

PERCEIVED SUSTAINABILITY OF THE SPANISH PENSION SYSTEM

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Abstract. In recent years, sustainability of Spain's pension system has emerged as a matter of public and academic concern, particularly regarding its long-term viability. This paper examines, using a primary survey data, public perceptions of the contributory pension system in Spain. Results suggest that private retirement planning is linked to lower confidence in the public system, while generational awareness, social and institutional sensitivity, perceived economic resilience, and support for operational reforms are positively associated with perceived sustainability. Finally, findings encourage changes to public policy to improve the sustainability of the pension system in the future.

Keywords: contributory pensions, system sustainability, public perception, institutional trust, generational sensitivity, economic security.

JEL Classification: H53, H55, H75, Q56, E24, P36

Introduction

The Spanish welfare state, promoted by intellectual and political elites in the late nineteenth century, emerged from a political and social philosophy centered on social harmony, organicist thought, and the state's responsibility to safeguard citizens' collective well-being. Its development, influenced by ideological currents such as liberal Krausism and social Catholicism, laid the basis for the design and implementation of public policies aimed at social protection, notably the pension, education, and healthcare systems as fundamental pillars of the Spanish model (Guillén, 1990).

In this context, Social Security has become one of the key institutions of the welfare state, not only because of its distributive and protective function but also because of its role in preserving state legitimacy, social cohesion, and the integrity of the intergenerational contract. It also provides economic security in old age (Conde-Ruiz & Galasso, 2005). Pensions represent not only an economic benefit but also an essential mechanism of social protection, as they cover situations of need associated with retirement, old age, disability, and other circumstances of vulnerability involving a significant loss of income. In this sense, they constitute a central mechanism for reducing poverty, stabilizing and regulating the economy, fostering intergenerational equity, promoting collective stability, and strengthening structural development (Barr, 2020; Bonifacio, 2023). The system's sustainability depends on the state's ability to guarantee fair and universal access to essential services, as well as to fulfil its dual purpose: ensuring economic security for contributors and minimum protection for the most vulnerable groups (Hernández de Cos et al., 2017; Domínguez, 2021).

Within this framework, the contributory system plays a particularly important role in Spain's welfare model. It is based on a pay-as-you-go system underpinned by an intergenerational social contract and is structured around fundamental principles such as contributory proportionality, universality, benefit adequacy, and public management (BBVA, 2022). However, the social and economic changes that

have taken place over the past thirty years have made it increasingly urgent to align institutional reforms with benefit adequacy, intergenerational equity, and financial sustainability. For this reason, this debate is not merely technical or budgetary; it has also become a priority issue of public policy and social trust.

In recent decades, concerns about the sustainability of the system have grown due to demographic, labor, economic, and institutional pressures. From a demographic perspective, population aging, declining birth rates, delayed childbearing, and increased life expectancy are profoundly altering the balance between generations on which the pay-as-you-go system depends. Moreover, decisions regarding parenthood can be shaped by economic uncertainty, employment instability, and future expectations, which may reduce fertility intentions, increase willingness to migrate, or lead individuals to postpone parenting, as they directly affect financial stability and long-term planning (Kuhnt et al., 2020). In Spain, lower birth rates and the retirement of larger cohorts are increasing pressure on the system while reducing the generational replacement capacity needed to sustain it in the long term (Esteve et al., 2018; OECD, 2007). At the same time, the labor market also plays a crucial role. Job stability, the quality of career paths, wage levels, and productivity are directly linked to the system's ability to finance itself, since social security contributions are the main source of funding for contributory pensions. Despite some improvements in employment and labor force participation, structural problems persist. Seasonality, job insecurity, high turnover, and temporary employment continue to affect younger generations in particular, weakening both household economic stability and the contribution base that supports the pension system. Likewise, the absence of solid and sustained productivity growth may jeopardize revenue collection and hinder the implementation of reforms aimed at strengthening the system's sustainability in the medium and long term (Barr, 2020; INE, 2024). Furthermore, these tensions are placing upward pressure on public finances. The debate over the future sustainability of the system and the reforms needed to maintain it without compromising social equity has intensified as pension expenditure continues to rise, driven both by the growing number of pensioners and the increase in average pension levels. According to AIReF (2025), total pension expenditure is projected to rise from 12.9% of GDP in 2023 to 16.1% in 2050, mainly due to growth in both the number of pensioners and the average pension amount. In this context, sustainability is no longer assessed only in terms of financial adequacy, but also in relation to its capacity to continue providing adequate protection amid demographic change, job insecurity, economic uncertainty, and institutional transformation. Together, these factors highlight the growing pressure on the Social Security system.

This study addresses this gap. While previous literature has extensively examined the objective factors affecting the system's sustainability, fewer studies have explored how citizens perceive sustainability and which factors shape these perceptions. This approach is relevant, as social trust in the system influences attitudes, expectations, savings and retirement decisions, and evaluations of potential reforms. Perceived sustainability is therefore not a secondary issue; on the contrary, it is a key variable for understanding the relationship between the welfare state, citizens, and the future of the intergenerational pact. Accordingly, it should be understood not only as a response to structural pressures, but also as a social phenomenon shaped by personal experiences, generational profiles, future expectations, and institutional trust.

