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Measuring Ageism: Psychometric Analysis of the Portuguese Short Form of the Fraboni Scale (FSA-SF)

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Measurement Instruments for the Social Sciences, 2024, Vol. 6, Article e11993, https://doi.org/10.5964/miss.11993

Received: 2023-05-23 • **Accepted:** 2024-04-13 • **Published (VoR):** 2024-05-13

Handling Editor: Natalja Menold, Dresden University of Technology, Dresden, Germany

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Abstract

This article reports the development of a Portuguese shortened form of the Fraboni Scale of Ageism FSA (FSA-SF). The original FSA with 29 items measures the affective aspect of attitudes toward elderly to complement the cognitive component evaluated by other tools. Two studies were implemented to determine the psychometric features of the FSA-SF with 9 items. In the first study, 404 participants answered a questionnaire in Portuguese to evaluate the dimensionality of the FSA-SF via confirmatory factor analysis. In addition, the second-order factor, the reliability, and the convergent validity of the FSA-SF was assessed. Results showed 3 factors (Avoidance, Stereotypes, and Discrimination) with a second order factor (Ageism). The reliability and convergent validity of the FSA-SF were adequate. In the second study, 246 participants also answered a questionnaire in Portuguese to evaluate the replicability of the 3-factor structure and the second-order factor. In addition, the reliability, convergent, and incremental validity of the FSA-SF were examined. Good construct validity for the first and second order models was replicated via confirmatory factor analyses. Findings showed that the Portuguese FSA-SF had satisfactory reliability, convergent, and incremental validity. Overall, this article determines that the Portuguese shortened FSA-SF is an adequate tool to assess ageism.

Keywords

ageism, Fraboni Scale of Ageism, psychometrics, scale validation

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In 1969, Butler coined the word 'age-ism' to describe unfavorable attitudes and behaviors toward the elderly. Ageism is widespread around the world (Wilson et al., 2019). There are several instruments to assess ageism (Ayalon et al., 2019), which generally concerns negative attitudes and behaviors toward the elderly. One of these instruments is the Fraboni Scale of Ageism (FSA; Fraboni et al., 1990). The goal of this investigation is to test the psychometric features of a short form of the FSA.

Butler (1969) advanced the definition of ageism as "prejudice by one age group toward other age groups" (p. 243). In the following decades several scholars have proposed other definitions attempting to describe this complex phenomenon. Iversen and colleagues (2009) reviewed and analyzed the set of definitions advanced over the years and defined ageism as "negative or positive stereotypes, prejudice and/or discrimination against (or to the advantage of) elderly people based on their chronological age or on the basis of a perception of them as being 'old' or 'elderly'. Ageism can be implicit or explicit and can be expressed on a micro, meso, or macrolevel" (p. 15). This definition calls our attention to diverse and complex aspects of ageism. Ageism includes three components: stereotypes (cognitive component—e.g., "I think older adults are a burden to society"); prejudice (emotional component—e.g., "I do not enjoy conversations with older adults"); and discrimination (behavioral component—e.g., "I try not to interact with older adults") (Iversen et al., 2009). Furthermore, ageism concerns conscious and unconscious aspects and individual, social, and institutional dimensions.

Ageism is increasingly recognized as a prevailing kind of stereotyping, prejudice, and discrimination (Marquet et al., 2019). Although ageism can have an impact on all age groups, there is research suggesting that the older adults are at greater risk of suffering from its prejudicial effects (Levy et al., 2022; Palmore, 2004). In fact, ageism was shown to raise detrimental consequences on older adults' health and wellbeing (Bergman et al., 2020; Chang et al., 2020; Gvili & Bodner, 2021; Kornadt et al., 2021; Levy et al., 2020; Schuurman et al., 2022; Shiovitz-Ezra et al., 2023; Wyman et al., 2018). A meta-analytic study reviewing data from 32 articles concluded that being stereotyped negatively impaired older people's cognitive and functional performance (Lamont et al., 2015). Ageist beliefs and attitudes result in poorer mental health (Wurm & Benyamini, 2014), and enhanced morbidity (Allen, 2016). Ageism is also associated with low self-esteem and more loneliness (Neto, 2004), and low existential well-being (Ferreira & Neto, 2012), and can result in the exclusion of older people from relevant roles in society (Wethington et al., 2016). Hence, it is crucial to monitor levels of ageism and take early intervention.

