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Attitudes Toward Aging: A Sustainability Psychology Perspective on the Perceptions of Undergraduate Students

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Abstract: The aging of the population is a key challenge for society today, with important implications for psychological and social sustainability. The persistence of negative attitudes toward older people leads to ageism, a form of discrimination that hinders an inclusive and equitable society. This study aims to develop a scale to assess attitudes toward old age and to analyze its psychometric properties in university students. The sample consisted of 185 university students aged between 19 and 44 years. A 35-item questionnaire was used, divided into two scales measuring positive and negative attitudes toward old age, each with three factors. The results indicate that the Attitudes toward Aging Scale (AAS) is suitable for measuring both attitudes and is a valid and reliable tool for diagnosing both negative and positive attitudes, as well as facilitating prevention and intervention strategies against ageism. From a sustainability psychology perspective, the use of the AAS contributes to a more equitable and sustainable society by promoting inclusive attitudes toward aging. This approach allows population aging to be seen not only as a demographic challenge, but also as an opportunity to promote intergenerational well-being and social cohesion, key elements for long-term sustainability. The limitations of this study include the small sample size, which could affect the generalizability of the results, but are justified by the contextual relevance of the sample, focusing on a key university group for the formation of future social and educational attitudes.

Keywords: social sustainability; ageism; attitudes; intergenerational welfare

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1. Introduction

The aging of the population is currently a phenomenon of great psychosocial and sustainability relevance. The World Health Organization (WHO) points out that the increase in the number of people aged 65 and over worldwide calls for aging to be addressed from a public health and sustainability perspective. In addition, policies must be developed to avoid negative stereotypes and age discrimination [1]. More recently, in 2020, the WHO emphasized the importance of a comprehensive response that includes promoting age-friendly environments and adopting a human-rights-based approach to prevent ageism [2].

Negative attitudes toward older people lead to social exclusion and affect their role, promoting loss of independence, disability, depression, and premature mortality [3–6].

Various studies have examined how educational and intergenerational interventions can transform attitudes toward aging. For example, *Attitudes Toward Aging Among College*

Students: Results From the Intergenerational Connections Project [7] and *Attitudes Toward Aging among College Students: Results from an Intergenerational Reminiscence Project* [8] demonstrated that consistent interaction between college students and older adults significantly reduces ageist attitudes. Similarly, in *Impact of an Interdisciplinary Class on First-Year Undergraduate Student Knowledge and Attitudes Toward Aging* [9], an interdisciplinary approach for first-year students increased knowledge about aging, decreased associated anxiety, and promoted more positive perceptions of older adults.

These studies emphasize the positive impact of educational and intergenerational strategies in promoting inclusive attitudes and a comprehensive understanding of aging, providing essential tools to address ageism from an educational foundation. By fostering interaction between young people and older adults, ageist biases are significantly reduced, and knowledge and perceptions about aging are improved. However, challenges remain regarding professional orientation toward aging, highlighting the need to continue exploring educational approaches that not only address attitudes but also encourage interest in aging-related careers.

Education plays a crucial role in shaping attitudes toward old age, and it is essential to work on social values in educational institutions. This study focuses on the development of a tool for assessing attitudes toward aging (AAS) in the educational sector, to help prevent and intervene against ageism. The AAS will enable educators and students to assess their own attitudes and thus promote a more inclusive and respectful educational environment. The implementation of this tool will not only promote respect for older learners but will also contribute to a more equitable and enriching educational approach for all. The community plays a fundamental role as a psychosocial resource, promoting well-being in old age and counteracting ageism through educational and social interventions [10]. This work provides a tool for diagnosing attitudes toward aging and preventing social discrimination, promoting intergenerational relations and well-being [11]. Negative attitudes and stereotypes reduce individuals to the image of the group to which they belong, leading to depersonalization and behavior based on stereotypical expectations [12]. This phenomenon has both positive and negative effects on group behavior [13,14].

1.1. Psychology of Sustainability: A Psychosocial Exploration of Attitudes to Aging and the Transformative Role of Education

The increase in life expectancy and the aging of the population are phenomena that, while representing significant achievements, do not correspond to the social valuation of older people. This imbalance is influenced by deeply rooted misconceptions, stigmas, and stereotypes [15]. Attitudes, which are dispositions for evaluating symbols, objects, materials, or people, play a crucial role in individual and social behavior [16]. Melero and Buz emphasized that these attitudes act as mental schemas that shape the perception and retrieval of information about others, thus influencing thought and behavior [17].

Studies have shown that younger generations often have negative perceptions of old age [18,19]. For example, Gutiérrez and Mayordomo [20] found negative stereotypes of older people among university students, particularly in terms of personality and social motivation. Furthermore, studies such as those of Sanhueza and Felipe Rello et al. [21,22] have found differences in the perception of old age among students from different disciplines, showing that these stereotypes can vary significantly depending on the field of study.

Education needs to challenge these stereotypes and promote a positive and respectful view of aging. It is crucial for educators to reflect on their attitudes toward aging, as these can directly influence the educational experience of older students [23]. In Taiwan, for example, the retirement age for teachers has led to discriminatory attitudes among younger teachers and has negatively affected the work environment and self-esteem of older workers [24].

To deepen this field, it is essential to study both positive and negative attitudes toward old age by developing an instrument that assesses these attitudes and analyzing its psychometric properties. This will allow a better understanding of the perceptions and stereotypes that affect older people and the design of effective educational and social interventions that promote a more inclusive and respectful view of aging, thus contributing to social sustainability [25].

The main objective of this study is to explore attitudes toward old age among university students from a sustainability psychology perspective. It seeks to identify and understand young people's perceptions of older people, both in terms of negative and positive stereotypes, by developing a structured questionnaire specifically for this purpose.

In this context, the research question that guides this study is as follows: What are the attitudes toward old age among university students, and how do these attitudes vary across different academic disciplines?

1.2. Hypotheses

The following general hypothesis is considered in this study: It is hypothesized that there are significant differences in attitudes toward old age among groups of university students, reflected in distinct response patterns on scales assessing both negative and positive attitudes. This hypothesis is based on the theory of sustainability psychology, which suggests that perceptions of old age may vary widely among younger people, influenced by sociocultural and personal factors. The following hypotheses are derived from this general hypothesis:

Hypothesis 1 (H1): *There will be significant differences in negative attitudes toward old age between students from different academic disciplines (e.g., psychology vs. engineering), as reflected in higher scores on Scale 1 of the questionnaire (Impairment/Personality, Disability, and Psychosocial Functioning). This will indicate more negative perceptions of older adults in certain fields of study.*

Hypothesis 2 (H2): *There will be significant differences in positive attitudes toward old age between students from different academic disciplines, evidenced by higher scores on Scale 2 of the questionnaire (Attitudes, Interpersonal Functioning, and Wisdom). This will reflect more positive perceptions of older adults among specific academic groups.*

Hypothesis 3 (H3): *Negative attitudes toward old age (Scale 1) will show a significant correlation with similar questionnaires assessing negative stereotypes toward old age, such as those by Montorio and Izal [26] and Sánchez Palacios [27], supporting the convergent validity of the questionnaire developed in this study.*

Hypothesis 4 (H4): *Positive attitudes toward old age (Scale 2) will show a significant correlation with questionnaires assessing positive stereotypes toward old age, such as those by Montorio and Izal [26] and Sánchez [27], further supporting the convergent validity of the questionnaire.*

2. Methods

This research is based on a non-experimental design with purposive sampling and instrumental scope, the aim of which is to examine the psychometric properties of an instrument for measuring a psychological construct. In order to carry out this study, the following phases were followed: (i) preparation of the initial version of the questionnaire, (ii) validation of the questionnaire, and (iii) analysis of the psychometric properties. First, the initial version of the questionnaire was obtained from a review of bibliographic sources. The items were derived from an extensive literature review and included constructs related

to social interaction, well-being, and emotional regulation in aging populations. The initial questionnaire consisted of 45 items. Later, the Angoff method was used to ensure the validity of the initial test. The Angoff method is a widely used approach for establishing content validity through expert judgment. This required the participation of leading experts in the field. Specifically, five experts participated in the review process: three experts specializing in social psychology and the psychology of aging, and two experts in test design and psychometric analysis.

The Angoff method was applied in two sessions in which the experts rated the vocabulary, clarity, wording, and conceptual structure of each of the items considered on a scale from 1 (minimum score) to 10 (maximum score). Each of the experts justified the score given to each item and suggested possible changes to the items under consideration. Examples of suggested changes included rephrasing items for better cultural relevance, simplifying complex terms, and merging redundant questions. For instance, one item originally stated, "I feel emotionally supported by those around me", which was revised to "I feel supported by the people in my life" to improve clarity. Each change was proposed to the expert team, and finally, the change was only included if a consensus of all experts was reached.

