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# Is age an issue? Psychosocial differences in perceived older workers' work (un)adaptability, effectiveness, and workplace age discrimination

Sofia von Humboldt<sup>a</sup>, Isabel Miguel<sup>b</sup>, Joaquim P. Valentim<sup>c</sup>, Andrea Costa, Gail Low<sup>e</sup>, and Isabel Leal<sup>a</sup>

<sup>a</sup>William James Center for Research, ISPA – Instituto Universitário, Lisbon, Portugal; <sup>b</sup>Portuguese Institute of Human Development & Department of Psychology and Education, Portuguese University, Porto, Portugal; <sup>c</sup>Faculty of Psychology and Educational Sciences, University of Coimbra, Coimbra, Portugal; <sup>e</sup>Faculty of Nursing, University of Alberta, Edmonton, Canada

## ABSTRACT

The aging population in the developed world has implied increasing age diversity in the workforce of organizations. Consequently, mutual perceptions about one's coworkers and age discrimination are becoming increasingly important. This study aims to explore how perceptions about older workers' work (un)adaptability, work effectiveness, and workplace age discrimination vary according to participants' psychosocial factors, such as age group, gender, education level, and work sector. This study included a sample of 453 workers in Portugal, diverse in terms of age, gender, education level, and work sector. Four different instruments were used: (a) a sociodemographic questionnaire; (b) an older workers' Work Adaptability scale; (c) an older workers' Work Effectiveness Scale and; (d) the Workplace Age Discrimination Scale (WADS). Results: Middle-aged and older participants perceive older workers as more adaptable than younger participants. The oldest group of participants perceives older workers to be more work-effective and experience the highest levels of age discrimination in the workplace, when compared to the other age groups. Also, participants with lower levels of education tend to perceive higher levels of workplace age discrimination, when compared to participants with high school and higher education. Conclusions: Generational perceptions in the workplace are perceived by workers differently, hence organizations should implement age management strategies to address age discrimination, particularly due to the increasing proportion of older workers.

## Introduction

Average life expectancy has been steadily increasing (Duncan & Loretto, 2004; Raymer et al., 2017). Portugal has the fourth oldest population in Europe (PORDATA, 2022). As organizations increasingly have an older age group of workers (Finkelstein et al., 2013; Marchiondo et al., 2015), age diversity in the workforce of organizations is growing. According to EU28, workers aged between 55 and 64 years old will be more active in the labor market, increasing from 59.1% to 69.4% in mid-2070 (European Commission, 2018). The modern workforce is a cornucopia of diverse workers of a variety of ages, seeking to express skills, capabilities, and social attitudes at work (Roberts, 2020). As older workers are staying active in the workforce, different generations will work together in the same workspace.

**CONTACT** Sofia von Humboldt  [sofia.humboldt@gmail.com](mailto:sofia.humboldt@gmail.com)  William James Center for Research, ISPA – Instituto Universitário, Rua Jardim do Tabaco, 34, Lisboa 1149-041, Portugal

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Organizations are therefore challenged to manage the increased age diversity in the work environment. Diversity across age inevitably produces generational differences in the workplace including age discrimination in the workplace (King & Bryant, 2016; Kunze et al., 2009; Prelog et al., 2019).

Currently in Portugal, one in two individuals is over 45.2 years old (median age). In this sense, the number of people of working age (i.e., aged between 15 and 64) is lower, which translates into a decrease in the number of individuals in the workforce, as opposed to an increase of individuals over 65 years of age, causing several social and economic challenges (Instituto Nacional de Estatística, 2019).

Ageism is defined as discrimination against people on the basis of their age and is manifested through negative stereotypes and perceptions about older adults. Moreover, Butler highlighted three dimensions of ageism: attitudes and beliefs, behavioral discrimination, and formalized policies and practices (Butler, 1980; von Humboldt et al., 2020).

Currently, age discrimination appears to be more prevalent than sexism or even racism (World Health Organization, 2017). 53% of Portuguese people indicate age discrimination as frequent, however no specific legislative or public policy provisions are currently intended to support older workers (Gonçalves, 2020). According to Gonçalves (2020), managers in Portugal recognize positive characteristics in hiring older people; however, they frequently choose younger people, even if the older ones have higher qualifications, motivation, and even accepting lower salaries.