Given this approach, the question arises: How do socioeconomic and institutional factors, as well as expectations for the future, influence perceptions of the long-term sustainability of the pension system? Consequently, the objective is not to directly measure the "true" sustainability of the model, but rather to determine which material conditions, attitudes toward private pension plans, perceptions of institutions, and future expectations are related to higher or lower levels of perceived long-term sustainability.

Data and Methods

This study employs a quantitative approach with an exploratory-correlational design. This methodological choice was made because the aim is not to manipulate the variables, but rather to examine how economic, social, and institutional factors are linked to individuals' perceptions of the long-term sustainability of Spain's public pension system.

Data Collection and Survey Design

A questionnaire was designed and administered to gather primary data on respondents' knowledge, perceptions, trust, preferences, and planning habits regarding the public pension system, as well as on individual and contextual factors associated with perceptions of its long-term sustainability. The main dependent variable is the perceived long-term sustainability of the public pension system, while the explanatory variables include demographic, socioeconomic, institutional, labor-related, family-related, and financial-planning factors.

The unit of analysis for this study was individuals aged 18 and over residing in Spain. Broad inclusion criteria were used in order to obtain a heterogeneous sample in terms of age, gender, educational attainment, occupation, employment status, and income. A non-probability convenience sampling strategy was used. Participation was voluntary and anonymous, and respondents were informed of the study's purpose before completing the questionnaire. No sensitive personal data were collected, in accordance with ethical principles of privacy and informed consent. The questionnaire was distributed through messaging applications, social media, and email between March and April 2025. It was administered via Google Forms and resulted in a total of 75 valid responses. Given the sample design and size, the findings should be understood as exploratory insights rather than statistically generalizable results.

The questionnaire included 30 questions, most of which were closed-ended. It combined Likert-scale items, dichotomous questions, multiple-choice questions, and a limited number of open-ended options for exploratory purposes. The survey was organized into four thematic sections to facilitate the conceptual classification of the variables and their subsequent block-based interpretation.

The first block, "Demographic and Socioeconomic Profile," focused on characterizing the sample and segmenting the data. It included questions on age, gender, educational level, employment status, income, and savings capacity, among other variables, in order to examine potential differences and factors shaping perceptions of the pension system.

The following section, "Knowledge and Perceptions of the Pension System," collected information on respondents' understanding of how the system operates, including contribution principles and perceptions of its future viability. It contained questions assessing opinions and attitudes toward changes to the system, long-term sustainability, intergenerational expectations, and preferences regarding different reform proposals, thereby providing insight into the sample's social stance toward the pay-as-you-go system.

The third section, "Reproduction, Family Interests, and Mobility," explored the social and economic factors that influence demographic trends and, consequently, the sustainability of the system. These questions addressed intentions to have children, the obstacles affecting this decision, and labor mobility, with the goal of linking individual decisions to broader demographic patterns.

The final section, "Knowledge/Interest in Savings Mechanisms, Future Investments, and Private Plans," collected data on individual retirement planning, including respondents' interest in or current use of specific savings and investment instruments. This section examined the degree of individual financial foresight and openness toward these complementary mechanisms.

Each response option was assigned a numerical code. For ordinal scales, values ranging from 1 to 5 were used to represent different degrees of preference and/or agreement. For dichotomous and multiple-choice questions, consecutive numerical values were assigned. This facilitated the conversion and standardization of qualitative responses while preserving information relevant to the subsequent analyses. The technical specifications of the survey are presented in Table 1:

Table 2. Technical data sheet online survey

Details of the research parameters	
Scope of research	National. Residents in Spain, without restriction or differentiation by autonomic community.
Universe	Population over 18 years of age residing in Spain and belonging to the active population.
Sample design	Non-probability convenience sampling.
Sample	75 valid responses.
Study technique	Self-administered survey using an online form.

Technical approach	Questionnaire with closed-ended dichotomous questions, multiple choice, and Likert scales, which allow for the standardized measurement of knowledge, perceptions, and attitudes. Includes some exploratory open-ended response options.
Approach and justification	The survey was designed as an instrument for collecting primary data in a quantitative, exploratory, and descriptive research study.
Study period	March–April 2025. One-off survey, administered once per participant, with no follow-up.
Questionnaire	Structured into four thematic sections (sociodemographic profile, knowledge and perception, social decisions, foresight habits). Includes 30 questions.

Note. The findings derived from this sample are intended to provide an exploratory overview of the study topic. The complete questionnaire is available from the authors upon request. Descriptive results are presented in Annex 1.

