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ORIGINAL ARTICLE

The non-linearity between populist attitudes and ideological extremism

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Abstract
The relationship between populist attitudes and ideological orientations remains an area of considerable academic interest, yet much is still unknown about the ideological inclinations associated with populist attitudes. While many scholars acknowledge the link between populist attitudes and political ideology, existing studies often treat this relationship as either a given or a peripheral concern. This paper represents an initial exploration into the association between populist attitudes and political ideology. Utilizing data from the fifth wave (2016–2021) of the Comparative Study of Electoral Systems, which encompasses 43 countries and 52 elections, this study aims to uncover how this relationship manifests cross-nationally. By employing a variety of rigorous methodological models, including the Generalized Additive Model, our results reveal a nonlinear relationship between populist attitudes and political ideology. Specifically, we find that political ideology and populist attitudes exhibit a U-shaped nonlinear relationship and that ideological extremism and populist attitudes demonstrate an exponential nonlinear relationship. These findings emphasize the nuanced interplay between ideological positions and populist attitudes, providing a deeper understanding of how they intersect.

Keywords: comparative political behavior; extremism; populism; populist attitudes

1. Introduction

The global surge in populist sentiments has revitalized research on populism (Canovan, 2002; Mudde, 2004; Moffitt, 2016; Inglehart and Norris, 2017; Rodrik, 2018). Populism is often characterized by a dichotomous view of society, delineating "the pure people" versus "the corrupt elite." This characterization defines populism as a "thin" ideology, capable of adhering to various "thicker" ideologies within an ideational approach (Canovan, 2002; Mudde, 2004; Stanley, 2008; Hawkins *et al.*, 2012). Building on this ideational framework, scholars have increasingly sought to understand how these thin populist attitudes at the individual level may align with more substantiated, thick ideologies (Akkerman *et al.*, 2014; Schulz *et al.*, 2018; Zaslove and Meijers, 2023). Despite the growing academic interest in the demand side of populism, there remains a paucity of direct investigation into the correlations between populist attitudes and ideological inclinations. Consequently, much is still unknown about these correlations. This paper represents a pioneering effort to specifically focus on the relationship between populist attitudes and political ideologies, seeking to fill this gap in current research.

The relationship between populist attitudes and ideologies has been implicitly explored in studies that sought an overall understanding of the nature of populist attitudes. While not exclusively focused

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on the relationship between populism and ideology, these studies often concentrated on a single country or several countries, providing insights into how various factors, including ideologies, correlate with populist attitudes. Most of these region-centric studies have suggested that the closer a country's ideological leanings are to either the left or the right, the higher the prevalence of populist attitudes. For instance, some scholars argue for a linear relationship, suggesting a tendency where certain ideological orientations correspond to increasingly populist attitudes. According to this perspective, populist attitudes can be positively correlated with either right-leaning ideology (Hainmueller and Hiscox, 2007; Kriesi *et al.*, 2008; Bechtel *et al.*, 2014) or left-leaning ideology (Rico *et al.*, 2017; Tsatsanis *et al.*, 2018; Marcos-Marne *et al.*, 2020). Others who present the nonlinear nature of populist attitudes, starting from populist parties literature, have highlighted that the relationship between populism and ideology can be nonlinear, such as the U-shaped, where the extremities of the political spectrum are similarly inclined toward populist attitudes, potentially more so than moderate or centrist positions (Rooduijn and Akkerman, 2017; Meijers and Zaslove, 2021).

In our paper, we aim to make three contributions to the literature on populist attitudes. First, this study marks a pioneering effort to place political ideology at the center of research on populist attitudes, treating it as a critical element rather than a peripheral variable. While prior studies have acknowledged the link between ideology and populist attitudes, they often relegated this relationship to a secondary position, using it as one of many explanatory factors for understanding populist attitudes. These studies frequently stopped at the observation that individuals with strong populist attitudes in a given country tended to align with certain ideological leanings, leaving the deeper dynamics of this relationship underexplored. Moreover, few have systematically examined its potential nonlinear dimensions, often addressing them only as tangential considerations. In contrast, our research shifts the analytical focus entirely to this interplay, aiming to illuminate the broader patterns of how populist attitudes intersect with ideological positions. This paper thoroughly investigates not only the correlation between populist attitudes and political ideologies but also their intersection with ideological extremism, offering a comprehensive and nuanced examination of these critical relationships.

