Almost 100% of those who did have experience reported it as "positive" (94.1% in all groups; 92.3% in the control, 96% in the treatment group). All participants had relatives of that age. One third of the participants were aware of anti-age discrimination legislation in the labor market (31.4% in total; 29.5% in the control group and 33.3% in treatment group) (see Table 2).

Table 2. Data description (Professional experience with older people; relatives age 50+ and knowledge about anti-discriminatory legislation)

Group	**Professional experience with older people**	**Quality of that experience**	**Relatives aged 50+**	**Knowledge about anti-discriminatory legislation**
Control	Yes — 44.5% No — 55.7%	Positive — 92.3% Negative — 7.7%	100%	Yes — 29.5% No — 70.5%
Treatment	Yes — 43.3% No — 56.7%	Positive — 96.0%; Negative — 4.0%	100%	Yes — 33.3% No — 66.7%
Whole sample	Yes — 43.8% No — 56.2%	Positive — 94.1%; Negative — 5.9%	100%	Yes — 31.4% No — 68.6%

Thus, our control and treatment group did not differ a lot in terms of basic characteristics (age and gender), experience with older people and knowledge about the legislation concerning age discrimination.

In Section 5, we will discuss empirical strategy of analysis and our results.

Results

We first conducted a McNemar's test for binary data to test our hypotheses (McNemar, 1947) and built a mixed-effects logistic regression with random-effects on participants to examine the effect of all variables (e.g., Williams, 1975; Stiratelli et al., 1984; Kuk, 1995).

Following Fisher's classical approach (Fisher, 1960), we defined a hypothesis H_0 meaning that the responses of the participants did not change regardless of the type of job or differences in levels of experience and training. If p-values were less than 0.1 or smaller, the hypothesis of the equal distribution was rejected and the alternative hypothesis, i.e., that there was a difference between the two, was accepted. If not, then we would not have rejected H_0 and assumed that there was no difference and, thus, the responses given were independent.

The test indicated that, in case of the first two hypotheses, there was a difference between the choices made depending on the type of job when the candidates had the same experience [χ^2 (1; N = 968) = 272.92, p < .001 for the hypotheses 1 and 2]. However, this test did not permit to assess the exact influence on decisions, i.e., who were favored more by participants between older or younger candidates. The test shows that there was a relationship between the type of job and the age of the selected candidate (see details below). Regarding the third hypothesis, we found that experience [χ^2 (1; N = 1936) = 71.58, p < .001] and training [χ^2 (1; N = 1936) = 85.69, p < .001] had an influence on the decision-making process. Finally, the fourth hypothesis was not confirmed [χ^2 (1; N = 2904) = 1.17, p = 0.28]. Thus, the induced social influence did not have any significant role on participants' decisions.

Our mixed-effects logistic regression with random effects included variables from the CVs, such as personal characteristic of the participants and their responses to the questionnaire. Note that we excluded some questions from the model because their values did not show sufficient variance. This was the case for responses on positive working experience with older people, the perceived ability of younger people to master new technologies and the presence of relatives aged older than 50. All other variables used in the regression are presented and discussed in Table 3. Based on these variables, we constructed two models with the same method of analysis.

Table 3. Variables' description

Dependent variable	Measurement	Baseline
Candidate's age	Dummy (0 — older candidate; 1 — younger candidate)	Older candidate
Independent variables		
Position	Dummy (1 — electrician; 0 — managing director)	Managing director
Treatment	Dummy (1 — treatment group; 0 — control group)	Control group
Interaction: position and treatment		No treatment and managing direction position

Dependent variable	Measurement	Baseline
Candidates' characteristics variables		
Candidate's experience	Dummy (1 — older candidate has more experience; 0 — same experience for both candidates)	Same experience for both candidates
Interaction: experience and treatment		No treatment and same experience for both candidates
Candidate's recent training	Dummy (1 — older candidate had training; 0 — both candidates w/o training)	Both candidates w/o training
Interaction: training and treatment		No treatment and no training
Candidate's gender	Categorical (1 — both males; 2 — both females; 3 — younger male and older female; 4 — younger female and older male)	Both males
Interaction: candidate's gender and treatment		No treatment and both males
Participants' characteristics variables		
Gender	Dummy (1 — male; 0 — female)	Female
Age	Continuous	—
Professional experience with older workers	Dummy (1 — has experience; 0 — no experience)	No experience
Knowledge about legislation against age discrimination in the labor market	Dummy (1 — knows; 0 — does not know)	Does not know
Father's age Mother's age	Continuous	—
Father's employment status Mother's employment status	Categorical (1 — unemployed/inactive; 2 — employed/self-employed)	Unemployed/inactive
Participant's attitudes towards older workers variables		
Who: — is more productive — is more competent — is more responsible — is better in mastering new technologies — takes more leaves due to illness — is more prepared to work overtime — is better in group work	Categorical variable (1 — younger worker; 2 —older worker; 3 — age does not matter)	Age does not matter
Participant's attitudes towards older people in general variables		
Attitude (feelings around older people) Characteristics (thoughts about older people)	Categorical variable* (1 — positive; 2 — negative; 3 — neutral)	Neutral

Note: * — The variable was created from a multiple-choice question (Which of the following adjectives would best describe your general attitude towards, and relationship with, people aged 50 or more (choose no more than 3 answers)?)) with several possible responses. Responses "distant, wary, uneasy" were considered and negative; responses "sympathetic, friendly, co-operative, respectful, interested" — as positive; indifferent, responsible, none of the above" as neutral. If the number of "positive" responses was higher than the number of negative or neutral responses, the person was attributed a positive attitude to the participant; if the negative responses outweighed, a negative attitude was attributed to the participant. In case of equal number of positive and negative choices, a neutral attitude was attributed to the participant; if there was an equal number of all types of responses, a neutral attitude was attributed to the participant.
** — The approach was the same as with the previous question. "Do you consider that most people over 50 are (choose no more than 3 answers)? "Demanding, very conservative, boring, difficult to please" was coded

as negative. "Cheerful, helpful, easy to get on with, encouraging, flexible, interesting" — as positive. None of the above as neutral.

First, we ran the model with only effects of the treatment, the position and the characteristics of the candidates, i.e., only on the variables that were directly connected to the job (Model 1). The results are presented in Table 4.

Table 4[3]. Mixed-effects logistic model (only effects of the position; candidates' characteristics and treatment)

Variables		Odds ratios	Coefficients
Position	Electrician	1.54	0.43***
Treatment	Treatment group	0.90	- 0.10
Interaction: P-T	Treatment group; Electrician	1.41	0.34*
Candidates' characteristics variables			
Candidate's experience	Older candidate has higher experience	0.11	- 2.24***
Interaction: E-T	Treatment group; Older candidate has higher experience	0.63	- 0.46*
Candidate's training	Older candidate had training	0.19	- 1.66***
Interaction: Tr-T	Treatment group; older candidate has recent training	1.55	0.43*
Candidate's gender	Both females	1.42	0.35***
	Younger male, older female	1.53	0.43**
	Older male, younger female	0.64	- 0.45**
Interaction: G-T	Both females	1.02	0.2
	Younger male, older female	1.17	0.16
	Older male, younger female	0.52	- 0.66**
Constant		7.31	1.99*

Significance levels: *$p < 0.10$, **$p < 0.05$, *** $p < 0.01$.

We found that the position had a positive significant influence on the probability of choosing younger candidates compared to older ones. According to the odds ratios, younger candidates were 1.54 times more likely to be chosen than older for the position of electrician compared to the position of managing director. For a job requiring more physical performance, younger workers were considered fitter than older workers.

Note that the influence of the treatment variable was statistically non-significant, i.e., subjects' decisions from the control group did not differ from those of the treatment group. This means that the induced social influence did not significantly change individual decisions. This would indicate that certain norms and attitudes related to age are deeply embedded in individual perceptions so that individual and collective attitudes fully conflate.

The interaction between position and treatment was slightly significant (10%). However, when we looked at predictive margins (
Fig. 1 and
Fig. 2), we found that confidence intervals overlapped. Therefore, the treatment did not have any particular influence on the role of job positions in the choices made by subjects.

[3] For full description of variables, please refer to Table 3.

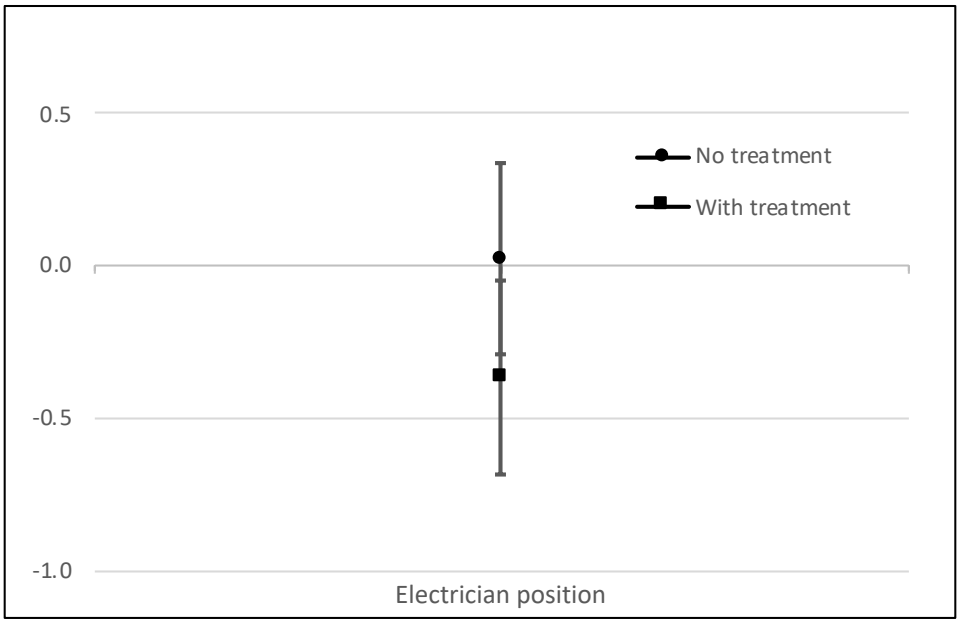

Fig. 1. Predictive margins for the position and treatment (electrician position), Model 1