Literature indicates that Portuguese society shows numerous processes of inequality, based on different factors, such as gender, ethnic origin, age, education, among others (Carmo et al., 2018). Furthermore, the unemployment rate in Portugal is estimated at 7.8% and the majority are older workers, thus making it difficult for them to enter the labor market (Instituto Nacional de Estatística 2019; Truxillo et al. 2015). The difficulty of access for older workers to the labor market results from a process of inequality in social representations of age. Older people are discriminated against in the labor market, not only as workers but also as unemployed, who, compared to younger groups, find it more difficult to find a job. The evolution of unemployment rates over the last few decades shows an increase in the relative weight of the older age group in the total unemployed population. Although the youth unemployment rate is very high and with great social visibility, literature indicates a silent movement of increasing difficulties for older people to reenter the labor market (Carmo et al., 2018).

Literature on ageism in the workforce highlights the micro, meso, and macro-level determinants of ageism (Naegele, De Tavernier, et al., 2018). According to Matos (2018), the participation of older workers in the labor market is related to demand and supply. Organizations impose several restrictions on the age of workers. Hence, older workers face some problems regarding employment opportunities, namely, lower employment opportunities compared to younger workers and, less training opportunities. Moreover, they face difficulties in terms of salary, since their salary is commonly lower than in their previous job (Ferreira, 2017).

Age is a social characteristic that is quickly perceived by individuals, constituting itself as a basic unit of information that automatically triggers categorizations, labeling, and social judgments about others (Cuddy & Fiske, 2002; Fiske, 2010; Giasson et al., 2017; Ilişanu & Andrei, 2018; Nelson, 2005). From the perception of age, people may be categorized in a certain age group, through their social and cognitive skills, their beliefs, and physical abilities, hence giving rise to different categorizations and consequent age discrimination (Cuddy & Fiske, 2002; von Humboldt & Leal, 2014a, 2014b, 2014c, 2015a, 2017; von Humboldt et al., 2014b, 2014c, 2018).

Age discrimination may be shown in the workplace (Swift et al., 2017; Yuan & Tech, 2007) and may translate into negative attitudes and practices carried out in the workplace, where workers are treated differently because of their age (Bayl-Smith & Griffin, 2014; Greenberg et al., 2002; Marques, 2011; Minnotte, 2012; Swift et al., 2017). Moreover, it should be noted that age discrimination is illegal in several nations, and the Portuguese Constitution and the Labor Law prohibits age discrimination against workers (Lei Constitucional n.º1/2005 da Assembleia da República, 2005; Lei n.º 28/2015 da Assembleia da República, 2015).

Though not exclusive to older workers, some studies have shown that this group experiences more negative effects of age discrimination than younger workers (e.g., Davey, 2014; Jelenko, 2020). For example, individuals may be subject to the refusal of a job, or even their dismissal, as well as receiving a lower salary, refusal of promotions and training provided by the company, as well as other benefits (Marques, 2011; Swift et al., 2017). In short, age discrimination can act as a barrier to the growth and success of active, healthy, and successful aging (Marques, 2011; Swift et al., 2017).

Discrimination in the workplace is one of the most stressful and disturbing factors that workers can face, with harmful consequences (Minnotte, 2012; Xu & Chopik, 2020). Discriminatory behavior can generate negative feelings such as frustration and lack of motivation, as well as low engagement at work (Ilişanu & Andrei, 2018). Age discrimination is a psychosocial risk factor, affecting and decreasing the health of individuals (Rospenda et al., 2009; Swift et al., 2017; Yuan & Tech, 2007). It can be associated with great psychological stress and a decrease in the physical and mental well-being of workers (Marchiondo et al., 2015, 2017; Pascoe & Richman, 2009; Swift et al., 2017; Yuan & Tech, 2007). For instance, research has found that older workers who experience age discrimination at the workplace, report increased levels in depressive symptoms and overall poor (self-rated) health (Marchiondo et al., 2017), problems related to alcohol consumption (Rospenda et al., 2009; Thrasher et al., 2016), and increased stress (American Psychological Association [APA], 2016; Pascoe & Richman, 2009). Studies have found significant associations between negative age stereotypes and decreased self-efficacy, job satisfaction, performance as well as learning, development, or increased retirement intentions of older employees (Weber et al., 2019). Overall, such negative stereotypes end up translating into discriminatory behavior toward older workers (Giasson et al., 2017; Marchiondo et al., 2015), with potentially harmful consequences both for individuals and organizations.