Second, our study provides a comprehensive examination of the relationship between populist attitudes and ideologies on a cross-national scale, utilizing data from the fifth wave (2016–2021) of the Comparative Study of Electoral Systems, encompassing 43 countries and 52 elections. By analyzing an extensive dataset, this research identifies overarching patterns and trends in the interplay between populist attitudes and ideological orientations across different countries. In contrast to prior research that predominantly focused on individual cases or regional clusters, our approach expands the scope of analysis to identify broader patterns and variations on a global scale. This cross-national perspective enables a deeper understanding of how populist attitudes correlate with ideological positions globally and advances the comparative analysis of populism on a global scale.

Moreover, our robustness tests reveal a subtle, context-dependent asymmetry: while the overall U-shaped relationship between ideology and populist attitudes is robust, in several cases, populist sentiments tend to be modestly more pronounced among right-leaning respondents than among their left-leaning counterparts. This is particularly the case in settings dominated by right-wing populist parties. Such asymmetry provides an important caveat to our findings, underscoring the moderating influence of political supply in the relationship between populism and ideology at the individual level.

Finally, our research offers a methodologically rigorous examination of the relationship between populist attitudes and ideologies. While much of the existing literature has relied primarily on Ordinary Least Squares regression to explore this relationship, our study incorporates both OLS and Generalized Additive Models (GAMs), enabling a more nuanced analysis that captures potential nonlinear dynamics. By employing these complementary methods and conducting detailed methodological analyses, we systematically investigate the intricate interplay between populist attitudes and ideological orientations. This approach provides a more robust framework for understanding

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these relationships, contributing to the growing body of research on populism by offering a deeper, empirically grounded perspective on how these critical dimensions interact across diverse contexts.

Our research approach is structured as follows. We begin by defining populism from an ideational perspective and then review previous studies on populism that have touched upon ideologies, examining how they have approached the topic. Subsequently, we will methodically explain how we use data to explore the correlation between ideologies and populist attitudes. Finally, we conclude our paper with robustness tests to confirm and validate our findings on the relationship between these two aspects. This comprehensive approach ensures a thorough and detailed examination of the interplay between populist attitudes and ideologies.

2. Populism and ideology

The academic discourse on populism has significantly evolved, with scholars consistently grappling over its definitional clarity. Researchers have conceptualized populism from various perspectives, describing it as a political strategy (Mény and Surel, 2001; Weyland, 2001; 2017; 2024; Barr, 2018), a political style (Jagers and Walgrave, 2007; Moffitt and Tormey, 2014), or an interpretation of representation and democracy (Taggart, 2002; Kriesi, 2014; Urbinati, 2019). In recent years, scholarly consensus has increasingly favored viewing populism as a constellation of ideas (Hawkins *et al.*, 2012), with some treating it primarily as discourse (Laclau, 2005; Aslanidis, 2016) and others as ideology (Canovan, 2002; Mudde, 2004; Stanley, 2008), yet uniformly acknowledging its essential dichotomy between a virtuous populace and a corrupt elite. Among these, Mudde's (2004: 543) definition has gained widespread acceptance, characterizing populism as a thin-centered ideology that divides society into two homogeneous and antagonistic groups—"the pure people" and "the corrupt elite"—and argues for politics to be an expression of the general will of the people. This conceptualization highlights people-centrism and anti-elitism as populism's core components, positioning it as distinct from more comprehensive ideologies such as liberalism, socialism, and conservatism, which propose broader worldviews beyond merely the relationship between the populace and the elite (Canovan, 2002; Mudde, 2004).

From this ideational perspective, populism is understood as a thin-centered ideology that does not exist independently but rather coexists and interacts dynamically with thicker ideological frameworks. This coexistence highlights the necessity of examining how populism integrates with, and is articulated through, these broader ideological structures. Such an approach allows researchers to delve deeper into public sentiments toward populism, moving beyond analyzing mere voting behavior to exploring how fundamental populist principles, including anti-elitism and people-centrism, resonate within society at an individual level. Consequently, this framework has significantly enriched scholarly insights into how populist attitudes align with and express themselves through specific ideological paradigms, contributing to varied political manifestations (Hunger and Paxton, 2022). Central to this perspective is the notion that populist ideologies are characterized by distinctive, identifiable sets of beliefs that can be measured quantitatively. As a result, there has been growing academic interest in exploring how these thick ideologies intersect with populist attitudes, particularly at the individual level. (Akkerman *et al.*, 2014; Schulz *et al.*, 2018; Castanho Silva *et al.*, 2020; Zaslove and Meijers, 2023)

Despite recent advances, scholarly attention to citizens' attitudes toward populism remains relatively nascent (Huber *et al.*, 2023, 136), and empirical studies that systematically examine how populist attitudes align with specific ideological orientations are still limited. This gap is significant because understanding this alignment offers valuable insights into how populist sentiments interact with broader ideological frameworks.