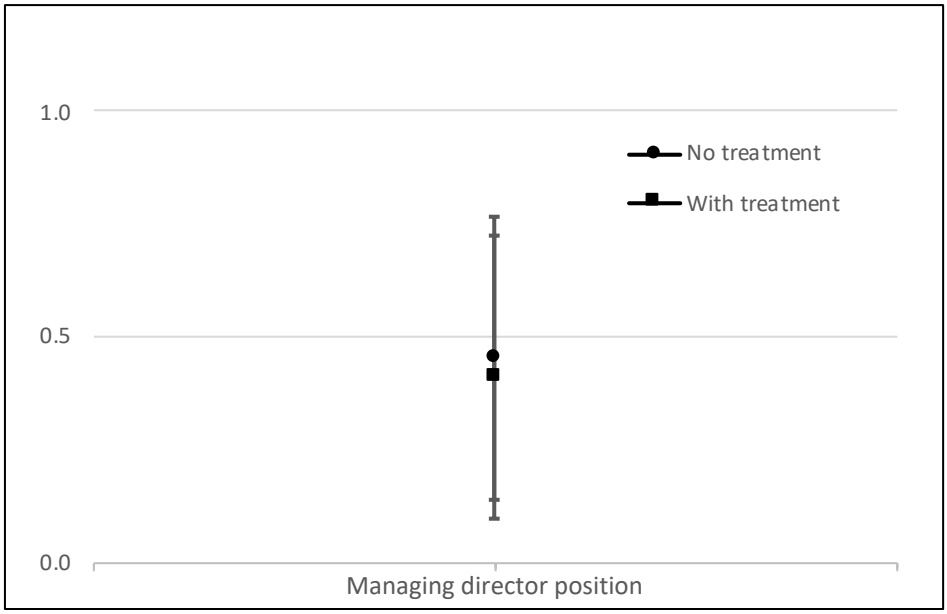

Fig. 2. Predictive margins for the position and treatment (managing director position), Model 1

Experience and additional training worked in favor of older candidates. Coefficients were negative and significant ($p < 0.01$), meaning that younger candidates were less likely to be chosen than older candidates. Odds ratios indicated that younger candidates were 0.11 times less likely to be chosen compared to older candidates if the latter had more experience and 0.19 times less likely to be chosen if older candidate also had additional training ($p < 0.01$). When adding interaction with treatment variable, the significance remained ($p < 0.10$) but, similarly to the case with the job position, predictive margins were so close that any difference was almost non-existent both for experience (
Fig. 3 and
Fig. 4) and additional training (
Fig. 5 and

Fig. 6). This means that the treatment did not change the effect of training on participants' decisions.

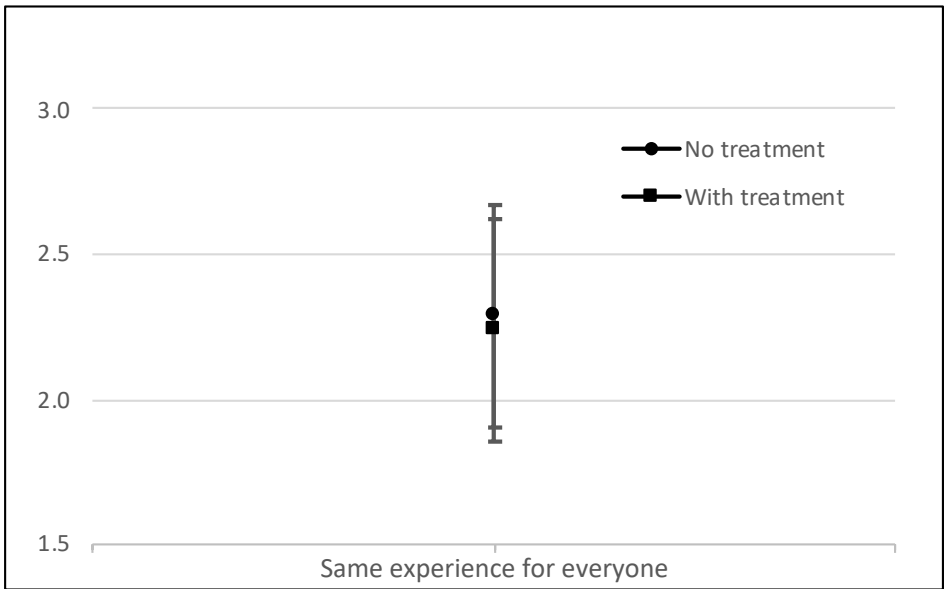

Fig. 3. Predictive margins for experience and treatment (same experience for everyone), Model 1

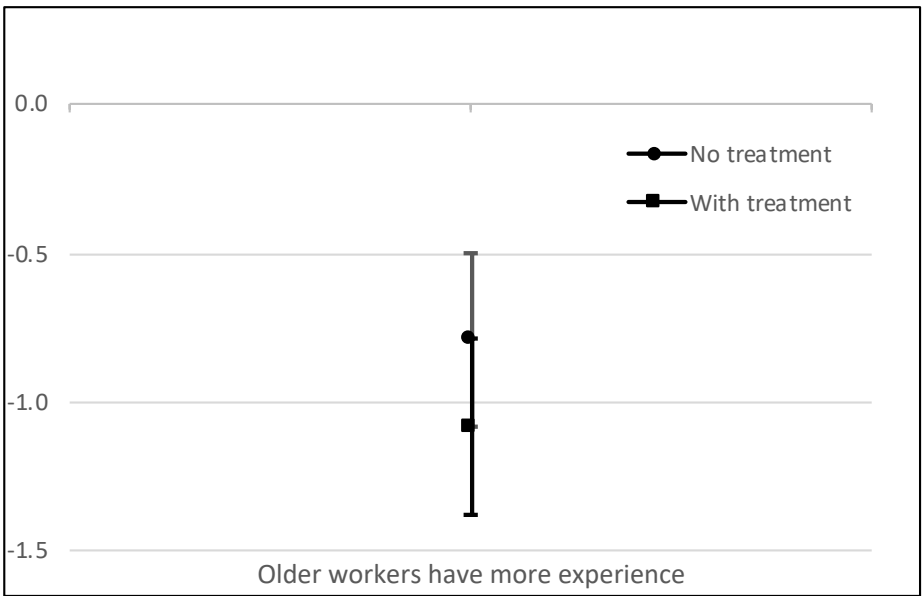

Fig. 4. Predictive margins for experience and treatment (older workers have more experience), Model 1

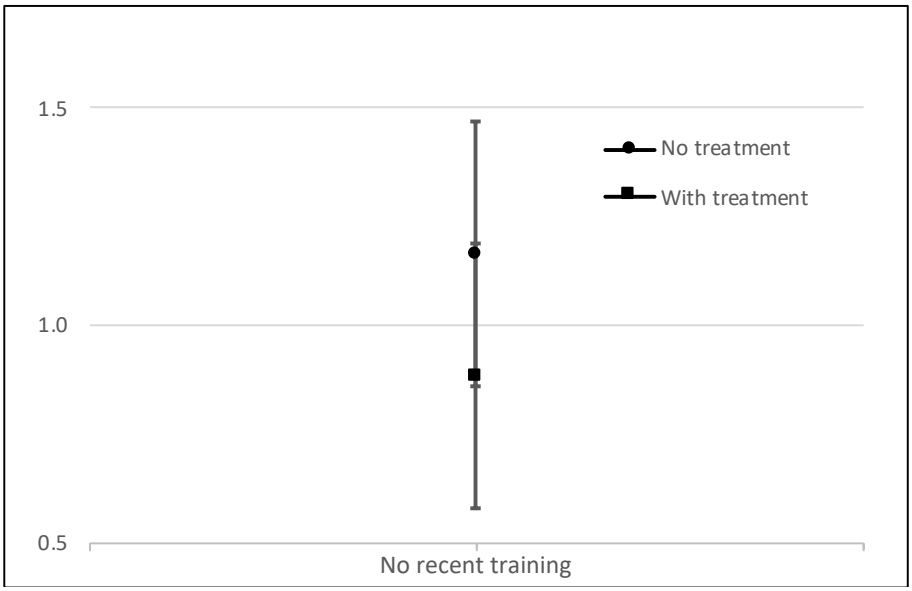

Fig. 5. Predictive margins for experience and treatment (no recent training), Model 1