A possible reason for this discrimination is that older workers may be perceived as having particular characteristics. For example, older workers are usually perceived as resistant to change, inflexible, less adaptable, and complacent (O'Loughlin et al., 2017), less able or interested to acquire new skills (Kadefors & Hanse, 2012; O'Loughlin et al., 2017), less efficient and competent (Man & Man, 2018; Marques, 2011; Yuan & Tech, 2007), less qualified (Kadefors & Hanse, 2012), less healthy, more vulnerable to work-family imbalance, less trusting of others, and having low motivation to work (Ng & Feldman, 2012). Older workers have been considered unable to cope with a high pace of work, with a heavy workload, with working hours that are considered 'difficult,' with working nights and working weekends (Kadefors & Hanse, 2012), less healthy, more vulnerable to work-family imbalance, less trusting of others, and having low motivation to work (Ng & Feldman, 2012; Vickerstaff & Van der Horst, 2021). Furthermore, older workers are perceived as having little ability and interest to learn, little ability to adapt to new methods, and possessing low qualifications (Marques, 2011; Wong & Tetrick, 2017).

Age discrimination may be experienced at any stage of the life cycle (Macdonald & Levy, 2016; North & Fiske, 2015). However, the recent findings (Lagacé et al., 2019) emphasize the positive effects of a positive intergenerational climate, as a way of decreasing feelings of ageism and to increase satisfaction. Hence, the study of age-related stereotypes, effectiveness, adaptability, and discrimination on the workplace is needed to produce evidence that may help lessen negative stereotyping and ageism about older employees. Consideration of how psychosocial factors influence these perceptions contributes to practitioners' and scholars' understanding of employee development, work conditions interventions, and employment agreements, suitable to the shifting workforce demographics. In fact, given the age-related issues for individuals, organizations, and society, a comprehensive study that can help describing, preventing, and intervening in contexts is necessary. Such is especially important in contexts where few empirical studies on work-related ageism exist, such as the Portuguese working environment (Cebola et al., 2021).

In this context, the purpose of the present study is to explore how perceptions about older workers' work (un)adaptability, work effectiveness, and workplace age discrimination vary according to participants' psychosocial factors. More specifically, differences according to participants' age group

(younger, middle-aged, and older workers), gender (male and female), education level (compulsory, high school, and higher education) and work sector (public and private) are explored.

## Methods

### Participants

A total of 453 individuals of Portuguese nationality participated in this study, aged between 18 and 65 years old ( $M = 41.20$ ;  $SD = 11.869$ ). The convenience sample comprised 117 younger workers (18–30), 201 middle-aged workers (31–49) and 135 older workers (50–65), with almost two-thirds (64%) of the sample being female.

A minority of participants (6.4%) completed only primary school, 40% finished high school, 9.7% had a bachelor or post-Bologna degree, and 14.1% had a pre-Bologna degree or post-Bologna Master's degree.

All participants had a full-time contract, with an open-ended contract being the most common (67.1%), followed by a fixed-term contract (21%). Still 4.6% of individuals are currently working at a company with a temporary contract. The remaining participants did not specify their professional situation.

The majority of participants did not hold management functions (82.6%) and 69.8% were enrolled in functions related to service provision (e.g., teaching) and production (e.g., factory). The sector most represented in the sample is the service sector (52.5%; e.g., school, hospital), followed by the industry sector (24.3%). The majority of participants works in the private sector (65.3%), with 31.3% working in the public sector.