There are several instruments to evaluate ageism. Ayalon and colleagues (2019) conducted a systematic compilation study of the scales to measure ageism. They found 11 explicit scales of ageism: "Aging perceptions questionnaire" (Barker et al., 2007), "Aging semantic differential" (Rosencranz & McNevin, 1969), "Anxiety about ageing questionnaire" (Lasher, 1987), "Attitudes to aging questionnaire" (Laidlaw et al., 2007), "Expectations regarding aging questionnaire" (Sarkisian et al., 2001), "Facts on aging

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quiz" (Palmore, 1977), "Fraboni scale of ageism" (Fraboni et al., 1990), "Image of aging scale" (Levy et al., 2004), "Kogan's attitudes towards old people" (Kogan, 1961), "Reactions to aging questionnaire" (Gething, 1994), and "Tuckman and Lorge questionnaire" (Tuckman & Lorge, 1954). Another measure of ageism is the SIC (Succession, Identity, and Consumption) scale based on prescriptive beliefs (North & Fiske, 2013). Ayalon et al. (2019) concluded that there is "a need to further study scales that evaluate explicit aspects, with a specific focus on those scales that measure the three dimensions of ageism" (p. 6). This paper reflects the FSA (Fraboni et al., 1990) developed in Canada which has more positive criteria than other scales and measures the 3 dimensions of ageism.

The FSA was based on Butler's definition of ageism, and it is a self-report tool including 29 items. The items were conceived to assess 3 levels of prejudice from Allport's (1954) 5 levels linked to ageism conceptualization: Antilocution (e.g., "Many old people just live in the past"), Avoidance (e.g., "It is best that old people live where they won't bother anyone"), and Discrimination (e.g., "Old people should find friends their own age"). A factor analysis evidenced the three dimensions. Internal consistencies of the Antilocution, Avoidance, and Discrimination subscales were 0.76, 0.77, and 0.65, respectively. Internal consistency of the FSA was .86, suggesting the instrument is homogeneous (Fraboni et al., 1990).

In 2004, Neto conducted a Portuguese adaptation of the FSA. Four items were removed because of the analyses conducted, and this version of the FSA included 25 items. To test the structure of attitudes towards older adults among the Portuguese participants principal component analysis with varimax orthogonal rotation was performed with the 25 FSA items. Three factors emerged explaining 41% of the variance. The reported results support the 3-factor structure of ageism evidenced by Fraboni et al. (1990): Discrimination, Antilocution, and Avoidance. The alpha value for the Portuguese scale was .85.

Subsequently, several adaptations of the FSA have been made (e.g., Bodner & Lazar, 2008; Fan et al., 2020; Kim et al., 2012; Rupp et al., 2005). In general, three factors were found in these adaptations of the FSA. According to results of reliability tests and factor analyses in the adaptation of the FSA to other cultures, several items were proposed for elimination from the original FSA. However, one consistent finding from these previous studies is that there are no consensual items to retain to assess ageism. Therefore, in the present study we are going to report the development and validation of a shortened measure of the FSA. To the best of our knowledge, this research is the first study to propose a brief measure of the FSA.

Nowadays, brief tools are used more and more to evaluate psychological constructs (e.g., Kemper et al., 2019; Neto, 2014; Rammstedt et al., 2013; Ziegler et al., 2014). Among the applications of brief scales, following Gosling and colleagues (2003, p. 505) are "large-scale surveys, pre-screening packets, longitudinal studies, and experience-sampling stud-

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ies". Hence, the goal of the current work is to develop and validate a brief form of the FSA (Fraboni et al., 1990; Neto, 2004). To achieve this goal two studies were conducted.

Study 1

This study intended to test the factor structure of a shortened form of the FSA (FSA-SF). We expected to find a 3-factor structure like that found in the Canadian study (Fraboni et al., 1990) as well as in a Portuguese sample (Neto, 2004), and greatly intercorrelated factors within this structure (Fraboni et al., 1990; Neto, 2004). Therefore, we also expected to find a global second-order factor in this structural model, constituted by the three first-order factors. Further, we expected that the FSA-SF possesses adequate internal consistency, and convergent validity.