While existing studies have often examined this relationship implicitly within broader analyses of populist attitudes, they tend to focus on individual countries or groups of countries, providing indirect insights rather than systematic, cross-national findings. Many of these region-specific studies

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suggest that the prevalence of populist attitudes increases as ideological leanings move toward either the extreme left or right. For instance, some scholars have observed a right-sided pattern in Western Europe, where countries are affluent, thus making identity politics a more significant issue (e.g., Hainmueller and Hiscox, 2007; Kriesi *et al.*, 2008; Bechtel *et al.*, 2014). Bernhard and Hänggli (2018) also found that in Switzerland, where the radical right party has been tremendously successful, opposition to the EU and xenophobia are prevalent, resulting in a high correlation between populist attitudes and right-wing ideologies. Similarly, Marcos-Marne, Llamazares, and Schikano (2021) discovered through an original survey that individuals on the extreme right of the cultural dimension exhibit higher populist attitudes compared to those on the far left.

Concurrently with the right-leaning argument, other regional studies have also presented a left-leaning perspective. For example, Rico *et al.* (2017) pointed to a strong correlation between populist attitudes and left-wing ideologies among the Spanish populace. Marcos-Marne, Llamazares, and Schikano (2021) also argued, based on their survey, that in Spain, individuals on the extreme left in economic and cultural dimensions exhibited higher populist attitudes. Tsatsanis *et al.* (2018) observed a similar trend in Greece.

These findings, though not explicitly focused on the ideological correlates of populist attitudes, collectively hint at the existence of such dynamics. By synthesizing findings across these studies, a pattern emerges suggesting that populist attitudes may increase as ideological positions move toward either extreme of the left-right spectrum, pointing to a potential nonlinear relationship.

Building on the suggestion of a potential nonlinear relationship between populist attitudes and ideologies at the individual level, similar patterns emerge when examining populism from the perspective of its suppliers, such as populist parties and their ideological positions. Although these studies do not directly address individual-level populist attitudes, they provide critical insights into how the ideological orientations of parties relate to populism, frequently identifying nonlinear, U-shaped patterns that highlight the role of ideological extremity in shaping populist dynamics.

For instance, Rooduijn and Akkerman (2017) analyzed election manifestos of 32 parties across five Western European countries and found that a party's leaning toward the right or left did not significantly influence its populism. Instead, the radicalness of a party was a more significant factor, as both far-left and far-right parties commonly propagate the populist message that corrupt elites neglect the interests of ordinary people. Similarly, Meijers and Zaslove (2021), in their elite survey of 250 political parties, found higher populist scores among parties with extreme left or right ideological tendencies. Their OLS regression analysis revealed correlations between leftist economic policies and rightist agendas, such as nativism and anti-EU integration, with the likelihood of being a populist party. Thus, Meijers and Zaslove (2021) concluded that there is a U-shaped relationship between populist parties and ideologies. This aligns with Castanho Silva (2017), who, after analyzing manifestos of 92 parties across 14 Western European countries, found that populism is generally associated with extremism, not specifically with left or right politics. These discourses collectively hint at a potential relationship between populism itself and ideological radicalism on the supply side.

As mentioned, the papers discussed above predominantly focus on populism from the supply-side perspective, specifically on the relationship between *parties* and party ideologies. While research on populist attitudes has surged, and studies have explored the nature of these attitudes, there remains a lack of dedicated research on the demand level, specifically on the correlation between populist attitudes and individual ideologies, to the extent that party and party ideologies have been examined.

The most relevant research to date has predominantly focused on the broader nature of populist attitudes, offering valuable hints about their potential nonlinear relationship with ideology across various contexts, even if not explicitly examining this interplay. For example, Hawkins *et al.* 2012 utilized CCES and UCEP data and found that conservatives are more populist than liberals, with strong conservatives/liberals being more populist than their moderate counterparts. However, their study's focus was more on quantitatively capturing populist attitudes and descriptively comparing

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groups of individual characteristics represented as binary variables. It did not delve deeply into this nonlinearity, and while it highlighted the association between populism and strong conservatism, it still hinted at a link between high populist attitudes and ideological extremism. Similarly, Bernhard and Hänggli (2018), using Switzerland as a case study, hypothesized a U-shaped relationship between populist attitudes and ideologies, but their findings suggested a W-shape, increasingly skewed to the right. In line with this, Tsatsanis *et al.* (2018), who also anticipated a U-shape, found in their analysis of Greece that the trend generally declined in a linear fashion toward the left, with a slight rise in populist attitudes at the far right end of the spectrum. This suggests a linearity skewed to the left, resembling a U-shape.