Overall, the sample of the present study mirrors the Portuguese work force. In fact, recent data (PORDATA, 2022) show that, in 2021, 25.3% of employed workers are 34 years-old or younger, 25.1% are between 35 and 44 years old, and 49.6% are 45 years old or older. As for educational level, 35.2% of employed workers have a compulsory level of education, 30.6% have high-school education, and 33.8% have a high education degree. Concerning the employment sector, 2.7% work in the primary sector, 24.6% work in the secondary sector, and 72.7% work in the tertiary sector. As for the type of contract, 67.1% have an open-ended contract, while 14.4% have fixed-term contract (PORDATA, 2022). However, gender is an exception, as the sample is mainly constituted by women, when compared to an even distribution in the Portuguese working population (50.5% men and 49.5% women) (PORDATA, 2022).

## Material

### Sociodemographic questionnaire

The participants of this study were asked to provide personal data (gender, age, and education) and about their professional activity (e.g., type of contract with the company, professional category, time working in the company, whether or not they have had leadership functions, job function, and sector of the organization).

### Perception of work adaptability

Perceptions about work adaptability were measured by six items (Chiu et al., 2001) assessing how older workers are perceived to be adaptable. Respondents were asked to rate all items (e.g., 'Most older workers cannot keep up with the speed of modern industry') according to five-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). In the original version (Chiu et al., 2001), scale items were aggregated in a one-dimensional structure, presenting a Cronbach's alpha value of .77 for the total scale.

### Perception of work effectiveness

Perceptions about work effectiveness were measured by four items (Chiu et al., 2001) assessing how older workers are perceived to be effective at work. Respondents were asked to rate all items (e.g.,

‘Older workers are better employees’) according to five-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). In the original version (Chiu et al., 2001), the one-dimensional structure of the instrument presented a Cronbach’s alpha value of .65 for the total scale.

### **Perception of workplace age discrimination**

The Workplace Age Discrimination Scale (WADS; Marchiondo et al., 2015) was used to measure workplace age discrimination. Respondents indicated the degree of agreement with each of the 9 items (e.g., ‘I was given fewer opportunities to express my ideas because of my age’) on a five-point Likert-type scale (1 = *strongly disagree*, to 5 = *strongly agree*). In the original version, WADS presented a one-dimensional structure. The WADS scale, validated by Marchiondo et al., (2015) was language translated for the present study, and the original studies indicate that it has an excellent index of internal consistency, with a Cronbach’s alpha value of .93 for the total scale.

### **Procedure**

The objectives of the present investigation were explained to the participants and any questions about their participation were clarified. All participants were assured of the voluntary nature of their participation, and their right to withdraw at any given time. Anonymity and confidentiality were guaranteed. All participants received appropriate documentation to provide informed consent in written form. Inclusion criteria comprised being 18 years-old or older and being actively employed for six or more months. A convenience sample was collected by approaching active workers in different work sectors, and through informal social networks. Questionnaires were delivered to the participants in hard copy and returned to the research team. Data was collected by the end of 2018, in a pre-pandemic context. Ethical principles for research with human subjects from the Declaration of Helsinki and the Portuguese Psychologists’ Code of Ethics were followed. Participants received no compensation upon the completion of the surveys.

The collected data were entered into a database and analyzed using the SPSS statistical software – Statistical Package for the Social Sciences (version 22). To characterize the sample and the variables under study, a set of descriptive analyses was carried out. Because the variables un-adaptability and adaptability are the same variable, stated in opposite directions, reverse coding was performed for items 5 and 6. To verify the construct validity, each of the instruments used in this study was subject to exploratory factor analyses using principal components, after verifying the respective application requirements by observing the results of the Bartlett’s sphericity test and the adequacy measure of Kaiser-Meyer Olkin (KMO) sampling. The reliability of each scale was analyzed by calculating Cronbach’s alpha coefficient, as a step to illustrate the validity of the construct (Marôco & Garcia-Marques, 2006). Pearson correlations were computed to explore the associations between variables under study. Univariate Analyses of Variance (ANOVA) were performed with study variables (work (un)adaptability, work effectiveness, workplace age discrimination) as dependent variables and participants’ age group (18–30 years old; 31–49 years old; 50 years old and over) as the independent variable, to explore group differences in perceptions about older workers and age discrimination. Identified differences were further explored with a posteriori multiple comparisons through Tukey HSD Test.

