



## Input and Output Legitimacy of Occupational Pension Plans in Six European Countries

Juan J. Fernández, Hayley James, Tobias Wiß & Karen M. Anderson

**To cite this article:** Juan J. Fernández, Hayley James, Tobias Wiß & Karen M. Anderson (21 Jan 2026): Input and Output Legitimacy of Occupational Pension Plans in Six European Countries, *Journal of Comparative Policy Analysis: Research and Practice*, DOI: [10.1080/13876988.2025.2599955](https://doi.org/10.1080/13876988.2025.2599955)

**To link to this article:** <https://doi.org/10.1080/13876988.2025.2599955>



© 2026 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 21 Jan 2026.



[Submit your article to this journal](#) 



[View related articles](#) 



[View Crossmark data](#) 



# Input and Output Legitimacy of Occupational Pension Plans in Six European Countries

JUAN J. FERNÁNDEZ<sup>\*</sup>, HAYLEY JAMES <sup>\*\*</sup>, TOBIAS WIß <sup>†</sup>, & KAREN M. ANDERSON <sup>‡</sup>

<sup>\*</sup>Department of Social Sciences, University Carlos III of Madrid, Getafe, Spain, <sup>\*\*</sup>Centre for Personal Financial Wellbeing, Aston University, Birmingham, UK, <sup>†</sup>Institute of Politics and Social Policy, Johannes Kepler University Linz, Linz, Austria, <sup>‡</sup>School of Politics and International Relations, University College Dublin, Dublin, Ireland

(Received 28 May 2025; accepted 01 December 2025)

**ABSTRACT** *Do participants in funded occupational pension plans (OPPs) perceive them as legitimate? This study addresses that question by considering both input legitimacy – participants’ satisfaction with OPPs’ decision-making processes – and output legitimacy – participants’ satisfaction with the benefits and financial returns of OPPs. It draws on an original survey conducted in Austria, Denmark, Germany, Ireland, the Netherlands, and Spain in 2023. The analysis indicates moderate satisfaction with input and output legitimacy across all six countries. Moreover, behavioural factors – having gathered information about their OPP or engaged in OPP decision-making processes – are strong predictors of input and output legitimacy.*

**Keywords:** occupational pension plans; legitimacy; attitudes; pensions; financialization; comparative policy analysis

Since the 1990s many European pension systems have undergone substantial financialization: ever larger shares of retirement income are now channelled through funded occupational pension plans (OPPs) that invest employee (and often employer) contributions on global capital markets to generate income to finance pension benefits (Palier 2007; Vroom and Bannink 2008; Hassel et al. 2019). This shift is widely perceived as a

---

**Juan J. Fernández** is Associate Professor of Sociology at Universidad Carlos III de Madrid (Spain). His main research interests include Europeanization, welfare policy attitudes and globalization.

**Hayley James** is a Senior Research Fellow at the Centre for Personal Financial Wellbeing at Aston University, UK. Her research interests concern sociological perspectives on money, finance and value.

**Tobias Wiß** is Associate Professor in Political Science at Johannes Kepler University Linz. His research focus is on welfare state analysis, comparative public policy, comparative political economy, and political representation.

**Karen M. Anderson** is Professor of Politics and Public Policy at University College Dublin. Her research focuses on comparative welfare state development, EU social policy, and the financialization of social protection.

*Correspondence Address:* Tobias Wiß, Institute of Politics and Social Policy, Johannes Kepler University Linz, Altenberger Str. 69, Linz 4040, Austria. Email: [tobias.wiss@jku.at](mailto:tobias.wiss@jku.at)

© 2026 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

pragmatic response to population ageing and fiscal stress on public pension schemes, but it also relocates policy authority from electorally accountable actors to boards of trustees, asset-management firms, and other financial experts. The result is a hybrid governance structure – typical for regulatory capitalism (Levi-Faur 2005) – that combines public regulation, self-administration by social partners, and the logic of private markets. But do pension savers view such arrangements as legitimate? This question is a pivotal, yet surprisingly under-researched question concerning the long-term sustainability of European pension systems and, more generally, welfare states. As such, this paper also contributes to the literature of regulatory capitalism and welfare states (Benish and Levi-Faur 2020) by investigating the perceived public legitimacy of hybrid governance structures based on the example of occupational pensions. Filling this gap appears important as regulatory capitalism is on the rise (Levi-Faur 2005) and non-state actors assume responsibilities previously carried out by the public sector in welfare or service provision.

Both public pension policies and capital-funded OPPs rest on stakeholder support – they require legitimacy. If OPP members, or voters participating in public pension schemes, are not satisfied with their pension arrangements, they might withdraw their support. The rise of financialized, funded pensions therefore creates a democratic dilemma for the pension system as a whole. Financialization may erode democratic legitimacy by transferring decision-making power from elected officials (who are responsible for public pensions) to unelected financial actors (who manage funded OPPs), often making decisions via technocratic and non-representative processes. This shift in power from elected to non-elected actors complicates the assignment of responsibility and accountability by those affected by these decisions (e.g. Nölke 2020). This study approaches the democratic dilemma associated with capital-funded OPPs by examining legitimacy in funded occupational pensions in six European countries. OPPs are a “high stakes” policy area because of the importance of pension income for retirees’ standard of living, so it is vital to unpack the principal–agent relationship between OPP participants (the principals) and OPP administrators (the agents). Legitimacy is relational and interactive – it refers to how affected individuals or groups evaluate an institution or other social objects that they participate in or are affected by. This process is ongoing, as affected persons or groups continuously assess the performance of institutions or other objects of legitimacy relevant to them (Schoon 2022).

Recent work by Mayer and Wiß (2025) highlights one side of this dilemma. Using Scharpf’s (1999) framework, they show that the availability of input channels – either individual (choice, exit) or collective-representative (board seats, bargaining) – varies systematically with the degree of compulsion in national OPP systems. We draw on this insight and extend the debate in two ways. First, we shift from examining the range of effective decision-making channels to analysing whether participants perceive OPPs as legitimate. Second, we draw on Scharpf’s (1997, 1999) distinction between *input* and *output* legitimacy to conceptualize legitimacy in OPPs (see also Heidebreder 2015; Haesevoets et al. 2024). OPPs are not merely insurance or consumer products that could be analysed with satisfaction alone. They are delegated retirement institutions (in the sense of delegated welfare in times of the rise of the regulatory welfare state, see Benish and Levi-Faur 2020) that manage (often) collectively bargained or legally set contributions, pool risks, and often are (partially) financed by tax subsidies. In this sense

they exercise authority over the allocation of deferred wages and old-age income. We therefore study legitimacy, members' satisfaction with the procedures and outcomes, rather than generic customer satisfaction.

Following Scharpf, we use the distinction between “input” and “output” legitimacy as a heuristic device. Input legitimacy refers to the decision-making process itself, asking whether and how stakeholders are represented in decision-making processes. Thus input legitimacy rests on stakeholders' acceptance – usually based on representation – of governance and decision-making processes. Output legitimacy captures whether and how stakeholders accept the outcomes associated with an institution or process. We explicitly adapt these dimensions from democratic politics to the governance of OPP, where acceptance or contestation can have far-reaching consequences (coverage, contributions, regulatory pressure). If we apply this conceptual distinction to OPPs, input legitimacy refers to participants' trust and support for the governance structures of OPPs, and output legitimacy refers to participants' support for the OPP based on the benefits and financial returns of the scheme, not how OPPs are actually governed.

To examine empirically the legitimacy of OPPs, we construct several measures of input and output legitimacy and examine their determinants across six countries that vary in OPP importance and design. As Haesevoets et al. (2024) show, legitimacy is a multifaceted concept, so it is essential to analyse the different components of legitimacy with different indicators. This analytical approach does justice to the theoretical and conceptual nuances in claims about the legitimacy of welfare state policies, and it strengthens the internal and external validity of our results.

Our results qualify concerns over a “democratic deficit” of the welfare–finance nexus (Nölke 2020). Across the six countries, OPP schemes have intermediate to high levels of input and output legitimacy, suggesting that neither the national governance model nor OPP design is decisive for this result. Instead, behavioural factors are the most consistent determinants of OPP scheme legitimacy: respondents who gathered information about and/or are engaged in decision-making of their OPP were significantly more satisfied than those who did not. Moreover, women and lower-income members remain systematically less positive about these schemes, suggesting a legitimacy divide with distributional and governance implications. The following sections review the literature on delegated welfare governance and legitimacy, derive our hypotheses, detail the survey and methods, present the empirical findings, and conclude with policy and theoretical implications for sustaining democratic legitimacy in financialized welfare states.

## **Understanding Legitimacy in Occupational Pensions**

Legitimacy is crucial for the stability of social policies – as it is for political decisions in general – whether they are publicly or privately financed and delivered. The legitimacy of social policies rests on whether stakeholders believe that the burdens and benefits embodied in the institution are fair or just (Rothstein 2000). This means that social policies should deliver the benefits and services they promise at a cost that is fairly distributed. Stakeholder evaluations of whether burdens and benefits are a major source of support for the social policy in question. In the case of OPPs, such perceptions may seem irrelevant because non-democratically elected financial experts contribute to the governance of these schemes and pension outcomes hinge on market dynamics.

However, OPPs are usually governed under democratically set rules (e.g. coverage mandates, tax subsidies, social partner governance, regulatory oversight, investment restrictions and decisions). Hence members' acceptance of those rule choices – particularly in terms of representation and transparency – and of their resulting outcomes is crucial for the legitimacy of these saving and investment devices.

### *Input and Output Legitimacy*

We draw on Scharpf's (1997, 1999) distinction between input and output legitimacy in democratic decision-making to analyse individual attitudes concerning the governance and performance of funded OPPs.<sup>1</sup> Although the conceptual distinction between input and output legitimacy has not yet been applied to occupational pensions,<sup>2</sup> there are good reasons to believe that OPPs require democratic legitimacy in much the same way that public pensions do. OPP governance is regulated by EU and national law in the six countries examined here; this includes rules concerning OPP access, contributions, fiscal support (i.e. tax deductions), investment policy, and benefit structure. In many countries, OPPs are embedded in industrial relations, so they are negotiated within collective bargaining institutions. These characteristics mean that non-state actors within OPPs make decisions on behalf of OPP members in ways that are similar to decisions made by politicians for public pension programmes on behalf of citizens/residents.

Input legitimacy refers to citizens' evaluation of collective decision-making processes, such as democratic elections or referenda. A higher degree of democratic input legitimacy is evident when political decisions involve the participation of citizens or their elected representatives and align with the preferences of the citizens (Scharpf 1999). In contrast, output legitimacy refers to citizens' acceptance of decisions because the "outputs" or effects of the decision generate collective benefits. Political decisions acquire input and output legitimacy when they align with the needs and preferences of citizens, effectively advancing the collective well-being of the population or when policies are perceived as equitable (Scharpf 1997, 1999).

### *Understanding Individual Evaluations of OPP Legitimacy*

Despite the critical importance of OPP legitimacy for their long-term sustainability, existing research on capital-funded OPPs has little to say about participants' views on this matter. A growing literature analyses the expansion of funded occupational pensions and the emergence of a new public–private mix in pensions (Ebbinghaus and Wiß 2011; Natali 2018; OECD 2022). This research has identified cross-national differences in public and private pension provision, employing indicators such as the level of pension provision (often measured through replacement rates) and coverage to document this trajectory. However, where this literature has considered citizens' perceptions, it has tended to focus on the state-provided elements rather than private, funded occupational schemes (Ebbinghaus and Naumann 2018, 2020).