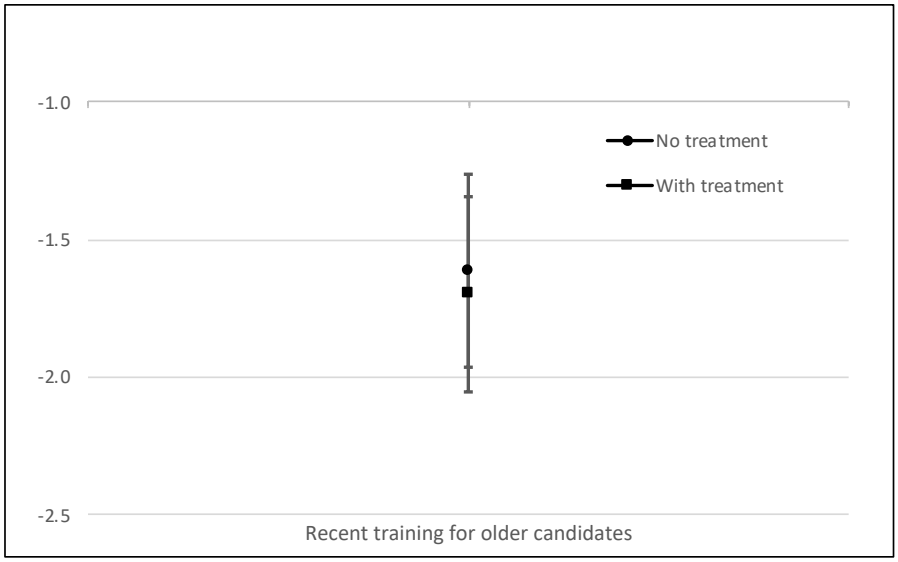

Fig. 6. Predictive margins for experience and treatment (recent training for older workers), Model 1

The candidates' gender effect was weakly significant. According to the odds ratios, younger candidates were 1.42 times more likely to be chosen if both candidates were females compared to both males ($p < 0.10$), 1.53 more likely if younger candidates were male and older were female ($p < 0.05$) and 0.64 less likely if younger candidates were female and older candidate were male ($p < 0.05$). The interaction of this variable with the treatment did not bring any significant results, aside from the last group (older male and younger female) ($p < 0.05$). This was confirmed when looking at the predictive margins (
Fig. 7 and
Fig. 8), i.e., the treatment did not change the effect of gender on subject decisions.

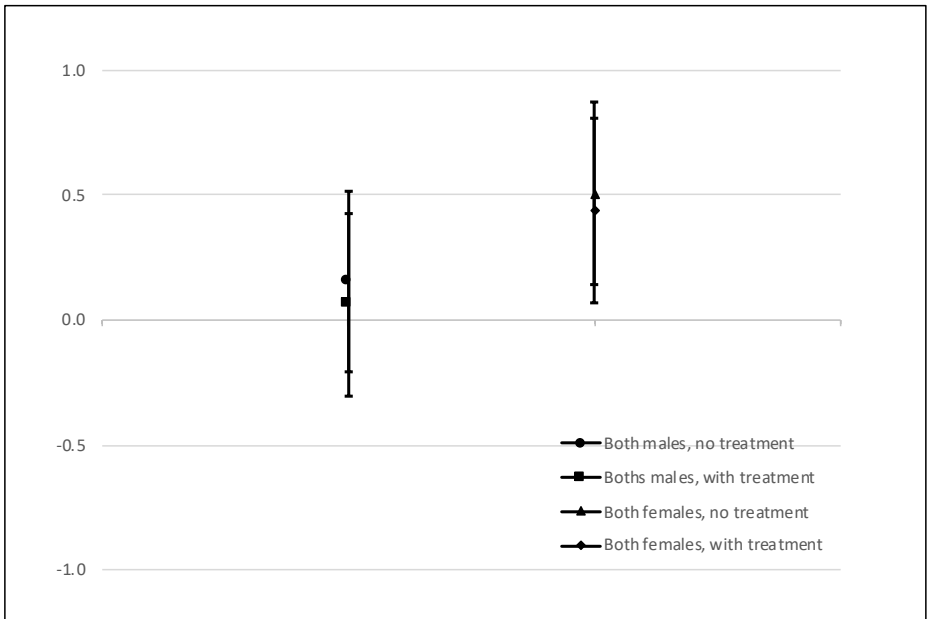

Fig. 7. Predictive margins for applicant's gender and treatment (same gender), Model 1

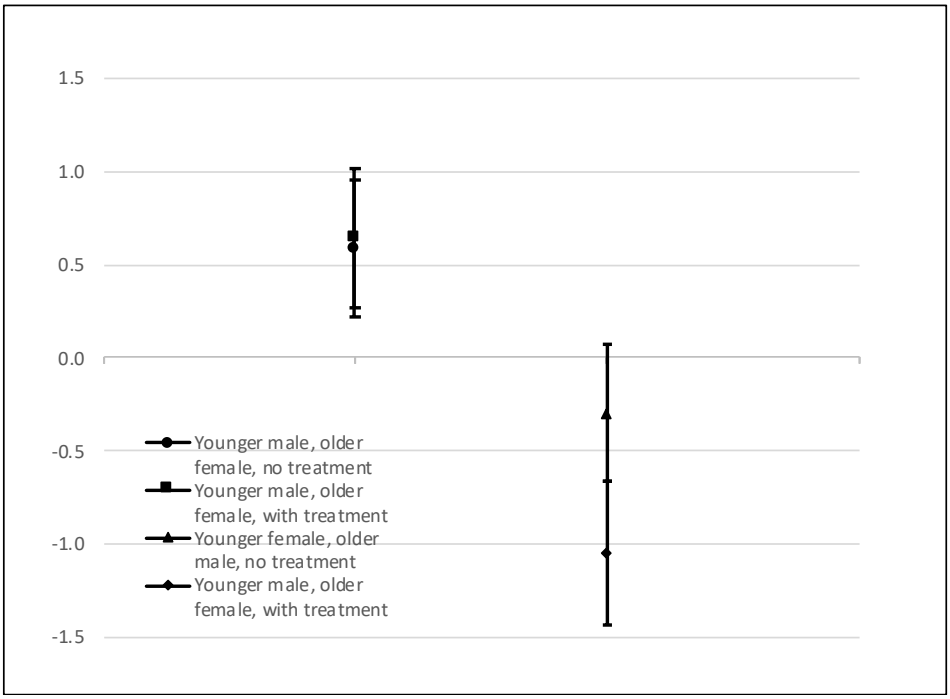

Fig. 8. Predictive margins for applicant's gender and treatment (different gender), Model 1.

We then introduced both objective (age, gender, family characteristics) and subjective (attitudes towards older people) participants' characteristics (Model 2). The results are presented in

Table 5. In short, we did not find any significant difference in the main variables (position, experience, treatment and interaction). Additionally, we found that certain other characteristics and attitudes (such as health stereotypes) have a significant effect.

Table 5[4]. Mixed-effects logistic model (with participants' characteristics)

Variables		*Odds ratios*	*Coefficients*
Position	Electrician	1.60	0.47***
Treatment	Treatment group	1.34	0.30
Interaction: P-T	Treatment group; Electrician	1.20	0.19
Candidates' characteristics			
Candidate's experience	Older candidate has higher experience	0.13	- 2.03***
Interaction: E-T	Treatment group; Older candidate has higher experience	0.44	- 0.81***
Candidate's recent training	Older candidate had recent training	0.16	- 1.85***
Interaction: Tr-T	Treatment group; both candidates w/o recent training	1.68	0.52*
Candidate's gender	Both females	1.83	0.60***
	Younger male, older female	2.12	0.75***
	Older male, younger female	0.68	- 0.39*
Interaction: G-T	Both females	0.82	- 0.20
	Younger male, older female	0.90	- 0.11
	Older male, younger female	0.47	- 0.75**
Participant's characteristics			
Gender	Male	0.82	- 0.20*
Age		0.99	- 0.01
Professional experience	Has experience working with older people	1.06	0.06
Legislation	Has knowledge about	0.80	- 0.23
Father's age		1.09	0.08**
Mother's age		0.95	- 0.06*
Father's status	Employed	2.92	1.11***
Mother's status	Employed	1.02	0.05
Participant's attitudes towards older workers			
Productivity	Younger than 50	0.98	- 0.02
	Older than 50	1.16	0.11
Competence	Younger than 50	0.92	0.08
	Older than 50	0.74	- 0.30
Responsibility	Younger than 50	1.59	0.45
	Older than 50	0.87	- 0.13
Sick leaves	Younger than 50	0.66	- 0.41
	Older than 50	1.75	0.55**
Overtime	Younger than 50	0.83	- 0.18
	Older than 50	1.11	0.10
Groupwork	Younger than 50	1.36	0.31
	Older than 50	1.58	0.45
Participant's attitudes towards older people in general			
Attitude	Positive	0.74	- 0.30

[4] For full description of variables please refer to

Table 3

Variables		*Odds ratios*	*Coefficients*
	Negative	1.06	0.06
Characteristics	Positive	0.95	- 0.06
	Negative	0.61	- 0.50**
Constant		0.92	- 0.08

Significance levels: *$p < 0.10$, **$p < 0.05$, *** $p < 0.01$.

Results indicate that the effect of the job position was similar to the previous model but the interaction with the treatment was not significant, i.e., the effect of position did not depend on the treatment. This is not surprising as the treatment itself was not significant (see

Table 5). Higher experience and existence of additional training for older candidates decreased the probability of younger candidates being chosen. There was also a significant interaction effect between experience and treatment (

Table 5) and training and treatment (

Table 5). However, when looking at predictive margins, we can see that the confidence intervals overlapped (

Fig. 9,

Fig. 10,

Fig. 11 and

Fig. 12). This means that treatment had practically no influence on the decisions made.