## **Results**

### **Validity**

Based on the Kaiser – Meyer–Olkin measure value ( $KMO = .771$ ) and the result of Bartlett’s test of sphericity ( $\chi^2 = 986.051$ ,  $df = 15$ ,  $p = .000$ ), an exploratory factor analysis using principal components factoring with varimax rotation was carried out for items assessing work adaptability. Two factors were considered which, in combination, accounted for 72.28% of variance (47.87 and 24.41,

respectively). While the first factor retained items emphasizing older workers' work *unadaptability* (Cronbach's  $\alpha = .865$ ; e.g., 'Older workers are not interested in learning new skills'), the second factor highlighted older workers' *adaptability* in work-related situations (Cronbach's  $\alpha = .641$ ; e.g., 'Older workers can learn new skills as easily as other employees').

An exploratory factor analysis using principal components with varimax rotation was also performed for items referring to work effectiveness, based on the Kaiser–Meyer–Olkin measure value ( $KMO = .651$ ) and the Bartlett's test of sphericity result ( $\chi^2 = 202.259$ ,  $df = 6$ ,  $p = .000$ ). A single factor was retained, which explained 47.848% of variance and referred to older workers' ability to be effective (Cronbach's  $\alpha = .595$ ; e.g., 'Older workers are better employees').

The scale assessing age discrimination was also factor analyzed, after assumptions ( $KMO = .939$ ;  $\chi^2(36) = 3315.478$ ,  $p = .000$ ) were excellently met (Pestana & Gageiro, 2005). The factor analysis using principal component method with varimax rotation yielded a one-factor solution, responsible for 69.794% of the explained variability. Such a factor reported on perceived workplace age discrimination (Cronbach's  $\alpha = .946$ ; e.g., 'My contributions are not valued as much due to my age').

### **Preliminary analysis: descriptive and correlational analyses**

Table 1 shows the means, standard deviation, and intercorrelations of the measured variables. Participants in this sample considered that older workers are work effective, as this variable is the one with the highest average score. Participants of the present study consider older workers to be more adaptable than unadaptable, although both characteristics are scored close to average. Low levels of workplace age discrimination were reported. As expected, perceived older workers' work effectiveness is positively correlated to adaptability, and negatively associated to unadaptability. Higher levels of perceived unadaptability are associated with higher levels of workplace age discrimination.

### **Perceived work unadaptability, work adaptability, work effectiveness, and workplace age discrimination: differences between age groups**

No differences were found between the different age groups in perceived older workers' unadaptability [ $F(2, 440) = 2.138$ ,  $p = .119$ ] (see Table 2). However, belonging to different age groups produced differences on how participants perceive older workers to be adaptable [ $F(2, 440) = 8.354$ ,  $p = .000$ ;  $\eta^2p = .042$ ]. More specifically, a posteriori multiple comparisons using the Tukey HSD Test show that it is younger workers ( $M = 3.081$ ;  $SD = .980$ ) who consider older workers to be less adaptable, when compared to middle-aged ( $M = 3.420$ ,  $SD = .938$ ) and older workers ( $M = 3.574$ ;  $SD = 1.019$ ). Generational differences were also found in perceived older workers' effectiveness [ $F(2, 440) = 5.694$ ,  $p = .004$ ;  $\eta^2p = .025$ ]. For this variable, it is older participants ( $M = 3.148$ ;  $SD = .949$ ) who rate older workers' work effectiveness significantly higher than younger ( $M = 2.771$ ;  $SD = 1.017$ ) and middle-aged participants ( $M = 2.891$ ;  $SD = .821$ ). The existence of statistically significant differences between the three age categories were also revealed with regard to perceived age discrimination in the workplace [ $F(2, 440) = 9.633$ ,  $p = .000$ ], although with a small effect ( $\eta^2p = .042$ ) (Marôco, 2006). A posteriori, multiple comparisons indicated that perceived workplace age discrimination is statistically higher for the group of older workers ( $M = 2.114$ ,  $SD = .990$ ), when compared to the groups of younger  $M = 1.617$ ,  $SD = .772$ ) and middle-aged ( $M = 1.820$ ,  $SD = .897$ ) workers. No statistically

**Table 1.** Descriptive statistics and correlations between perceived work unadaptability, work adaptability, work effectiveness and workplace age discrimination.