Hence, existing research underscores the complexity of the relationship between populist attitudes and ideologies, suggesting that this dynamic may not be straightforward. Studies focusing on individual countries or specific regions have hinted that populist attitudes tend to increase toward the ideological extremes of both the left and right. Similarly, research on populist parties has suggested U-shaped patterns, with extreme ideological positions correlating with higher populism on the party level. However, few studies have systematically tested this relationship across national contexts, leaving a critical gap in understanding. Against this backdrop, this paper seeks to address the critical gap by systematically examining the relationship between ideological orientations and populist attitudes across diverse national contexts, with particular attention to their potential nonlinear dynamics.

3. Ideological extremism and populist attitudes

Building on the premise that the relationship between ideological orientations and populist attitudes is multifaceted and potentially nonlinear, it becomes imperative to examine how individuals situated at the ideological extremes engage with populist sentiments. Specifically, this raises critical questions: How do individuals positioned at the ideological extremes, on both the left and the right, manifest their relationship with populist attitudes? Moreover, do these ideological extremists, regardless of their alignment, share common traits that make them particularly susceptible to populist narratives?

Existing literature on political extremism highlights distinctive characteristics among individuals with extremist tendencies compared to those without. According to Van Prooijen and Krouwel (2019), ideological extremists are defined as those "strongly identifying with generic left- or right-wing ideological outlooks on society" (p. 159). To study these extremists, political psychology studies, for instance, have shown that ideological extremes are often associated with specific psychological traits (Krouwel *et al.*, 2017). Regardless of their position on the left or right, these ideological extremists share certain common psychological characteristics that mark their extremism, suggesting a cross-ideological psychological profile (Greenberg and Jonas, 2003; Kruglanski *et al.*, 2014; Van Prooijen and Krowel, 2017, 2019). For example, whether on the far left or the far right, individuals with extreme ideological positions tend to reject opposing beliefs and perceive any differing ideology as inferior (Van Prooijen and Krowel, 2017, 2019). Additionally, Zmigrod *et al.* (2020) found that individuals at both ends of the ideological spectrum exhibit cognitive inflexibility, further reinforcing the similarities in psychological rigidity among extremists on either side.

Why, then, do ideologically extreme individuals, who exhibit these distinctive characteristics, display heightened populist attitudes? This observation invites further inquiry into why individuals at the ideological extremes, characterized by these distinctive traits, may be particularly drawn to populist attitudes. First, ideological extremism inherently aligns with populism's Manichean worldview, characterized fundamentally by a cognitive division of society into clearly defined in-groups and out-groups. According to social identity theory (Tajfel and Turner, 1979), ideological extremism involves an identity-driven cognitive process wherein individuals distinctly categorize political and social groups based primarily on salient group identities. Such cognitive categorization is flexible, allowing the defining characteristics of these groups to shift depending on context (Berger, 2018).

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Within this framework, in-group loyalty and perceived homogeneity become central cognitive elements, facilitating a simplified worldview structured around binary divisions (Van Hiel, 2012). When applied politically, these cognitive divisions encourage extreme ideologues to interpret social and political phenomena through an "us versus them" schema (Jost *et al.*, 2022), thus providing fertile cognitive grounds for populist reasoning, especially its dualistic worldview.

Second, ideologically extreme individuals with a Manichean worldview often exhibit this perspective through traits of oversimplification and overconfidence, which reinforce populist mindsets. Studies suggest that those with extremist ideologies have a pronounced tendency to oversimplify complex issues, approaching them with an epistemological rigidity that renders them more susceptible to binary thinking (Greenberg and Jonas, 2003; Kruglanski *et al.*, 2006; Webber *et al.*, 2018; Van Prooijen and Krouwel, 2019). As a result, these individuals are more likely to categorize the world in homogenous, overly simplistic terms Lammers *et al.* (2017). This extreme simplification further entrenches their overconfidence (Van Prooijen and Krouwel, 2020), reinforcing their rigid worldview and solidifying their adherence to a fixed ideological perspective. Consequently, this entrenched, oversimplified outlook not only facilitates but also amplifies their populist, dualistic perspective on society and politics.

Third, the association between ideological extremism and populist attitudes emerges from the alignment of extremists' preferences for direct participation in governance with the core tenets of populist thinking. Ideological extremists often reject the principles of representative democracy, favoring participatory democracy as a more authentic reflection of the people's will (Wojcieszak, 2014). This preference underpins their endorsement of people-centrism, as they perceive direct citizen involvement as a means to bypass the perceived inefficiencies or corruption of representative structures. Consequently, this alignment amplifies the populist notion that "the people" should hold direct power, reinforcing the connection between ideological extremism and populist attitudes.