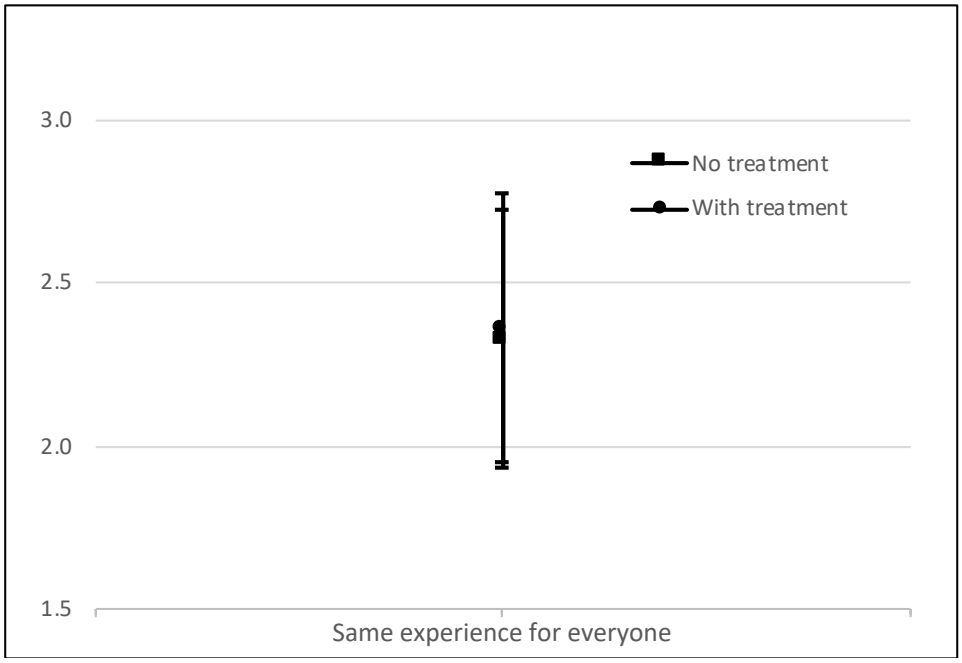

Fig. 9. Predictive margins for experience and treatment (same experience for everyone), Model 2

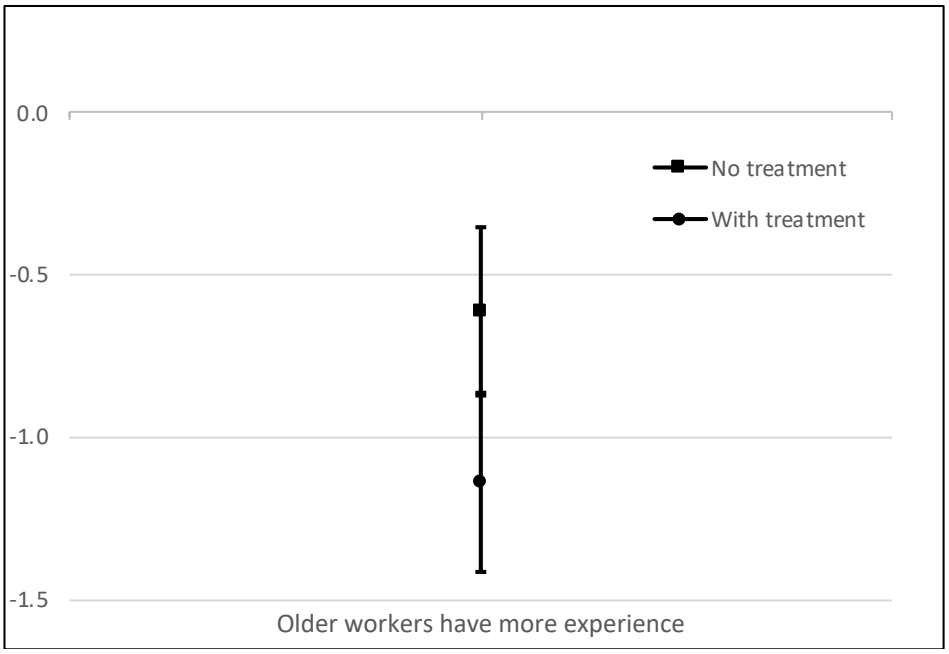

Fig. 10. Predictive margins for experience and treatment (older workers have more experience), Model 2

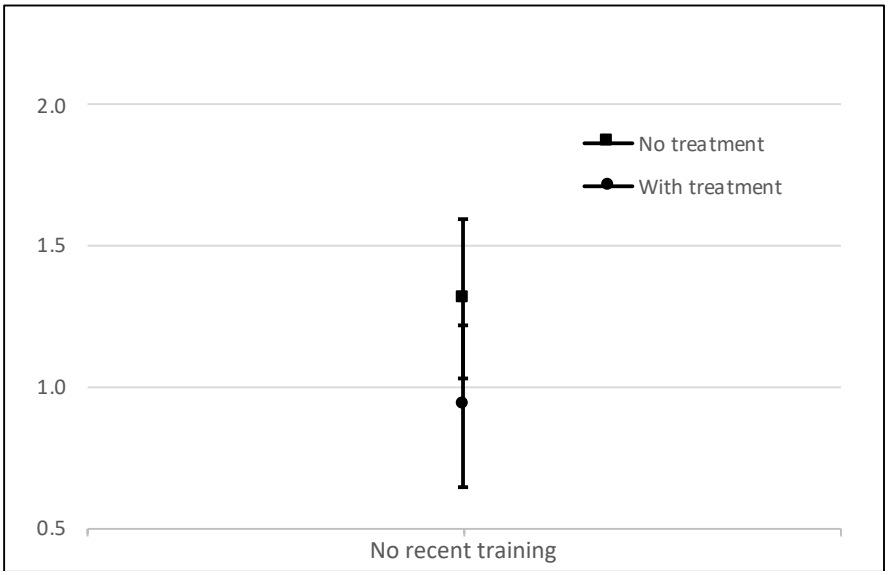

Fig. 11. Predictive margins for training and treatment (no recent training), Model 2

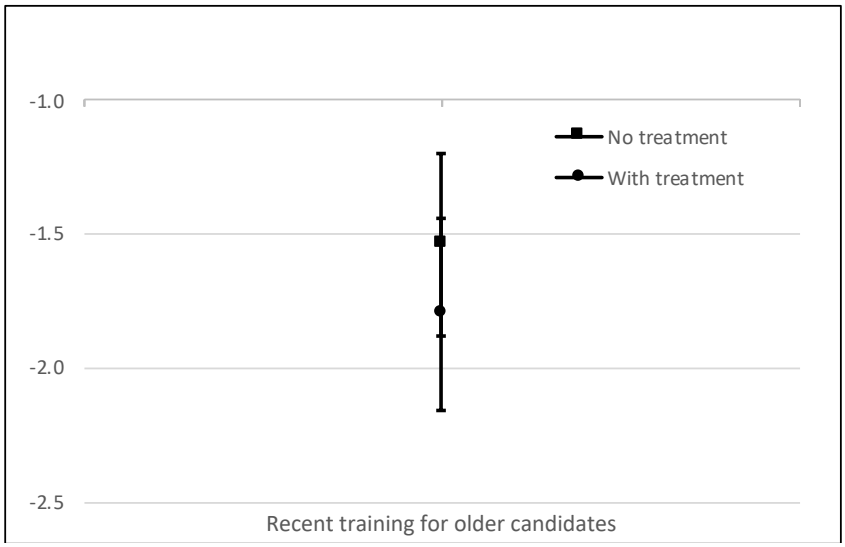

Fig. 12. Predictive margins for training and treatment (recent training for older workers), Model 2

The pure candidates' gender effect was also still significant (

Table 5). According to the odds ratios, younger candidates were 1.83 times more likely to be chosen if both candidates were both female compared to both being male (*p* < 0.01), 2.12 more likely if younger candidates were male and older were female (*p* < 0.01) and 0.68 less likely if younger candidates were female and older candidate were male (*p* < 0.10). When the interaction with the treatment was introduced, statistical significance was reached only in the case of the last group, older male and younger female (
Fig. 13 and
Fig. 14).

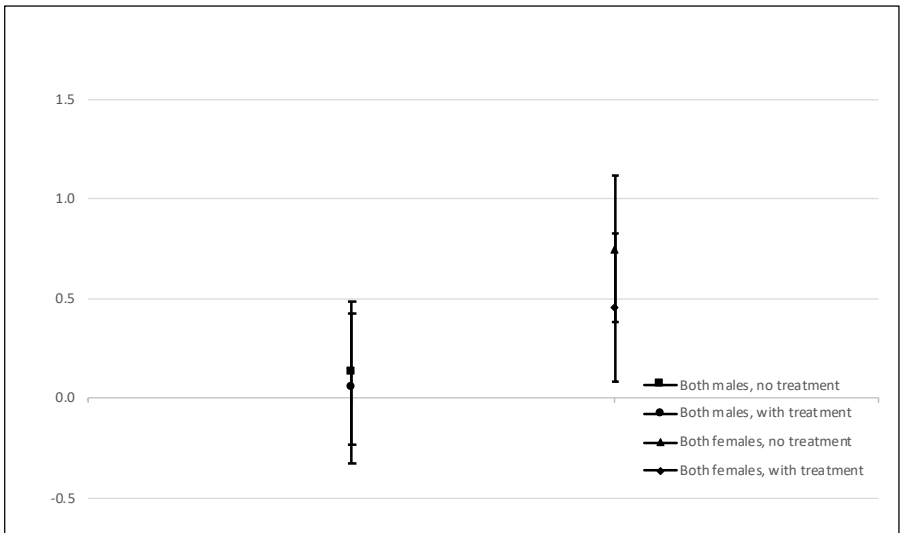

Fig. 13. Predictive margins for applicant's gender and treatment (same gender), Model 2