Finally, the psychometric properties of the AAS instrument were reviewed, and the procedure for obtaining test reliability indicators was carried out in the third phase of this study. Additional items were added to the measure to address gaps identified in the initial review. These items focused on emotional resilience and adaptability, which are core aspects of the psychological construct being assessed. The final version of the questionnaire included 50 items, 5 more than the initial version.

2.1. Sample

The research sample consisted of 185 university students enrolled in the first year of a Master's degree in Education at the American University of Europe in Mexico. The sample was selected using a convenience sampling method, where participants were invited to participate based on their availability and willingness to be part of this study. The age of the participants ranged from 19 to 44 years, with a mean age of 31.5 years (SD = 7.22).

The sample was stratified by gender and age to ensure a diverse representation across these key demographic characteristics. The table below presents the distribution of participants across gender, age, and other relevant characteristics (Table 1).

Table 1. Demographic distribution of participants by gender and age range.

Gender	Age Range	Number of Participants	Percentage
Female	19–25 years	45	24.3%
	26–35 years	85	46.2%
	36–44 years	33	17.8%
Male	19–25 years	12	6.5%
	26–35 years	7	3.8%
	36–44 years	1	0.5%
Total		185	100%

Inclusion criteria: The participants were required to be enrolled in the first year of the Master's degree in Education program at the American University of Europe in Mexico. They had to be 18 years of age or older and provide informed consent to participate in this study.

Exclusion criteria: Participants who were not enrolled in the first year of the Master's program, were below 18 years of age, or did not provide informed consent were excluded from this study.

Sampling method: A convenience sampling method was used to select participants. While this method does not ensure random selection, it was suitable for the scope and context of this study. The sample is primarily reflective of the demographic characteristics of the student body at the university, though the small sample size limits the generalizability of the findings to broader populations.

Representativeness and generalizability: The sample includes a wide age range, which provides valuable insights into the generational diversity within the educational context. However, the relatively small size of the sample limits the ability to generalize the findings to all university students or other educational settings. Future research with larger and more diverse samples would be beneficial for validating the instrument more comprehensively.

Justification for the sample size: While the sample size may be considered small for the validation of an instrument, it is important to note that the purpose of this study was to explore attitudes toward aging among university students in a specific educational context. Given the nature of the research and the focus on a specific population, the sample is deemed appropriate for the preliminary validation of the instrument. Nonetheless, further studies with larger samples are recommended to strengthen the instrument's validity across broader populations.

2.2. Instrument

The collection of information necessary for this study consisted of two parts. In the first part, a booklet of materials related to the evaluation of stereotypes toward old age was elaborated; this first part was the prelude to the construction of the questionnaire on stereotypes toward old age. The questionnaires used in this study, as well as the variables to be measured and their psychometric properties, are as follows:

The Questionnaire of Negative Stereotypes towards Old Age (CENVE), developed by Sánchez Palacios et al. [27], is a key tool in this research for assessing perceptions and stereotypes associated with old age. This instrument is based on previous adaptations, such as Palmore's Facts on Aging Quiz (FAQ) [28] and Montorio and Izal's questionnaire [26], and focuses on three main dimensions: health, motivational–social, and character–personality. Each of these dimensions is composed of 4 items or phrases designed to measure the individual's predisposition to negative stereotypes related to aspects of old age.

The CENVE response format follows a four-point Likert model ranging from "strongly disagree" to "strongly agree". This structure allows the intensity of the participant's agreement or disagreement with each statement about stereotypes related to old age to be recorded, thus providing quantitative data that can be statistically analyzed to assess the prevailing attitudes within the sample studied.

In addition to the aforementioned test battery, this study included an initial booklet that served as the basis for the development of the final AAS questionnaire. This booklet included other materials such as permission forms for voluntary cooperation, previous questionnaires for assessing stereotypes about old age, and collection tables of positive and negative adjectives associated with old age. Specific questions were also included about the participants' personal relationship with the elderly, exploring aspects such as the number of family members over 65, the type of relationship that unites them, living with them, and the personal perception of what age marks the onset of old age.

This comprehensive methodological approach allows one not only to measure current attitudes toward old age among the participating university students, but also to delve deeper into the variables that may influence the formation and maintenance of stereotypes in this specific demographic group.

2.3. Procedures and Measurements

The research was carried out in two distinct phases to ensure clarity and rigor in the data collection process. In the first phase, participants completed a series of initial materials, including a questionnaire about stereotypes and attitudes toward old age, and a list of adjectives, both positive and negative, that describe older individuals. This first phase was designed to capture an initial understanding of the participants' perceptions of old age. In the second phase, participants completed a modified version of the questionnaire that assessed stigma and attitudes toward old age, incorporating the data gathered in the first phase. This second phase allowed for a systematic evaluation of the students' attitudes and the analysis of how these attitudes might have been influenced by the adjectives and content presented in the first phase.

Participants were selected from the Master's program in Education at the American University of Europe, and only those who met the inclusion criteria were included in this study. Specifically, only participants who were enrolled in the program and provided informed consent were included in this study. A total of 10 participants were excluded from this study due to not meeting the inclusion criteria or not completing the measures in their entirety. For transparency, all questionnaires were written in Spanish to ensure clarity for the participants.

Participation in this study was voluntary, and participants were provided with general information about the research to ensure their informed consent. They were explicitly assured that their participation would remain anonymous, voluntary, and confidential, in accordance with the ethical guidelines outlined in the Declaration of Helsinki [29]. To maintain the anonymity of the responses while still linking participants to both phases of this study, an identification code was assigned to each participant.

In the first phase of the research, participants responded to a set of questionnaires and provided adjectives related to both positive and negative perceptions of old age. The collection of adjectives aimed to capture how university students view older individuals in various domains (e.g., physical, cognitive, social). Students were asked to describe adjectives they associated with older people, ensuring that both positive and negative characteristics were represented.

These collected adjectives underwent a filtering process performed by five experts in the field of social psychology and aging. The experts excluded any responses that were not adjectives and grouped the remaining adjectives based on synonyms. Only adjectives mentioned more than 10 times by participants were retained for further consideration, ensuring that the final list of adjectives was significant and representative of common perceptions of old age within the sample. After this initial filtering, the adjectives were categorized as either positive or negative, based on their general connotations.

A consensus process was carried out among the experts to ensure that the selected adjectives were accurate and reflected the general perceptions of the students. This process led to a final list consisting of 20 positive and 20 negative adjectives, which adequately represented the range of perceptions and stereotypes associated with old age (see Figure 1).

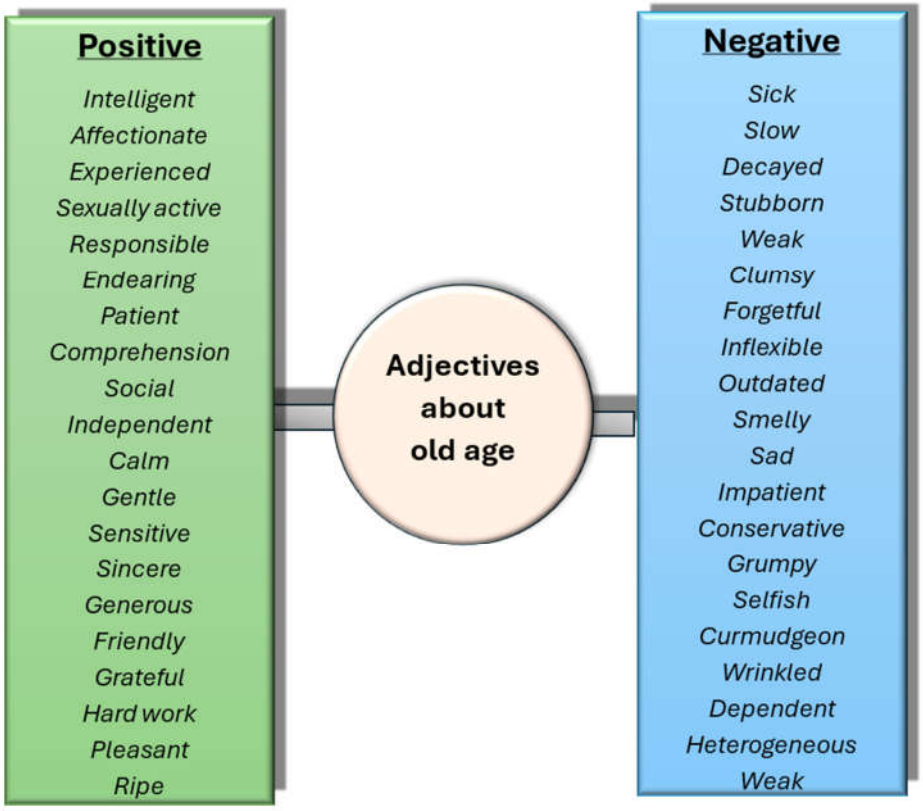

Figure 1. Positive and negative adjectives about old age.