	M	SD	1	2	3	4
1. Unadaptability	2.732	1.0157	(.865)	.097	-.183**	.325**
2. Adaptability	3.378	.989		(.641)	.135**	.029
3. Work effectiveness	3.413	.657			(.595)	-.021
4. Workplace age discrimination	1.854	.913				(.946)

\*  $p < .05$  level; \*\*  $p < .01$ .

Cronbach's alpha in diagonal.

Work unadaptability, work adaptability, work effectiveness, and workplace age discrimination are item mean scores.

**Table 2.** Perceived work unadaptability, work adaptability, work effectiveness, and workplace age discrimination: descriptives and univariate tests.

Variable/Statement	Unadaptability	Adaptability	Work effectiveness	Workplace age discrimination
	Mean (SD)	Mean (SD)	Mean (SD)	
Age category				
18 – 30	2.600 (.929)	3.081 (.980) <i>a</i>	2.771 (1.017) <i>a</i>	1.617 (.772) <i>a</i>
31 – 49	2.721 (.993)	3.420 (.980) <i>b</i>	2.891 (.821) <i>a</i>	1.820 (.897) <i>a</i>
≥ 50	2.864 (1.108)	3.574 (1.019) <i>b</i>	3.148 (.949) <i>b</i>	2.114 (.990) <i>b</i>
	$F(440) = 2.138; p = .119$ $\eta^2 = .009$	$F(440) = 8.354; p = .000$ $\eta^2 = .036$	$F(440) = 5.694; p = .004$ $\eta^2 = .025$	$F(440) = 9.633; p = .000$ $\eta^2 = .042$
Gender				
Female	2.693 (1.010)	3.367 (1.014)	3.414 (.691)	1.837 (.919)
Male	2.790 (1.019)	3.388 (.942)	3.416 (.594)	1.890 (.906)
	$t(440) = -.972; p = .332$	$t(440) = -.216; p = .829$	$t(440) = -.024; p = .980$	$t(440) = -.581; p = .562$
Education level				
Compulsory	2.734 (1.107)	3.476 (1.025)	3.250 (.859)	2.120 (.960) <i>a</i>
High school	2.711 (.979)	3.294 (.967)	3.378 (.528)	1.664 (.791) <i>b</i>
Higher education	2.780 (.943)	3.407 (.950)	3.414 (.468)	1.793 (.952) <i>b</i>
	$F(440) = .156; p = .856$ $\eta^2 = .001$	$F(440) = 1.464; p = .232$ $\eta^2 = .007$	$F(440) = .507; p = .603$ $\eta^2 = .002$	$F(440) = 11.232; p = .000$ $\eta^2 = .049$
Sector				
Public	2.827 (1.054)	3.414 (.959)	3.411 (.541)	1.855 (.931)
Private	2.699 (1.004)	3.368 (.999)	3.398 (.567)	1.823 (.904)
	$t(440) = 1.194; p = .233$	$t(440) = .447; p = .655$	$t(440) = .220; p = .826$	$t(440) = .328; p = .743$

Measures marked with different letters differ statistically between age categories, at the level of  $\alpha < .05$ , according to the Tukey HSD test.

significant differences were found between the group of younger workers and the group of middle-aged workers ( $p = .131$ ). Although no differences between educational levels were found in perceived work unadaptability, work adaptability and work effectiveness, an effect of education level in workplace age discrimination was detected ( $F(2, 440) = 11.232, p = .000$ ): participants with basic education ( $M = 2.120; SD = .960$ ) perceived higher levels of workplace age discrimination than did participants with high school ( $M = 1.664; SD = .791$ ) and higher education ( $M = 1.793; SD = .952$ ). Female and male participants did not significantly differ in their perceptions of work unadaptability, work adaptability, work effectiveness, and workplace age discrimination. Also, analyses revealed that these perceptions presented no significant differences when the two work sectors (public *versus* private) were compared.