Method

Participants and Procedure

This community sample consisted of 404 adults (59% females and 41% males). Their average age was 31.01 years (*SD* = 11.71; range: 18 to 65 years). Participants were all Portuguese from the Porto area of Portugal. One hundred and sixty-two participants had completed primary or secondary education, and 242 had attended tertiary education. A convenience sample was recruited by trained research assistants in 2019. Snowball sampling from personal contacts and community groups was utilized. Participants were informed that the research was about aging. The questionnaire was administered to the participants in a standard paper and pencil format. The study was carried out according to the Declaration of Helsinki and ethical norms of the country and informed consent was acquired from all the participants. Before responding the questionnaire, participants were informed that participation was voluntary, anonymous, and confidential. Information was also provided to the participants that they could withdraw from the questionnaire at any time without explanation. Respondents were not remunerated.

Measures

Fraboni Scale of Ageism (FSA) — The Portuguese form of the FSA includes 25 items (Neto, 2004). Ratings ranged from 1 ("*strongly disagree*") to 7 ("*strongly agree*"). The FSA comprises three factors: Avoidance (8 items; e.g., "I sometimes avoid eye contact with old people when I see them"); Antilocution (9 items; e.g., "Many old people just live in the past"); Discrimination (8 items; e.g., "The company of most old people is quite enjoyable". Greater scores denote greater ageism. In this sample, alpha of the FSA was .88, and for the subscales alpha ranged from .74 to .85.

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Demographic Information — Respondents reported their gender, age, nationality, and level of education.

Data Analysis

Descriptive statistics, confirmatory factor analyses (CFA), reliabilities, Pearson's correlations, and one sample *t*-test were conducted. Data analyses were performed utilizing IBM SPSS AMOS (Version 26). The criterion for statistical significance was set at .05.

Results

The form of the FSA-SF was developed using a Portuguese-speaking sample. According to Stöber and Joormann's (2001) procedure for developing brief versions of longer self-reporting tools, we chose three statements from each of the three ageism dimensions that showed (a) high correlations with the FSA, (b) high correlations with their intended FSA dimension, and (c) high intercorrelations so that the subscales would show satisfactory reliability. Similar requirements were followed by Raes et al. (2011) in the construction of a brief version of the Self-Compassion Scale. The full wording of the statements that were chosen to constitute the FSA-SF, consisted of 9 items representing three subscales: Avoidance, Stereotypes (previously called Antilocution), and Discrimination (see Appendix). Table 1 presents item correlations with long FSA and FSA-SF subscale scores. Each item showed a correlation with its respective FSA subscale score ranging between .56 and .82 for the full FSA, and .75 and .90 for the FSA-SF.

Table 1

Items for the FSA-SF, Including Item Correlations With Subscale Scores (Both the Long and Short Versions)

Item[a]	Subscale	Total FSA	FSA-SF
1	Avoidance	.79	.88
2	Avoidance	.82	.90
3	Avoidance	.77	.87
4	Stereotypes	.60	.75
5	Stereotypes	.67	.80
6	Stereotypes	.71	.82
7	Discrimination	.63	.76
8	Discrimination	.56	.77
9	Discrimination	.66	.78

[a]For full item wordings, see Appendix.

Table 2 provides the descriptive statistics of the items. The study observed that Item 6 (M = 3.40) yielded the greatest mean, whereas Item 9 displayed the lowest average (M = 1.71). In terms of variability, Item 3 (SD = 1.65) obtained the greatest dispersion,

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whereas Item 9 (*SD* = 1.38) yielded the lowest dispersion. The discriminative power of the items was evaluated from the distribution of the percentage of participants' responses and the proposed alternatives. It should be noted that we considered elimination of the item whenever one of the answers collected more than 70% of adherence. In this sense, we verified that no item presented a concentration of responses higher than this value.

Table 2

FSA-SF's Items: Descriptives Statistics

Item	*M*	*SD*	Minimum	Maximum	g1	*SE*	*z*-test	g2	*SE*	*z*-test
1	2.52	1.60	1	7	0.95	.12	7.73	0.06	.24	0.20
2	2.38	1.50	1	7	1.03	.12	8.38	0.17	.24	0.75
3	2.51	1.65	1	7	0.91	.12	7.42	-0.17	.24	-0.74
4	2.53	1.58	1	7	0.91	.12	7.45	-0.08	.24	-0.37
5	2.80	1.59	1	7	0.62	.12	5.08	-0.52	.24	-2.15
6	3.40	1.64	1	7	0.17	.12	1.36	-0.85	.24	-3.51
7	1.99	1.43	1	7	1.63	.12	13.35	2.19	.24	8.81
8	2.52	1.47	1	7	0.82	.12	6.74	-0.06	.24	-0.29
9	1.71	1.38	1	7	2.24	.12	18.33	2.58	.24	18.50

Note. *M* = Average; *SD* = Standard Deviation; g1 = skewness; g2 = kurtosis; *SE* = Standard Error.