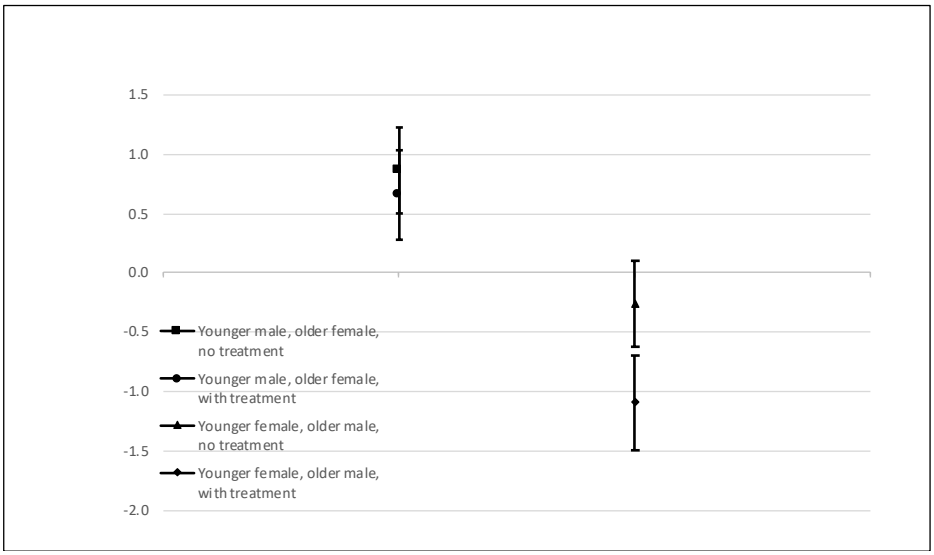

Fig. 14. Predictive margins for applicant's gender and treatment (different gender), Model 2

Most of other factors that could have influenced the decisions of participants turned out to be insignificant or weakly significant (

Table 5). Gender of participants was significant ($p < 0.10$), with male participants being 0.82 less likely to choose younger candidates than female participants. Father's age, which was between 44 and 73 with the mean of 56.5 ($p < 0.05$), and mother's age, which was between 41 and 68 with the mean 52.9 ($p < 0.10$), were also significant. The older the participant's father, the higher was the probability of choosing younger candidate (1.09 times more likely). On the contrary, the older was the mother, the lower was the probability of choosing younger candidate (0.95 times less likely). Moreover, if the father was working, the participant was 2.92 times more likely to choose younger candidate.

It is worth noting that these results are hardly interpretable as long as we could not consider specific family situations of each participant. It could be that participants having their working or older fathers developed perceptions more favorable to younger people for certain jobs. This would testify to the importance of the social environment in sharing individual perceptions. On the other hand, considering that these results (apart from that of the father's job) were very weakly significant, bigger samples or ad-hoc research would be necessary to corroborate any conclusion.

Only two variables regarding participants' attitudes were statistically significant. Firstly, those who believed that older people took sick leaves more often were 1.75 times more likely to choose younger candidates ($p < 0.05$). This confirms previous research showing that older people are stereotyped as less healthy and physically capable (e.g., Riach and Rich, 2007). In general, those who characterized older people with negative adjectives tended to choose older candidates instead of young ones (0.61 times less likely to choose a younger candidate). An explanation for this could be that "demanding" was coded as a negative trait. It has negative connotations in general, and this is why it was coded within the negative attitudes. However, when considering working environment, a demanding person could mean a person who is involved in his/her job and motivated. Thus, a person who considers older people demanding would probably also consider them good workers. This could be the reason why

negative attitudes towards older candidates brought them to be favored more than younger ones by some participants.

Adding questions about participants' attitudes towards older people was intended to help us to distinguish between the two possible explanations behind discrimination discussed in Section 2: discrimination due to imperfect information in the labor market (i.e., statistical discrimination) and discrimination due to the cultural attitudes that consider "young" being better than "old" (i.e., tastes-based discrimination).

Our findings indicate that personal attitudes did not significantly influence decisions. Moreover, we found that certain negative attitudes towards older people led to an inverse effect — participants who chose adjectives with negative meanings tended to choose older candidates more often. On the other hand, objective characteristics, such as experience and training played in favor of older workers. Additionally, stereotypes about the type of profession and about the health status of older workers decreased their chances of being hired. Both seem to swing more towards imperfect information theory than towards cultural stereotypes that consider "youth" being better than "old age".

Discussion and Conclusions

In this paper, we aimed to examine whether older people were in any way disadvantaged compared to younger ones in different job positions. We also wanted to test whether perceptions and potential stereotypes were socially embedded by stressing potential differences between individual perceptions and socially shared beliefs.

We formulated four hypotheses. Our results corroborated the first three. As previous research suggested, the type of job *(Hypotheses 1* and *Hypotheses 2)* and job experience *(Hypothesis 3)* were more influential on the hiring decisions than age. For a job requiring more physical performance, which was potentially too demanding for older workers, subjects chose younger candidates more preferably. On the other hand, older workers had much better chances with a non-physical job with more executive functions, which entail more responsibility.

We also showed the importance of on-going training *(Hypothesis 3)* for older workers, which is often unfortunately denied in many economies (Adams, 2002; Cohn, 1982; Maxwell, 1989; O'Rand and MacLean, 1986). Additionally, coherently with previous research (Baert et al., 2016), we found that discrimination occurred only regarding those who at older age had the same experience as younger workers. Our findings suggest that with proper experience and training, older workers sometimes could be even more favored than younger workers.

The null outcomes of our *Hypothesis 4* are particularly interesting. Decisions of the control group were consistent with those of the treatment group. This suggests that the attitudes and level of discrimination do not fluctuate due to exogenous forces as individual perceptions and social expectations were similar. This could indicate that beliefs and attitudes regarding age are deeply wired into individual perceptions, thereby revealing the potential existence of contextual social norms and cultural values coherent with age discrimination. This casts doubts on the efficacy of age discrimination policies in Italy, which is also one of the countries with the highest rate of life expectancy. In Italy, older workers will be required to work even more in the next decades. As suggested by De Rose et al. (2019) "currently, the national policies put in place have been aimed essentially at raising the retirement age; only

few regions have implemented measures explicitly favoring the employment of workers who have lost their jobs in old age" (p. 67), while only a few companies are able "to invest in skills and health promotion of more mature workers" (p. 68). This would reveal a misalignment between policies to make retirement systems more sustainable and labor market reforms.

We also found that decision-makers' family background had a role in their attitudes towards older workers. However, we could not provide a convincing explanation of this role, due to lack of in-depth contextual information. Specifically, we found that the age of both parents and the employment status of the decision-maker's father had a statistically significant influence on hiring decisions. This would mean that the family environment, the exposure to parents' experience and the beliefs ingrained through personal experiences might have a significant influence on age-related attitudes towards employment decisions. This could reveal a sampling bias, according to which the subject would tend to project his/her age-related experience in a family onto the idealized market situation in which he/she was called to decide during the experiment (e.g., Takács et al., 2018). However, disentangling the mechanisms behind these influences would require more detailed research, which could even help us understand whether family environments can contribute to share discriminatory attitudes more, less or equal to any other kind of social environment (e.g., media and peers) to which people are exposed.

Among possible stereotypes, only health stereotype proved to be significant and decreasing older people's chances of being hired. Personal attitudes towards older people did not have any negative influence on hiring probability, while certain negative attitudes towards them, such as being considered "demanding" persons, actually played in their favor. This could reveal statistical more than tastes-based discrimination as only factors such as the type of job requiring workers to be physically fit actually decreased the chances of older people to be hired. Obviously, this is probably based on the stereotype that older people are less healthy due to age, which may concern very old people but less likely among those who are in active employment (Ng and Feldman, 2012). However, this fact is true at the population level but could be misleading when judging individual conditions. Thus, basing hiring choice on an age-related assumption about someone's health without any proof (e.g., a medical certificate) would be discriminatory because the employer would be using someone's age as a population concept as a proxy to estimate individual features.

Gender is another important factor that was not the focus of our study but still requires some discussion. Female candidates were more penalized regardless of their age, especially when hiring concerned a typical "male" profession (electrician). Note that for the managing director's position, professional experience and training could outweigh gender bias. However, in general, men were preferred over women both in case of women being older and younger. This would testify of the complex nature of discrimination when markets are based on imperfect information (e.g., Wood et al., 2008).

Although with all caveats of a simple role-game lab experiment with a limited student sample, our findings can have interesting implications. Firstly, our findings suggest that discrimination of older people is more likely to happen in situations when workers had long career breaks or spent a lot of time in another type of job. In this case, even if they had enough experience to fill the position, a younger candidate with the same experience can benefit. This indicates that unemployment at younger ages, which often happens due to younger people lacking necessary education or experience, may reinforce discriminative attitudes with elderly workers in future.

Secondly, while we did not consider low-skilled job that required more physical work (Riach and Rich, 2006, 2007), our findings suggest that an older person is likelier to have problems with jobs that are physically relatively tiresome than intellectual activities. This calls for initiatives on promotion of active ageing programs and long-life training that also points to jobs that are perceived to have a minor intellectual content and require certain level of physical fitness among employees. However, the attitudes of many employers who consider older workers not worthy of any investment in terms of training, work against this purpose. Although there are certain successful case studies mostly in multinational corporations, there is need for age-related initiatives focused on training and "preventive or "compensating for physical decline" policies in term of workplace design and health promotion" (Lazazzara, Bombelli, 2011, p.820).

Finally, considering the characteristics of our student sample, a valuable development could be to extend the experiment to a population of older decision-makers to understand inter-generational bias. Testing richer decision scenarios (e.g., with different vacancies) would also help to reconstruct the formation of age-related perceptions in more detail.

References

Adams, S. J., 2002. Educational attainment and health: Evidence from a sample of older adults. Education Economics, 10(1), 97-109, https://doi.org/10.1080/09645290110110227.

Aigner, D. J., Cain, G. G., 1977. Statistical theories of discrimination in labor markets. Industrial and Labour Relations Review, 30(2), 175, https://doi.org/10.1177/001979397703000204.