Methods: PCA and Ordinal Modeling

Following the collection, coding, and organization of the survey datasets, the data analysis began. To this end, a three-phase analytical strategy was adopted: first, data reduction via principal component analysis (PCA) to identify latent structures; second, the component scores derived from the four PCAs were used as predictors in a set of ordinal generalized linear models, which were estimated separately for each analytical dimension; and, third, the components showing statistical relevance or strong theoretical coherence with the research objective were selected and incorporated into a final ordinal model to explain the probability of rating the system as more or less sustainable. The variables were organized and interpreted by grouping the questionnaire items according to their conceptual relationship. Based on the survey structure, four key questions were identified that served as the basis for classifying the remaining variables into four main dimensions and one cross-cutting dimension, as shown below:

Table 3. Analytical dimensions and indicators

No.	Dimension	Conceptual scope	Indicators included
1	Knowledge and perception of the pension system	System assessment, perceived sustainability level, long-term confidence, and related perceptions	18 questions
2	Capacity, stability, and economic planning	Financial situation, ability to save, economic stability, and related planning indicators	16 questions
3	Reproductive and family decisions	Family planning, interests, and reproductive perceptions	14 questions
4	Uncertainty and labor mobility	Labor expectations, uncertainty, and interest in emigrating	11 questions
cross-cutting	Socio-demographic profile	Three quantitative variables used to describe the sample: included across all PCA dimensions	3 questions

Note. The indicators were grouped according to their theoretical relevance to each dimension and their conceptual interdependence, serving as the basis for the subsequent analytical procedures.

Based on the estimation of the four independent PCAs, one for each analytical dimension, component scores were calculated and subsequently used to estimate a set of ordinal generalized linear models, with the aim of evaluating which components were strongly associated with perceived sustainability. In all cases, the dependent variable was Question 21 of the survey, which measured respondents' perception of long-term sustainability using an ordinal scale. Components were retained for the final model based on a combination of statistical evidence from the omnibus p-value tests, theoretical relevance, and conceptual coherence with the research objective. Given the exploratory nature of the study, components with marginal statistical evidence were also considered when they contributed substantively to explaining perceived sustainability.

This procedure led to the selection of six components, which were jointly incorporated into a final ordinal generalized linear model, again with Q21 as the dependent variable. The model made it possible to assess which latent dimensions contributed most to explaining the probability that an individual would consider the public pension system as more or less sustainable in the future. This stage complemented the previous dimensionality reduction, translating the identified latent structures into an explanatory framework for evaluating the relative influence of economic, social, and institutional factors on perceived system sustainability.

This type of model allowed the cumulative probability of belonging to a given category of the dependent variable, or to a lower one, to be examined on the basis of a set of predictors. Specifically,

the latent dimensions obtained through PCA were included as explanatory variables, making it possible to assess the influence of economic, social, and institutional factors on perceived system sustainability. In this way, this ordinal model complemented the dimensionality reduction stage, by identifying which latent dimensions contributed most significantly to explaining the social perception of the future sustainability of the public pension system in Spain.

For the primary data obtained from the survey, four PCA analyses were conducted to reduce the dimensionality of the dataset and synthesize the information into a smaller set of underlying components that allow the measurement and study of latent structures (level of knowledge, social perception, degree of agreement, etc., as shown in Table 2). The component scores were then used in the subsequent ordinal models, allowing the analysis to focus on the dimensions with the greatest statistical and conceptual relevance.

The general formula for calculating a principal component is:

$$CP_j = a_{j1}x_1 + a_{j2}x_2 + \dots + a_{jp}x_p \quad (1)$$

where CP_j is the principal component, x_p are the standardized original variables, and a_{jp} are the factor loadings associated with the component.

The statistical suitability of the data was assessed using Bartlett's test of sphericity to confirm the significance of the correlations between variables, thereby justifying the application of a dimensionality reduction technique; and the Kaiser-Meyer-Olkin (KMO) index to evaluate the sampling adequacy based on the proportion of variance between variables attributable to common factors.

The ordinal generalized linear model was used to assess the explanatory capacity of the components regarding perceptions of the future sustainability of the public pension system in two stages: first, through four independent models estimated for each analytical dimension; and second, through a final model constructed from the components selected on the basis of their theoretical relevance and conceptual coherence with the research objective. In all cases, the models used the same ordinal dependent variable, which was measured through Question 21 using a 1–5 Likert scale, although the recorded responses covered only categories 1 to 4. Ordinal models were used because they allow for the analysis of dependent variables with ordered categories and the estimation of the cumulative probability that an individual will fall into a given category or lower based on a set of predictors.

The general formulation of the model can be expressed as follows:

$$P(Y_i \leq j | X_i) = F(\tau_j - \eta_i); \quad j = 1, 2, 3 \quad (2)$$

where $P(Y_i \leq j | X_i)$ denotes the cumulative probability that individual i falls in category j or below (conditional on the explanatory variables included in the model), Y_i represents the observed ordinal response for individual i , j is the cutoff points of the dependent variable, F indicates the cumulative distribution function of the model, τ_j are the thresholds that separate the ordinal categories, X_i is the vector of explanatory variables, and η_i is the linear predictor. Since the dependent variable contained four ordered response categories, the model estimates three cumulative thresholds.