The items exhibited skewness between .17 and 2.24, and kurtosis between -.85 and 2.58 (Table 2). In other words, the univariate normality is met (Field, 2017). Mardia's multivariate kurtosis for the nine statements of FSA-SF was 45.21. Following Bollen (1989), if Mardia's coefficient is lower than P(P + 2), where p is the number of observed variables, there is multivariate normality. Given that we utilized nine observed variables, there was not severe non-normal distribution of the data.

Confirmatory Factor Analysis

A unidimensional model where the factor ageism loads on all 9 items was tested. Results from the one-factor, 9-item CFA indicated that, in our sample, the model had very poor psychometric properties: $\chi^2(27, N = 404) = 272.03$, $p < .001$, CMIN/df = 10.08, CFI = .80, GFI = .85, SRMR = .09, and RMSEA = .15, 90% CI [.13, .17] (Hu & Bentler, 1999).

Next, to examine construct validity of the FSA-SF we carried out CFA, with maximum likelihood estimation and mean structure analysis of the three first-order factors (Avoidance, Stereotypes, and Discrimination) and the second-order factor. The model of 3-factor structure of the FSA-SF fit the data well: $\chi^2(24, N = 404) = 76.06$, $p < .001$, CMIN/df = 3.17, CFI = .96, GFI = .96, SRMR = .04, and RMSEA = .07, 90% CI [.06, .09] (Hu & Bentler, 1999). All standardized factor loadings (λ) of the items were statistically significant ($p < .001$)

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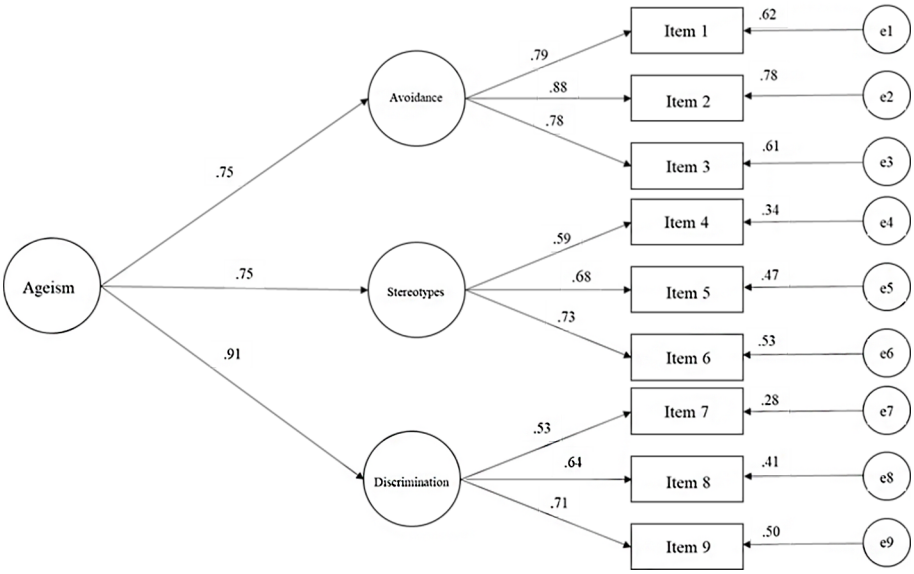
and ranged from .53 to .88. Hence, all items showed factorial weights greater than 0.50 demonstrating the factorial validity (Hair et al., 2010).

The correlation between Avoidance, and Stereotypes and Discrimination was $r = .43$ ($p < .001$), and $r = .48$, ($p < .001$), respectively, and between Stereotypes and Discrimination was $r = .51$ ($p < .001$). As the correlations between the first-order factors are higher than .40, and due to theoretical conceptualization of the authors of the scale we looked at whether there was a second-order factor to the FSA-SF constituting a larger psychological construct of Ageism. Therefore, another model was tested, the 3 latent factors being correlated to a second order factor. This model also showed good fit with no significant deviation in fit indices from the first model (see Figure 1). The subfacets, Avoidance, Stereotypes, and Discrimination, presented factor loadings with the second-order factor by .75, .75 and .91, respectively.