A second research strand, grounded in political economy, has considered the shift towards private pension provision, but from a governance perspective. As responsibility for later life provision moves from the collective systems led by the state and/or the employer to funded occupational pensions, not only are individuals

exposed to investment risks (van der Zwan 2014; Berry 2021), but also financial actors play a more significant role in determining retirement outcomes, thereby raising the democratic dilemma discussed previously. Research in this field has considered the emerging governance constellations in funded occupational pensions, where state and non-state actors interact, with implications for benefit levels (e.g. Clark 2004; Hyde and Dixon 2009; Ebbinghaus 2011; Sorsa 2016). However, research on citizens' perceptions of these shifts in power and accountability has been limited. One exception concerns trust in occupational pension funds. Trust in pensions is generally low and women, those with lower incomes and those with lower educational attainment are found to be particularly less trusting of occupational pensions than other groups (Vickerstaff et al. 2012; Foster 2017; van Dalen and Henkens 2018).

A third research area examines the micro-foundations of pension saving. Several studies find that women, those with lower income, and those with lower educational attainment tend to participate in and save less than men, or those with high incomes and/or high education attainment (Bucher-Koenen et al. 2017; Lusardi et al. 2017; Gonzales and Fernández 2024). These systematic differences in pension participation reflect labour market inequalities which shape access to occupational pension saving (OECD 2022). For all their merits, these three strands of research do not shed light on the key question of whether OPP participants perceive the decision-making and outputs of OPPs as legitimate or not. The rest of this study fills this gap by exploring the individual- and institutional-level determinants of OPP participants' evaluations.

## **Theory and Hypotheses**

This section draws on previous research regarding social policy, welfare markets, stratification, and political attitudes to perceptions of legitimacy. Extant literature identifies four sets of determinants of individual social policy attitudes and pension preferences: (i) self-interest; (ii) ideology; (iii) individual behaviour; and (iv) institutional context (Eick 2023; Roosma and Laenen 2023). These four dimensions matter because they capture the multifaceted nature of individual views about OPP legitimacy. The *self-interest* approach posits that individual structural location and experiences shape how individuals benefit from OPPs and therefore influence the legitimacy they perceive in them. Individual *ideology* also shapes perceptions of fairness and security in OPP. We capture this dimension through trade union membership. The *individual behaviour* approach highlights the role of proactive engagement in decision-making processes. Individual efforts to gather information and participate in decision-making regarding the OPP could foster a sense of control and satisfaction. Finally, the *design and governance of pension schemes*, including the type (defined-benefit (DB)/defined-contribution (DC)), could also shape the overall legitimacy of OPP.

With regard to self-interest, gender can influence views about OPP legitimacy due to gendered career patterns, wage gaps, and life expectancy that affect pension outcomes. Previous research reports gendered differences in pension saving not only because of structural factors such as gendered employment trajectories, earnings gaps, career breaks and higher levels of part-time work that result in lower pension entitlements, but also because women are found to have lower average financial literacy and lower levels of

trust in pensions than men (Bucher-Koenen et al. 2017). These differences are likely to affect perceptions of fairness and expected outcomes and as such input and legitimacy, since the system may be perceived to disadvantage women (Risse and Stollenwerk 2018; Schoon 2022). We hypothesize that women will therefore perceive input and output legitimacy of OPP less positively than men (H1a and H1b).

Individuals with higher incomes may be more positive about their personal financial situation, more able to afford long-term saving, and more likely to engage with details about OPPs (Christoph 2010; Foster 2017; Rey-Ares et al. 2018). Since higher income increases individual capacity to afford financial losses, it also fosters personal trust in these saving and investment vehicles (Bresser and van Soest 2009; Goedkoop et al. 2023), which could translate into higher perceptions of legitimacy. We hypothesize that participants with higher income consider decision-making in OPP (H2a) and the outputs of OPP (H2b) more legitimate.

Individuals may perceive OPP as legitimate for reasons other than self-interest. Their ideological orientation, for instance, may colour their evaluations of these financial arrangements. Trade union membership reflects ideological orientation because of unions' emphasis on collective, rather than individual, bargaining over working conditions and unions' pursuit of equal pay for equal work. Trade union membership also increases electoral and political participation as well as commitment to democracy (D'Art and Turner 2007; Arndt and Rennwald 2017; Timming and Summers 2020; Turner et al. 2020). Employee representation in the workplace and trade union membership, moreover, allow employees to voice their positions through trade union representatives. Given their higher capacity to influence decision-making, we expect trade union members to be more satisfied with input legitimacy (H3).

Individual behaviour and interactions with OPP decision-makers can also shape attitudes towards OPP legitimacy. These practices can enhance perceived control and satisfaction with pension schemes. Since pension programmes are commonly perceived as complex, accessing information about a pension scheme may result in increased locus of control (Kangas et al. 2022; Singh and Mayne 2023). We expect people who have collected information to perceive the inputs and outputs of these schemes as more legitimate than those who have not (H4a and H4b). Furthermore, participation in consultative processes of decision-making may facilitate a better understanding of OPPs and how they work (Singh and Mayne 2023), and generate trust (van Dalen and Henkens 2018). We therefore expect people who have participated in decision-making processes to consider them more legitimate on input and output measures than those who have not (H5a and H5b).

Finally, the institutional context might shape satisfaction with input and output legitimacy. Different governance models, such as employer-managed or social partner-led systems, can significantly affect trust, transparency, and perceived fairness in pension schemes. Drawing on research on satisfaction with democracy (Ezrow and Xezonakis 2011; Reher 2015; Mayne and Hakhverdian 2017), we posit that when fund members are represented on fund boards and decision-making processes, they are more satisfied with input legitimacy of occupational pensions (Ebbinghaus and Wiß 2011; McCarthy 2014). In employer-dominated schemes – like those prevalent in Austria and Ireland – OPP members' voice largely depends on the discretion of employers. In jointly governed schemes – Denmark, Netherlands, Spain – employers, trade union members, and

employees are represented on boards and in decision-making processes. Germany, in contrast, is a mixed model with some employer-dominated and other jointly governed schemes. Since jointly governed models provide participants with stronger channels of influence, we hypothesize lower satisfaction with OPP input legitimacy in Austria and Ireland than in Denmark, the Netherlands, and Spain (H6).

The type of pension scheme determines the predictability and security of retirement benefits, influencing satisfaction levels. Participants in DC schemes are exposed to greater uncertainty than in DB schemes, because these schemes’ outcomes depend on investment returns accumulated over the life of the pension (van der Zwan 2014; Berry 2021). While there is evidence that some individuals prefer DC schemes over DB ones, the majority of participants recognize the higher uncertainty linked to DC schemes (Ryan and Cude 2024). We therefore hypothesize that participants in DB schemes show higher satisfaction with output legitimacy due to guaranteed benefits, while those in DC schemes exhibit varied satisfaction based on their scheme’s investment performance and their own personal risk tolerance (H7).

**Case Selection**

We test these seven hypotheses in six European countries that differ substantially in the relative importance of occupational pensions for retirement income as well as in their design. Occupational pensions are (quasi-)mandatory in Denmark and the Netherlands, resulting in high coverage rates and exceptionally high levels of private pension assets (Table 1). The occupational pension system in the Netherlands, for instance, is a collective scheme, where trade unions and employers jointly administer pension funds (Anderson 2019). DB plans have been dominant, with a recent shift towards more (collective) DC plans (Sorsa and van der Zwan 2022). Sector-wide collective agreements guarantee high coverage rates of insurance-based occupational pension schemes in Denmark that mainly come with DC plans.

In contrast, occupational pensions are voluntary in Austria, Ireland, Spain, and Germany. Occupational pensions in Ireland can be DC or DB plans and pension funds are typically managed by trustees. Thanks to their generous public pension schemes, occupational pensions are a voluntary top-up with rather low coverage rates in Austria and Spain, and social partners are more involved in their governance in Spain than in

**Table 1.** Occupational pensions in the selected countries (2019–2022)

	<b>Occupational pension coverage (% working-age population)</b>	<b>Private pension assets (% GDP)</b>
The Netherlands	95	150.7
Denmark	68	192.3
Ireland	60	26.7
Germany	54	6.5
Austria	15	6.9
Spain	10	11.8

Sources: OECD (2023); coverage rate for Spain: INVERCO (2021).

Austria (Wiß 2018; Guerrero Padrón and Sanchez Rodas 2021). Although occupational pensions are voluntary in Germany, they are increasing in importance and coverage due to cuts in the public pension scheme and employees' entitlement to salary sacrifice (Wiß 2018). By assessing input and output legitimacy in countries with such heterogeneous occupational pension pillars, we explore the potential influence of macro-institutional conditions on average perceived legitimacy and in potential attitudinal divides around age, gender, income, trade union membership, and type of OPP funding.

## Data and Methods

To test the hypotheses, we designed, implemented, and analysed a novel cross-national online survey on individual experiences and attitudes of non-retiree individuals towards OPP in six countries: Austria, Denmark, Germany, Ireland, the Netherlands, and Spain. The survey was conducted by YouGov and the fieldwork was carried out in April 2023. The survey includes 18–65-year-old non-retiree residents<sup>3</sup> in the six countries. Since the survey sought to generate data about the OPP attitudes of all non-retirees, the samples in the six countries include both participants and non-participants. The national samples were representative of the distribution of age, gender, and geographical groups in each country and included between 560 (Ireland) and 510 (Spain) participants.<sup>4</sup> Experiences and familiarity with OPP should differ drastically between non-participants and participants in these plans. Since non-participants are not active in OPP, they do not engage with activities of OPP and are thus likely poorly informed regarding the decision-making processes and outcomes of these schemes. OPP participants, in contrast, can be expected to have the most developed perceptions of input and output legitimacy of OPP. In this study, therefore, we do not analyse the input and output legitimacy of non-participants and only analyse the attitudes of OPP participants. In the following analysis a person is defined as an OPP participant if they meet four conditions: (i) is a non-retiree, (ii) has a paid job, (iii) has employment that offers OPPs, and (iv) is a member of that OPP.

To operationalize satisfaction with OPPs, we draw on conceptual discussions about legitimacy in general (Schoon 2022; Haesevoets et al. 2024) and address attitudes towards several dimensions of OPP activities and outputs. Input legitimacy is therefore captured through two questionnaire items. One item captures satisfaction with decision-making processes regarding contributions and requirements to access benefits while the other captures satisfaction with decision-making processes regarding investments. *Input legitimacy* sums the values of these two items ( $r = 0.615$ ,  $p < 0.05$ ;  $\alpha = 0.76$ ). Output legitimacy is also captured through two items: one concerning satisfaction with the financial returns of the OPP and the other the respondent's confidence that the pension benefits eventually paid by the OPP will be satisfactory. *Output legitimacy* sums the values of these two items ( $r = 0.638$ ,  $p < 0.05$ ;  $\alpha = 0.78$ ).<sup>5</sup>

Following the Hypotheses section and our focus on self-interest, ideology, behavioural aspects, and institutional characteristics, we focus on the role of gender, income, trade union membership, efforts at collecting information, involvement in collective decision-making regarding the OPP, and type of OPP. Regarding gender, we distinguish *female* from male respondents. *Tertile income* represents the tertile in equivalized income of the

household considering the number of members in the household. *Trade union members* captures membership in one of these voluntary organizations.

To capture efforts at collecting information about one's OPP characteristics and OPP account, we inductively select the two most common engagement activities among respondents: having *read a personalized letter* about one's OPP over the last five years and having *read an annual report* regarding the finances of the plan also over the last five years. These two variables were summed into the index *gathered information* ( $r = 0.390$ ,  $p < 0.05$ ;  $\alpha = 0.56$ ). As indicators of involvement in collective governance of the scheme, we also use the two most common activities of this type: *participating in an online activity* (e.g. sending an email or completing a survey) regarding rules and decisions of the plan and *having participated in a meeting* aimed to discuss rules and decisions of the plan, in both cases over the last five years. These two variables were summed into the index *involved in decision-making* ( $r = 0.432$ ,  $p < 0.05$ ;  $\alpha = 0.63$ ). The type of OPP is operationalized through a dichotomous variable differentiating between *DB* and *DC schemes*.