The linear predictor is specified as follows:

$$\eta_i = X_i' \beta = \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki} \quad (3)$$

where β_k are the coefficients associated with each explanatory variable, capturing the direction and strength of the relationship between the predictors and the ordinal outcome.

The coefficients are interpreted in terms of the direction and strength of the relationship between each explanatory variable and the probability of occupying higher or lower positions in terms of perceived sustainability. Under the model parameterization used in this study, positive coefficients are interpreted as increasing the probability of belonging to higher categories of perceived sustainability, whereas negative coefficients indicate a greater likelihood of belonging to lower categories. Particular attention was paid to the overall fit of the model and to the p-values associated with each component. Given the exploratory nature of the study, p-values below .05 were interpreted as statistically significant, while p-values between .05 and .10 were interpreted as marginally significant. The final ordinal model was evaluated using comparative fit indices, including log-likelihood and pseudo- R^2 , in order to assess its explanatory power within the exploratory context of the study.

Results

This section presents the empirical results of the analysis, moving from the descriptive profile of the sample to the PCA component structure and, finally, to the ordinal model explaining perceived long-term sustainability of Spain's public pension system.

The survey results make it possible to characterize the sample sociodemographically and to analyze respondents' perceptions and knowledge of the public pension system. The sample reveals a diverse profile with certain distinct characteristics. In general terms, a younger demographic predominated, as the majority of respondents were between the ages of 18 and 30. Likewise, a large portion of the sample had higher education, reported a net monthly income below 1,500 euros, had limited short-term financial reserves in the event of income loss, and expected to retire between the ages of 65 and 70. Altogether, the sample is characterized by a predominantly young profile, a relatively high educational level, and limited savings capacity and financial resilience, which are key factors for interpreting perceptions of the pension system's sustainability. These characteristics provide important background for interpreting respondents' perceptions of the pension system's future sustainability.

Regarding the dependent variable, Question 21 measured respondents' perceived long-term sustainability of the public pension system on a scale from 1 to 5, where 5 represented the highest degree of perceived sustainability. Although the response scale ranged from 1 to 5, the maximum observed response was 4, as no respondent selected the highest category. The majority of respondents were clustered in the lower categories of the scale, with 68.00% of respondents choosing values 1 or 2, while only 32.00% selected values 3 or 4. The median and mode were both equal to 2, and the mean score was 2.05 out of 5, indicating a low to moderate level of confidence in the system's long-term viability.

After synthesizing the information using PCA, several latent structures consistent with each analytical block or dimension were identified. Overall, between five and seven components were extracted for each dimension. To summarize briefly, the results revealed several substantive patterns: openness to broad system reforms; a more critical and informed perception of the system's evolution; profiles associated with personal solvency, financial autonomy, and interest in private pension mechanisms; economic and institutional barriers affecting fertility and family planning decisions; and factors related to uncertainty and labor mobility.

The table below provides a comprehensive summary of the components identified in each PCA, as well as the results of the intermediate models estimated in order to assess the individual association between each PCA component and the perceived long-term sustainability of the public pension system.

Table 4. PCA component summary and intermediate ordinal model screening

PCA component summary					Omnibus tests	
Dimension	No.	Component label	Loadings	% Var.	X ²	p value
Knowledge and perception of the pension system	1.1	Openness to comprehensive system reforms	9	18.7	0.749	0.387
	1.2	Critical and informed perception of the evolution	4	9.15	0.678	0.410
	1.3	Private retirement planning amid distrust in the public system	4	8.76	1.612	0.204
	1.4	Contributory adjustments and private retirement	4	8.18	7.061	0.008
	1.5	Preference for technical and modern reforms	3	8.08	2.655	0.103
	1.6	Conservative perspective grounded in structural experience	7	7.76	3.485	0.062
	1.7	Socioeconomic vulnerability and institutional distrust	4	5.92	9.96e-6	0.997
Capacity, stability, and economic planning	2.1	Personal solvency and financial independence	6	15.7	4.4830	0.034
	2.2	Access to and interest in private retirement planning	6	14.21	10.0614	0.002
	2.3	Generational sensitivity and critical attitudes toward the system	7	12.61	3.0425	0.081
	2.4	Moderate institutional adjustment with private support	7	10.38	1.2005	0.273
	2.5	Digital alternatives and non-traditional planning	3	6.6	0.0533	0.817
	3.1	Socioeconomic barriers to reproductive decisions	7	17.09	6.107	0.013