Albert, R., Escot, L., Fernández-Cornejo, J. A., 2011. A field experiment to study sex and age discrimination in the Madrid labour market. International Journal of Human Resource Management, 22: 351–75, https://doi.org/10.1080/09585192.2011.540160.

Allport, G. W.,1979. The nature of prejudice. Reading, Mass: Addison-Wesley Pub. Co.

Arrow, K., 1973. The theory of discrimination. In Discrimination in labor markets, edited by Orly C. Ashenfelter and Albert E. Rees. Princeton, NJ: Princeton University Press, pp. 3-33.

Baert, S., Norga, J., Thuy, Y., Van Hecke, M., 2016. Getting grey hairs in the labour market. An alternative experiment on age discrimination. Journal of Economic Psychology, 57, 86-101, https://doi.org/10.1016/j.joep.2016.10.002.

Barnes, M., Blom, A., Cox, K., Lessof, C., Walker, A., 2006. The Social Exclusion of Older People: Evidence from the First Wave of the English Longitudinal Study on Ageing: Final Report. London: Office of the Deputy Prime Minister. Available: https://www.ifs.org.uk/docs/odpm_social_exclusion.pdf. Accesses: 8 May 2020.

Barbieri, P., Scherer, S., 2009. Labour market flexibilization and its consequences in Italy. European Sociological Review, 25(6), 677-692, https://doi.org/10.1093/esr/jcp009.

Bayl-Smith, P. H., Griffin, B., 2014. Age discrimination in the workplace: Identifying as a late-career worker and its relationship with engagement and intended retirement age. Journal of Applied Social Psychology, 44(9), 588-599, https://doi.org/10.1111/jasp.12251.

Becker, G. S., 1971. The Economics of Discrimination, Second Edition, The University of Chicago Press, Chicago and London.

Bertoni, M., Brunello, G., Rocco, L., 2015. Selection and the age–productivity profile. Evidence from chess players. Journal of Economic Behavior & Organization, 110, 45-58, https://doi.org/10.1016/j.jebo.2014.11.011.

Besedeš, T., Deck, C., Sarangi, S., Shor, M., 2012. Decision-making strategies and performance among seniors. Journal of economic behavior & organization, 81(2), 524-533, https://doi.org/10.1016/j.jebo.2011.07.016.

Boyes, L., McCormick, J., 2005. A Coming of Age. York: Joseph Rowntree Foundation.

Brooks, B. M., Gardiner, J. M., Kaminska, Z., & Beavis, Z., 2001. Implicit versus explicit retrieval of surnames of famous people: Dissociative effects of levels of processing and age. Journal of Memory and Language, 44(1), 118-130, https://doi.org/10.1006/jmla.2001.2717.

Burdyak A., Grishina E., Dormidontova Y., Kazakova Y., Lyashok V., Tsatsura E., 2015. Effect of Labor and Retirement Behavior of the Population in the Long-Term Sustainability of the Pension System in the Russian Federation and the Reduction of Risks of Deprivational Poverty Among the Elderly, http://dx.doi.org/10.2139/ssrn.2608964

Chaparro, A., Bohan, M., Fernandez, J., Choi, S. D., Kattel, B., 1999. The impact of age on computer input device use:: Psychophysical and physiological measures. International Journal of Industrial Ergonomics, 24(5), 503-513, https://doi.org/10.1016/S0169-8141(98)00077-8.

Cialdini R. B., Goldstein N. J., 2004. Social influence: Compliance and conformity //Annual Review of Psychology, 55, 591-621, https://doi.org/10.1146/annurev.psych.55.090902.142015.

Choudhry, M. T., Marelli, E., & Signorelli, M., 2012. Youth unemployment rate and impact of financial crises. International journal of manpower, 33(1), 76-95, https://doi.org/10.1108/01437721211212538.

Cohn, R. M., 1982. Economic development and status change of the aged. American Journal of Sociology, 87(5), 1150-1161, https://doi.org/10.1086/227559.

Council Directive 2000/78/EC of 27 November 2000 establishing a general framework for equal treatment in employment and occupation, (2000). Available at: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0078:EN:HTML. Accessed: 8 May 2020.

Dalal, D. K., Diab, D. L., Tindale, R. S., 2015. I Heard That : Do rumors affect hiring decisions?. International Journal of Selection and Assessment, 23: 224–236, https://doi.org /10.1111/ijsa.12110.

De Rose, A., Racioppi, F., Checcucci, P., Arezzo, M.F., Polli, C., 2019. The workforce aging and challenges for policy and for business. The case of Italy. Review of European Studies, 11, p.60, https://doi.org/10.5539/res.v11n4p60.

Evandrou, M., Glaser, K., 2004. Family, work and quality of life. Ageing and Society, 24, 771–791. DOI: https://doi.org/10.1017/S0144686X04002545Pu.

Fernandes-Alcantara, A. L., 2012. Youth and the labor force: Background and trends, Available at: https://fas.org/sgp/crs/misc/R42519.pdf; Accessed: 8 May 2020.

Fischbacher, U., 2007. z-Tree: Zurich toolbox for ready-made economic experiments. Experimental economics, 10(2), 171-178, https://doi.org/10.1007/s10683-006-9159-4.

Fisher R. A., 1960. The Design of Experiments, 7th Edn Edinburgh: Oliver and Boyd.

Fyock, C.,1991. Teaching Older Workers New Tricks. Training and Development Journal (April): 21-23.

Garstka, T. A., Hummert, M. L., and Branscombe, N. R., 2005. Perceiving age discrimination in response to intergenerational inequity. Journal of Social Issues, 61(2), 321-342, https://doi.org/10.1111/j.1540-4560.2005.00408.x.

Glover, I., Branine, M., 1997. Ageism and the labour process. Personnel Review, 26, 274–292, https://doi.org/10.1108/00483489710172079

Guaglianone, L., Ravelli, F., 2015. Young and Old: Age Discrimination in Italian Case Law. European Labour Law Journal, 6(2), 175-182, https://doi.org/10.1177/201395251500600205

Haefner, J. R., 1977. Race, age, sex, and competence as factors in employer selection of the disadvantaged. Journal of Applied Psychology, 62, 199-202, http://dx.doi.org/10.1037/0021-9010.62.2.199.

Hassell, B. L., Perrewé, P. L., 1993. An examination of the relationship between older workers' perceptions of age discrimination and employee psychological states. Journal of Managerial Issues, 109-120. Available at: https://www.jstor.org/stable/40604173. Accessed: 8 May 2020.

Johnson, R. W., Neumark, D., 1996. Age discrimination, job separation, and employment status of older workers: Evidence from self-reports (No. w5619). National Bureau of Economic Research, https://doi.org /10.3386/w5619.

Kang, N. E., Yoon, W. C., 2008. Age-and experience-related user behavior differences in the use of complicated electronic devices. International Journal of Human-Computer Studies, 66(6), 425-437, https://doi.org/10.1016/j.ijhcs.2007.12.003.

Kapp, M., 2013. Looking at age discrimination laws through a global lens. Generations, American Society on Aging, 37(1), 70-75.

Kaufmann, M. C., Krings, F., Sczesny, S., 2015. Looking Too Old? How an Older Age Appearance Reduces Chances of Being Hired. British Journal of Management, https://doi.org/10.1111/1467-8551.12125.

Keuschnigg, M., Wolbring T., 2015. The Use of Field Experiments to Study Mechanisms of Discrimination. Analyze & Kritik, https://doi.org/10.1515/auk-2016-0109.

Kuk, A. Y. C.,1995. Asymptotically unbiased estimation in generalized linear mixed models with random effects. Journal of the Royal Statistical Society, Series B 57, 395-407, https://doi.org/10.1111/j.2517-6161.1995.tb02035.x

Kunze, F., Boehm, S. A., Bruch, H., 2011. Age diversity, age discrimination climate and performance consequences—a cross organizational study. Journal of Organizational Behavior, 32(2), 264-290, https://doi.org/10.1002/job.698.

Lahey, J. N. (2005). Do older workers face discrimination? (Issue Brief No. 33). Chestnut Hill, MA: Center for Retirement Research at Boston College. Available at: https://www.researchgate.net/profile/Joanna_Lahey/publication/23644137_Do_Older_Workers_Face_Discrimination/links/55d1fd9608aec1b0429dcb8e/Do-Older-Workers-Face-Discrimination.pdf. Accessed: 8 May 2020.

Lazazzara, A., Bombelli, M.C., 2011 "HRM practices for an ageing Italian workforce: the role of training", Journal of European Industrial Training, Vol. 35 Iss: 8, pp.808 – 825, https://doi.org/10.1108/03090591111168339.

Locke-Connor, C., Walsh, R. P., 1980. Attitudes toward older job applicant: Just as competent, but more likely to fail. Journal of Gerontology, 35, 920-927, https://doi.org/10.1093/geronj/35.6.920.

Lobjois, R., Cavallo, V., 2007. Age-related differences in street-crossing decisions: The effects of vehicle speed and time constraints on gap selection in an estimation task. Accident Analysis & Prevention, 39(5), 934-943, https://doi.org/10.1016/j.aap.2006.12.013.

Lozon, J. C., Barratt, J., 2013. Revera report on ageism. International Federation on Ageing, Global Connection. Available at: https://ifa.ngo/wp-content/uploads/2013/03/Revera-IFA-Ageism-Report.pdf. Accessed: 8 May 2020.

Lucas, S., 2008. Theorizing discrimination in an era of contested prejudice: Discrimination in the United States. Temple University Press.

Luo, L., Craik, F. I., 2009. Age differences in recollection: Specificity effects at retrieval. Journal of Memory and Language, 60(4), 421-436, https://doi.org/10.1016/j.jml.2009.01.005.

Macnicol, J., 2006. Age Discrimination. Cambridge: Cambridge University Press.