The models control for four other individual-level dimensions: education, financial literacy, age, and respondent's ideology. Individual education is operationalized through a dichotomous variable distinguishing respondents with *university education* from the rest. Following Lusardi and Mitchell (2008) we capture *financial literacy* through three items that indicate whether the respondent understands what inflation, compound interest, and financial risk are. All models control for age through five groups (18–24, 25–34, 35–44, 45–54, and 55 or more). Respondents' *left–right ideology* reflects their preference for market vs state solutions, which may also influence perceptions of legitimacy. The Appendix includes the verbatim questionnaire items and responses used to operationalize each variable verbatim. Table A1 in the Appendix reports descriptive statistics of all dependent and independent variables.

In the following analysis we estimate OLS pooled models as well as separate models for each country. Pooled models have the advantage of drawing on a larger sample (thus being less sensitive to outlier individual respondents) and of revealing potential average cross-national differences independently from socio-demographic and behavioural factors.<sup>6</sup> Single-country OLS models, by contrast, allow us to assess the cross-national consistency of statistical relationships, although those results have to be interpreted with caution due to the small sample for each country ( $N \approx 500$  cases).<sup>7</sup>

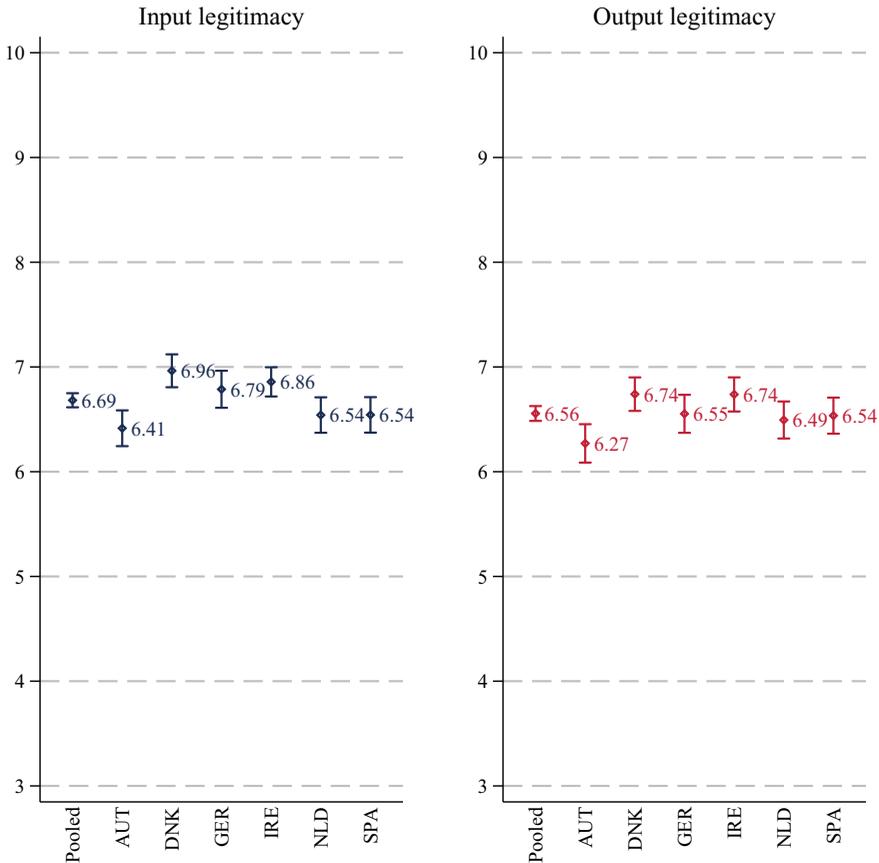
The survey does not include forced-choice questions because we wanted to prevent measurement error caused by random responses from participants without knowledge or an opinion on each of the concrete questions. Respondents were thus allowed to select a 'Don't know' and "I refuse to answer" responses. As a result, several independent variables have non-negligible missing values (Table A1 in the Appendix).<sup>8</sup> We therefore employ a multiple imputation technique to obtain estimates of those missing values of independent variables and most models are estimated with these imputed values.<sup>9</sup> Following convention, the imputation model includes independent and dependent variables, but missing values in the dependent variables were subsequently excluded from the analytical sample.<sup>10</sup>

**Results**

*Descriptive Analysis*

Figure 1 depicts the average value of the indexes *input legitimacy* and *output legitimacy*. This evidence suggests three things. First, in our sample input legitimacy is generally slightly higher than output legitimacy. For all countries except the Netherlands and Spain, the average value of *input legitimacy* is significantly higher than the value of *output legitimacy*.<sup>11</sup> Respondents are, thus, slightly more satisfied with the governance than the outcomes of OPPs. Second, without controlling for socio-demographic features, survey respondents in the six countries display very similar levels of both input and output legitimacy. Indeed, the range of variation in national averages of *input legitimacy* and *output legitimacy* is rather small: 0.55 points and 0.47 points, respectively. This is striking considering the substantial cross-national differences in outcomes, maturity, and governance models of OPPs. Third, the average values are between intermediate and intermediate-high: OPP participants in all six countries are only moderately satisfied with the input and output legitimacy of these schemes.

**Figure 1.** Input and output legitimacy of OPP



To determine whether this descriptive evidence indicates high or low legitimacy levels, we can compare it to the perceptions of non-participants and with public perceptions regarding other pension plans. The survey conducted for this project reveals that non-participants actually display lower levels of *input legitimacy* and *output legitimacy* (6.2 and 6.0, respectively) than OPP participants. This might be related to selection and exposure mechanisms. People with higher income or financial literacy are more likely to be enrolled and to already trust these institutions, though this can be excluded for countries with (quasi-)mandatory occupational pension schemes (the Netherlands and Denmark). Furthermore, pension fund members are exposed to annual statements and might interact with fund governance, so that they feel the process (input) to be fairer and outcomes more predictable (output legitimacy). To our knowledge, there are no studies regarding the input and output legitimacy of other sources of pension provision. But confidence in pensions has historically been quite cross-nationally variable and moderate in Austria, Germany, and Spain (Naumann 2018) and relatively high in the Netherlands (Van Dalen and Henkens 2022). Furthermore, most Europeans trust private pension funds (EIOPA 2025). Hence the input and output legitimacy of occupational pension plans may be similar to the legitimacy of public and private pension plans.

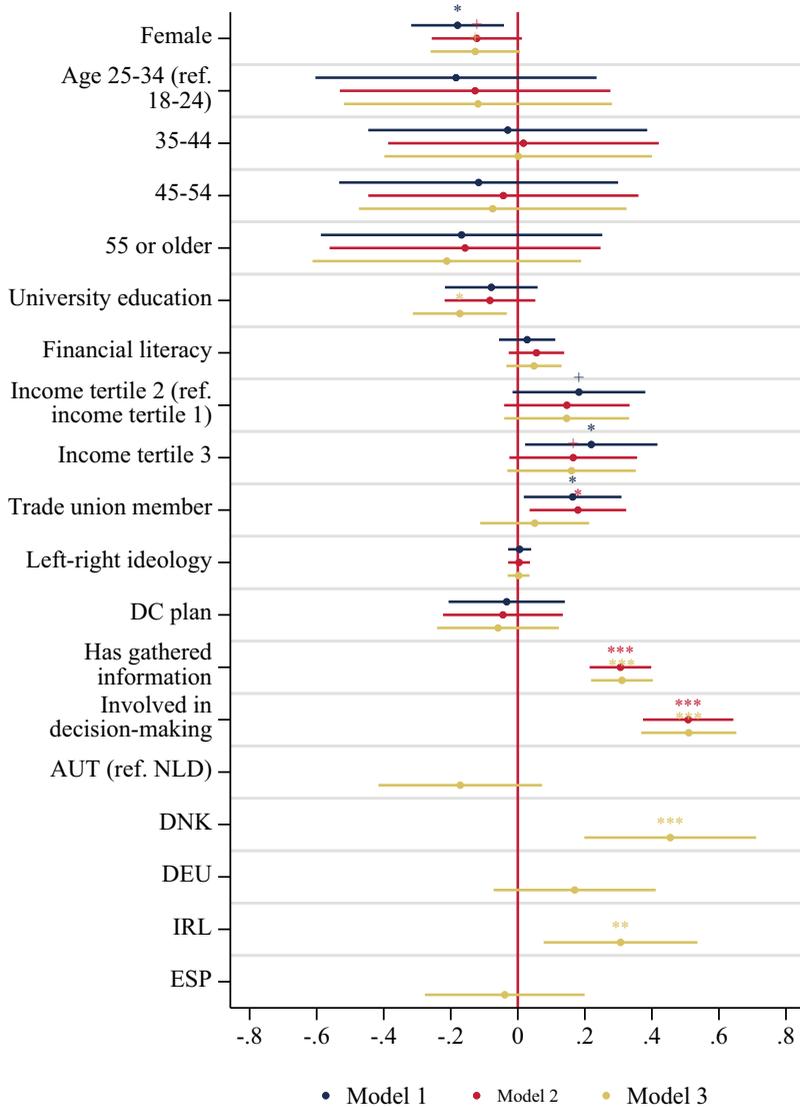
We also consider the extent to which OPP participants collect information about their OPPs or are involved in decision-making processes (Table A2 in the Appendix). In all six countries participants are more likely to collect information than to be actively involved in decision-making. On average in all six countries, 70.61 per cent of all surveyed participants have either examined a letter or a report with information regarding the OPPs in the last five years. Cross-national variation in this rate is, moreover, small. On average in all six countries, only 23.21 per cent of all surveyed participants have either attended a meeting to discuss decisions concerning the plan or contacted a representative to suggest decisions. This rate is slightly higher in Spain and Germany than the other four countries.

### *Multivariate Analysis*

To consider whether the absence of cross-national differences in input and output legitimacy persist controlling for socio-demographic characteristics and test the seven hypotheses, we estimate three multivariate models: one with socio-demographic factors (model 1), another adding the indices of information gathering and collective decision-making (model 2), and the final one adding dummies for the country of residence (model 3). The models are shown in Tables A3 and A5 in the Appendix. In these pooled models we set the Netherlands as the reference category because it is the country with the largest total assets in private pension funds and benefits as a proportion of GDP (OECD 2022). In additional analyses, we replicate the full model 3 for each of the two outcomes disaggregating by country (Tables A4 and A6 in the Appendix). Figures 2 and 3 show predictors in pooled models and Figures A1 and A2 in the Appendix depict predictors in country-specific models.