In terms of how positive and negative attitudes were measured, the adjectives used to capture these attitudes were carefully selected based on their frequency and relevance. The adjectives were selected from the responses provided by the students during the first part of this study, focusing on terms that were most frequently mentioned in relation to older people. Examples of positive adjectives include "active", "wise", and "resilient", while examples of negative adjectives include "frail", "decrepit", and "forgetful". These adjectives were categorized based on their general connotation and formed the basis for developing the questionnaire items.

The final questionnaire included 46 items related to positive attitudes toward old age and 46 items related to negative attitudes toward old age. These items were created by transforming the selected adjectives into statements that participants could rate on a 5-point Likert scale, ranging from "1—strongly disagree" to "5—strongly agree" with an additional "6—do not know" option. This Likert scale allowed for an assessment of the intensity of agreement or disagreement with each statement.

To ensure the reliability of the attitude grouping and to address the potential issue of different interpretations of terms based on age, we conducted a pilot study with a small sample from a similar demographic group to assess whether any terms were interpreted inconsistently across age groups. In cases where terms were found to have different connotations, we modified the wording or provided additional clarification to ensure consistency in understanding across the sample.

Furthermore, the classification of adjectives into positive and negative categories was reviewed by multiple raters to ensure inter-rater reliability. Disagreements were resolved through discussion and consensus. This process helped ensure that the final classification reflected a consistent interpretation of the terms by the research team.

Statistical analyses were conducted using IBM SPSS Statistics 27.0 and IBM SPSS-AMOS 26. To analyze qualitative or categorical variables, frequencies and percentages were calculated, and the chi-square test of homogeneity was applied to assess whether two or more samples

came from homogeneous populations based on specific criteria, such as gender or education level. Additionally, contingency tables with the chi-square test of non-dependence were used to explore potential relationships between two categorical variables.

For quantitative variables, exploratory and descriptive analysis was performed, utilizing the goodness-of-fit test (Kolmogorov–Smirnov) to assess the discrepancy between observed and expected values in relation to the normal Gaussian model. Box plots were also used to detect any outliers. Cronbach's alpha was employed to determine the reliability and internal consistency of the measurement instruments, specifically for the ARS scale proposed in this study. The bivariate correlation test using Pearson's correlation coefficient was applied to explore the relationships between quantitative variables that followed a normal distribution.

When examining differences in meaning, significance tests such as Student's *t*-test and ANOVA were used. The Student's *t*-test was applied to compare means and proportions of quantitative variables, especially in socio-demographic data, while ANOVA was used to compare the means of three or more independent groups with a normal distribution and assess the consistency of the analysis.

In cases where necessary, alternative statistical tests were employed. The Mann–Whitney test, a non-parametric version of the Student's *t*-test, was used to confirm the heterogeneity of two samples. The Friedman test, an equivalent of ANOVA for repeated measures, was used to evaluate data organized in blocks or rows.

Finally, multivariate statistical techniques were applied, including Exploratory Factor Analysis (EFA), which helped explore the internal structure of the analyzed variables and determine the weight of items in the a priori proposed factors. This technique was specifically used to verify the internal structure of the ARS scale. Confirmatory Factor Analysis (CFA) was then performed to ensure that the factors and their weights obtained from the EFA aligned with theoretical expectations, validating the results through hypothesis testing. These statistical methods were essential for interpreting and discussing the results of this study.

3. Results

Before proceeding with the factor structure analysis of the questionnaire, a reliability analysis was conducted to assess the internal consistency of the items included in the instrument. The reliability of a questionnaire is a crucial aspect of its validation, as it ensures that the items consistently measure the same construct across different administrations and that any observed variations in responses are due to the true differences in the construct being measured rather than to inconsistencies in the instrument.

To assess internal consistency, Cronbach's alpha coefficient was calculated. Cronbach's alpha is a widely used statistic for evaluating the reliability of multi-item scales, as it measures the proportion of total variance in the test scores that is attributable to the true variance in the construct. A higher Cronbach's alpha indicates that the items in the scale are highly correlated and thus that the questionnaire consistently measures the same underlying construct.

The Cronbach's alpha for the old age attitude questionnaire was found to be $\alpha = 0.95$, indicating excellent internal reliability. This value suggests that the items in the questionnaire are highly consistent with each other and reliably measure participants' attitudes toward old age. Generally, a Cronbach's alpha greater than 0.90 is considered excellent, reinforcing confidence in the tool's ability to produce stable and consistent results.

The high Cronbach's alpha also implies that the observed differences in participants' responses are likely to be due to real differences in their attitudes toward old age, rather than being influenced by errors or inconsistencies within the instrument itself. This reliability

further strengthens the validity of the results derived from the factor structure analysis and provides a solid foundation for interpreting the data in subsequent analyses.

3.1. Factorial Structure

To determine the underlying structure of the Attitudes Toward Aging Questionnaire, which initially contained 92 items, a principal component factor analysis was conducted. This analysis aimed to identify the key factors that explain the variation in participants' responses, thereby reducing the number of items to those that were most relevant and consistent.

The factor analysis followed several specific steps. First, a Promax rotation method was chosen, which is an oblique rotation technique. This method was deemed appropriate because the factors were expected to correlate with one another, given that attitudes toward old age often influence each other. Next, lower loadings below 0.30 were suppressed to improve the clarity of the analysis and ensure that only items with significant loadings were retained. This threshold was selected to ensure that the remaining items would be the most representative and relevant.

From the original 92 items, 36 items were removed due to their communality index scores being below 0.30, indicating they did not significantly contribute to explaining the common variance. A second principal component analysis with Promax rotation was then performed on the remaining 42 items. This refined analysis focused on the most significant items to achieve a more accurate assessment of the factor structure.

The results of the factor analysis revealed two strong factors that together explained 43% of the total variance. These factors represent the main dimensions underlying attitudes toward old age in the sample studied. The first scale includes items reflecting specific attitudes and perceptions toward old age, covering emotional and cognitive aspects. The second scale assesses social interaction and interpersonal functioning in old age, as well as perceptions of the contributions and wisdom of older individuals.

The saturation of each item on these two scales is shown in Tables 2 and 3, and Figures 2 and 3 provide a detailed overview of how each item contributed to the identified factors.

The identification of two robust factors suggests that attitudes toward old age can be divided into two main dimensions. The use of Promax rotation allowed for the correlation between the factors, which aligns with the theory that the different dimensions of attitudes toward old age are interrelated. This analysis not only simplified the questionnaire but also improved its ability to accurately measure attitudes toward old age.

The removal of non-significant items and those that were saturated on both factors ensures that the final questionnaire is clearer and more concise, improving its utility for future research and practical applications. By explaining 43% of the total variance, these two factors offer a solid and reliable understanding of the main dimensions of attitudes toward old age in the studied population.

Table 2. Saturations of variables. Scale 1.

Scale 1		
Item Number	**Item**	**Saturation**
1	They transmit kindness to me	0.811
2	They become endearing	0.794
3	They are very pleasant	0.791
4	They seem sweet and helpful	0.790
5	They show gratitude when they are served	0.774
6	They have many things to contribute	0.732
7	They are adorable	0.717
8	It's interesting to listen to older people	0.709
9	I find it kind and gentle	0.706
10	They are generous with others	0.696
11	They exude great sympathy	0.677
12	Maturity	0.673
13	A great sense of responsibility	0.657
14	They are very grateful	0.656
15	Patience	0.611
16	Experience	0.604
17	Affectionate and pleasant in their dealings with others	0.598
18	They tend to share everything they have	0.595
19	They are very industrious and hardworking.	0.593
20	Greater life experience	0.575
21	They are a source of knowledge	0.568
22	They maintain close contact with their families	0.530
23	They take life more calmly	0.522

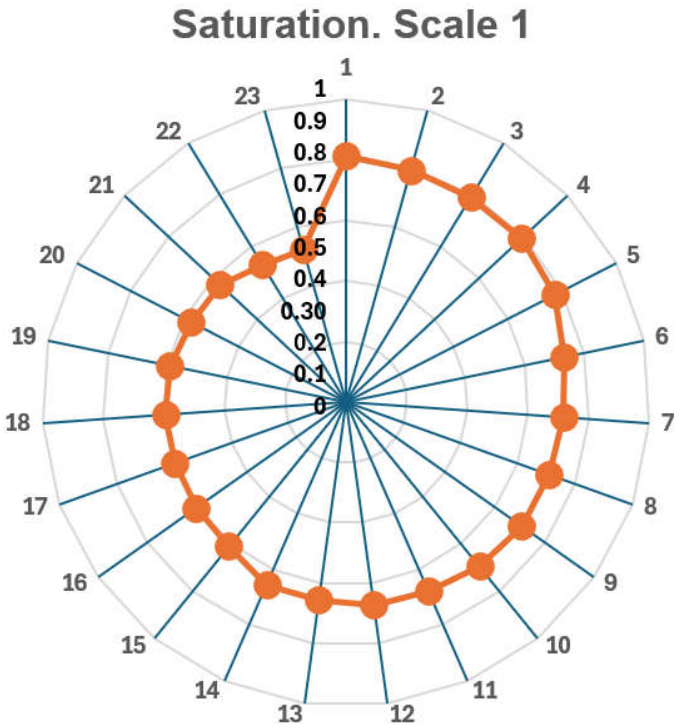

Figure 2. Saturation of variables corresponding to Scale 1.