Maxwell, N. L., 1989. Labor market effects from involuntary job losses in layoffs, plant closings: The role of human capital in facilitating reemployment and reduced wage losses. American Journal of Economics and Sociology, 48(2), 129-141, https://doi.org/10.1111/j.1536-7150.1989.tb02106.x.

McNemar, Q., 1947. Note on the sampling error of the difference between correlated proportions or percentages. Psychometrika, 12(2), 153-157, https://doi.org/10.1007/BF02295996.

Muchnik L., Aral S., Taylor S., 2013. J. Social influence bias: A randomized experiment, Science, T. 341, 6146, pp. 647-651, https://doi.org/10.1126/science.1240466.

Ng, T.W., Feldman, D.C., 2012. Evaluating six common stereotypes about older workers with meta-analytical data. Personnel psychology, 65(4), pp.821-858, https://doi.org/10.1111/peps.12003.

O'Boyle, E., 2001. Salary compression and inversion in the university workplace. International Journal of Social Economics, 28, 959–979, https://doi.org/10.1108/03068290110404679

OECD, 2015. Pensions at a Glance 2015: OECD and G20 indicators, OECD Publishing, Paris, http://dx.doi.org/10.1787/pension_glance-2015-en.

OECD, 2017. Pensions at a Glance 2017: OECD and G20 Indicators, OECD Publishing, Paris, https://doi.org/10.1787/pension_glance-2017-en.

OECD, 2019. OECD Labour Force Statistics 2019, OECD Publishing, Paris, https://doi.org/10.1787/g2g9fb3e-en.

Official OECD Website, Ageing Societies and the Looming Pension Crisis. Available at: https://www.oecd.org/employment/ageingsocietiesandtheloomingpensioncrisis.htm. Accessed: 8 May 2020.

O'Rand, A. M., MacLean, V. M., 1986. Labor market, pension rule structure and retirement benefit promise for long-term employees. Social Forces, 65(1), 224-240, https://doi.org/10.1093/sf/65.1.224.

Peng, B., Kleiner, B., 1999. New developments in age discrimination. Equal Opportunities International, 18(2–4), 72–75, https://doi.org/10.1108/02610159910785871.

Perry, E. L., Bourhis, A. C., 1998. A closer look at the role of applicant age in selection decisions. Journal of Applied Social Psychology, 28, 1670-1697, https://doi.org/10.1111/j.1559-1816.1998.tb01340.x.

Phelps, E. S., 1972. The statistical theory of racism and sexism. American Economic Review 62:659-61. Available at: https://www.jstor.org/stable/1806107. Accessed: 8 May 2020.

Phillipson, C., 2013. Ageing. Cambridge, Polity Press.

Power B.,1987. Attitudes of young people to ageing and the elderly. National Council for the Elderly. Available at: http://www.lenus.ie/hse/handle/10147/336076. Accessed: Accessed: 8 May 2020.

Rhodes, S., 1983. Age-Related Differences in Work Attitudes and Behavior: A Review and Conceptual Analysis. Psychological Bulletin 93 (2): 328- 367, http://dx.doi.org/10.1037/0033-2909.93.2.328.

Riach, P., Rich, J., 2006. An Experimental Investigation of Age Discrimination in the French Labour Market, IZA Discussion Papers 2522, Institute for the Study of Labour (IZA). Available at: https://ssrn.com/abstract=956389. Accessed: 8 May 2020.

Riach, P., Rich, J., 2007. An Experimental Investigation of Age Discrimination in the Spanish Labour Market, IZA Discussion Papers 2654, Institute for the Study of Labour (IZA). Available at: https://ssrn.com/abstract= 970498. Accessed: 8 May 2020.

Riach P. A., 2015. A field experiment investigating age discrimination in four European labour markets, International Review of Applied Economics, https://doi.org/10.1080/02692171.2015.1021667

Rippon, I., Kneale, D., de Oliveira, C., Demakakos, P., & Steptoe, A., 2013. Perceived age discrimination in older adults. Age and ageing, 43(3), 379-386, https://doi.org/10.1093/ageing/aft146

Rymkevitch, O., Villosio C., 2007. Age Discrimination in Italy, No 67, LABORatorio R. Revelli Working Papers Series from LABORatorio R. Revelli, Centre for Employment Studies. Available at: http://econpapers.repec.org/paper/ccawplabo/67.htm. Accessed: 8 May 2020.

Sargeant, M., 2001. Lifelong learning and age discrimination in employment. Education and the
Law, 13(2), 141–154, https://doi.org/10.1080/09539960120068336

Sacchi, S., 2013. Social policy reform in the Italian debt crisis: pensions, labor, unemployment benefits. Italian Politics, 28(1), 207-226, https://doi.org/10.3167/ip.2013.280112.

Schneider, D. J., 2005. The psychology of stereotyping. Guilford Press.

Schuman, E., Kleiner, B., 2001. Is age a handicap in finding employment? Equal Opportunities International, 20(5–7), 48–52. Doi: https://doi.org/10.1108/02610159910786078.

Schwerha, D. J., Wiker, S. F., Jaraiedi, M., 2007. Effect of distractors, age, and level of education upon psychomotor task learning. International Journal of Industrial Ergonomics, 37(9-10), 801-809, https://doi.org/10.1016/j.ergon.2007.07.005.

Segalla, M., Jacobs-Belschak, G., Muller, C., 2001, Cultural influences on employee termination decisions: firing the good, the average or the old?, European Management Journal, Vol. 19 No. 1, pp. 58-72, https://doi.org/10.1016/S0263-2373(00)00071-2.

Shen, G., Kleiner, B., 2001. Age discrimination in hiring. Equal Opportunities International, 20(8), 25–32, https://doi.org/10.1108/02610150110786660.

Stiratelli, R., Laird, N., Ware, J., 1984. Random effects statistical model for serial observations with binary response. Biometrics 40, 961-971, https://doi.org/10.2307/2531147

Takács, K., Bravo, G., Squazzoni, F., 2018. Referrals and information flow in networks increase discrimination: A laboratory experiment. Social Networks, 54, 254-265, https://doi.org/10.1016/j.socnet.2018.03.005

Takács K., Squazzoni F., Bravo G., Castellani M., 2014. Employer Networks, Priming, and Discrimination in Hiring: An Experiment. In Manzo, G. (Ed.), Analytical Sociology. Actions and Networks. Chichester: Wiley, pp. 373-396, https://doi.org/10.1002/9781118762707.ch15.

United Nations, Department of Economic and Social Affairs, Population Division, 2013. World Population Ageing 2013. ST/ESA/SER.A/348.

Wagner, N., Hassanein, K., Head, M., 2014. The impact of age on website usability. Computers in Human Behavior, 37, 270-282, https://doi.org/10.1016/j.chb.2014.05.003.

Williams, D., 1975. The analysis of binary responses from toxicological experiments involving reproduction and teratogenicity. Biometrics 31, 949-952, https://doi.org/10.2307/2529820.

Wood, G., Wilkinson, A., Harcourt, M., 2008. Age discrimination and working life: Perspectives and contestations–a review of the contemporary literature. International Journal of Management Reviews, 10(4), 425-442, https://doi.org/10.1111/j.1468-2370.2008.00236.x.

World Health Organization, 2002. Active ageing: A policy framework (No. WHO/NMH/NPH/02.8). Geneva: World Health Organization. Available at: https://apps.who.int/iris/bitstream/handle/10665/67215/WHO_NMH_NPH_02.8.pdf. Accessed: 8 May 2020.

Zancada-Menendez, C., Sampedro-Piquero, P., Meneghetti, C., Labate, E., Begega, A., & Lopez, L., 2015. Age differences in path learning: The role of interference in updating spatial information. Learning and Individual Differences, 38, 83-89, https://doi.org/10.1016/j.lindif.2015.01.015.

Appendix

Experimental instructions

Introduction

Introduction — control group

You will participate in an experiment that simulates job market situations.

You will act as a recruiter and will be presented with a variety of job vacancies and candidates for them.

You will need to choose the candidate for each vacancy whom you will consider the best fit.

When making your decisions, please keep in mind the following information. Each applicant has equal hiring costs for the employers, i.e., the wages, social security payments, etc. will be the same for all potential employees.

To accomplish your task, you will be paid cash immediately at the end of the experiment.

Introduction — treatment group

You will participate in an experiment that simulates job market situations.

You will act as a recruiter and will be presented with a variety of job vacancies and candidates for them.

You will need to choose the candidate for each vacancy whom you will consider the best fit.

When making your decisions, please keep in mind the following information. Each applicant has equal hiring costs for the employers, i.e., the wages, social security payments, etc. will be the same for all potential employees.

You will be paid cash immediately at the end of the experiment.

Other students have already played this experiment before. The amount of the payment you will receive will be calculated in the following way. For each response that will correspond to the majority of responses given by the previous group (i.e. more than 50%), you will receive 80 cents, for every response that will not correspond to the majority of responses you will lose 80 cents. In case you end in a loss, you will receive 5 euros participation fee. After the experiment, you will be required to fill in a questionnaire including information about you, after which you will know your earning, which will be communicated only to you directly by the experimenter.

Resumes[5]

First vacancy.

A position of an electrician in a construction company.

Description: the successful candidate's key responsibilities will include electrical installation, repairs and maintenance work which should be of high quality, 'right first time' and cost effective.

Requirements: specialized secondary education; experience in a similar position of 3 years or more.

First pair of resumes:

[5] Here, we presented the complete list of all pairs that were randomized.

1. First applicant is male, 35 years old, has specialized secondary education in the required field (graduated in 2003) and 10 years of relevant experience.
2. Second applicant is male, 50 years old, has specialized secondary education in the required field (graduated in 1988) and 10 years of relevant experience.