We first consider the determinants of the index of *input legitimacy*. The results indicate that age, individual income, *financial literacy*, and *left-right ideology* of respondents do not consistently shape perceptions of input legitimacy, nor does type of OPP. On average, respondents with a DB plan are not significantly more or less likely to be satisfied with decision-making than respondents with a DC plan. Contrary to H2a, respondents with

**Figure 2.** Determinants of the perception of input legitimacy among participants

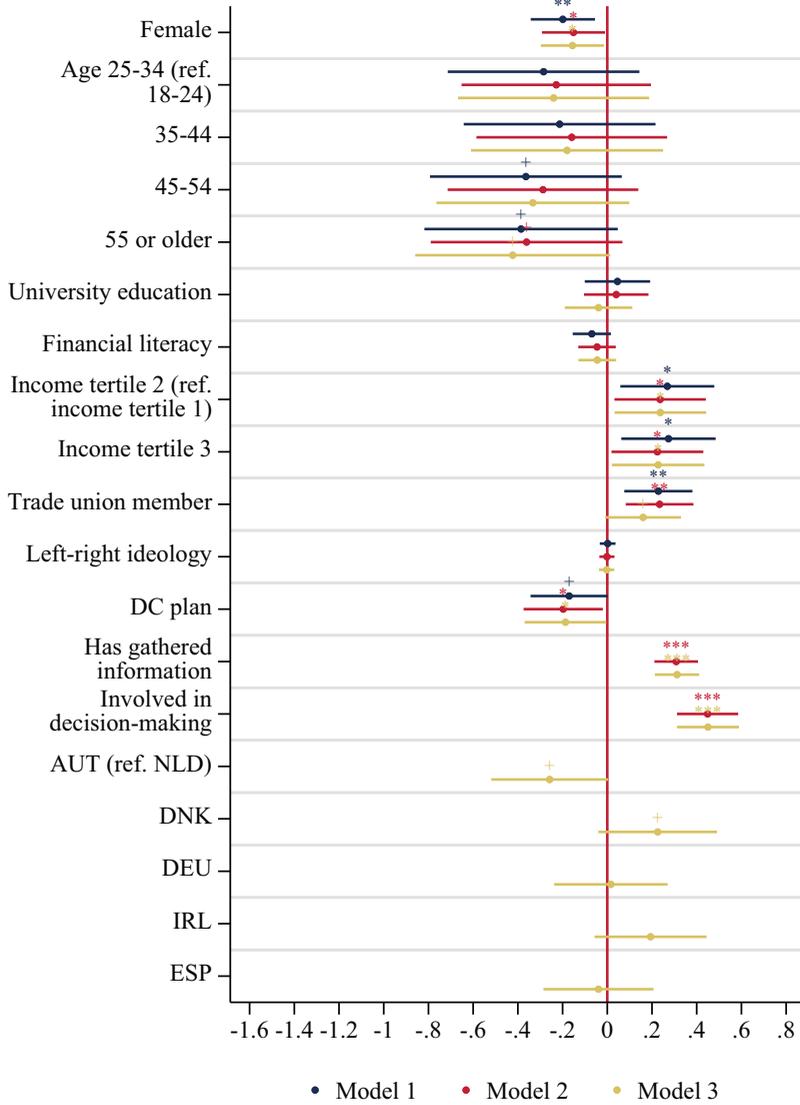


Note: + $p < 0.1$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

higher income do not display consistently higher levels of input legitimacy. However, partially supporting H3, *trade union member* is positive and significant in models 1 and 2 although the effect is not significant for the reference country in model 3.

We do however find that perceptions of input legitimacy are related, on average, to gender and the level of education. Women display a significantly lower perceived *input*

**Figure 3.** Determinants of the perception of output legitimacy among participants



Note: + $p < 0.1$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

legitimacy than men (in models 2 and 3, the effect is significant at the 10 per cent level). This is consistent with H1a. Moreover, respondents with a higher-education degree do not display significantly different input legitimacy than respondents with lower levels of education.

Additionally, information gathering and engagement in collective scheme governance are strongly linked to input legitimacy. This evidence supports H4a and H5a. On average, respondents who have gathered information regarding their OPP (by reading a personalized letter or a general report) prove significantly more satisfied with decision-making than respondents who have not. Similarly, respondents who have been involved in decision-making of their OP (either by engaging in online activism or participating in discussions with colleagues) also prove significantly more satisfied with decision-making than respondents who have not participated in those activities.

Therefore, on average, across the six countries, participants who are men, have collected information about their OPP, and have participated in collective governance of the OPP are more satisfied with input processes than other respondents. Table A4 (and Figure A1) in the Appendix addresses the consistency of these patterns through six country-specific models that replicate model 3 in Table A3 in the Appendix. Due to the small samples of respondents in each country, which pushes the standard error upwards, those tests have lower statistical power. *Female* has a negative association in four countries, but it is statistically significant only in Germany and Spain. Higher education experience is (on average) negatively significantly related to input legitimacy mainly because of the negative association between these items in Austria and the Netherlands.

Behavioural aspects, by contrast, show a more consistent association with this outcome cross-nationally. Having gathered information is positively related to input legitimacy in all six countries, and the association is statistically significant in all countries except Austria. Engagement with collective fund governance is also generally positively associated with the outcome. Involvement in decision-making is also positively related to the outcome in all countries but the association is not significant in Denmark and the Netherlands. Hence, notwithstanding cross-national differences in the significance levels of each variable, in pooled models gender, information gathering, and collective engagement are positively linked to input legitimacy.

Concerning country-level differences, as noted above without control variables, cross-nationally average levels of input legitimacy were similar (Figure 1), but this is not the case once we include control variables. Controlling for 14 individual-level variables, surveyed residents in Denmark and in Ireland display significantly higher levels of input legitimacy than surveyed residents in the Netherlands (Figure 2). By contrast, the level of input legitimacy is similar in Austria, Germany, Spain, and the Netherlands. This evidence weakly supports H6 because, although Denmark (a country with joint OPP governance) displays comparatively higher input legitimacy, so does Ireland (a country with an employer-dominated OPP governance).

Regarding *output legitimacy*, Figure 3 (and Table A5 in the Appendix) shows that patterns are only partially similar to those reported for input legitimacy. Gender is again associated with perceptions of output legitimacy: women are, on average, less satisfied with the outcomes of OPPs than men, consistent with H1b. Yet, unlike input legitimacy, age is significantly associated with output legitimacy. On average, older respondents are less satisfied with the returns and benefits of their plans, possibly because they are closer to retirement and know more about probable outcomes. Also, we find that higher-income individuals and trade union members are more satisfied with the outputs of their OPP than other respondents.<sup>12</sup> These results are consistent with H2b. Also in line with H7, respondents with a DB plan are actually more satisfied with the results of their plans than respondents with a DC plan.

As with input legitimacy, information gathering and engagement in collective governance are strongly and positively significantly related to output legitimacy. Respondents who have gathered information about the OPP (by reading an annual report or a personalized letter) or participated in activities aimed at influencing the governance of the OPP (through online activities or discussions with colleagues) are more satisfied with the outcomes of these schemes than those who did not. This evidence is consistent with hypotheses H4b and H5b. Concerning country-level differences, controlling for the 14 individual-level factors surveyed, resident survey respondents in Austria, Denmark, Germany Ireland, and Spain do not consistently differ in their average output legitimacy compared to respondents in the Netherlands.

Table A6 (and Figure A2) in the Appendix allows us to assess the consistency of these patterns across the six countries. Women are generally less satisfied with the OPP outcomes but the difference with men is only statistically significant in Germany. The association with age is mostly concentrated in Austria and Ireland. *Income* does not have a significant positive association in any of the six separate models and trade union membership is significant in Germany. As was the case with input legitimacy, behavioural aspects are consistently related to the outcome. The positive association between having gathered information and output legitimacy is significantly in Denmark, Germany, the Netherlands, and Spain. Moreover, the positive association between having been involved in decision-making and output legitimacy is positive and significant in Austria, Germany, and Spain.

These patterns may be affected by the use of multiple imputation and influenced by the indicators of input and output legitimacy. We therefore conducted two robustness checks. First, we replicate the main pooled model 3 in Tables A3 and A5 in the Appendix but without imputed missing values. Table A7 in the Appendix includes these alternative models with predictors of *input legitimacy* and *output legitimacy* – which have a lower sample size and thus statistical power. *Has gathered information* and *involved in decision-making* are still strongly positive and significant in both cases. Moreover, *income* is positively and significantly associated with output legitimacy. Without using imputed models, women are less satisfied with the outputs of OPPs than men and higher-income individuals are more satisfied with the outputs of OPPS than lower-income individuals.

Second, results may differ if respondents are asked about their general satisfaction with the OPP. We thus use a questionnaire item concerning whether the respondent is satisfied overall with the OPP (Table A8 in the Appendix). The results of these last models show that overall satisfaction is significantly higher among respondents with higher income, trade union membership, and those who have gathered information or been involved in decision-making regarding the OPP. Controlling for individual-level factors, overall satisfaction with the fund is significantly higher in Denmark, Germany, and Ireland than in the Netherlands.

## **Discussion and Conclusion**

Funded occupational pensions represent an increasingly important source of retirement income in European countries, and this importance is expected to increase. Democratic political processes underlie the governance structure of public pension schemes, whereas

occupational pensions, traditionally governed within the sphere of industrial relations, are increasingly reliant on financial markets and financial actors. Therefore, occupational pensions are at the intersection of financial markets including their logic and risks, and delegated decision-making authority. Our six-country study based on a novel online survey offers the first systematic evidence on whether members regard this hybrid governance structure as legitimate along both the input (governance) and output (performance) dimensions. The analysis yields four main results.

First, the descriptive results indicate that participants of OPPs are moderately satisfied with the input and output legitimacy of their OPP. The evidence suggests that OPP participants in the six countries are slightly more satisfied with inputs, i.e. the decision-making processes governing these funds, than with outputs, i.e. the financial returns and benefits associated with them. This finding is surprising in the context of financialization, where welfare has become increasingly dependent on financial returns, because this change has been premised upon better outcomes than can be provided through state-run systems. Our results demonstrate that OPP participants do not necessarily perceive this to be true, as they do not perceive OPP outcomes particularly favourably. Our findings contribute to research highlighting the democratic dilemma of financialization, especially concerning the decreasing legitimacy of public pensions and the emphasis on private pensions as an alternative (Ebbinghaus and Naumann 2018, 2020). However, we recognize that the asymmetry between input and output legitimacy identified in this study could be caused by the cyclical nature of financial markets, given the stagnant nature of financial markets across Europe at the point the research was conducted. This is a dynamic that could be explored in further research.

Second, contrary to our expectations, the results point to limited cross-national differences in average input and output legitimacy. Despite substantial variation across the six countries in terms of the outcomes, maturity, and OPP governance models, we observe significant differences for perceptions of input legitimacy – not for output legitimacy after controlling for individual-level factors. We also find that input legitimacy is higher in Denmark and Ireland than in the Netherlands, but similar in Austria, Germany, and Spain to the Netherlands. Hence there is only weak support for our expectation that the dominant governance model of OPPs in the country would be related to average input legitimacy. Higher levels of satisfaction with input legitimacy in Denmark and Ireland may be related to the strong involvement of social partners in the governance of occupational pension schemes in Denmark, whilst participants in Ireland might be satisfied with lower real-world involvement in pension fund boards, because this reflects the overall low level of social partner involvement in governance in Ireland. The relatively weaker level of input legitimacy in the Netherlands, despite strong social partner involvement in OPP governance, may be due to the protracted and often contested OPP reform process. Thus the salience of pension reform may reduce participants' faith in input legitimacy (Fernández et al. 2024).

Third, perceptions of input and output legitimacy are influenced by only certain socio-demographic factors, with stronger support for the role of self-interest than ideology. Individuals with lower income and those who are not trade union members are significantly less satisfied with OPP financial outputs. With regard to low-income earners, outcomes could be made less regressive for them by, for example, considering progressive state subsidies, tax rebates, or matching contributions as well as targeted pension

fund communication (e.g. net pay effect, available subsidies) to increase their satisfaction with output legitimacy. The higher legitimacy among union members highlights the role social partners can play to enhance legitimacy. The early and substantive involvement of unions in design and communication of pension funds might turn individuals' dissatisfaction into conditional support, widening the coalition for pension funds and reforms.

Moreover, a significant policy-salient divide we observe is gendered: women report lower satisfaction with both governance and outcomes. Because informational engagement is strongly linked to higher legitimacy, targeted improvements in transparency and communication such as the provision of targeted and accessible information for women (e.g. regarding career breaks and part-time work) in annual letters and pension fund communication might be promising to close legitimacy gaps. Moreover, pension funds might consider gender balance targets on boards and advisory committees as involvement in decision-making is linked to higher legitimacy. In terms of scheme design, a review of eligibility thresholds and vesting periods that penalize part-time work or career breaks (e.g. by introducing top-ups or care credits) could increase confidence in future benefits and hence output legitimacy. Future qualitative and quantitative work could unpack this gender bias in perceptions of legitimacy in more detail, for example by considering whether it is more strongly driven by the socio-economic position of women or the way in which pension schemes operate.