Fourth, research on ideological extremism underscores a strong correlation between extreme ideological positions, low levels of political trust, and cognitive rigidity, all of which contribute to the adoption of a populist mindset. According to Kutiyski *et al.* (2021), individuals with rigid ideological beliefs often engage in black-and-white thinking, which provides simplified and intuitive solutions to complex societal issues (p. 2). This cognitive inflexibility fosters a closed-minded perspective, characterized by an "us vs. them" mentality that perpetuates distrust of others, including political elites. Such distrust, a defining feature of anti-elitism, is further reinforced by extremists' rejection of representative structures and their tendency to view the world through overly simplistic and oppositional frameworks. These traits collectively intensify the populist sentiment among ideologically extreme individuals, anchoring their opposition to perceived elite dominance.

Lastly, ideologically extreme individuals not only adopt a cognitive "us versus them" worldview but also exhibit pronounced affective and behavioral hostility toward political opponents. Empirical research consistently documents that ideological extremists harbor higher levels of emotional animosity toward opposing parties compared to their own (Schmitt and Holmberg, 1995; Berglund *et al.*, 2005). Furthermore, their characteristic overconfidence leads to active rejection and intolerance of differing ideological perspectives (Van Prooijen and Krouwel, 2017, 2019). Unlike the purely cognitive categorization described previously, this affective dimension manifests in explicit hostility, intolerance, and a refusal to engage constructively with opposing groups, thereby intensifying populist sentiments such as anti-elitism and people-centrism. Thus, ideological extremism not only promotes binary cognitive framing but also significantly enhances negative emotional and behavioral reactions toward opponents, amplifying populist attitudes. Consequently, we expect that ideological extremism significantly influences higher populist attitudes. However, this is not to suggest a causal relationship where ideology directly produces populist attitudes; rather, it indicates that individuals with extreme ideological views are more likely to exhibit populist behaviors.

Hence, in line with our hypothesis of a nonlinear relationship between political ideology and populist attitudes, we posit that there exists an exponential nonlinear relationship between ideological

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Table 1. Descriptive statistics for the populist attitudes variables

	Item	N	Mean	SD
MC1	What people call compromise in politics is really just selling out on one's principles	61,921	2.88	1.20
AE1	Most politicians do not care about the people	68,194	3.22	1.25
AE3	Politicians are the main problem in [country]	67,599	2.95	1.28
AE4	Most politicians care only about the interests of the rich and powerful	68,012	3.29	1.24
PC1	The people, and not politicians, should make our most important policy decisions	67,860	3.27	1.25

Note: Total N = 69,355. All questions were originally asked on a 1-5 strongly agree-strongly disagree scale and have further been reverse-coded so that 1-5 means strongly disagree-strongly agree, with higher values denoting higher populism.

extremism and populist attitudes. This extended framework anticipates that as ideological extremism intensifies, the association with populist attitudes becomes disproportionately stronger, further supporting a U-shaped model in which ideological extremes correspond with heightened populist sentiments.

Hypothesis 1. *There is a nonlinear relationship between populist attitudes and political ideology.*

4. Data

In this study, we utilize the cross-national survey data from the fifth wave of the Comparative Study of Electoral Systems (CSES), conducted from 2016 to 2021. The data encompasses face-to-face surveys conducted in 43 nations, spanning 53 elections,[1] and based on a random sample of respondents aged 16 and older. The data is representative of each country's national voting-age population on gender, age, education level, and working sector. Detailed descriptive statistics for demographic characteristics are presented in **Table A.1** of the Supplementary Material.

4.1. Populist attitudes

To test our hypothesis, we first construct a scale to measure populist attitudes. Recognizing populism as a multidimensional construct, we employ the populist/anti-establishment attitudes battery from the CSES, developed by Hobolt (2016). This scale comprises five items,[2] assessed on a 1 to 5 Likert-type scale (ranging from "strongly agree" to "strongly disagree"[3]). Each item reflects distinct dimensions of populism, with some items addressing multiple dimensions. Table 1 presents the original item wording alongside descriptive statistics for our sample.

Next, we perform a one-factor Multiple Group Confirmatory Factor Analysis (MGCFA). Despite the diverse range of national and electoral contexts in our study, we implement a metric-invariant model to ensure consistency in factor loadings across countries.[4] Details on the full test for metric invariance, as well as factor loadings, are provided in Appendix B.

[1]The original number of countries included in the fifth wave of the CSES was 55. Some were dropped due to inconsistencies in data and measurement.

[2]We excluded the item "Having a strong leader in government is good for [COUNTRY] even if the leader bends the rules to get things done," based on findings by Castanho Silva *et al.* (2020), who noted that this item neither correlated nor loaded with the others. We observed a similar pattern in our data. Conceptually, this item aligns more closely with authoritarian preferences than populism, at least in its ideational conception.