Second pair of resumes:

1. First applicant is male, 35 years old, has specialized secondary education in the required field (graduated in 2003) and 10 years of relevant experience.
2. Second applicant is male, 50 years old, has specialized secondary education in the required field (graduated in 1988) and 25 years of relevant experience.

Third pair of resumes:

1. First applicant is male, 35 years old, has specialized secondary education in the required field (graduated in 2003) and 10 years of relevant experience.
2. Second applicant is male, 50 years old, has specialized secondary education in the required field (graduated in 1988), proof of undergoing additional training in 2010 and 2016 and 25 years of relevant experience.

Fourth pair of resumes:

1. First applicant is female, 35 years old, has specialized secondary education in the required field (graduated in 2003) and 10 years of relevant experience.
2. Second applicant is female, 50 years old, has specialized secondary education in the required field (graduated in 1988) and 10 years of relevant experience.

Fifth pair of resumes:

1. First applicant is female, 35 years old, has specialized secondary education in the required field (graduated in 2003) and 10 years of relevant experience.
2. Second applicant is female, 50 years old, has specialized secondary education in the required field (graduated in 1988) and 25 years of relevant experience.

Sixth pair of resumes:

1. First applicant is female, 35 years old, has specialized secondary education in the required field (graduated in 2003) and 10 years of relevant experience.
2. Second applicant is female, 50 years old, has specialized secondary education in the required field (graduated in 1988), proof of undergoing additional training in 2010 and 2016 and 25 years of relevant experience.

Seventh pair of resumes:

1. First applicant is male, 35 years old, has specialized secondary education in the required field (graduated in 2003) and 10 years of relevant experience.
2. Second applicant is female, 50 years old, has specialized secondary education in the required field (graduated in 1988) and 10 years of relevant experience.

Eighth pair of resumes:

1. First applicant is male, 35 years old, has specialized secondary education in the required field (graduated in 2003) and 10 years of relevant experience.
2. Second applicant is female, 50 years old, has specialized secondary education in the required field (graduated in 1988) and 25 years of relevant experience.

Ninth pair of resumes:

1. First applicant is male, 35 years old, has specialized secondary education in the required field (graduated in 2003) and 10 years of relevant experience.
2. Second applicant is female, 50 years old, has specialized secondary education in the required field (graduated in 1988), proof of undergoing additional training in 2010 and 2016 and 25 years of relevant experience.

Tenth pair of resumes:

1. First applicant is female, 35 years old, has specialized secondary education in the required field (graduated in 2003) and 10 years of relevant experience.
2. Second applicant is male, 50 years old, has specialized secondary education in the required field (graduated in 1988) and 10 years of relevant experience.

Eleventh pair of resumes:

1. First applicant is female, 35 years old, has specialized secondary education in the required field (graduated in 2003) and 10 years of relevant experience.
2. Second applicant is male, 50 years old, has specialized secondary education in the required field (graduated in 1988) and 25 years of relevant experience.

Twelfth pair of resumes:

1. First applicant is female, 35 years old, has specialized secondary education in the required field (graduated in 2003) and 10 years of relevant experience.
2. Second applicant is male, 50 years old, has specialized secondary education in the required field (graduated in 1988), proof of undergoing additional training in 2010 and 2016 and 25 years of relevant experience.

Second vacancy

A position of a Managing Director in Mergers and Acquisitions (M&A) in an advisory firm.

Description: the successful candidate will be responsible for generation and execution of various M&A transactions (from the first discussions till the transactions' closings); for the communication of the regulatory and financial information, as well as complex strategic issues in order to help the decision-makers in corporate finance transactions; for the development and enhancement of client networks, for the development and execution of sales and marketing strategies; for the mentorship of his / her subordinates.

Requirements: Master's degree in Economics, Accounting or Finance; at least 15 years of professional experience in M&A.

First pair of resumes:

1. First applicant is male, 38 years old, has Master's degree in Accounting (graduated in 2004), started working in M&A 15 years ago.
2. Second applicant is male, 53 years old, has Master's degree in Accounting (graduated in 1989), started working in M&A 15 years ago.

Second pair of resumes:

1. First applicant is male, 38 years old, has Master's degree in Accounting (graduated in 2004), started working in M&A 15 years ago.
2. Second applicant is male, 53 years old, has Master's degree in Accounting (graduated in 1989), started working in M&A 30 years ago.

Third pair of resumes:

1. First applicant is male, 38 years old, has Master's degree in Accounting (graduated in 2004), started working in M&A 15 years ago.
2. Second applicant is male, 53 years old, has Master's degree in Accounting (graduated in 1989), started working in M&A 30 years ago and has proof of undergoing additional training every 2-3 years.

Fourth pair of resumes:

1. First applicant is female, 38 years old, has Master's degree in Accounting (graduated in 2004), started working in M&A 15 years ago.
2. Second applicant is female, 53 years old, has Master's degree in Accounting (graduated in 1989), started working in M&A 30 years ago.

Fifth pair of resumes:

1. First applicant is female, 38 years old, has Master's degree in Accounting (graduated in 2004), started working in M&A 15 years ago.
2. Second applicant is female, 53 years old, has Master's degree in Accounting, started working in M&A 30 years ago.

Sixth pair of resumes:

1. First applicant is female, 38 years old, has Master's degree in Accounting (graduated in 2004), started working in investment banking as an intern 15 years ago.

2. Second applicant is female, 53 years old, has Master's degree in Accounting (graduated in 1989), started working in investment banking 30 years ago and has proof of undergoing additional training every 2-3 years.

Seventh pair of resumes:

1. First applicant is male, 38 years old, has Master's degree in Accounting (graduated in 2004), started working in M&A 15 years ago.
2. Second applicant is female, 53 years old, has Master's degree in Accounting (graduated in 1989), started working in M&A 15 years ago.

Eighth pair of resumes:

1. First applicant is male, 38 years old, has Master's degree in Accounting (graduated in 2004), started working in M&A 15 years ago.
2. Second applicant is female, 53 years old, has Master's degree in Accounting (graduated in 1989), started working in M&A 30 years ago.

Ninth pair of resumes:

1. First applicant is male, 38 years old, has Master's degree in Accounting (graduated in 2004), started working in M&A 15 years ago.
2. Second applicant is female, 53 years old, has Master's degree in Accounting (graduated in 1989), started working in M&A 30 years ago and has proof of undergoing additional training every 2-3 years.

Tenth pair of resumes:

1. First applicant is female, 38 years old, has Master's degree in Accounting (graduated in 2004), started working in M&A 15 years ago.
2. Second applicant is male, 53 years old, has Master's degree in Accounting (graduated in 1989), started working in M&A 15 years ago.

Eleventh pair of resumes:

1. First applicant is female, 38 years old, has Master's degree in Accounting (graduated in 2004), started working in M&A 15 years ago.
2. Second applicant is male, 53 years old, has Master's degree in Accounting (graduated in 1989), started working in M&A 30 years ago.

Twelfth pair of resumes:

1. First applicant is female, 38 years old, has Master's degree in Accounting (graduated in 2004), started working in M&A 15 years ago.
2. Second applicant is male, 53 years old, has Master's degree in Accounting (graduated in 1989), started working in M&A 30 years ago and has proof of undergoing additional training every 2-3

Final questionnaire

1. Which of the following words would best describe your general attitude towards and relationship with people aged 50 or more (choose no more than 3 answers)?
    a. Distant
    b. Sympathetic
    c. Wary
    d. Friendly
    e. Uneasy
    f. Co-operative
    g. Respectful
    h. Interested
    i. Indifferent
    j. None of the above
2. Do you consider that most people over 50 are (choose no more than 3 answers)?
    a. Demanding
    b. Cheerful
    c. Helpful

   d. Difficult to please
   e. Easy to get on with
   f. Encouraging
   g. Very conservative
   h. Boring
   i. Flexible
   j. Interesting
   k. None on the above
3. Who would you believe to have a higher proficiency level: workers older or younger than 50? The question concerns workers in general, regardless of the type of job or position held.
   a. Younger than 50
   b. Older than 50
   c. The age does not matter
   d. Do not know
4. Who would you believe to be more dependable and responsible: workers older or younger than 50?
   a. Younger than 50
   b. Older than 50
   c. The age does not matter
   d. Do not know
5. Who would you believe to be better in work group: workers older or younger than 50?
   a. Younger than 50
   b. Older than 50
   c. The age does not matter
   d. Do not know
6. Who would you believe to be more productive: workers older or younger than 50?
   a. Younger than 50
   b. Older than 50
   c. The age does not matter
   d. Do not know
7. Who would you believe to be better in mastering new technologies and methods of work: workers older or younger than 50?
   a. Younger than 50
   b. Older than 50
   c. The age does not matter
   d. Do not know
8. Who would you believe to be more prepared to work longer hours: workers older or younger than 50?
   a. Younger than 50
   b. Older than 50
   c. The age does not matter
   d. Do not know
9. Who would you believe to be taking sick leaves more often: workers older or younger than 50?
   a. Younger than 50
   b. Older than 50
   c. The age does not matter
   d. Do not know
10. Did you have any personal experience working with worker aged older than 50?
   a. Yes

b. No

11. If yes, in which circumstances? (open question)

_____

12. If yes, would you consider it positive or negative?
    a. Positive
    b. Negative
    c. Do not know
13. How old is your mother?

_____

14. What is her occupation?

_____

15. How old is your father?

_____

16. What is his profession?

_____

17. Do you have any relatives aged 50 or more?
    a. Yes
    b. No
18. State your age

_____

19. State your gender
    a. Male
    b. Female
    c. Other
20. Are you familiar with the legislation against discrimination based on age in the labour market?
    a. Yes
    b. No