Table 3. Saturations of variables. Scale 2.

Scale 2		
Item Number	**Item**	**Saturation**
1	Clumsiness is a characteristic feature of old age	0.745
2	They tend towards conservatism	0.723
3	They are very stubborn	0.690
4	They are usually sick	0.680
5	Conservative mentality	0.679
6	Old-fashioned mentality	0.663
7	They slow down as they age	0.627
8	They have not sex	0.626
9	They have some deterioration	0.620
10	Rigid and inflexible in their decisions	0.616
11	Stiff and inflexible	0.614
12	Repetitive, heavy and boring speech	0.614
13	Loss of interest in sex	0.612
14	Impatient	0.585
15	Sad and depressed	0.570
16	Grumpy	0.567
17	Dependents	0.566
18	They care about themselves	0.467

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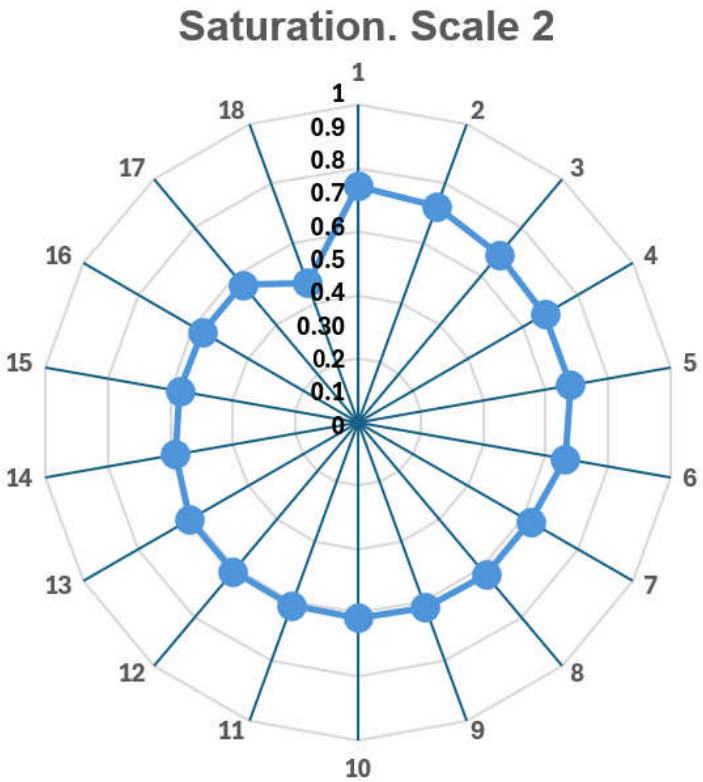

Figure 3. Saturation of variables corresponding to Scale 2.

3.1.1. Detailed Analysis of the Scales

The analysis revealed two distinct scales of attitudes toward old age, based on principal component factor analysis with Promax rotation. The Promax rotation was chosen because it was theoretically expected that the resulting factors would correlate, allowing for a more accurate and meaningful interpretation of the data.

First Scale: Negative Attitudes Toward Old Age

The first scale is characterized by negative attitudes toward old age. All items in this scale showed positive saturations, meaning a higher score on this scale is associated with a greater degree of negative perception toward older people. These items reflect common stereotypes and prejudices about old age, such as perceptions of physical and mental decline, rigid thinking, and diminished abilities (Table 4).

Factor analysis of the first scale identified three significant factors, together explaining 26% of the total variance:

1. Impairment/Personality: This factor includes items reflecting perceptions of impairment in the personality and abilities of older people. Examples of items in this factor include perceptions of increased rigidity and inflexibility with age.
2. Disability: This factor focuses on perceptions of physical and functional limitations associated with old age. Items like "Clumsiness is a characteristic of old age" were initially included here but removed if they showed saturation on multiple factors.
3. Psychosocial Functioning: This factor includes items related to the social integration and psychological functioning of older people, assessing aspects like the ability to maintain relationships and participate in community activities.

Items that saturated on more than one factor were removed to improve the clarity and precision of the identified factors. Some of the eliminated items include:

- "Over time, older people become more rigid and inflexible".
- "Clumsiness is a characteristic of old age".

Table 4. Saturations of variables within the first scale.

Scale 1. Negative Attitudes	
Item	**Saturation**
Factor 1. Impairment/Personality	
Conservatism in their opinions	0.857
They slow down	0.762
Conservative mentality	0.759
Antiquated	0.645
Impatient	0.644
Rigid and inflexible	0.583
Cognitive and physical impairment	0.504
Stubborn	0.476
Factor 2. Disability	
They have not sex	0.812
Less interest in sex	0.804
Dependents	0.687
Sick	0.667
Factor 3. Psychosocial Functioning	
They care about them	0.883
Boring and heavy speech	0.562
Sad and depressed	0.433
They are grumpy	0.491

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The second scale reflects positive attitudes toward old age. As with the first scale, all items within this scale showed positive saturations, meaning a higher score on this scale indicates a more positive approach to old age, emphasizing aspects like wisdom, accumulated experience, and the continued contribution of older people to society.

The positive correlations between the factors of both scales support the use of Promax rotation, which allows for a more meaningful interpretation of the factors since they are expected to be related. This theoretical assumption is confirmed by the results.

Based on these initial results, further analyses were conducted to identify the underlying factors within each scale in more detail. The three significant factors on the second scale were further explored to ensure that the retained items were the most representative and contributed significantly to explaining the total variance. This refinement is crucial for developing an accurate and reliable measurement tool.

The factor analysis of the second scale identified three robust factors, explaining 43% of the total variance in attitudes toward old age. The removal of items with multiple saturations improved the clarity and interpretability of the factors, ensuring each represented a distinct dimension of positive attitudes toward old age. The identification of these factors is critical for future research and practical applications, providing a clear framework for assessing and understanding attitudes toward old age. These findings can be used to develop programs and interventions promoting more positive perceptions of old age, fostering a more inclusive and respectful view of older people in society.

3.2. Internal Consistency Reliability

To ensure the reliability of the identified factors, the internal consistency of each factor was calculated using Cronbach's alpha coefficient. This coefficient is a commonly used measure for assessing the internal reliability of a scale and indicates how well the items that make up each factor correlate with each other. The results showed Cronbach's alphas of 0.87 for the negative attitudes toward old age scale and 0.91 for the positive attitudes toward old age scale.

These values indicate a high internal consistency for both scales. A Cronbach's alpha above 0.70 is considered acceptable in social research, while values above 0.80 indicate good internal consistency. The obtained values of 0.87 and 0.91 indicate that the items of each scale are highly correlated with each other and consistently measure attitudes toward old age, both negative and positive.

In addition to Cronbach's alpha, homogeneity indices were analyzed for each item of the final questionnaire with its respective factor. This analysis involves calculating item–total correlations, which assesses how each item correlates with the total score of the factor to which it belongs. This analysis is essential to identify items that may not be aligned with the overall construct that the factor measures. Item-to-total correlations were higher than 0.30 in all cases except for one item in Factor 1 (negative attitudes). This finding suggests that almost all items correlate well with their total factor and contribute positively to the internal consistency of the factor. The item that did not meet this criterion could be considered for revision or deletion in future versions of the questionnaire, although its presence does not significantly affect the overall high reliability of the factor.

The detailed item–total correlations are shown in Table 5, which clearly presents the item–total correlations for each factor. These correlations provide a clear picture of how each item contributes to the internal reliability of its respective factor. Items with item–total correlations higher than 0.30 are considered adequate, indicating that the item is consistent with the construct measured by the factor.

Regarding the factor diagrams mentioned, we have revised them for clarity. The diagrams now explicitly show the frequencies of responses for each item, the mean scores for each factor, and other relevant measures. We have also included additional explanations in the figure captions to ensure that the diagrams are easily interpretable. This revision should help clarify the purpose of the diagrams and the type of data they represent.

Table 5. Saturations of variables within the second scale.

Scale 2. Positive Attitudes	
Item	**Saturation**
Factor 1. Attitudinal	
Loving	0.867
Patience	0.749
They appear sweet and helpful	0.742
They are generous with others	0.647
They exude great sympathy	0.643
They are patient with others	0.596
Kind and gentle	0.494
They are very grateful	0.425
Factor 2. Interpersonal functioning	
Interesting to listen to them	0.881
They have many things to contribute	0.857
They show gratitude when they are served	0.836
Lived experience manifests itself	0.704
They tend to share everything they have	0.649
They are very industrious and hardworking	0.316
Factor 3. Wisdom	
Greater life experience is appreciated	0.734
A great sense of responsibility	0.727
Close contact with family members	0.699
They take life more calmly	0.678
They are a source of knowledge	0.428

SPSS program version 29.0.0.0.