Figure 1

FSA-SF's Second-Order Factor



Reliability Estimation and Descriptive Statistics

To assess scale reliability, internal consistency was assessed using McDonald's omega (McDonald, 1999), and Cronbach's alpha (Cronbach, 1951). Table 3 presents the internal consistencies for the long FSA and FSA-SF, considering the total score and subfacets scores.

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Table 3

Means, SDs, Cronbach's Alphas (α), and McDonald's Omegas (ω) for the Long FSA (Subscales Scores and Total Scores) and the FSA-SF (Subscales Scores and Total Scores)

Scale	*M*	*SD*	α	ω
Long FSA				
Avoidance	2.59	1.09	.85	.85
Stereotypes	3.73	1.02	.79	.79
Discrimination	2.19	0.81	.74	.72
Total FSA score	2.87	0.78	—	—
Short FSA				
Avoidance	2.47	1.39	.86	.85
Stereotypes	2.91	1.27	.70	.71
Discrimination	2.08	1.10	.66	.66
Total FSA score	2.49	1.01	—	—

Note. FSA = Fraboni Scale of Ageism long version; FSA-SF = Fraboni Scale of Ageism – Short Form (9 items); *SD* = Standard Deviation.

Cronbach's alpha and McDonald's omega of the FSA-SF were adequate for the subscales scores. Means and standard-deviations for the FSA and FSA-SF (subscales and total scores) are also presented in Table 3. One-sample *t*-test showed that the average score of the FSA (M = 2.87, SD = .78) and of the shortened version (M = 2.49; SD = 1.01) were significantly below the scale midpoint of 4, $t(403)$ = -29.00, p < .001, 95% CI [-1.20, -1.05], and $t(403)$ = -30.11, p < .001, 95% CI [-1.61, -1.42], respectively. Besides, all the average scores of the 3 facets of the long FSA, and of the short FSA were significantly lower than the scale midpoint of 4 (all ps < .001). Therefore, the sample reported positive explicit attitudes towards older people.

Convergent Validity

We calculated the average variance extracted for the FSA-SF (AVE = .76) and for the three subscales, Avoidance (AVE = .78), Stereotypes (AVE = .57), and Discrimination (AVE = .51). These results indicate good convergent validity for the FSA-SF and its three subscales (Hair et al., 2010).

To scrutinize the convergent validity of the FSA-SF, we also correlated the FSA-SF scores with the long FSA scores. Correlations between the subfacets of the FSA and FSA-SF were: r = .90 for Avoidance; r = .84 for Stereotypes, and r = .80 for Discrimination. The correlation between the total score of the FSA and FSA-SF was r = .93.

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Discussion

In this study a set of nine items of the FSA were selected based on criteria like those used in previous research (Raes et al., 2011; Stöber & Joormann, 2001). This Portuguese shortened form of the FSA supported the construct validity of the FSA-SF via CFA, demonstrating its one-dimensionality with 3 intermediate factors (avoidance, stereotypes, and discrimination). The reliability of the FSA-SF subscales assessed by means of McDonald's omega and Cronbach's alpha was adequate. In addition, this study demonstrated the convergent validity of the FSA-SF using the average variance extracted.

In sum, the findings of this study suggested that the 9-item FSA-SF is a reliable and valid tool for evaluating ageism. One of the advantages of using the FSA-SF is the short measurement time. Brief measures are more likely to be used in research.

Study 2

In Study 1, a 3-factor structure of the FSA-SF was recognized by means of the CFA, and a second-order factor constituting a broader psychosocial domain was also evidenced. Therefore, the goal of Study 2 was to (a) explore the replicability of the 3-factor structure on a different sample, (b) test the replicability of a second-order factor, (c) give more validation to the reliability of the items, (d) investigate the relationship between the FSA-SF and external variables to examine its convergent validity, and (e) test incremental validity by establishing that ageism adds predictive power over and above the attitudes towards old people.

Convergent validity was tested through bivariate correlations between the FSA-SF scores, and compassionate love (CL) and attitudes towards the elderly. CL is "the kind of love that ultimately centers on the good of the other" (Underwood, 2009, p. 3). The CL for others is linked to various pro-social behaviors, including altruism, empathy, sympathy, social support, gratitude, and unconditional forgiveness (Neto & Menezes, 2014; Neto & Neto, 2022; Sprecher & Fehr, 2005). Sinclair et al. (2016) found that people high in compassionate love had more positive attitudes toward out-groups. Given its pro-social nature, we expected that high ageism would be associated with low compassionate love for humanity. Attitudes toward older adults are beliefs and feelings that people have towards the elderly. Common ways in which ageism manifests itself is the low acceptance of others (Fraboni et al., 1990). Therefore, we can expect that high ageism would be associated with more negative attitudes toward older adults.