Reproductive and family decisions	3.2	Institutional sensitivity and individual social perception	9	16.84	3.462	0.063
	3.3	Rejection due to costs and work-life balance constraints	4	9.36	0.174	0.677
	3.4	Economic and educational capacity in family planning	3	9.33	0.324	0.569
	3.5	Economic resilience and family-planning insecurity	3	9.31	7.053	0.008
	3.6	Uncertainty and distrust in the national context	5	9.22	2.115	0.146
Uncertainty and labor mobility	4.1	Institutional efficiency and operational sustainability	4	16.7	0.0785	0.779
	4.2	Labor insecurity and cost-of-living pressure	4	16.6	2.3760	0.123
	4.3	Socioeconomic resilience in the face of uncertainty	5	13.3	3.9299	0.047
	4.4	International labor mobility as an individual strategy	3	12.0	2.1234	0.145
	4.5	Acceptance of parametric adjustments to the system	3	11.3	0.0890	0.765

Note. Each χ^2 statistic corresponds to an individual ordinal generalized model estimated using the total score of each component as a predictor, with question 21 (perception of the long-term sustainability of the public pension system) specified as the dependent variable, following the same modelling approach used in the main model (n = 75). Green shading marks for significant and marginal components, while yellow shading identifies Component 4.1, retained for its theoretical relevance despite its non-significant p-value.

Based on the screening stage and the conceptual relevance of the components, six components were retained for the final ordinal model. These components were associated with several key dimensions, including preferences regarding the combination of contributory arrangements and private pension plans, financial solvency, complementary retirement planning, fertility-related barriers, family-support concerns, socioeconomic resilience, and institutional reform. They also captured respondents' assessments of preferred policy measures and unmet needs within the sample. While several of these components showed statistically significant or marginal associations with the dependent variable, Component 4.1 was retained because of its theoretical relevance and contribution to the multidimensional interpretation of perceived sustainability. Together, these components provide a multidimensional framework for explaining perceptions of the long-term sustainability of the public pension system.

Table 5. Components retained for the final ordinal model

No.	Component label	Question codes	Main variables represented in the component
1.4	Combination of contributory adjustments and private pension provision	P9, P22.3, P29, P30	Support for employer-sponsored pension schemes, approval of tax incentives for private pensions, and willingness to devote part of monthly income to retirement saving.
2.2	Access to and interest in private pension planning	P22.3, P25.10, P28.1, P28.2, P28.3, P28.5	Interest in private retirement planning tools, such as pension plans, savings accounts, investment funds, and business-related assets, together with the influence of employment stability and policy incentives.
2.3	Generational sensitivity and critical attitudes toward the system	P1, P16, P25.10, P28.3, P28.4, P28.5, P28.6	Age and expected retirement timing, combined with stronger interest in alternative long-term financial strategies such as investment funds, equity participation, homeownership, and digital assets.
3.2	Institutional sensitivity and individual social perception	P23, P25.2, P25.3, P25.4, P25.5, P25.6, P25.7, P25.8, P25.9	Perceptions of demographic and institutional pressures on the pension system, including ageing, housing and living costs, limited family support, work-family balance difficulties, career penalties associated with parenthood, delayed fertility, and broader economic uncertainty.
3.5	Economic resilience and family-planning insecurity	P9, P15, P25.1	Limited confidence in public and household support capacity, reflected in concern about job instability, low short-term financial resilience, and greater perceived need for complementary protection mechanisms.
4.1	Institutional efficiency and operational sustainability	P6, P22.6, P22.8, P22.9	Support for institutional and labor-market reforms aimed at improving sustainability, reducing fraud and informality, and strengthening productivity and wages to expand contribution capacity.

Note. The table presents PCA components retained for the ordinal modeling stage. Question codes correspond to the questionnaire items represented within each component.

On this basis, the final ordinal model was estimated to explain respondents' perceptions of the future sustainability of the public pension system, with higher values of the dependent variable indicating a greater perceived level of sustainability. The overall fit of the model, shown in Table 5, was statistically significant, indicating that the set of latent dimensions included in the model improved the explanation of the dependent variable compared with the null model. The model achieved a pseudo- R^2 of 0.169, suggesting a modest but meaningful explanatory capacity, which is reasonable given the exploratory nature of the study and the attitudinal character of the dependent variable.

Table 6. Final ordinal model of perceived pension sustainability

Effect	Estimate	SE	Exp(B)	p
1.4 Combination of contributory adjustments and private pension provision	-0.570	0.306	0.565	0.063†
2.2 Access to and interest in private pension planning	-0.749	0.332	0.473	0.024*
2.3 Generational sensitivity and critical attitudes toward the system	0.624	0.269	1.867	0.020*
3.2 Institutional sensitivity and individual social perception	0.553	0.269	1.738	0.040*
3.5 Economic resilience and family-planning insecurity	0.836	0.285	2.307	0.003**
4.1 Institutional efficiency and operational sustainability	0.522	0.275	1.685	0.058†

Note. Exp(B) = odds ratio. Pseudo- R^2 = 0.169; df = 6; χ^2 = 32.0; † $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