The high internal consistency demonstrated by Cronbach's alphas and item–total correlations supports the reliability of the questionnaire. These results indicate that the identified factors are robust and can be used with confidence to measure attitudes toward old age. The elimination of items that do not fit well with their factor further improves the reliability and accuracy of the questionnaire. In conclusion, the internal consistency analyses confirm that the questionnaire is a reliable tool for assessing both negative and positive attitudes toward old age. These findings are crucial for the validation of the questionnaire and its application in future research and practice related to the perception of old age. In order to assess the reliability of the factors within each scale, the same procedure of internal consistency analysis was used. This involved calculating the Cronbach's alpha coefficient for each of the three factors that make up the first negative attitudes toward old age scale, as well as analyzing item–total correlations.

The Cronbach's alpha coefficients obtained for the three factors of the first scale were as follows: Factor 1: Impairment/Personality—$\alpha = 0.84$, Factor 2: Disability—$\alpha = 0.76$, Factor 3: Psychosocial Functioning—$\alpha = 0.63$

These results indicate that Factors 1 and 2 have good internal consistency, with Cronbach's alphas higher than 0.70, which is generally considered an acceptable level of reliability in social research. Factor 3 has an alpha of 0.63, which is slightly lower but still within a reasonable range for exploratory research. This result suggests that there may be scope for improving the internal consistency of this factor, possibly by revising or refining some of the items. Item–total correlations were analyzed to assess the homogeneity of each item within its respective factor. The item–total correlations were higher than 0.30 in all cases, indicating that each item correlates well with the total score of the corresponding factor. This strengthens the reliability of the factors as it shows that the items are consistent with the constructs they are intended to measure.

The item–total correlations are shown in Table 6. These detailed correlations provide a clear picture of each item's contribution to the internal reliability of its respective factor.

Items with correlations higher than 0.30 indicate good internal consistency and show that each item is relevant to the factor to which it belongs. The assessment of the internal consistency of the factors within the first scale confirms the reliability of these factors, albeit with some differences in the level of reliability between them. The high Cronbach's alpha coefficients for the Defiance/Personality and Disability factors suggest that these factors are robust and consistently measure negative attitudes toward old age.

Table 6. Item–total correlation of each factor.

Item	Saturation
Scale 1. Positive Attitudes	
They tend to be sad and depressed	0.452
They only care about themselves	0.293
Autonomy decreases and people become more dependent	0.456
Older people do not have sex	0.561
Interest in sex reduces with age	0.557
Older people are often sick	0.590
They tend towards conservatism in their way of understanding life and in their opinions	0.665
In their daily chores, older people tend to be impatient	0.484
The majority have some degree of cognitive and physical impairment	0.552
They are rigid and inflexible when making decisions	0.523
Conservative mentality is seen more clearly in old age	0.550
People slow down as they age	0.551
The mentality is outdated	0.617
You cannot argue with them, they are very stubborn	0.610
Scale 2. Negative Attitudes	
They are especially affectionate and pleasant	0.478
They are patient with others	0.492
They appear sweet and helpful	0.676
A virtue is patience	0.457
They are generous with others	0.635
They exude great sympathy	0.599
They are kind and gentle	0.650
They are very grateful	0.629
It is interesting to listen to them	0.617
They have many things to contribute	0.654
They show gratitude when they are served	0.683
They show maturity	0.590
They tend to share everything they have	0.564
They are very industrious and hardworking	0.553
They are a source of knowledge	0.529
They have a sense of responsibility	0.618
They maintain close contact with their families	0.519
They have greater life experience	0.501
They take life more calmly	0.478

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The somewhat lower Cronbach's alpha coefficient for the Psychosocial Functioning factor suggests the need for further revision. Adjustments to the items of this factor may be considered to improve its reliability. Nevertheless, item–total correlations above 0.30 for all items within this factor suggest that there is still good internal consistency. In conclusion, the internal consistency analyses carried out for the three factors within the first scale confirm the reliability of the questionnaire and its ability to measure different dimensions of negative attitudes toward old age. These findings are essential for the further validation of the questionnaire and its use in future studies.

Cronbach's alphas for the factors making up the Second Age Scale were 0.85, 0.85 and 0.76. Item–total correlations were analyzed to ensure the homogeneity of each item within its re-

spective factor. The item–total correlations were higher than 0.30 in all cases, confirming that each item correlates well with the total score of the corresponding factor. This result indicates good internal consistency and suggests that the items are representative and consistent with the constructs measured by each factor.

The item–total correlations are shown in Table 7. These correlations provide a detailed view of how each item contributes to the internal consistency of its factor. Items with correlations above 0.30 are considered adequate as they show that each item is relevant and aligned with the factor to which it belongs.

Table 7. Item–total correlation of each factor in the first scale.

Scale 1. Negative Attitudes	
Item	**Saturation**
Factor 1. Impairment/Personality	
They are rigid and inflexible when making decisions	0.486
They have some degree of cognitive and physical impairment	0.500
They are conservative	0.606
They slow down	0.574
They tend towards conservatism in their way of understanding life	0.734
The mentality is outdated	0.631
They are very stubborn	0.575
They tend to be impatient	0.496
Factor 2. Disability	
They become more dependent	0.440
They do not have sex	0.630
They are usually sick	0.570
Interest in sex reduces with age	0.647
Factor 3. Psychosocial Functioning	
Repetitive, heavy and boring speech	0.357
They tend to be sad and depressed	0.418
They only care about themselves	0.487
They are grumpy	0.357

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The assessment of the internal consistency of the factors within the second scale confirms the reliability of these factors. The high Cronbach's alpha coefficients for the Attitudinal and Interpersonal Functioning factors indicate that these factors are robust and consistently measure positive attitudes toward old age. The Cronbach's alpha coefficient of 0.76 for the Wisdom factor, although lower than the other two factors, is still acceptable and suggests that this factor is also reliable (Table 8).

Table 8. Item–total correlation of respective factor in the second scale.

Scale 2. Positive Attitudes	
Item	**Saturation**
Factor 1. Attitudinal	
Kind and gentle	0.608
They are patient with others	0.528
Affectionate and pleasant in their dealings with others	0.602
Patience	0.643
They are very grateful	0.577
They exude great sympathy	0.568
They appear sweet and helpful	0.696
They are generous with others	0.533
Factor 2. Interpersonal functioning	
They show gratitude	0.725
They have many things to contribute	0.743
Experience manifests itself as maturity	0.602
They tend to share everything they have	0.691
They are very industrious and hardworking	0.492
It is interesting to listen to them	0.614
Factor 3. Wisdom	
Greater life experience	0.535
Great sense of responsibility	0.631
They are a source of knowledge	0.571
They maintain close contact with their families	0.566
They take life more calmly	0.403

SPSS program version 29.0.0.0.

Item–total correlations higher than 0.30 for all items within each factor confirm the good internal consistency. This means that the items are well aligned with the constructs measured by each factor, providing a solid basis for further research and practical application. These findings confirm that the questionnaire is a reliable tool for assessing different dimensions of positive attitudes toward old age and are crucial for its further validation and use in future studies.

3.3. External Validation

Then the external validity of the questionnaire on attitudes toward old age was assessed by comparing it with those of Montorio and Izal (1991) [26] and Sánchez Palacios (2004) [27]. The results were as follows: When comparing the Pearson correlation coefficient of our First Age Scale with Montorio and Izal's questionnaire (r = 0.205; p = 0.006; n = 148), a direct and significant correlation was observed, with a medium effect size. Similarly, when compared with the Sánchez Palacios questionnaire (r = 0.294; p = 0.000; n = 148), a direct and highly significant correlation was found, also with a medium effect size. These results are consistent with the fact that the First Old Age Scale assesses negative stereotypes about old age, as do the other two questionnaires, suggesting an adequate validation of this scale.

On the other hand, when assessing the external validity of the Second Old Age Scale with the same questionnaires (Montorio and Izal and Sánchez Palacios [26,27]), it was found that there was no significant correlation. No significant relationship was found with the Montorio and Izal questionnaire (r = −0.037; p = 0.328; n = 151), which is to be expected given that the Second Old Age Scale measures positive stereotypes about old age, whereas the Montorio and Izal questionnaire focuses on negative stereotypes. The same was found with the Sánchez questionnaire (r = −0.030; p = 0.357; n = 148), which also showed a non-significant correlation, as it measures negative stereotypes toward old age.

Finally, direct and significant correlations were found when comparing the total of the attitudes toward old age questionnaire (sum of both scales) with the Montorio and Izal and Sánchez questionnaires. With the Montorio and Izal questionnaire (r = 0.186; p = 0.016; n = 134), a direct and significant correlation was found, with a medium effect size. Similarly, the Sánchez questionnaire (r= 0.203; p = 0.009; n = 134) showed a direct and significant correlation with a medium to low effect size.