Method

Participants and Procedure

The sample included 246 participants (64% females and 36% males). The mean age of the respondents was 28.42 years (*SD* = 9.98; range: 18 to 65 years). As in Study 1, they were

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all Portuguese, and came from the Porto area. One hundred and twelve participants had completed primary or secondary education, and 134 had attended tertiary education. The procedure was the same as was used in Study 1.

Measures

Beyond demographics (age, gender, nationality, and level of education) the questionnaire included the following measures:

Short Form Fraboni Scale of Ageism (FSA-SF) — Participants answered the 9-item version of the FSA-SF developed in Study 1.

Compassionate Love for Humanity Scale — This scale includes 21 items (Sprecher & Fehr, 2005) such as "I very much wish to be kind and good to fellow human beings". Ratings ranged from 1 ("not at all true of me") to 7 ("very true of me"). The internal consistency and validity of the Portuguese form of this scale has been proven (Neto & Menezes, 2014). In the present sample, Cronbach's alpha was .92, and McDonald's omega was .91.

Attitudes Toward Older Adults — To assess the attitudes toward older adults we have used the Refined Aging Semantic Differential (RASD) proposed by Polizzi (2003). The RASD is composed of 24 bipolar adjective pairs evaluated on a 7-point scale (e.g., "pleasant/unpleasant", and "friendly/unfriendly"). For this study, participants rated 'most old people'. Higher scores indicate more negative attitudes. In the present sample, Cronbach's alpha was .91, and McDonald's omega was .90.

Data Analysis

Descriptive statistics, CFA, internal consistencies, Pearson's correlations, and hierarchical multiple regressions were carried out.

Results

Confirmatory Factor Analysis

Mardia's multivariate kurtosis for the 9 items of FSA-SF was 53.43, indicating no strong deviation from normal distribution. In agreement with the results of Study 1, the model of 3-factor structure of the FSA-SF fit the data well: $\chi^2(24) = 57.232$, $p < .001$, CMIN/df = 2.39, CFI = .95, GFI = .95, SRMR = .04, RMSEA = .075, 90% CI [.05, .10]. All standardized factor loadings (λ) of the items were statistically significant ($p < .001$) and ranged from .58 to .88. The second-factor structure showed good fit with no significant deviation in fit indices from the first-order structure (see Figure 2). Therefore, results fit the first-order factor structure and the second-order factor structure supports the construct validity of the FSA-SF.

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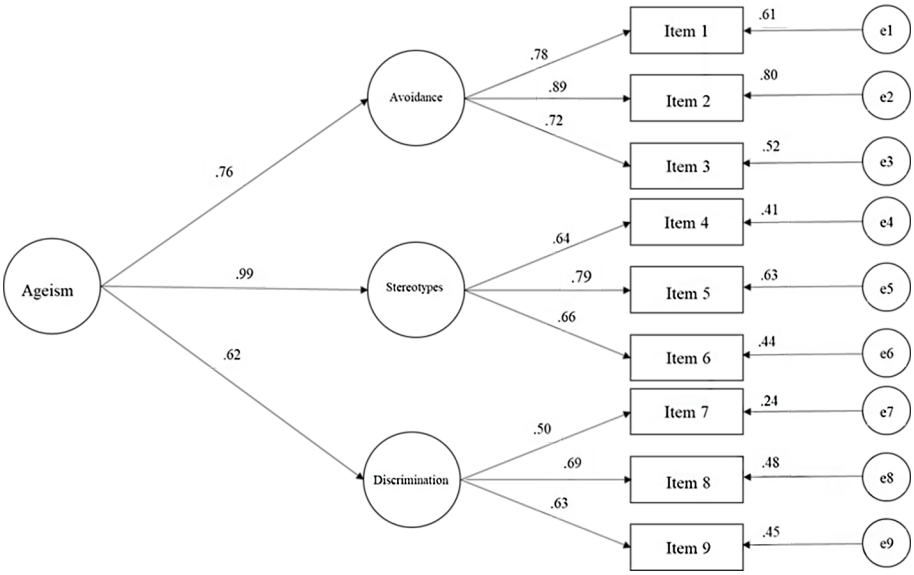
Figure 2

Replicability of FSA-SF's Second-Order Factor



Reliability Estimation

The internal consistencies for the scale also closely replicated the original alphas from Study 1: Avoidance, alpha = .84, omega = .84; Stereotypes, alpha = .71, omega = .72; and Discrimination, alpha = .68, omega = .67.