## Discussion

As the workforce is aging due to the aging of the population, organizations are facing the challenge of managing the increased age diversity in their work environment. In such a context, continuing to study age-related stereotypes and discrimination in the workplace proves to be valuable. The present study aimed at analyzing how the perception about older Portuguese employees' work (un)adaptability, work effectiveness and age discrimination varies according to factors, such as age group, gender, education level and work sector.

Overall, results show that older workers are more likely to be associated with negative work-related stereotypes, especially by younger workers. More specifically, younger participants perceived older workers as less adaptable, when compared to middle-aged and older participants (Raposo & Carstensen, 2015). Further, younger and middle-aged participants perceived older workers to be less work effective. Thus, it appears that, at present, negative stereotypes regarding older workers that place them in a disadvantaged position compared to other age groups are still well entrenched. These stereotypes are evident in the various interactions that exist in the organizational sphere, and can influence important decisions made by human resource managers (Boehm et al., 2021; Brooke & Taylor, 2005).



Consistent with the literature (e.g., Davey, 2014; Ilisanu & Andrei, 2018; Jelenko, 2020). Older participants reported being the most likely to experience age discrimination in the workplace. Furthermore, the results of the present study also suggest the existence of a growing sense, depending on age, of perceived age discrimination in the workplace: as age increases, so does the perception of experiencing age discrimination. Therefore, findings of the present study do not support so-called reverse ageism (Raymer et al., 2017), that is, the tendency for younger workers to be subject to equal or higher levels of age discrimination in the workplace than older workers (Bratt et al., 2018; Finkelstein et al., 2013; Marchiondo et al., 2015; Raymer et al., 2017), since it is younger workers who perceive less age discrimination in the workplace.

Previous research investigating the prevalence of age discrimination in working life due to older age has found that educational level has no influence on participants' experiences of age discrimination in the workplace (Solem, 2016). Older workers have spent more time in the labor market and hence had more opportunities to experience discrimination. Additionally, research indicated that higher educated people usually are more sensitized to discrimination, therefore finding them to be more aware of ageism (Halanych et al., 2011; Marchiondo et al., 2019). However, the present study shows that participants with a lower educational level tend to report higher levels of workplace age discrimination, when compared to participants with high school or a higher education degree. Due to the contradictory findings, the influence of educational level in perceived workplace age discrimination needs further development in future studies.

This study also shows a number of limitations. Firstly, although generational differences in age stereotypes and discriminations are provided, results do not show the possible repercussions such stereotypes and perceived age discrimination in the workplace bring to workers' life in general. Future studies are encouraged to investigate such repercussions by assessing, for example, its impact in work engagement, job satisfaction, or successful aging at work. Secondly, this study includes a very heterogeneous sample regarding sociodemographic variables. Therefore, in-depth analyses in terms of more concrete variables of sociodemographic and labor characterization – e.g., gender, level of education, profession – should be developed in future studies, to strengthen our understanding of how these variables may affect work-related age stereotypes and discrimination. Also, considering that similar functions and sectors across different fields may have varying demands for professional workers (i.e., medical vs. non-medical, academic vs non-academic, aligned vs not aligned with educational background), future studies should also analyze the nature of work as a determinant of perceived work adaptability and effectiveness. Thirdly, although the present study provided data on how older workers are perceived in their workplace, no information was collected on older workers' performance, especially in terms of their work (un)adaptability or work effectiveness. Future studies should collect such a data and explore how it matches perceptions about older workers' performance. Finally, an important limitation of the study is that the sample was recruited in Portugal. Transferring the results and the recommendations to other labor markets, or generalizing them on a greater level, is only possible to a very limited extent. This limitation is related to the fact that some measures used in this study were translated and used for the first time in the Portuguese context, revealing a different factor structure from the original version of the measures. Future studies should further explore the factor structure and stability of the measures in different contexts.