The first component included in the final model is “1.4 Combination of contributory adjustments and private pension provision,” which consists of questions related to income level, views on the inclusion of fiscal incentives for private plans, the amount respondents would be willing to save or invest monthly for retirement, and support for employer-sponsored private pension schemes. It should be noted that the Likert-type questions do not assess whether these measures are already in place or effective at present, but rather whether respondents believe they are appropriate for increasing future sustainability. Therefore, a high score on this component indicates a combination of certain economic potential and the belief that the system requires additional support through corporate participation and incentivized private savings. Its coefficient was marginal and negative (-0.570), indicating that the higher the score on this set of measures related to supplementary retirement savings, the lower the perceived sustainability of the current public system on its own. In terms of reforms or needs, this result indicates that respondents consider measures such as tax incentives for retirement savings, employer contributions, and increasing households' actual savings capacity to be important. However, because this dimension is negatively associated with perceived sustainability, it suggests that these mechanisms are perceived more as necessary compensation for the anticipated shortcomings of the public system rather than as signs of confidence in its intrinsic strength.

The second component, “2.2 Access to and interest in private pension planning,” consists of questions regarding uncertainty about the country's economic future, as well as mechanisms related to interest in private pension planning and improving savings capacity. This dimension refers not only to the actual use of private pension tools but also to the willingness to use them and the perception that they may be necessary in an uncertain economic scenario. Its coefficient was significant and negative (-0.749), suggesting that there is an association between a greater inclination toward private pension planning and a lower likelihood of viewing the public system as sustainable. This highlights a series of implicit needs, such as improving savings capacity, strengthening financial education, facilitating access to pension products, and promoting macroeconomic stability. However, since the coefficient is negative, it indicates that confidence in the system does not increase with the perceived need for these private mechanisms. In other words, the more private instruments are seen as determining future retirement, the more fragile the perception of the current public system's sustainability becomes.

Component “2.3 Generational sensitivity and critical attitudes toward the system,” consists of the age at which respondents believe they will actually be able to retire, the degree of perceived economic uncertainty, and savings and investment mechanisms such as mutual funds, home ownership, equity in companies, and cryptocurrencies and digital assets. This component reflects a long-term outlook closely tied to generational experience: younger respondents, aware that retirement may occur later, and open to various forms of wealth or financial accumulation to secure their future. Its coefficient was positive and significant (0.624), indicating that higher scores could be associated with a higher

level of foresight and awareness regarding the future of the pension system. This finding suggests that, within this sample group, generational awareness of the problem does not necessarily lead to a pessimistic view, but rather to a more strategic and adaptable approach, particularly at the private and personal level. The needs that arise here do not refer solely to the pension system itself, but also to structural conditions that enable younger generations to build more secure life trajectories: the possibility of accessing housing, a predictable job market, relatively clear retirement prospects, and opportunities to accumulate wealth or investment for the long term. Therefore, sustainability is not only related to the financial balance of the system, but also to whether active generations have the opportunity to reach old age through more stable and diversified career paths. In this sense, this component can also be interpreted as suggesting that sustainability is considered more likely when there is room for individual planning and resource accumulation.