We also excluded "Most politicians are trustworthy" due to its negative wording. Although retaining such items can mitigate acquiescence bias e.g., Castanho Silva *et al.* 2018, the questionnaire includes only one negatively worded item (for "anti-elitism").

[3]We reverse-coded the scale for interpretive clarity. In the revised scale, "1" represents "Strongly Disagree" and "5" represents "Strongly Agree."

[4]CFI = 0.94, TLI = 0.93, RMSEA = 0.086 (90% CI: 0.084 - 0.089), SRMR = 0.064. Ultimately, we consider the good fit of the metric-invariant model to be enough for us to consider the scale's invariance across countries.

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Our final populist attitudes scale comprises MC1, AE1, and PC1. "MC1" captures the Manichaean view of politics, while "PC1" reflects the belief in the "general will of the people." To prevent the overrepresentation of anti-elitism or anti-establishment attitudes, which are assessed by three distinct items ("AE"), we opt for a single indicator to control for anti-elitism rather than using multiple items (Hayduk and Littvay, 2012). Specifically, we use "AE1," as it holistically encapsulates anti-elite sentiment by explicitly linking elite misbehavior to the people.

Finally, we operationalize populist attitudes as an additive index, adopting a compensatory approach. By averaging respondents' answers to the three selected items, we allow higher values in one dimension to offset lower values in another. Although this method lacks the stringent rigor of alternative scales, such as those proposed by Wuttke *et al.* (2020) and Castanho Silva *et al.* (2022), it produces results comparable to widely used scales, such as those developed by Akkerman *et al.* (2014) and Schulz *et al.* (2018), with high correlations ($r > 0.80$). Thus, it serves as a valid measure for the purposes of our analysis.

4.2. Ideology and ideological extremism

We then turn to our primary independent variables: ideology and ideological extremism. Ideology is measured by respondents' self-placement on the conventional left-right ideological scale (ranging from 0 to 10, left to right). To measure ideological extremism, we adopt the approach outlined by Torcal and Magalhães (2022), which calculates the absolute difference between each respondent's left-right self-placement and the average placement of respondents in the same country/election. Essentially, we define [ideological] extremism as:

$$Ext = |(Ideo_{ij} - \overline{Ideo_j})|$$

where $Ideo_{ij}$ denotes the left-right (0-10) ideological position of each individual i from country/election j, and $\overline{Ideo_j}$ the country j's average individual ideological self-placement.

As previously discussed, this study focuses on the relationship between political ideology and populist attitudes. To ensure a more precise analysis, we also consider an additional factor: politically neutral moderates often lack a complete understanding of their political ideology compared to those with more defined political stances. Therefore, in exploring the relationship between political ideology and populist attitudes, we exclude individuals who identify as completely politically neutral to ensure a more accurate analysis of this relationship. This approach is informed by research such as Freeder *et al.* (2019), which highlights the lack of stable policy views among politically uninformed individuals, and Kinder and Kalmoe 2017, who describe moderates as politically innocent and ideologically indifferent.[5]

To test our hypothesis, we employ GAMs. Given our expectation of a nonlinear relationship between populist attitudes and ideology at the individual level, GAMs are particularly well-suited, as they allow for the estimation of smooth, nonparametric functional forms rather than imposing linear constraints (Pedersen *et al.*, 2019). To test the robustness of our findings, we also utilize OLS regression models.

The development of our models followed an incremental approach. We began with simple univariate models to account for potential suppression effects (Pandey and Elliott, 2010; Lenz and Sahn, 2021). Subsequently, we gradually introduced exogenous variables, including

[5]In considering alternative measures of ideology for this analysis, it is important to clarify that no suitable variable exists in the CSES dataset that could replace self-placement on the left-right scale. Furthermore, our primary objective was to address individuals who positioned themselves exactly at the midpoint of the scale (5) due to concerns about their political sophistication. We specifically excluded them from our analysis to focus on the ideologically sophisticated respondents, for whom the relationship between ideology and populist attitudes is clearer.