Fourth, our results show that behavioural aspects are the most consistent and relevant factors associated with input and output legitimacy. Respondents who made more effort to gather information about the OPP and who engaged in decision-making prove significantly more satisfied with the governance and outputs of these schemes than others. This finding resonates with Mayer and Wiß's (2025) argument that participatory channels are key for the legitimacy of private welfare governance, and it aligns with broader democratic-theory claims about the power of voice. This provides some grounds for optimism, because it suggests that learning about one's OPP and participating in decision-making are related to acceptance and favourable perceptions of the schemes, because participants experience that governance is fair and reasonable. Since information-gathering strongly predicts input and output legitimacy, plain-language annual statements, standardized benefit projections, and simple fee disclosure might increase satisfaction among pension fund members. Furthermore, since participation in decision-making increases legitimacy, pension funds could lower the barriers to member voice with gender-balanced boards, online consultations and member surveys, as well as limited individual discretion over some plan details (e.g. investment strategy or payout).

However, we cannot dismiss the possibility that the behavioural-attitudinal link is influenced by reversed causality, i.e. that those who are already satisfied with input and output legitimacy are more inclined to avail themselves of opportunities to learn about the scheme and participate in discussions about its governance. However, we believe this interpretation to be less likely, because once someone is satisfied, they have little incentive to do anything about it. Nonetheless, future work with panel data and cross-lagged models can determine the predominant causal direction of this association.

The study has some limitations. The sample for each country is relatively small ( $N \approx 500$ ), which reduces the statistical power of tests conducted, disaggregating by country. For space and time reasons, the survey questionnaire could not include questions

on company characteristics (firm size, industry), subjective perceptions of financial literacy that have proven consequential in previous work (Fernandes et al. 2014) and of personality traits (e.g. Big Five). Moreover, certain variables had a non-negligible proportion of missing values which required the use of multiple imputation. Further research could explore the robustness of the findings of this study using larger samples and controlling for personality traits and other perceptions. Additional studies could also explore why participants do not have a position or do not want to answer questions regarding certain topics like their engagement with OPPs. We also need a better understanding of attitudes towards OPPs among non-OPP participants.

In terms of theoretical implications, our evidence suggests that the use of participatory procedures does not crowd out performance concerns as conventional readings of Scharpf's input–output concept might predict (e.g. Horeth 1999), but instead increase satisfaction on both fronts simultaneously. In funded pensions, therefore, deliberative and participatory design appears to amplify rather than substitute for interests in positive material outcomes. Furthermore, our results suggest the claim that shifting risk to markets (financialization) automatically erodes citizen support is too deterministic. Legitimacy can be maintained when OPPs engage in transparent communication and accessible participation. The strong link between behavioural factors (engagement) and legitimacy suggests that theorizing legitimacy requires integrating behavioural insights with distributive politics: who engages, and under what conditions, becomes central to explaining support for the governance of private welfare.

Taken together, our results suggest that legitimacy is not an exogenous immutable backdrop, but a transformable element. A high degree of input legitimacy fostered by transparent communication and meaningful member voice, might buffer dissatisfaction with outcomes. Likewise, output legitimacy, achieved through high and predictable benefits, can make cost and risk configurations more acceptable. Hence, OPP governance structures that operate in a transparent way and make outcomes comprehensible can improve tolerance towards adjustments and reforms by converting potential veto groups into conditional supporters.

## Notes

1. We adopt a two-dimensional adaptation of Scharpf (input and output) without considering “throughput legitimacy” as a separate category due to well-documented boundary problems and limited empirical separability from input/output (for a similar argument, see Steffek 2019).
2. Some studies deal with accountability and responsibility of occupational pensions (Hyde and Dixon 2009; Sorsa 2016), but not with participatory rights or output legitimacy. Other studies focus on output legitimacy for the governance of global finance (Mügge 2011; Tsingou 2015), but they do not consider input legitimacy or determinants of satisfaction with legitimacy. Moreover, Mayer and Wiß (2025) deal with the assessment of input legitimacy of occupational pensions, but do not measure input and output legitimacy from OPP members' perspectives.
3. The experience of retirees with OPPs is very different from that of current employees and analysing both groups (retirees and non-retirees) would have required very different questions and would have reduced the sample size and statistical power of empirical tests.
4. In a first stage, quotas for the adult non-retiree population were filled up to 1,000 cases. If that initial sample did not include 500 OPP participants, the survey continued until that sample goal was met.
5. Answers to the output questions may be partially sensitive to developments in financial markets prior to the survey. Yet this influence should be limited because the questions ask regarding satisfaction with past fund performance and confidence that the benefits will be satisfactory.

6. Alternative ordered logit models (available upon request) provide substantially equivalent results. For the main models we instead present OLS models because the parallel-lines assumption of ordered logit models is not normally met (as in this case).
7. We examined whether the estimates of independent variables could be influenced by multicollinearity. The variance inflation factors (VIF) of all variables except the age categorical variable are below 2.5, which signals the absence of multicollinearity. The presence of higher VIF in categorical variables is expected and this does not necessarily represent a problem.
8. As noted in the section “Understanding Legitimacy in Occupational Pensions”, previous work shows that many participants in OPPs have a limited understanding of decision-making processes and the organizational logic of these schemes, which helps explaining non-negligible proportions of non-responses.
9. We specifically estimate ten imputed values for each variable using chained equations and models specific for each country in Stata.
10. The project obtained approval from an independent ethics committee.
11. Results of t-tests available upon request.
12. In additional analyses available upon request, the respondent’s social class – measured in three categories: professional/managerial, clerical/service worker, and skilled/unskilled worker – proves unrelated to perceptions of input and output legitimacy.

## Disclosure Statement

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

## Ethical Approval

The survey conducted for this study has been approved by the Ethics Committee at University Carlos III of Madrid.

## Data Availability Statement

Replication materials for this article can be found at: <https://figshare.com/s/2f92017f1e638558697d>

## Funding

This work was supported by the Norface Network, the Irish Research Council, the Dutch Research Council, the Austrian Science Fund [I 4821-G] and the Spanish State Research Agency [PCI2020-112131].

## ORCID

Hayley James  <http://orcid.org/0000-0002-9626-4961>

Tobias Wiß  <http://orcid.org/0000-0003-2882-0636>

Karen M. Anderson  <http://orcid.org/0000-0002-1352-604X>

## References

- Anderson, K. M., 2019, Financialisation meets collectivisation: Occupational pensions in Denmark, the Netherlands and Sweden. *Journal of European Public Policy*, **26**(4), pp. 617–636.
- Arndt, C. and Rennwald, L., 2017, Workplace characteristics and working class vote for the old and new right. *British Journal of Industrial Relations*, **55**(1), pp. 137–164. doi:10.1111/bjir.12143
- Benish, A. and Levi-Faur, D., 2020, The expansion of regulation in welfare governance. *Annals of the American Academy of Political and Social Science*, **691**(1), pp. 17–29. doi:10.1177/0002716220949230
- Berry, C., 2021, *Pensions Imperilled: The Political Economy of Private Pensions Provision in the UK* (Oxford: Oxford University Press).

- Bresser de, J. and Soest, A. V., 2009. Satisfaction with pension provisions in the Netherlands-A panel data analysis. *Netspar Discussion Paper*, 10/2009–034.
- Bucher-Koenen, T., Alessie, R., Lusardi, A., and van Rooij, M., 2017. How financially literate are women? An overview and new insights. *Journal of Consumer Affairs*, **51**(2), pp. 255–283. doi:10.1111/joca.12121
- Christoph, B., 2010. The relation between life satisfaction and the material situation: A re-evaluation using alternative measures. *Social Indicators Research*, **98**(3), pp. 475–499. doi:10.1007/s11205-009-9552-4
- Clark, G. L., 2004. Pension fund governance: Expertise and organizational form. *Journal of Pension Economics and Finance*, **3**(2), pp. 233–253. doi:10.1017/S1474747204001556
- D’Art, D. and Turner, T., 2007. Trade unions and political participation in the European Union: Still providing a democratic dividend? *British Journal of Industrial Relations*, **45**(1), pp. 103–126. doi:10.1111/j.1467-8543.2007.00604.x
- De Vroom, B. and Bannink, D., 2008. Changing life courses and new social risks: The case of old age pensions. *Journal of Comparative Policy Analysis*, **10**(1), pp. 75–92.
- Ebbinghaus, B. (Ed), 2011, *The Varieties of Pension Governance* (Oxford: Oxford University Press).
- Ebbinghaus, B. and Naumann, E., 2018. The popularity of pension and unemployment policies revisited: The erosion of public support in Britain and Germany, in: B. Ebbinghaus and E. Naumann (Eds) *Welfare State Reforms Seen from Below* (Cham: Palgrave Macmillan), pp. 155–186.
- Ebbinghaus, B. and Naumann, E., 2020. The legitimacy of public pensions in an ageing Europe: Changes in subjective evaluations and policy preferences, 2008–2016, in: T. Laenen, B. Meulemann, and W. van Oorschot (Eds) *Welfare State Legitimacy in Times of Crisis and Austerity. Between Continuity and Change* (Cheltenham: Edward Elgar), pp. 159–176.
- Ebbinghaus, B. and Wiß, T., 2011. The governance and regulation of private pensions in Europe, in: B. Ebbinghaus (Ed) *The Varieties of Pension Governance - Pension Privatization in Europe* (Oxford: Oxford University Press), pp. 351–383.
- Eick, G. M., 2023. The evolution of welfare attitudes in Europe over the past four decades, in: B. Greve (Ed) *Welfare States in a Turbulent Era* (Cheltenham, UK: Edward Elgar Publishing), pp. 71–83.
- European Insurance and Occupational Pensions Authority (EIOPA), 2025, *Flash Eurobarometer. Consumer Trends in Insurance and Pension Services* (Frankfurt, Germany: EIOPA).
- Eurostat. 2023. Inflation in the Euro Area. Available at [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Inflation\\_in\\_the\\_euro\\_area](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Inflation_in_the_euro_area)
- Ezrow, L. and Xezonakis, G., 2011. Citizen satisfaction with democracy and parties’ policy offerings. *Comparative Political Studies*, **44**(9), pp. 1152–1178. doi:10.1177/0010414011405461
- Fernandes, D., Lynch, J. G., and Netemeyer, R. G., 2014. Financial literacy, financial education, and downstream financial behaviors. *Management Science*, **60**(8), pp. 1861–1883. doi:10.1287/mnsc.2013.1849
- Fernández, J. J., Wiß, T., and Anderson, K. M., 2024. Issue salience and feedback effects: The case of pension reforms. *Journal of European Public Policy*, **31**(11), pp. 3732–3760. doi:10.1080/13501763.2023.2263051
- Foster, L., 2017. Young people and attitudes towards pension planning. *Social Policy and Society*, **16**(1), pp. 65–80. doi:10.1017/S1474746415000627
- Goedkoop, F., Mangan, M., Mastrogiacomio, M., and Hochguertel, S., 2023, *Trust in the Financial Performance of Pension Funds, Public Perception, and its Effect on Participation in Voluntary Pension Saving Plans*. De Nederlandsche Bank Working Paper No. 783.
- Gonzales, S. and Fernández, J. J., 2024. Socio-Economic Gaps in Workers’ Participation in Private Pension Programmes in Ten European Countries. *Journal of Social Policy*, **53**, pp. 1187–1219.
- Guerrero Padrón, T. and Sanchez Rodas, C., 2021, Spain, in: S. M. Schneider, T. Petrova, and U. Becker (Eds) *Pension Maps: Visualising the Institutional Structure of Old Age Security in Europe and Beyond* (Munich: Max Planck Institute for Social Law and Social Policy), pp. 389–410.
- Haesevoets, T., Roets, A., Steyvers, K., Verschuere, B., & Wauters, B 2024, Towards a multifaceted measure of perceived legitimacy of participatory governance. *Governance*, **37**(3), pp. 711–728. doi:10.1111/gove.12800
- Hassel, A., Naczyk, M., and Wiß, T., 2019. The political economy of pension financialisation: Public policy responses to the crisis. *Journal of European Public Policy*, **26**(4), pp. 483–500. doi:10.1080/13501763.2019.1575455
- Heidbreder, E. G., 2015. Governance in the European Union: A policy analysis of the attempts to raise legitimacy through civil society participation. *Journal of Comparative Policy Analysis: Research and Practice*, **17**(4), pp. 359–377.
- Horeth, M., 1999. No way out for the beast? The unsolved legitimacy problem of European governance. *Journal of European Public Policy*, **6**(2), pp. 249–268. doi:10.1080/135017699343702