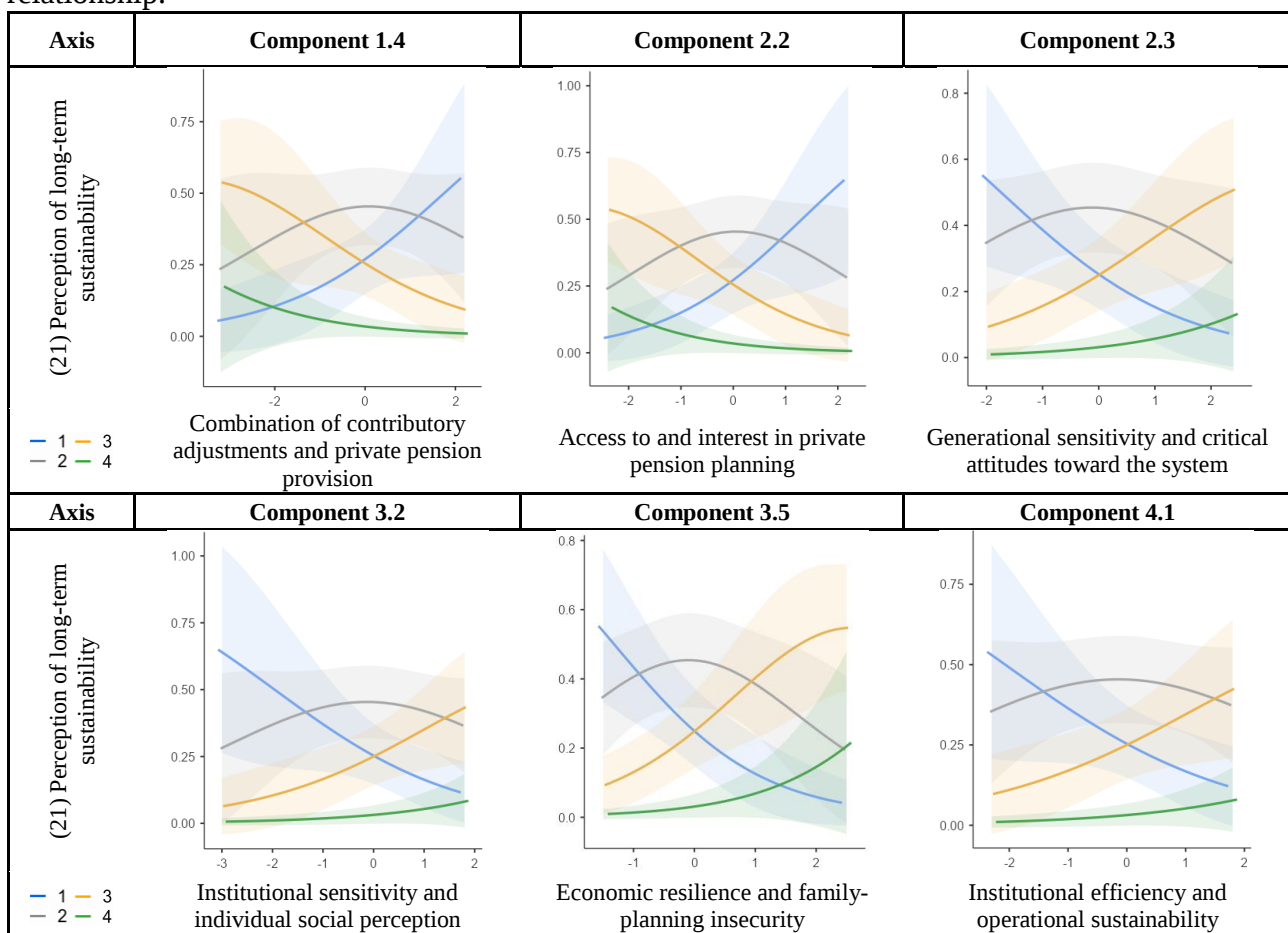
One of the most revealing results corresponds to “3.2 Institutional sensitivity and individual social perception,” which includes questions regarding the extent to which respondents agree that population aging is a serious problem for the system, as well as barriers limiting personal and professional development, such as the cost of living and housing, insufficient public assistance or tax benefits for having children, the difficulty of balancing work and family life, the fear of missing out on career opportunities due to parenthood, the voluntary delay of parenthood, and the unequal distribution of family responsibilities, among others. In this case, high scores do not mean that conditions are positive or that these issues have been resolved, but rather that respondents more strongly recognize that these factors hinder family formation and social reproduction and, by extension, the demographic sustainability of the system. The coefficient was positive and significant (0.553), indicating that those who are more sensitive to these factors and have unmet latent needs tend to assess the system’s sustainability from a more structural perspective. This should not be interpreted to mean that “seeing more problems” increases confidence, but rather that sustainability is understood through a more structural understanding of the problem. In this context, the emerging needs are particularly evident: work-life balance policies, access to housing, stronger public assistance and tax benefits related to child-rearing, the expansion of quality public services, the reduction of the career penalty associated with being a parent, and the correction of gender-based inequities in caregiving. Therefore, the model suggests that the sustainability of the pension system is not viewed solely as a matter of expenditure or contribution, but also as a social issue. This means that the institutional and economic environment has the capacity to promote viable family trajectories and, consequently, to maintain the contributor base over time.

The component with the strongest coefficient in the final model was “3.5 Economic resilience and family-planning insecurity,” which consists of questions about net monthly income, how long respondents believe they could sustain themselves if their income were to stop, and the lack of job stability as a factor influencing the decision to have children. Its coefficient was positive and highly significant (0.836). Although this component includes elements related to insecurity and concern about support capacity, empirically it primarily captures personal economic security and the material resilience needed to perceive stability. In a sample where moderate incomes and limited financial buffers predominate, this result indicates that those with a relatively more solid economic position or who perceive themselves as less vulnerable tend to view the system as more sustainable. The needs highlighted by this component are essential: securing more stable employment, increasing income, building up short-term savings, and reducing day-to-day economic vulnerability. Furthermore, it indirectly underscores the importance of strengthening public and family support systems during periods of income loss. In other words, the model indicates that the sustainability of the system is not viewed in abstract terms; rather, it is strongly influenced by individual material security. People with less financial capacity to withstand labor or income shocks tend to have less institutional trust and less confidence in the sustainability of the pension system.

For its part, “4.1 Institutional efficiency and operational sustainability,” included questions on educational attainment and assessments of reforms regarding the compatibility of pensions and work, combating fraud and the informal economy, and improving productivity and wages to boost contributions. This component represents a dimension of structural and operational reform of the

system. High scores do not mean that there is already greater productivity, less fraud, or more active retirement, but rather that these measures are considered appropriate for improving sustainability. The coefficient was positive and marginally significant (0.522), suggesting that support for this group of reforms is related to a higher perception of sustainability, although it did not reach conventional statistical significance at the .05 level. This result suggests that respondents associate sustainability with more effective management of the system and a broader contribution base. The underlying reforms or needs here are very specific: extending contributions through active retirement schemes, reducing fraud and the informal economy to increase the actual number of contributors, as well as raising wages and productivity to strengthen revenue collection and ensure that pensions are sufficient in the future. Although this dimension was not one of the strongest from a statistical standpoint, it remains important in substantive terms, as it identifies the institutional and operational reforms that the sample considers most directly related to the system's viability.