These results underline the validity of the questionnaire developed to assess attitudes toward old age, confirming its usefulness and appropriateness in measuring both positive and negative stereotypes associated with old age.

The following presents the results related to composite reliability, MacDonald's Omega, average extracted variance (EVA), convergent validity, and discriminant validity (Table 9).

Table 9. Instrument validation data.

Item	Value	Interpretation
Composite reliability	0.875	Adequate value, indicating that the instrument is reliable.
MacDonald's Omega	0.84	Omega greater than 0.7, suggesting acceptable reliability.
EVA (average extracted variance)	0.51	Indicates an acceptable average extracted variance, which is positive for convergent validity.
Convergent validity	0.72	Strong positive relationship, confirming convergent validity.
Discriminant validity	0.78	Factors are appropriately differentiated, confirming discriminant validity.

Note: Composite reliability and MacDonald's Omega indicate the instrument's internal consistency. EVA (average extracted variance) reflects the degree of convergent validity, while convergent and discriminant validity confirm the scale's effectiveness in measuring distinct constructs.

These results provide a comprehensive psychometric analysis of the instrument, highlighting the key elements that ensure its reliability and validity. Composite reliability and MacDonald's Omega show that the instrument is reliable, while the average extracted variance (EVA) and convergent and discriminant validity metrics confirm that the scales used are effective in measuring attitudes toward old age, appropriately differentiating between constructs and validating the relationship between dimensions.

3.4. Description of the Final Questionnaire

The final questionnaire on stereotypes of old age consists of 35 items divided into two different scales that assess both negative and positive attitudes toward old age (see Figure 4). The first scale consists of 16 items, and the second of 19 items (see Appendix A). Each item is scored on a 5-point Likert Scale, where 1 means "disagree" and 5 means "strongly agree". This structure allows for a total score ranging from 16 to 80 points.

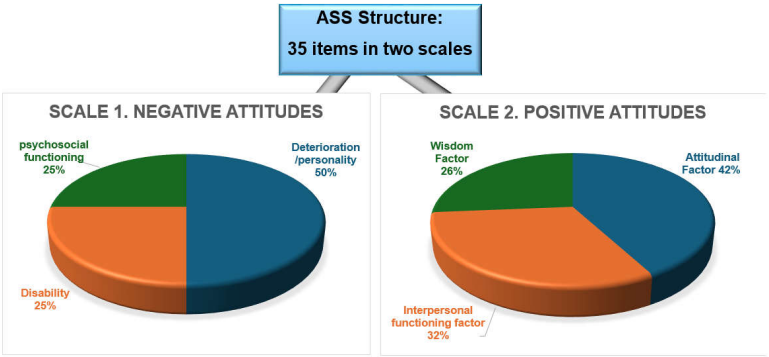

Figure 4. Scheme of the AAS structure.

3.4.1. Structure of the First Age Scale

The First Age Scale is divided into three distinct factors: Impairment/Personality, Disability, and Psychosocial Functioning (Figure 5). Each factor contains items that allow for a detailed assessment of various dimensions of negative attitudes toward old age. For example, the Impairment/Personality factor has a possible score ranging from 8 to 40 points, while the Disability and Psychosocial Functioning factors each have a possible score ranging from 4 to 20 points.

Figure 5. Scheme of the distribution of items in the AAS corresponding to Scale 1.

Scale 1 of the Negative Stereotyping includes 16 items with a total score range of 16 to 80 points. It is divided into three main factors: Impairment/Personality, Disability, and Psychosocial Functioning. The Impairment/Personality factor, which has a score range of 8 to 40 points, assesses personality impairment and its impacts. The Disability factor, with a score range of 4 to 20 points, evaluates participants' perceptions and experiences of disability. Lastly, the Psychosocial Functioning factor, also scored from 4 to 20 points, measures the level of social and psychological integration of the individual. Together, these three factors offer a comprehensive assessment of negative stereotypes and their impact on various aspects of participants' lives.

The Impairment/Personality factor has a mean score of 22.5 points with a standard deviation of 6.3 (M = 22.5, SD = 6.3). Figure 6 below shows the distribution of the data for this factor. The graph illustrates the response frequencies across participants, highlighting a moderate dispersion in scores. This suggests variability in how individuals perceive personality impairment, with some participants scoring higher or lower than the mean, reflecting differing personal perceptions of this factor.

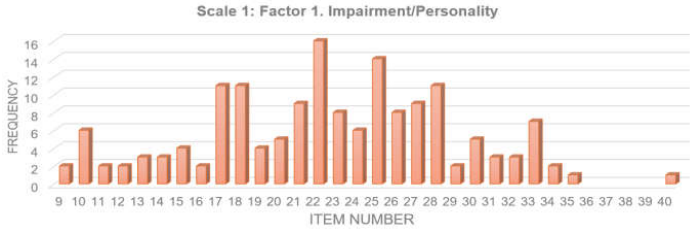

Figure 6. Distribution of data in the Impairment/Personality factor. This graph illustrates the frequency distribution of participants' responses to the Impairment/Personality factor. The mean score is 22.5 with a standard deviation of 6.3 (*M* = 22.5, *SD* = 6.3). The distribution shows moderate dispersion in the data, indicating variability in how participants perceive personality impairment. This suggests that different individuals have differing levels of perception regarding personality impairment, with some scoring above or below the mean.

For the Disability factor, the mean score was 9.95 points with a standard deviation of 3.6 (*M* = 9.95, *SD* = 3.6). The distribution of the corresponding data is shown in Figure 7. The Disability factor yielded a mean score of 9.95 points and a standard deviation of 3.6 (*M* = 9.95, *SD* = 3.6). Figure 7 illustrates the distribution of data for this factor. The data suggest a relatively low mean score, with a moderate standard deviation, indicating that while some participants report higher levels of disability, most show lower levels of perceived disability.

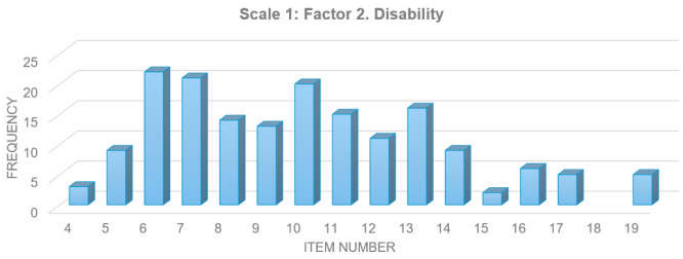

Figure 7. Distribution of the data in the Disability factor. This graph depicts the frequency distribution of responses for the Disability factor. With a mean score of 9.95 and a standard deviation of 3.6 (*M* = 9.95, *SD* = 3.6), the data suggest that while some participants report higher levels of perceived disability, most participants show relatively lower levels of disability. The distribution reflects a moderate variation in the data.

The Psychosocial Functioning factor had a mean score of 7.1 points with a standard deviation of 2.16 (*M* = 7.1, *SD* = 2.16). As shown in Figure 8, this graph represents the

distribution of data for this factor. The low standard deviation and moderate mean indicate that participants generally perceive a moderate level of psychosocial functioning with little variability in their responses.

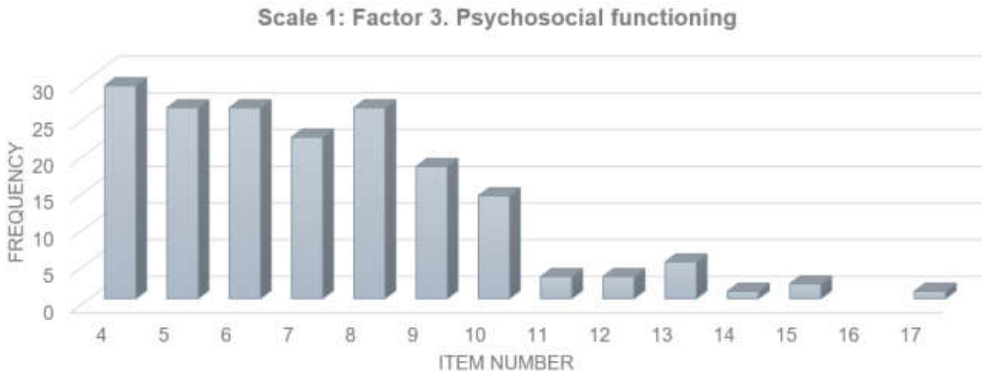

Figure 8. Distribution of Psychosocial Functioning data.

3.4.2. Structure of the Second Age Scale

The Second Age Scale, which assesses positive attitudes toward old age, is divided into three factors: Attitudes, Interpersonal Functioning, and Wisdom (Figure 9).