Convergent and Incremental Validity

We calculated the AVE for the FSA-SF (AVE = .74), and for the three subscales, Avoidance (AVE = .77), Stereotypes (AVE = .59) and Discrimination (AVE = .53). These results indicate good convergent validity for the FSA-SF and its 3 subscales.

To scrutinize the convergent validity, we evaluated the correlations of the FSA-SF scores with compassionate love, and attitudes towards old people. As expected, the FSA-SF total score revealed a negative and moderate correlation with compassionate love, r = -.33, p < .001, 95% CI [-.44, -.22], and a positive and moderate correlation with attitudes towards old people, r = .32, p < .001, 95% CI [.20, .42]. As regards the subscales of the FSA-SF, Avoidance, r = -.30, p < .001, 95% CI [-.41, -.18], Stereotypes, r = -.25, p < .001, 95% CI [-.36, -.13], and Discrimination, r = -.24, p < .001, 95% CI [-.36, -12], correlated significantly and negatively with compassionate love; and Avoidance, r = .24, p < .001, 95% CI [.12, .35], Stereotypes, r = .26, p < .001, 95% CI [.13, .37], and Discrimination, r = .26, p < .001, 95% CI [.14, .37], correlated significantly and positively

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with attitudes toward old people. These findings also tend to support the convergent validity of the FSA-SF.

Incremental Validity

To examine the incremental validity of the FSA-SF we looked at the enhanced predictive power of the three factors and of total ageism over and above the attitudes towards older people. Compassionate love for humanity was used as the criterion. Hierarchical multiple regressions were conducted using attitudes towards older adults in the first step, and Avoidance, Stereotypes, Discrimination, and total ageism in the second steps. Avoidance, Stereotypes, Discrimination, and total ageism add another 7%, 4%, 4%, and 8% respectively to the explained variance of compassionate love for humanity (Table 4).

Table 4

Incremental Validity of Ageism With Compassionate Love as Criterion Variable

	β				
		Block 2			
Measure	**Block 1**	**Avoidance**	**Stereotypes**	**Discrimination**	**Ageism**
Attitudes towards old people	-.23***	-.17**	-.18**	-.18**	-.14*
		-.26***	-.20**	-.20**	-.29***
Multiple R^2	.05***	.12***	.09***	.09***	.13***
ΔR^2	.05***	.07***	.04***	.04***	.08***

*$p < .05$. **$p < .01$. ***$p < .001$.

Discussion

As expected, the second study replicated the 3-factor structure and second-order factor of the Portuguese FSA-SF shown in the first study, using a distinct sample. The reliability of the FSA-SF subscales was also adequate. The convergent validity was tested using the AVE, and correlations with two external variables, compassionate love, and attitudes towards older adults. All AVE values were higher than .50, supporting the convergent validity of the FSA-SF. The convergent validity of the FSA-SF was also confirmed via significant expected correlations with measurements of compassionate love and attitudes towards older adults. However, some of those correlations were of small magnitude. The incremental validity was established given that ageism added predictive power over and above the attitudes towards old people. In sum, Study 2 demonstrated that the FAS-SF has adequate construct validity, reliability, convergent and incremental validity.

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General Discussion

This work researched the validity and reliability of a psychosocial measure of ageism, a Portuguese shortened version of the FSA (FSA-SF), in two studies. In the first study, the dimensionality of the FSA-SF was evaluated by means of the CFA which recognized a 3-factor structure. The first factor was labeled Avoidance, as items on that factor identified the tendency to avoid contact with older adults. The second factor was called Stereotypes, because items on that factor described negative stereotypical beliefs about older adults. The third factor was called Discrimination, because items on that factor indicated a negative look at the expected contributions of older adults to society. We also considered an alternate confirmatory factor analysis model of the FSA-SF to examine whether it would be empirically feasible to develop a total score for the tool that constituted second order latent factor. This model also showed satisfactory fit, suggesting that the full-scale score has usefulness. The FSA-SF was applied to another sample to evaluate the replicability of the 3-factor structure of the FSA-SF via CFA. The findings supported the 3 factors of Avoidance, Stereotypes, and Discrimination, as well as second order latent factor. In both studies, the reliability of the FSA-SF was adequate for the subscale scores.