To complement the interpretation of the coefficients', predicted probabilities were calculated for each response category of Question 21. Figure 1 below presents an integrated view of the predicted probabilities for each category of perceived future sustainability across the observed range of the six components included in the final ordinal model, illustrating how variation in each component is associated with the likelihood of selecting each response category, without implying a causal relationship.



Note. Predicted probabilities were obtained from the final generalized ordinal model using Question 21 as the dependent variable in Jamovi. Each panel shows the estimated probability of belonging to each response category.

Figure 1. Predicted probabilities in the final ordinal model

Conclusions

The results of the generalized ordinal model show that the perceived sustainability of Spain's public pension system depends not only on financial factors, but also on social, institutional, and personal conditions. Public perception is based on confidence in the system's ability to adapt to demographic, labor, and economic changes, as well as on the material security experienced by individuals themselves. One of the main findings is that interest in private savings and retirement planning mechanisms is not necessarily associated with greater confidence in the public system. Rather, it

seems to reflect a perception of weakness in the current model and the need for additional mechanisms in the face of future uncertainty. In contrast, greater economic stability, better life planning expectations, and a positive valuation of institutional reforms that respond to latent needs are associated with a more favorable perception of the system's sustainability. In this sample, these results suggest that sustainability must be understood in a broad sense. It is not merely a matter of achieving a balance between revenue and expenditure, but of strengthening the conditions that enable the maintenance of a sufficient and stable contribution base: quality employment, savings capacity, work-life balance, access to housing, generational renewal, productivity, and institutional trust. Thus, the perception of sustainability is closely linked to the everyday experience of economic security or vulnerability. Consequently, future reforms should combine financial measures with social and labor policies capable of strengthening the contributory base without undermining the protective function of the public system. Key areas for action include greater transparency through individual pension information tools, pension education programs, more inclusive supplementary savings mechanisms, policies supporting families and work-life balance, the formal labor market integration of immigrants, and improvements in productivity, wages, and job stability.

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Annexes

Annex 1. Descriptive characteristics of the sample

Variable	Category	Men (n=35)		Women (n=40)		Total (N=75)	
Gender	Men / Women	35	(100.00%)	40	(100.00%)	75	(100.00%)
Age group	18–24 years	12	(34.29%)	17	(42.50%)	29	(38.67%)
	25–30 years	5	(14.29%)	8	(20.00%)	13	(17.33%)
	31–40 years	4	(11.43%)	9	(22.50%)	13	(17.33%)
	41–50 years	11	(31.43%)	4	(10.00%)	15	(20.00%)
	50+ years	3	(8.57%)	2	(5.00%)	5	(6.67%)
Education	Primary education or less	0	(0.00%)	1	(2.50%)	1	(1.33%)
	Secondary education	2	(5.71%)	6	(15.00%)	8	(10.67%)
	Vocational training	5	(14.29%)	4	(10.00%)	9	(12.00%)
	University degree	22	(62.86%)	18	(45.00%)	40	(53.33%)
	Postgraduate	6	(17.14%)	11	(27.50%)	17	(22.67%)
Sector	Finance & insurance	8	(22.86%)	4	(10.00%)	12	(16.00%)
	Technology & IT	5	(14.29%)	6	(15.00%)	11	(14.67%)
	Hospitality & tourism	4	(11.43%)	6	(15.00%)	10	(13.33%)
	None	3	(8.57%)	7	(17.50%)	10	(13.33%)
	Commerce	4	(11.43%)	4	(10.00%)	8	(10.67%)
	Education	2	(5.71%)	5	(12.50%)	7	(9.33%)
	Transport & logistics	3	(8.57%)	2	(5.00%)	5	(6.67%)
	Other sectors*	6	(17.14%)	6	(15.00%)	12	(16.00%)
Monthly income	< €1,000	11	(31.43%)	18	(45.00%)	29	(38.67%)
	€1,000–€1,500	14	(40.00%)	9	(22.50%)	23	(30.67%)
	€1,500–€2,000	3	(8.57%)	4	(10.00%)	7	(9.33%)
	€2,000–€3,000	3	(8.57%)	2	(5.00%)	5	(6.67%)
	> €3,000	3	(8.57%)	0	(0.00%)	3	(4.00%)
	Prefer not to say	1	(2.86%)	7	(17.50%)	8	(10.67%)

Note. Percentages in Men/Women columns are within gender; percentages in the Total column are of the full sample. Other sectors* included: public administration, construction, consulting, publishing & languages, industry & manufacturing, health, and energy. The information was obtained from the first block of questions “Demographic, Social, Economic, and Occupational Profile”