Attitudinal Factor:

The Attitudinal factor had a mean score of 21.7 points with a standard deviation of 5.9 (M = 21.7, SD = 5.9). Figure 10 represents the distribution of responses for this factor, showing positive attitudes toward old age with some variability among participants. Figure 9 illustrates how the items are distributed in the second scale of the AAS, reflecting the main dimensions assessed in relation to attitudes toward aging.

Figure 9. Scheme of the distribution of items in the AAS corresponding to Scale 2.

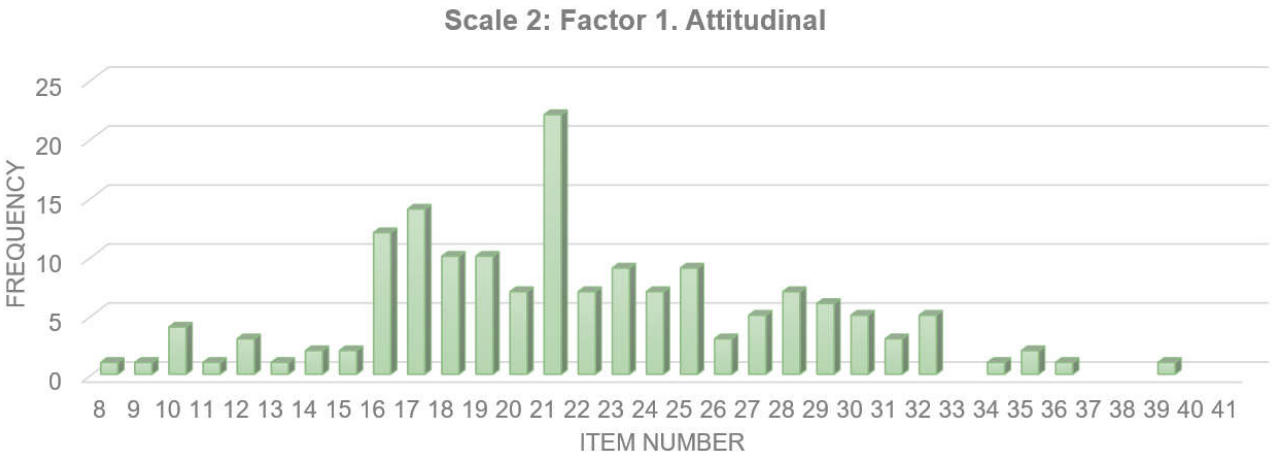

Figure 10. Distribution of data in the Attitude factor. Distribution of response frequencies for Factor 1, Attitudinal, of Scale 2. The chart shows the frequency of responses for each item of the scale, which evaluates general attitudes toward aging. The X-axis represents the item numbers, while the Y-axis reflects the number of responses associated with each item. This chart highlights variations in participants' responses, showing differences in perceptions of aging.

The Interpersonal Functioning factor had a mean of 18.0 points and a standard deviation of 5.1 (M = 18.0, SD = 5.1). As shown in Figure 11, the data distribution indicates moderate variability in participants' perceptions of interpersonal functioning and relationships in old age.

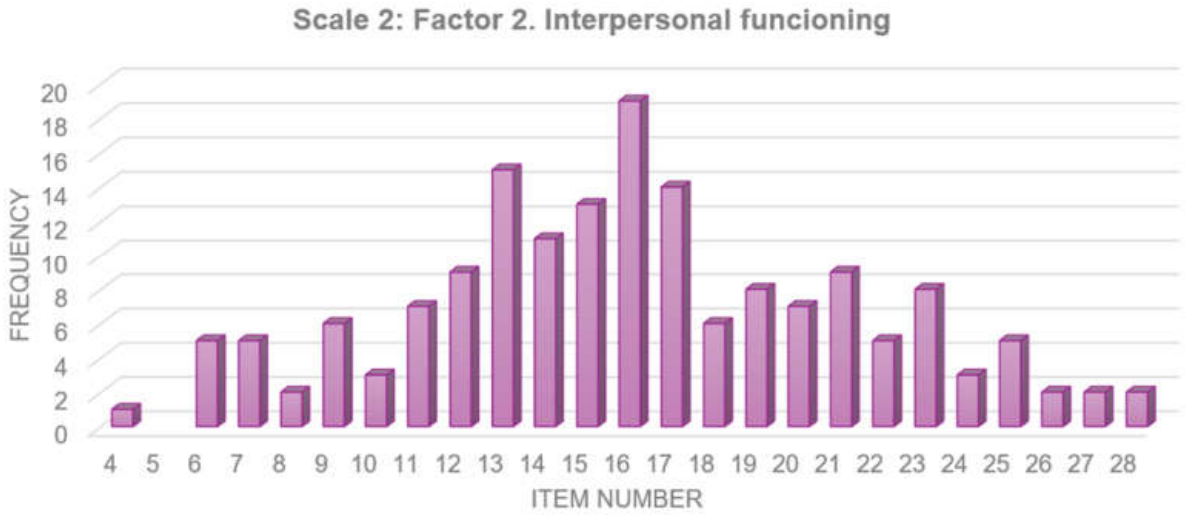

Figure 11. Data distribution for the Interpersonal Functioning factor. Frequency distribution of responses in Factor 2, Interpersonal Functioning, of Scale 2. The graph shows the number of responses for each item of the scale, which evaluates interpersonal skills and relationships in old age. The values on the X-axis represent the item numbers, while the Y-axis reflects the frequency of responses associated with each item.

Finally, the Wisdom factor had a mean of 16.5 points and a standard deviation of 3.8 (M = 16.5, SD = 3.8). Figure 12 below presents the distribution of responses for this factor. It shows that most participants perceive older people as possessing considerable wisdom, with low variability in scores.

Figure 12. Distribution of data in the Wisdom factor. Frequency distribution of Factor 3: Wisdom (Scale 2). The graph shows the frequency of responses for each scale item, with a greater number of responses clustered in the central items, indicating a more common perception of wisdom among participants. The variability in frequencies suggests differences in the perception of wisdom across items.

These figures and graphs provide a detailed overview of how the responses are distributed within each factor, allowing a clear understanding of the attitudes toward aging assessed in this study. The graphical information complements the statistical data, making it easier to identify patterns and trends in participants' responses.

The Positive Stereotype Scale 2, which consists of 19 items, has a total score ranging from 19 to 95 points. The scale is divided into three main factors: Attitudinal, Interpersonal Functioning, and Wisdom. The Attitudinal factor, with scores ranging from 8 to 40 points, measures general attitudes toward old age, with a mean of 21.7 points and a standard deviation of 5.9 (M = 21.7, SD = 5.9), suggesting generally positive attitudes with some variability between participants, as shown in Figure 10. The Interpersonal Functioning factor, with scores ranging from 6 to 30 points, assesses interpersonal skills and relationships in old age, with a mean of 18.0 points and a standard deviation of 5.1 (M = 18.0, SD = 5.1), indicating a good level of interpersonal functioning with moderate variability, as shown in Figure 11. Finally, the Wisdom factor, with scores ranging from 5 to 25 points, measures the perception of wisdom and knowledge accumulated with age, with a mean of 16.5 points and a standard deviation of 3.8 (M = 16.5, SD = 3.8), reflecting a moderately high perception of wisdom with little variability among participants, as shown in Figure 12.

The construct validity indices for the Negative Stereotype Scale and Positive Stereotype Scale are now presented below. This table shows the relationship between the factors of each scale and their corresponding convergent and discriminant validity indices (Table 10).

Table 10. Construct validity indices for the Negative and Positive Stereotype Scales.

Factor	Negative Stereotype Scale	Positive Stereotype Scale
Impairment/Personality	r = 0.56, $p < 0.001$	r = 0.25, $p = 0.02$
Disability	r = 0.45, $p < 0.001$	r = 0.31, $p = 0.003$
Psychosocial Functioning	r = 0.60, $p < 0.001$	r = 0.35, $p = 0.001$
Attitudinal	r = 0.30, $p = 0.01$	r = 0.68, $p < 0.001$
Interpersonal Functioning	r = 0.48, $p < 0.001$	r = 0.65, $p < 0.001$
Wisdom	r = 0.33, $p = 0.003$	r = 0.72, $p < 0.001$

Note: "r" = Pearson correlation coefficient; $p < 0.001$ indicates a highly significant correlation; p between 0.001 and 0.05 indicates a significant correlation. The values reflect the relationship between the factors of the Negative and Positive Stereotype Scales.

Table 10 presents the correlations between the factors of the Negative and Positive Stereotype Scales, along with their respective p-values. For the Negative Stereotype Scale, the factors show significant positive correlations, particularly Psychosocial Functioning (r = 0.60) and Impairment/Personality (r = 0.56), which suggest a strong relationship with negative attitudes toward old age. On the other hand, the Positive Stereotype Scale shows higher correlations for factors such as Wisdom (r = 0.72) and Attitudinal (r = 0.68), indicating a stronger association with positive attitudes toward aging. The other factors in both scales, such as Disability and Interpersonal Functioning, show moderate but still significant correlations. These results underscore the validity of both scales in distinguishing between positive and negative stereotypes, confirming their construct validity and effectiveness in capturing different aspects of attitudes toward old age.