Notwithstanding these limitations, this study adds to the literature. Apart from some exceptions (e.g., O'Loughlin et al., 2017), studies suggesting the negative effects of age discrimination against older adults have often focused on older adults (e.g., Kang & Kim, 2022; Nelson, 2005; Rippon et al., 2014). The present study differs from that perspective by considering perceived age discrimination across different age groups, including the two most prominent ones, older and younger. Also, in light of studies which tend to focus on specific occupational groups (e.g., Redman & Snape, 2006), the present study includes participants of a wide range of occupations, providing an overall picture of work-related age stereotypes and perception of workplace age discrimination. Methodological issues have been identified as the main problem surrounding intergenerational differentiation, with conceptualization and measurement based on a single-item indicator being pointed as the major concern

(Jelenko, 2020). Therefore, results of the present study combine multi-item measures to offer a more consistent framework of work-related age stereotypes and age discrimination.

Overall, results of the present study should encourage HR professionals, managers, and organization professionals to develop strategies to challenge assumptions that older workers have negative characteristics, while working actively to understand the value older workers bring to organizations and support them to do their work productively and positively. To this end, it is important to equate and establish organizational practices of ‘age management,’ conceived as the elimination of age-related barriers in the workplace, fostering an organizational culture that values older workers as positive factors in professional life and society. Age management can be a challenge, but also an opportunity (Kadefors & Hanse, 2012; von Humboldt et al., 2018, 2022). Therefore, organizations must make it possible for older workers to perceive a friendly and supportive environment in relation to age in the workplace. This can be promoted through the implementation of integration and interaction strategies between workers of different ages, creating multi-age teams, and applying government-led legislative and policy provisions which may make age discrimination unacceptable and illegal in workplaces (Brooke & Taylor, 2005; Kim & Kang, 2016). Thus, the policies and practices of workplaces must contemplate the development and full use of their older workers’ skills and the offer of a rewarding professional life (Billett et al., 2011; Blomé et al., 2018).

Further, age barriers in accessing employment must be considered. Unemployed and underemployed people aged 50 or over have great difficulty in reentering the labor market (Kadefors & Hanse, 2012; von Humboldt & Leal, 2015b; von Humboldt et al., 2013a; 2013b; Walwei & Deller, 2021). As such, organizations must adopt strategies to combat these barriers, such as removing age limits in job advertisements, use qualified people to interview and select candidates for their skills, qualifications, and experience, not their age (Naegele & Walker, 2006; Naegele, De Tavernier, et al., 2018). Professional development must also be guaranteed, through training and opportunities for older workers to progress (European Agency for Safety and Health at Work, 2016; Naegele & Walker, 2006).

In sum, the current study contributed to the literature by addressing work-related age stereotypes and perceptions of discrimination, across an age-diverse sample of younger, middle-aged and older workers in Portugal. Findings suggest that older workers are more likely to be associated with negative work characteristics, and also the ones reporting higher levels of perceived age discrimination at work. Given the context of growing age diversity in organizations, the present study is a relevant empirical advancement in the study of intergenerational perceptions at work and age discrimination. Results highlight the need to develop age management strategies to avoid age discrimination in the workplace and the negative implications that derive from it. More specifically, results suggest the need to conduct further research to gain insight on how to improve the long-term well-being of workers, independent of their age, urging employers and health professionals to support employee wellness, by providing comprehensive evidence-based policies and intervention strategies for the prevention and treatment of work-related mental illness.

### **Authors’ contributions**

Contributions: SVH: study concept and design, analysis, and interpretation of data, recruitment of subjects, preparation of manuscript; IM: study concept and design, interpretation of data; JPV: preparation of manuscript; AC: preparation of manuscript; GL: study concept and design, interpretation of data IL: study concept and design, interpretation of data. All authors read and approved the final manuscript.

### **Disclosure statement**

No potential conflict of interest was reported by the author(s).

### **Ethics approval and consent to participate**

The study was conducted according to the guidelines of the Declaration of Helsinki and the Portuguese Psychologists’ Code of Ethics. The study did not involve experimental protocols. Informed consent was obtained from all subjects.

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