Convergent validity of FSA-SF was evidenced because AVE was greater than .50 in both studies (Hair et al., 2010). Compassionate love and attitudes towards older adults were also utilized to analyze the convergent validity of the FSA-SF. The FSA-SF scores were negatively related to compassionate love and positively related to attitudes towards older people in the expected directions. These associations indicate that ageism is conceptually linked to compassionate love and attitudes towards old people. According to Abma et al. (2016) "convergent validity is generally considered adequate if > 75% of hypotheses are correct" (p. 2). Our findings showed that all associations were correct, hence the convergent validity of the FSA-SF was supported. In addition, the incremental validity of the FSA-SF was also supported, as the three subscales of ageism and the total ageism predicted compassionate love for humanity over and above the attitudes towards older adults.

The present findings indicate that in effect the Portuguese FSA-SF can be utilized as an economical alternative to measure ageism. With only nine items, this shortened version may be used in cost-intensive surveys. Additionally, given its brevity, the FSA-SF may be less susceptible to "measurement-induced improvement in anxiety" (Knowles et al., 1996).

The present work naturally has several limitations. Firstly, we used a convenience sampling method which limits the capacity of generalizing findings. Replication studies with distinct samples should be carried out to generalize results. Secondly, to evaluate the validity of the FSA, we have used just the correlations with two measures, compassionate love, and attitudes towards older people. All these associations were significant and in the expected direction; however, some correlations were small. Future research

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should assess the construct validity of the FSA-SF, using other constructs, such as acceptance of others, racism, and sexism. Thirdly, ageism was measured with a self-report instrument. Ageism is a sensitive issue for many people and assessing ageism with a self-report tool can imply social desirability. Future investigation should assess the social desirability (see He et al., 2015).

In spite of these limitations, the Portuguese FSA-SF is a straight and short measure that is very ease to apply which should stimulate the research about ageism. Current work provided new empirical insights about the psychometric features of this measure: it revealed a multidimensional structure, with satisfactory reliability, and validity. Moreover, the findings afforded further support for a global ageism factor.

Funding: This research was partially supported by the Center for Psychology at the University of Oporto, Portuguese Science Foundation (FCT UIDB/00050/2020).

Acknowledgments: The authors have no additional (i.e., non-financial) support to report.

Competing Interests: The authors have declared that no competing interests exist.

Ethics Statement: Participants consented to their participation in the anonymous survey. Approval by an ethics committee was not necessary.

Data Availability: The dataset supporting the conclusions of this article will not be shared, all available data is included within the article.

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Appendix

Table A1

Items of a Portuguese Short Form Measure of the Fraboni Scale of Ageism (FSA-SF)

Item of the SF-FSA in English	Translation of the item of the SF-PSA in Portuguese
Avoidance	
Item 1: I would prefer not to go an open house at a seniors 'club, if invited.	Item 1: Preferia não ir a um convívio numa associação de pessoas idosas, no caso de ser convidado.
Item 2: I personally would not want to spend much time with an old person.	Item 2: Pessoalmente não gostaria de passar muito tempo com uma pessoa idosa.
Item 3: I would prefer not to live with an old person.	Item 3: Preferia não viver com uma pessoa idosa.
Stereotypes	
Item 4: Complex and interesting conversation cannot be expected from most old people.	Item 4: Conversas complexas e interessantes é algo que não se pode esperar da maior parte das pessoas idosas.
Item 5: Most old people would be considered to have poor personal hygiene.	Item 5: A maior parte das pessoas idosas deveriam ser consideradas como tendo pouca higiene pessoal.
Item 6: Most old people can be irritating because they tell the same stories over and over again.	Item 6: A maior parte das pessoas idosas podem ser irritantes porque repetem as mesmas histórias muitas vezes.
Discrimination	
Item 7: Old people don't really need to use our community sports facilities.	Item7: As pessoas idosas não necessitam de utilizar as instalações desportivas da nossa comunidade.
Item 8: Most old people should not be trusted to take care of infants.	Item 8: Não deveria confiar na maior parte das pessoas idosas para cuidarem das crianças.
Item 9: It is best that old people live where they won't bother anyone.	Item 9: É melhor que as pessoas idosas vivam onde não aborreçam ninguém.

Note. The English version is presented for comprehension only; the English short form is not validated.

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