The results of the Negative and Positive Stereotype Scales assessing attitudes toward old age among Master's degree students in Education can be attributed to various factors related to their advanced academic training and professional context.

Firstly, the theoretical depth provided by the Master's program plays a significant role. These students undergo advanced academic training that includes an in-depth study of human development, pedagogy, and psychology. This background equips them with a more nuanced and reflective understanding of the different stages of life, including old age, which likely contributes to the development of more positive and less stereotypical attitudes toward aging.

Moreover, research training and critical reflection are essential aspects of Master's-level education. Students are trained in research methods, which encourages them to critically analyze and challenge prevailing negative stereotypes about aging. This academic approach fosters a more informed and balanced perspective, allowing students to move beyond simplistic views and engage with the complexities of aging.

In addition to academic training, many Master's students have significant professional and social experiences that shape their perceptions of aging. Professional interactions, especially those with older individuals in educational or community settings, can help reinforce positive attitudes. These experiences often lead to a deeper appreciation of the skills, wisdom, and contributions of older people. Furthermore, professional networks and mentoring are common at the Master's level, and mentors who hold positive views of aging can serve as role models, influencing their mentees to adopt similar perspectives.

Master's programs also emphasize the preparation of students for leadership roles in education, which requires an inclusive and respectful understanding of all life stages, including aging. As future educators and leaders, students are expected to design and manage educational programs that cater to all age groups. This focus on leadership highlights the importance of developing positive and inclusive attitudes toward aging. Additionally, students are trained with a strong sense of ethical and social responsibility, which includes promoting the well-being of society, further reinforcing the need for a respectful attitude toward older adults.

Finally, sociocultural and media influences also play a crucial role in shaping students' attitudes. Master's students, who are typically more aware of cultural norms and values regarding aging, may be influenced by cultures that emphasize the wisdom and experience of older generations. These cultural values can encourage more positive views of aging. Moreover, Master's students have access to a wide range of academic resources, literature, and research that offer positive representations of aging, helping to counteract negative stereotypes and contribute to a more balanced and appreciative view of older adults.

In summary, the combination of advanced academic training, professional experience, expectations of leadership and social responsibility, and the influence of cultural norms and access to diverse information contribute to the development of positive and balanced attitudes

and perceptions of aging among Master's in Education students. Additionally, their training in social and community sustainability enables them to understand the importance of integrating and valuing older people as a fundamental part of a sustainable and inclusive society. This is reflected in the results of the Negative and Positive Stereotype Scales, which show an appreciation of the wisdom and capacity of older people, as well as a lower tendency to hold negative stereotypes. Involving older people in sustainability initiatives strengthens social cohesion and promotes a fairer and more supportive environment for all generations.

It is crucial to consider attitudes toward aging in this sample, as future educators have the potential to significantly influence the formation of perceptions and values in their students, thus promoting a more inclusive and respectful view of aging in society.

4. Discussion

This study aimed to explore attitudes toward aging among university students from the perspective of the psychology of sustainability. Overall, the results showed significant differences in both positive and negative attitudes toward aging, confirming this study's general hypothesis that there are diverse and complex perceptions of aging within this population group. These differences appear to be influenced by academic factors, as perceptions vary depending on the discipline in which the students are enrolled.

In terms of the validity of the hypotheses put forward, the results confirmed that there are significant differences in negative and positive attitudes toward aging among students from different academic disciplines, which supports the idea that the academic environment plays a crucial role in shaping these attitudes. These findings align with previous studies that have indicated how academic disciplines influence young people's perceptions of aging [7,8]. However, this research also offers a relevant nuance by showing that while students in disciplines such as engineering exhibit more negative attitudes toward aging, those in fields like psychology or social sciences tend to display more positive attitudes. This underscores the need to integrate content on aging and sustainability into curricula more cross-functionally, tailored to the specificities of each discipline [9].

Although the results are promising, it is essential to note that the limited sample size presents an important limitation in generalizing the findings to larger populations. The small number of participants hinders more robust and comprehensive analyses that could provide a more representative picture. This poses a significant challenge, as many studies in psychology require larger samples to validate measurement instruments and perform complex statistical analyses. Future studies should aim to expand the sample size and include a broader range of academic disciplines. Longitudinal research is also recommended to observe how attitudes toward aging may evolve over time and through different experiences, providing more dynamic and in-depth insights [10].

Moreover, techniques of textual analysis, as mentioned in the previous study by Uludag [30], can be utilized to examine attitudes related to aging. Such techniques may offer further insights into the nuanced ways in which individuals express and conceptualize aging in different contexts [11].

One of the primary contributions of this study is the development of a new tool for measuring attitudes toward aging, which allows for the assessment of both negative and positive dimensions of these attitudes. Although this tool was validated within the context of this research, it may prove useful for future studies and practical applications in educational settings. Given that attitudes toward aging are fundamental for understanding the phenomenon of ageism and promoting an inclusive society, this scale can help design educational programs that encourage a more balanced and respectful view of aging [12,13].

5. Conclusions

This study confirms that there are significant differences in attitudes toward aging among university students, supporting the hypothesis that the academic context influences young people's perceptions of aging. However, the small sample size is an important limitation that should be addressed in future research. The findings reinforce the need for aging issues to be incorporated more explicitly and across disciplines in university curricula, particularly in disciplines such as psychology, social sciences, and education.

Despite the limitations, this study adds value by providing a valid tool for measuring both negative and positive attitudes toward aging, offering a more comprehensive view than existing instruments. This balanced approach has the potential to improve students' understanding of aging and thus promote a more inclusive society.

In terms of educational applicability, the results suggest that implementing educational programs that promote empathy and respect toward older adults could be an effective way to change the prevailing attitudes among young people. The use of the tool developed in this study would allow educators to assess and adapt their pedagogical approaches based on students' attitudes toward aging, thus contributing to a more positive and sustainable view of aging in society.

Limitations and solutions:

The small sample size is one of the main limitations of this study. Although the sample provided interesting results, it is essential that future studies increase the number of participants to achieve greater representativeness. In addition, it would be beneficial to include a wider range of academic disciplines and geographical contexts to understand how attitudes toward aging vary in different settings. Other limitations include the cross-sectional design of this study, which prevents observing how attitudes evolve over time. Longitudinal research could provide a deeper understanding of how these attitudes develop as students' progress through their studies and life experiences.

Value added by this study:

The main added value of this study is the development of a new tool for measuring attitudes toward aging, which allows for a more comprehensive assessment of both positive and negative attitudes. Furthermore, by linking these findings to sustainability psychology, this study highlights the importance of integrating aging and intergenerational interactions into the educational sphere, thus contributing to the creation of a more respectful and sustainable society.

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Data Availability Statement: The data used to support the findings of this study are included within the article.

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

SCALE OF ATTITUDES TO OLD AGE							
Instructions: Please mark with an 'X' the extent to which each of the following statements reflects your personal attitude towards old age, using the scale below: 1 corresponds to STRONGLY DISAGREE and 5 corresponds to STRONGLY AGREE.							
		1	2	3	4	5	
1	Older people are less flexible when making decisions.						
2	Older people have some impairment.						
3	Older people are conservative.						
4	They slow down.						
5	They are conservative in their outlook on life.						
6	Older people's mentality is old-fashioned						
7	Older people are often impatient						
8	Older people are rigid and inflexible in their decision making.						
9	Older people are kind and gentle						
10	Older people are patient with others						
11	Older people are affectionate and pleasant to be around						
12	Old age is synonymous with patience						
13	Older people are very grateful						
14	Older people are very likeable						
15	Older people are kind and helpful						
16	Older people are generous to others						
17	Older people are becoming more dependent						
18	Older people do not have sex						
19	Older people are often ill						
20	Interest in sex declines with age						
21	Older people show gratitude						
22	Older people have a lot to contribute						
23	Experience manifests as maturity						
24	Older people tend to share everything they have						
25	Older people are hardworking and industrious						
26	It is interesting to listen to older people						
27	Older people's speech is repetitive, tiresome and boring.						
28	Older people tend to be sad and depressed						
29	Older people only care about themselves						
30	Older people are grumpy						
31	Old age means more life experience						
32	Older people have a strong sense of responsibility						
33	Age is a source of knowledge						
34	Older people are in close contact with their families						
35	Older people are more relaxed about life						

Scale 1. Negative attitudes. Impairment/Personality
Scale 1. Negative attitudes. Disability
Scale 1. Negative attitudes. Psychosocial functioning

Scale 2. Positive attitudes. Attitudinal Factor
Scale 2. Positive attitudes. Factor Interpersonal functioning
Scale 2. Positive attitudes. Wisdom Factor

Figure A1. The scale of attitudes toward old age.

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