- Hyde, M. and Dixon, J., 2009, Individual and collective responsibility: Mandated private pensions in a comparative perspective. *Journal of Comparative Social Welfare*, **25**(2), pp. 119–127. doi:10.1080/17486830902789749
- INVERCO, 2021, *Informe anual Instituciones de Inversión Colectiva y Fondos de Pensiones* (Madrid: Instituciones de Inversión Colectiva y Fondos de Pensiones).
- Kangas, O., Airio, I., Koskenvuo, K., Kuivalainen, S., & Tenhunen, S 2022, Information and legitimacy: Results from an experimental survey on attitudes to the 2017 pension reform in Finland. *Journal of Pension Economics & Finance*, **21**(3), pp. 359–374. doi:10.1017/S1474747220000396
- Levi-Faur, D., 2005, The global diffusion of regulatory capitalism. *Annals of the American Academy of Political and Social Science*, **598**(1), pp. 12–32. doi:10.1177/0002716204272371
- Lusardi, A. and Mitchell, O. S., 2008, Planning and financial literacy: How do women fare? *American Economic Review*, **98**(2), pp. 413–417.
- Lusardi, A., Mitchell, O. S., and Pierre-Carl, M., 2017, Optimal financial knowledge and wealth inequality. *The Journal of Political Economy*, **125**(4), pp. 431–477. doi:10.1086/690950
- Mayer, T. and Wiß, T., 2025, Assessing Input Legitimacy of Occupational Pensions in Europe. *Regulation & Governance*, **19**(4), pp. 1086–1100. doi:10.1111/rego.12647
- Mayne, Q. and Hakhverdian, A., 2017, Ideological congruence and citizen satisfaction: Evidence from 25 advanced democracies. *Comparative Political Studies*, **50**(6), pp. 822–849. doi:10.1177/0010414016639708
- McCarthy, M. A., 2014, Turning labor into capital: Pension funds and the corporate control of finance. *Politics & Society*, **42**(4), pp. 455–487. doi:10.1177/0032329214547351
- Mügge, D., 2011, Limits of legitimacy and the primacy of politics in financial governance. *Review of International Political Economy*, **18**(1), pp. 52–74. doi:10.1080/09692290903025162
- Natali, D., 2018, Occupational pensions in Europe: Trojan horse of financialization? *Social Policy & Administration*, **52**(2), pp. 449–462. doi:10.1111/spol.12376
- Nauman, E., 2018, Trust in ageing societies: Confidence in pensions across Europe, in: B. Ebbinghaus and P. Elias Nauman (Eds) *Welfare State Reforms Seen from Below: Comparing Public Attitudes and Organized Interests in Britain and Germany* (Cham, Switzerland: Springer Nature), pp. 187–210.
- Nölke, A., 2020, Financialization and the crisis of democracy, in: P. Mader, D. Mertens and N. van der Zwan (Eds) *The Routledge International Handbook of Financialization* (Abingdon: Routledge), pp. 425–436.
- OECD, 2022, *Pensions at a Glance 2022* (Paris: OECD Publishing).
- OECD, 2023, *Pensions at a Glance 2023* (Paris: OECD Publishing).
- Palier, B., 2007, Tracking the evolution of a single instrument can reveal profound changes: The case of funded pensions in France. *Governance*, **20**(1), pp. 85–107. doi:10.1111/j.1468-0491.2007.00345.x
- Reher, S., 2015, Explaining cross-national variation in the relationship between priority congruence and satisfaction with democracy. *European Journal of Political Research*, **54**(1), pp. 160–181. doi:10.1111/1475-6765.12077
- Rey-Ares, L., Fernández-López, S., and Vivel-Búa, M., 2018, The influence of social models on retirement savings: Evidence for European countries. *Social Indicators Research*, **136**(1), pp. 247–268. doi:10.1007/s11205-016-1533-9
- Risse, T. and Stollenwerk, E., 2018, Legitimacy in areas of limited statehood. *Annual Review of Political Science*, **21**(1), pp. 403–418. doi:10.1146/annurev-polisci-041916-023610
- Roosma, F. and Laenen, T., 2023, Introduction to A research agenda for public attitudes to welfare, in: F. Roosma and T. Laenen (Eds) *A Research Agenda for Public Attitudes to Welfare* (Cheltenham, UK: Edward Elgar), pp. 1–23.
- Rothstein, B., 2000, Trust, social dilemmas and collective memories. *Journal of Theoretical Politics*, **12**(4), pp. 477–501. doi:10.1177/0951692800012004007
- Ryan, M. P. and Cude, B. J., 2024, Factors that influence preferences for defined benefit plans versus defined contribution plans. *The American Economist*, **69**(1), pp. 35–58. doi:10.1177/05694345231180313
- Scharpf, F. W., 1997, Economic integration, democracy and the welfare state. *Journal of European Public Policy*, **4**(1), pp. 18–36. doi:10.1080/135017697344217
- Scharpf, F. W., 1999, *Governing in Europe: Effective and Democratic?* (Oxford: Oxford University Press).
- Schoon, E. W., 2022, Operationalizing legitimacy. *American Sociological Review*, **87**(3), pp. 478–503. doi:10.1177/00031224221081379
- Singh, S. P. and Mayne, Q., 2023, Satisfaction with democracy: A review of a major public opinion indicator. *Public Opinion Quarterly*, **87**(1), pp. 187–218. doi:10.1093/poq/nfad003

- Sorsa, V. P., 2016, Public–private partnerships in European old-age pension provision: An accountability perspective. *Social Policy & Administration*, **50**(7), pp. 846–874. doi:10.1111/spol.12186
- Sorsa, V.-P. and van der Zwan, N., 2022, Sustaining the unsustainable? The political sustainability of pensions in Finland and the Netherlands. *Journal of European Social Policy*, **32**(1), pp. 91–104. doi:10.1177/095892872111035691
- Steffek, J., 2019, The limits of proceduralism: Critical remarks on the rise of ‘throughput legitimacy’. *Public Administration*, **97**(4), pp. 784–796. doi:10.1111/padm.12565
- Timing, A. and Summers, J., 2020, Is workplace democracy associated with wider pro-democracy affect? A structural equation model. *Economic and Industrial Democracy*, **41**(3), pp. 709–726. doi:10.1177/0143831X17744028
- Tsingou, E., 2015, Club governance and the making of global financial rules. *Review of International Political Economy*, **22**(2), pp. 225–256. doi:10.1080/09692290.2014.890952
- Turner, T., Ryan, L., and O’Sullivan, M., 2020, Does union membership matter? Political participation, attachment to democracy and generational change. *European Journal of Industrial Relations*, **26**(3), pp. 279–295. doi:10.1177/0959680119844926
- van Dalen, H. P. and Henkens, K., 2018, The making and breaking of trust in pension providers: An empirical study of pension participants. *The Geneva Papers on Risk and Insurance - Issues and Practice*, **43**(3), pp. 473–491. doi:10.1057/s41288-018-0079-2
- Van Dalen, H. P. and Henkens, K., 2022, Trust and distrust in pension providers in times of decline and reform: Analysis of survey data 2004–2021. *De Economist*, **170**(4), pp. 401–433. doi:10.1007/s10645-022-09411-x
- van der Zwan, N., 2014, Making sense of financialization. *Socio-Economic Review*, **12**(1), pp. 99–129. doi:10.1093/ser/mwt020
- Vickerstaff, S., Macvarish, J., Taylor-Gooby, P., Loretto, W., and Harrison, T., 2012, *Trust and Confidence in Pensions: A Literature Review*. (London: Department for Work and Pensions).
- Wiß, T., 2018, Divergent occupational pensions in Bismarckian countries: The case of Germany and Austria. *Transfer: European Review of Labour and Research*, **24**(1), pp. 91–107. doi:10.1177/1024258917748258

## Appendix A

### *Definition and Codification of All Variables*

Determination of being a participant: We identify respondents who are participants in OPP through their responses to four questions. The first question asks the person: “Are you retired?” Response options are “Yes” and “No”. The second question asks respondents: “Which of these descriptions applies to what you have been doing for the last 7 days?” The key response option is “in paid work (or away temporarily) (employee, self-employed, working for a family business)”. The third question asks respondents: “Does your current employment offer an occupational pension plan? By occupational pension plan we mean pensions and other monetary transfers for old-age and disability linked to your employment and aimed at supplementing state-based pensions. (We do not refer to individual pension plans you may have).” Response options are “Yes” and “No”. The fourth question asks: “Are you a member of this occupational pension plan?” Response options are “Yes” and “No.” We identify as participants (1) all respondents who are not retired, are employed, their employment offers an occupational pension plan, and they are a member of it.

*Input legitimacy*: This variable is the average value in the variables: *satisfied decision-making regarding contributions and benefits* and *satisfied decision-making regarding investments*. Both are included in a battery with the following introduction: “Please indicate whether you agree or disagree with the following statements regarding your occupational plan.” One question asks for respondents’ opinion of the statement “I am satisfied with the decision-making processes followed regarding contributions and

requirements to access benefits”. The second statement reads: “I am satisfied with the decision-making processes followed regarding investments.” Response options for both questions are “strongly disagree” (1), “disagree” (2), “neither agree nor disagree” (3), “agree” (4), and “strongly agree” (5). We sum both variables: *satisfied decision-making regarding contributions* and *satisfied decision-making regarding investments*. The correlation between both variables is high: 0.615, ( $p < 0.05$ ).

*Output legitimacy*: This variable is the average value in the variables: *satisfied yearly financial returns* and *confident on forecasted pension*. Both are included in a battery with the following introduction: “Please indicate whether you agree or disagree with the following statements regarding your occupational plan.” One question asks for respondents’ opinions with the statement: “I am satisfied with the financial returns of the occupational pension plan.” The second statement reads: “I am confident that the pension benefit ultimately paid to me by the occupational pension plan will be satisfactory.” Response options for both questions are “strongly disagree” (1), “disagree” (2), “neither agree nor disagree” (3), “agree” (4), and “strongly agree” (5). We sum both variables: *satisfied yearly financial returns* and *confident on forecasted pension*. The correlation between both variables is high: 0.638 ( $p < 0.05$ ).

*Female*: We utilize a question already included in the YouGov national panels. It distinguishes respondents who are female (1) from those who are male (0).

*Age*: We utilize a question regarding respondent’s age already included in the YouGov national panels. For the analysis we distinguish five age groups: respondents aged 18–24 (1), 25–34 (2), 35–44 (3), 45–54 (4), and 55 or over (5).

*University education*: We utilize a question regarding respondent’s age already included in the YouGov national panels. This variable distinguishes respondents who completed a university degree (BA, MA, PhD) (1) from other respondents (0).