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Table 2. Individual ideology and populist attitudes (generalized additive models with fixed effects)

	Model 1 (GAM: Ideology)	Re-estimated Model 1 (GAM: Ideology)
Effective Degrees of Freedom		
Ideology	8.063***	7.167***
Parametric Coefficients		
Age	0.001***	0.001***
	(0.0005, 0.001)	(0.001, 0.001)
Gender		
Woman	Reference	Reference
Man	0.041***	0.043***
	(0.028, 0.053)	(0.030, 0.056)
Education	−0.077***	−0.077***
	(-0.081, -0.073)	(-0.081, -0.073)
Employment		
Employed	Reference	Reference
Unemployed	0.093***	0.088***
	(0.057, 0.129)	(0.050, 0.125)
Corruption Perception	0.391***	0.400***
	(0.382, 0.399)	(0.391, 0.409)
Economy Perception	0.073***	0.074***
	(0.066, 0.080)	(0.067, 0.080)
Intercept	2.833***	2.781***
	(2.750, 2.916)	(2.695, 2.868)
Adjusted R^2	0.314	0.319
Country/Elections	52	52
Respondents	56,318	52,043

Odds w/ 95% CIs in (parentheses). $+p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. For both Model 1 and Re-estimated Model 1, concurvities levels for ideology are below 0.17 (worst case). In both models ($p > 0.05$), we cannot reject the null hypothesis that residuals are randomly distributed.

sociodemographic controls and confounders. Throughout this process, we assessed improvements in model fit at each step. For conciseness, we present only the final models.[6]

In addition to standard sociodemographic controls (e.g., Rovira Kaltwasser and Van Hauwaert, 2020), our models also incorporate individuals' perceptions of corruption and the economy. These variables are essential for capturing the potential influence of contextual crises, such as widespread corruption and economic recession (e.g., Hawkins *et al.*, 2020), on populist attitudes. Emphasizing the subjective nature of crises Tamaki *et al.* (forthcoming), our approach prioritizes individuals' subjective perceptions over broader contextual factors.[7]

Finally, given the nested nature of our data, we adopted a fixed-effects approach. By incorporating fixed effects for countries and elections, we account for clustering effects and reduce omitted variable bias at the country and election levels (Allison, 2009; Huang, 2016).

5. Results

Starting with ideology, Model 1 in Table 2 presents the GAM results for the 52 countries/elections. The table is structured in two sections: the first presents the effective degrees of freedom (edf) of our smoothed term, and the second lists the conventional parametric terms, which in this case pertain to our control variables. Our primary focus is on the smoothed term for this analysis.

[6]Previous models are provided in Supplementary Material C.1.

[7]While concerns about endogeneity in the relationship between corruption, economic perceptions, and populism are valid, prior research suggests that the causal pathway primarily runs from these issues to populist attitudes rather than the reverse. For further discussion, see Rico and Anduiza, 2019.

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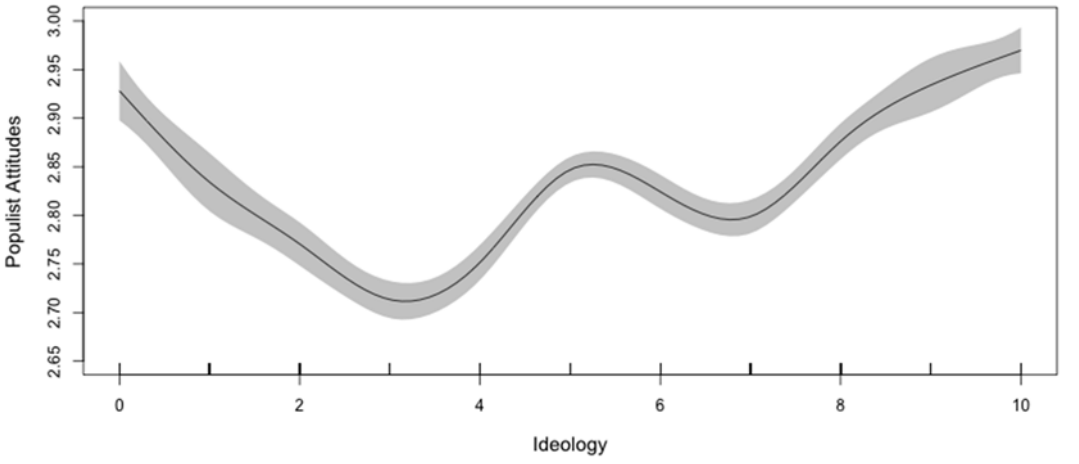


Figure 1. Model 1 - populist attitudes and ideology
Note: Nonlinear relationship between ideology and populist attitudes from Model 1; 95%CIs.

In a GAM, the edf measures the complexity of the smoothing function applied to model a nonlinear relationship. An *edf* of 1 indicates a linear relationship, while higher *edf* values suggest increasingly complex, nonlinear relationships.

Model 1 reveals an *edf* of 8.063 for ideology, significant at a p-value < 0.05. This result supports rejecting the null hypothesis of a linear relationship between individual ideology and populist attitudes. To further explore this relationship, we illustrate the smooth component of ideology in Figure 1. As hypothesized in H1, the relationship between individual ideology and populist attitudes is nonlinear. The observed "U" shaped pattern indicates that individuals identifying as either far left or far right exhibit higher levels of populist attitudes compared to those closer to the center. However, some caveats must be acknowledged.