*Financial literacy*: Following Lusardi and Mitchel (2008), we utilize three knowledge questions. The first asks: “Suppose you had 100€ in a savings account and the interest rate was 2 per cent per year. After 5 years, how much do you think you would have in the account if you left the money to grow?”, with response options “More than 102€” (1), “Exactly 102€” (2), “Less than 102€” (3). The second asks: “Imagine that the interest rate on your savings account was 1 per cent per year and inflation was 2 per cent per year. After 1 year, how much would you be able to buy with the money in this account?”, with response options “More than today” (1), “Exactly the same” (2), and “Less than today” (3). The third asks: “Please indicate whether this statement is true or false. Buying a single company’s stock usually provides a safer return than a stock mutual fund”, with response options “True” (1) and “False” (2). Correct answers are (1), (3), and (2). We assign a value of 1 to all correct answers. “Don’t know” responses are coded as (0).

*Equivalentized income*: Respondents are asked: “Using the following brackets, please indicate which letter describes your household’s total weekly income, after tax and compulsory deductions, from all sources? If you don’t know the exact figure, please give an estimate.” They are then provided ten brackets corresponding to approximately ten income deciles in the country. The values were obtained from round 9 of the European Social Survey. The values were then updated with the average Consumer Price Index (CPI) value (Eurostat 2023). We then calculate income tertiles within each

country, leading to three dichotomous variables: *income tertile 1*, *income tertile 2*, and *income tertile 3*.

*Trade union member*: The question reads: “Are you or have you ever been a member of a trade union or a professional association?”, with response options “Yes, currently”, “Yes, previously”, and “No”. Current trade union members (1), and the rest (0).

*Left–right ideology*: The question reads “In politics people sometimes talk about ‘left’ and ‘right’. Where would you place yourself on this scale, where 0 means the left and 10 means the right?”, with response options ranging from 0 to 10.

*DC plan*: The original question asks: “There are two main types of occupational pension plans. In defined benefit plans pensions are determined in advance based on factors such as age, years of service, and salary. In defined contribution plans pensions are not determined in advance, but are instead determined by the value of money accumulated through contributions from employees and employers, plus financial returns. Is the occupational plan you are included in defined benefit or defined contribution?” Response options are “Defined benefit” (0) and “Defined contribution” (1).

*Gathered information*: It averages *read a personalized letter* and *read a report*.

*Read a personalized letter*: The original question is introduced with “Occupational plans have several possible means to inform participants regarding their plan value, annual contributions, likely future benefits and other aspects of the plans. Which of the following forms of information are provided by your pension plan? Moreover, which ones have you utilized in the last five years?” One of the items is “An annual or periodic personalized letter to all participants”, with response options “Available and utilized,” “Available and not utilized”, and “Not available”. This distinguishes respondents who selected “Available and utilized” (1) from the rest (0).

*Read a report*: The original question is introduced with “Occupational plans have several possible means to inform participants regarding their plan value, annual contributions, likely future benefits, and other aspects of the plans. Which of the following forms of information are provided by your pension plan? Moreover, which ones have you utilized in the last five years?” One of the items is “An annual report regarding the finances and organization of the plan”. Options are “Available and utilized”, “Available and not utilized” and “Not available” This distinguishes respondents who selected “Available and utilized” (1) from the rest (0).

*Engaged in decision-making*: It averages *used online activism as channel* and *used discussions as channel*.

*Used online activism as channel*: The original question is introduced with “Participants of occupational pension plans usually have several channels to contribute to collective decisions regarding their plan. Which of the following channels are available to you? And which channels to contribute to collective decisions have you utilized in the last five years?” One of the items reads “To participate in an online activity regarding the rules and decisions of the plan (e.g. sending an email or participating in an online survey)” with response options “Available and utilized”, “Available and not utilized”, and “Not available”. It distinguishes respondents who selected “Available and utilized” (1) from the rest (0).

*Used discussions as channel*: The original question is introduced with the sentences “Participants of occupational pension plans usually have several channels



**Table A3.** OLS models with determinants of input legitimacy of OPP in six European countries, 2023

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Female	-0.180* (0.071)	-0.122 <sup>+</sup> (0.069)	-0.127 <sup>+</sup> (0.068)
Age 25–34 (ref. 18–24)	-0.184 (0.214)	-0.127 (0.206)	-0.119 (0.204)
35–44	-0.030 (0.212)	0.017 (0.206)	0.001 (0.204)
45–54	-0.117 (0.212)	-0.043 (0.206)	-0.075 (0.204)
55 or older	-0.168 (0.214)	-0.157 (0.206)	-0.212 (0.204)
University education	-0.079 (0.071)	-0.083 (0.069)	-0.173* (0.071)
Financial literacy	0.028 (0.043)	0.056 (0.042)	0.048 (0.042)
Income tertile 2 (ref. income tertile 1)	0.182 <sup>+</sup> (0.101)	0.146 (0.095)	0.146 (0.095)
Income tertile 3	0.219* (0.101)	0.165 <sup>+</sup> (0.097)	0.160 (0.098)
Trade union member	0.164* (0.074)	0.179* (0.073)	0.050 (0.083)
Left–right ideology	0.005 (0.018)	0.004 (0.017)	0.002 (0.017)
DC plan (ref. DB plan)	-0.033 (0.088)	-0.044 (0.090)	-0.059 (0.091)
Has gathered information		0.306*** (0.047)	0.311*** (0.047)
Involved in decision-making		0.508*** (0.068)	0.510*** (0.071)
AUT (ref. the Netherlands)			-0.172 (0.124)
DNK			0.455*** (0.131)
DEU			0.170 (0.123)
IRL			0.307** (0.117)
ESP			-0.039 (0.122)
Constant	6.651*** (0.258)	6.061*** (0.249)	6.092*** (0.258)
F-test	1.90***	12.82***	11.90***
Observations	2,452	2,452	2,452

Note: Robust standard errors in parentheses; <sup>+</sup> $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

**Table A4.** OLS models with determinants of input legitimacy of OPP in six European countries, 2023

	AUT	DNK	GER	IRE	NLD	SPA
Female	0.083 (0.191)	0.115 (0.163)	-0.484** (0.173)	-0.133 (0.148)	-0.111 (0.182)	-0.290 <sup>+</sup> (0.171)
Age 25–34 (ref. 18–24)	-0.296 (0.398)	-0.241 (0.739)	-0.201 (0.392)	-0.950* (0.397)	-0.151 (0.526)	0.743 (0.567)
35–44	0.262 (0.390)	0.140 (0.742)	-0.073 (0.368)	-0.988* (0.386)	-0.253 (0.523)	0.461 (0.588)
45–54	-0.023 (0.415)	0.031 (0.737)	0.050 (0.385)	-0.954* (0.391)	-0.171 (0.529)	0.176 (0.581)
55 or older	-0.201 (0.432)	-0.217 (0.728)	-0.155 (0.382)	-1.154** (0.407)	-0.281 (0.522)	0.269 (0.592)
University education	-0.390* (0.184)	-0.290 (0.178)	0.109 (0.180)	0.019 (0.163)	-0.498** (0.187)	-0.191 (0.170)
Financial literacy	0.001 (0.101)	-0.034 (0.099)	0.052 (0.113)	-0.032 (0.097)	0.177 (0.126)	0.122 (0.096)
Income tertile 2 (ref. income tertile 1)	-0.353 (0.231)	0.167 (0.231)	0.327 (0.288)	0.224 (0.226)	0.324 (0.260)	0.190 (0.207)
Income tertile 3	0.078 (0.238)	0.476* (0.230)	0.480 <sup>+</sup> (0.286)	0.027 (0.221)	0.032 (0.261)	0.080 (0.224)
Trade union member	0.398* (0.194)	-0.335 (0.206)	0.278 (0.227)	-0.340 <sup>+</sup> (0.177)	0.051 (0.221)	0.311 (0.215)
Left–right ideology	-0.009 (0.049)	-0.030 (0.040)	-0.034 (0.052)	-0.034 (0.037)	0.014 (0.040)	0.034 (0.036)
DC plan	0.295 (0.275)	-0.170 (0.194)	0.112 (0.250)	-0.360 <sup>+</sup> (0.202)	0.212 (0.224)	-0.255 (0.174)
Has gathered information	0.094 (0.113)	0.349** (0.112)	0.390** (0.122)	0.332** (0.100)	0.495*** (0.143)	0.240* (0.115)
Involved in decision-making	0.570** (0.183)	0.181 (0.234)	0.685*** (0.155)	0.247 <sup>+</sup> (0.132)	0.120 (0.225)	0.873*** (0.124)
Constant	6.055*** (0.615)	7.128*** (0.804)	5.940*** (0.612)	7.959*** (0.508)	5.673*** (0.623)	5.317*** (0.638)
F-test	2.49***	1.83***	4.79***	2.80***	3.19***	8.48***
Observations	410	356	413	457	368	448

Note: Robust standard errors in parentheses; <sup>+</sup> $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

**Table A5.** OLS models with determinants of output legitimacy of OPP in six European countries, 2023

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Female	-0.199** (0.073)	-0.151* (0.072)	-0.156* (0.072)
Age 25–34 (ref. 18–24)	-0.285 (0.219)	-0.228 (0.216)	-0.240 (0.218)
35–44	-0.213 (0.219)	-0.159 (0.217)	-0.180 (0.219)
45–54	-0.364 <sup>+</sup> (0.219)	-0.288 (0.217)	-0.333 (0.220)
55 or older	-0.386 <sup>+</sup> (0.221)	-0.361 <sup>+</sup> (0.219)	-0.423 <sup>+</sup> (0.222)
University education	0.045 (0.075)	0.040 (0.074)	-0.039 (0.077)
Financial literacy	-0.069 (0.044)	-0.046 (0.043)	-0.045 (0.043)
Income tertile 2 (ref. income tertile 1)	0.268* (0.107)	0.236* (0.104)	0.237* (0.104)
Income tertile 3	0.274* (0.107)	0.224* (0.105)	0.228* (0.105)
Trade union member	0.228** (0.078)	0.234** (0.077)	0.160 <sup>+</sup> (0.086)
Left–right ideology	0.002 (0.018)	-0.002 (0.017)	-0.002 (0.017)
DC plan	-0.170 <sup>+</sup> (0.088)	-0.197* (0.090)	-0.187* (0.092)
Has gathered information		0.308*** (0.049)	0.312*** (0.050)
Involved in decision-making		0.449*** (0.069)	0.450*** (0.070)
AUT (ref. the Netherlands)			-0.258 <sup>+</sup> (0.133)
DNK			0.225 <sup>+</sup> (0.135)
DEU			0.016 (0.129)
IRL			0.194 (0.128)
ESP			-0.039 (0.126)
Constant	6.908*** (0.254)	6.366*** (0.253)	6.435*** (0.270)
F-test	2.92***	10.93***	9.12***
Observations	2,617	2,617	2,617

Note: Robust standard errors in parentheses; <sup>+</sup> $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

**Table A6.** OLS models with determinants of output legitimacy of OPP in six European countries, 2023

	AUT	DNK	GER	IRE	NLD	SPA
Female	-0.228 (0.197)	-0.120 (0.169)	-0.578** (0.188)	0.020 (0.169)	-0.133 (0.197)	-0.245 (0.184)
Age 25–34 (ref. 18–24)	-1.217*** (0.341)	-0.265 (0.880)	-0.141 (0.535)	-0.559 (0.442)	0.269 (0.519)	0.549 (0.498)
35–44	-0.741* (0.339)	0.014 (0.876)	-0.089 (0.531)	-0.776 <sup>+</sup> (0.437)	0.214 (0.524)	0.162 (0.527)
45–54	-1.024** (0.353)	-0.172 (0.878)	0.011 (0.535)	-1.279** (0.448)	0.211 (0.528)	0.164 (0.513)
55 or older	-1.243** (0.401)	-0.235 (0.869)	-0.111 (0.531)	-1.238** (0.461)	-0.045 (0.527)	-0.027 (0.525)
University education	-0.071 (0.205)	-0.137 (0.188)	0.225 (0.189)	0.061 (0.193)	-0.243 (0.201)	-0.171 (0.179)
Financial literacy	-0.072 (0.109)	0.141 (0.112)	-0.047 (0.116)	-0.148 (0.110)	-0.023 (0.127)	-0.057 (0.099)
Income tertile 2 (ref. income tertile 1)	-0.010 (0.263)	0.240 (0.248)	0.470 (0.290)	0.436 <sup>+</sup> (0.251)	0.240 (0.275)	0.226 (0.215)
Income tertile 3	-0.091 (0.269)	0.257 (0.268)	0.525 <sup>+</sup> (0.282)	0.191 (0.250)	0.360 (0.273)	0.296 (0.228)
Trade union member	0.335 (0.204)	-0.202 (0.201)	0.595** (0.227)	-0.227 (0.202)	0.136 (0.258)	0.188 (0.218)
Left–right ideology	0.037 (0.051)	-0.004 (0.042)	-0.099 <sup>+</sup> (0.052)	-0.015 (0.044)	-0.028 (0.045)	0.023 (0.037)
DC plan	0.243 (0.288)	0.080 (0.236)	0.106 (0.253)	-0.645** (0.220)	-0.208 (0.228)	-0.408* (0.198)
Has gathered information	0.101 (0.119)	0.391** (0.122)	0.484*** (0.136)	0.193 (0.119)	0.515*** (0.143)	0.280* (0.118)
Involved in decision-making	0.750*** (0.188)	0.275 (0.222)	0.467** (0.165)	0.174 (0.137)	0.019 (0.249)	0.689*** (0.138)
Constant	6.769*** (0.556)	6.167*** (0.931)	6.138*** (0.709)	8.049*** (0.605)	5.997*** (0.640)	5.932*** (0.607)
F-test	3.97***	1.75***	4.44***	2.89***	1.86***	5.71***
Observations	437	408	456	465	395	456

Note: Robust standard errors in parentheses; <sup>+</sup> $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

**Table A7.** OLS models of input and output legitimacy without multiple imputation, 2023

	Input legitimacy	Output legitimacy
Female	-0.176 (0.116)	-0.267* (0.125)
Age 25–34 (ref. 18–24)	0.044 (0.347)	-0.358 (0.327)
35–44	0.143 (0.346)	-0.212 (0.331)
45–54	-0.070 (0.347)	-0.528 (0.334)
55 or older	-0.107 (0.346)	-0.458 (0.335)
University education	-0.186 (0.117)	0.006 (0.127)
Financial literacy	-0.053 (0.071)	-0.076 (0.076)
Income tertile 2 (ref. income tertile 1)	0.194 (0.155)	0.329 <sup>+</sup> (0.172)
Income tertile 3	0.296 <sup>+</sup> (0.167)	0.429* (0.181)
Trade union member	0.014 (0.133)	0.144 (0.139)
Left–right ideology	-0.022 (0.026)	-0.017 (0.028)
DC plan	-0.176 (0.123)	-0.413** (0.130)
Has gathered information	0.392*** (0.072)	0.339*** (0.077)
Involved in decision-making	0.617*** (0.085)	0.485*** (0.091)
AUT (ref. the Netherlands)	-0.304 (0.224)	-0.250 (0.236)
DNK	0.639** (0.247)	0.151 (0.267)
DEU	0.254 (0.211)	0.058 (0.217)
IRL	0.190 (0.215)	0.083 (0.233)
ESP	0.090 (0.207)	0.117 (0.208)
Constant	6.387*** (0.433)	6.859*** (0.430)
F-test	7.74***	5.46***
Observations	1,008	1,032

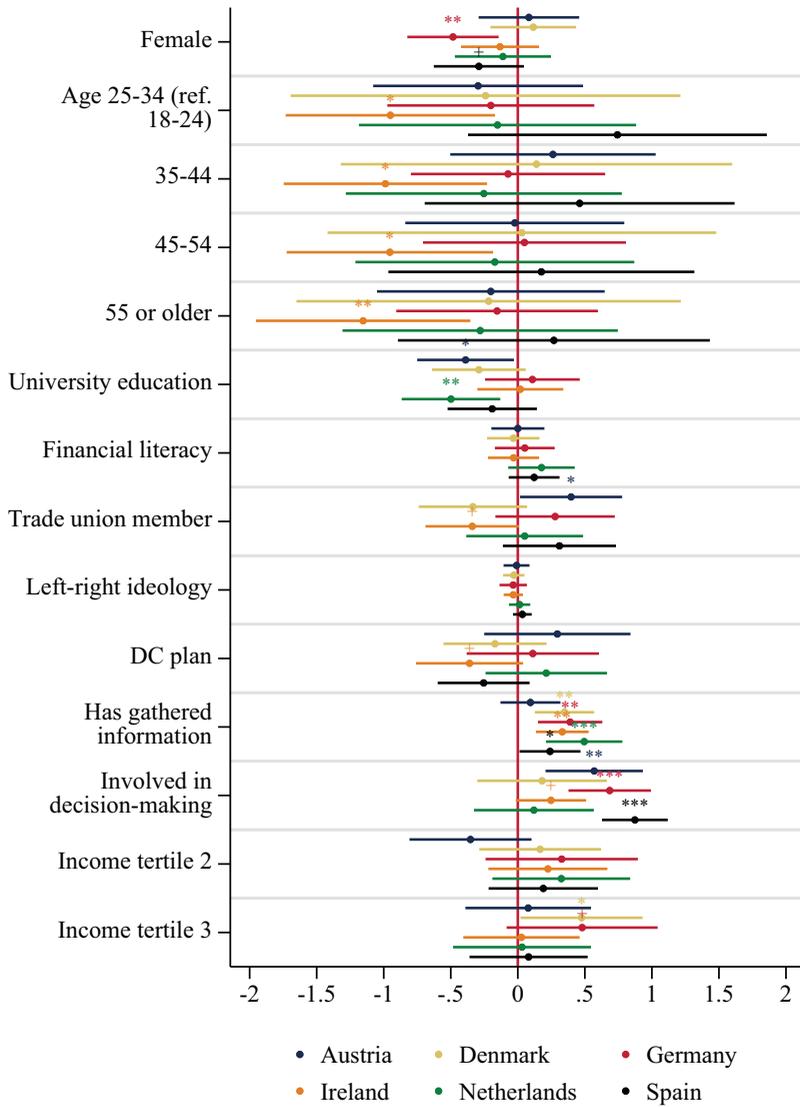
Note: Robust standard errors in parentheses; <sup>+</sup> $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

**Table A8.** OLS models with determinants of overall satisfaction in six European countries, 2023

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Female	-0.050 (0.037)	-0.034 (0.036)	-0.033 (0.036)
Age 25–34 (ref. 18–24)	-0.141 (0.124)	-0.119 (0.123)	-0.104 (0.123)
35–44	-0.046 (0.123)	-0.038 (0.122)	-0.039 (0.123)
45–54	-0.105 (0.123)	-0.098 (0.122)	-0.099 (0.123)
55 or older	-0.066 (0.124)	-0.082 (0.122)	-0.096 (0.123)
University education	-0.014 (0.037)	-0.006 (0.036)	-0.034 (0.038)
Financial literacy	0.025 (0.022)	0.026 (0.022)	0.019 (0.022)
Income tertile 2 (ref. income tertile 1)	0.128* (0.054)	0.110* (0.051)	0.106* (0.052)
Income tertile 3	0.176** (0.055)	0.142** (0.054)	0.137* (0.054)
Trade union member	0.116** (0.040)	0.125** (0.039)	0.078 <sup>+</sup> (0.044)
Left–right ideology	-0.008 (0.009)	-0.009 (0.009)	-0.011 (0.009)
DC plan	-0.016 (0.045)	-0.044 (0.045)	-0.061 (0.047)
Has gathered information		0.203*** (0.025)	0.206*** (0.025)
Involved in decision-making		0.151*** (0.034)	0.151*** (0.036)
AUT (ref. the Netherlands)			-0.087 (0.066)
DNK			0.159* (0.066)
DEU			0.150* (0.063)
IRL			0.136* (0.061)
ESP			-0.086 (0.064)
Constant	3.424*** (0.138)	3.180*** (0.137)	3.202*** (0.142)
F-test	2.61***	11.27***	10.50***
Observations	2899	2899	2899

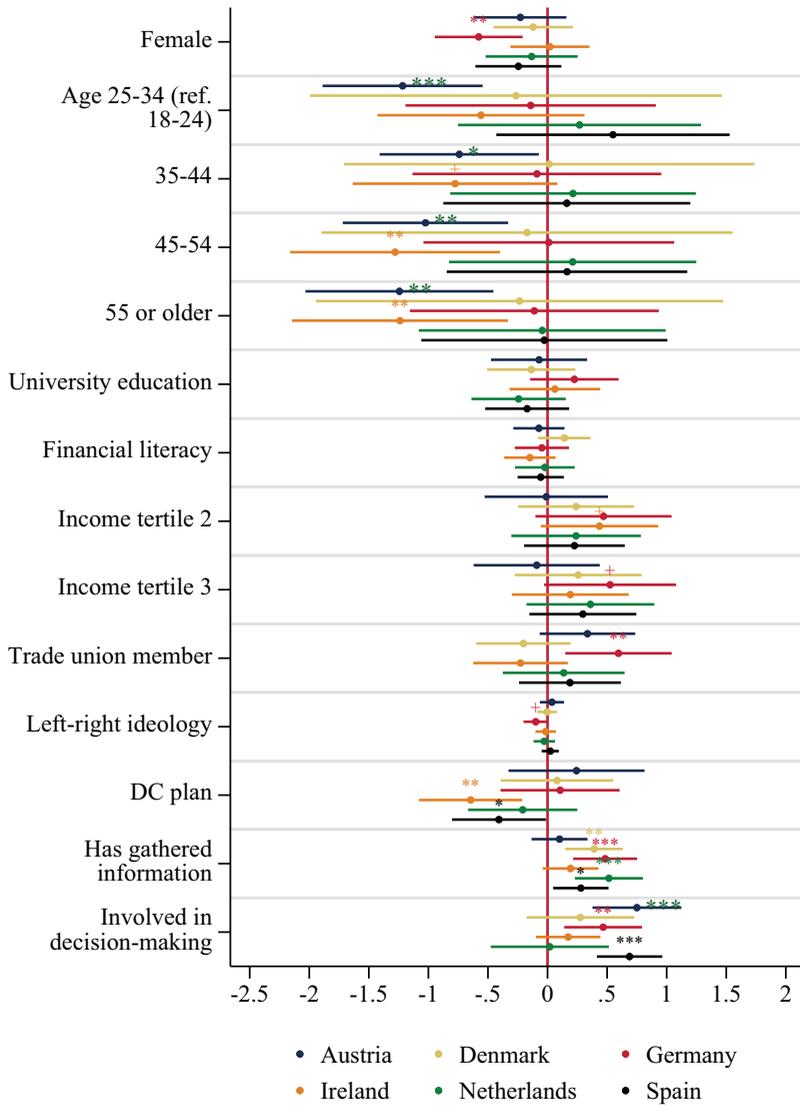
Note: Robust standard errors in parentheses; <sup>+</sup> $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

**Figure A1.** Determinants of the perception of input legitimacy by country



Note: + $p < 0.1$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

Figure A2. Determinants of the perception of output legitimacy by country



Note: +p < 0.1, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001.