Initially, we observe a slight increase in populist attitudes near the center of the ideological scale, which may suggest a more complex relationship. However, upon further investigation, we attribute this to uninformed voters who tend to position themselves at the center of the scale, even when their socioeconomic positions suggest otherwise (Iversen and Soskice, 2015: 1807). As Torcal and Magalhães (2022) argue, this pattern reflects low levels of political sophistication rather than true ideological moderation. Similarly, as noted above, Freeder, Lenz, and Turney (2019) highlight that politically uninformed individuals often lack stable policy preferences, and Kinder and Kalmoe (2017) describe moderates as politically innocent and ideologically indifferent.

Our initial assumption posits that centrist positioning on the ideological scale reflects a lack of political knowledge and/or apathy rather than genuine ideological moderation. To substantiate this, we employed the CSES variable on political interest[8] as a proxy for political knowledge, an approach recommended by Gidengil and Zechmeister (2016) during the development of the 5th module of the CSES. Although not a perfect substitute, political interest is a robust predictor of political knowledge, making it a viable alternative.

We then compared the levels of political interest between respondents who positioned themselves at the neutral point of the ideological scale (5) and the rest of our sample. The results revealed that the lack of political interest is significantly higher[9] among those who identified as centrists. Additionally,

[8]Original wording: "How interested would you say you are in politics? Are you: (1) very interested, (2) somewhat interested, (3) not very interested, or (4) not at all interested?" We treat "not interested" as those who answered 3 (not very interested) and 4 (not at all interested).

[9]Two-proportion Z-test.

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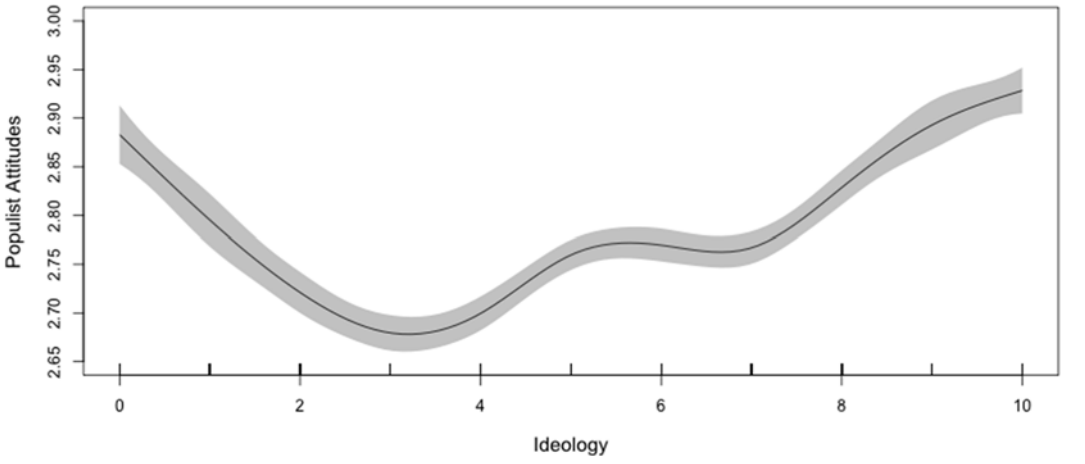


Figure 2. Re-estimated model 1 - populist attitudes and ideology
Note: Nonlinear relationship between ideology and populist attitudes from Re-estimate Model 1; 95%CIs.

we also examined the distribution of politically apathetic individuals across countries and ideological positions. On average, the majority of those with no interest in politics clustered at the midpoint (5) on the 0-to-10 ideological scale, accounting for approximately 23.8% of politically disinterested respondents. These findings challenge the notion of ideological moderation and provide further validity for our initial assumptions.

Consequently, we re-estimated Model 1, this time excluding respondents who positioned themselves at the exact center on the ideological scale (5) and who also demonstrated no interest in politics. The results in Table 2 and Figure 2 reinforce our initial hypothesis.[10]

The refined Model 1 offers a deeper understanding of this dynamic. While the "U"-shaped pattern remains, it now displays a more consistent trend as one moves further from the center in either direction. Notably, Figure 2 reveals a subtle asymmetry in which populist attitudes are slightly more pronounced among right-wing identifiers. This pattern suggests that, even within a broadly nonlinear relationship, there may be modest differences in how populist attitudes are expressed at the ideological extremes. As our robustness tests further demonstrate, this asymmetry is conditioned by the supply-side context of populism within each political system. The psychological mechanisms linking extremism to populist attitudes appear to be moderated by the presence and ideological orientation of populist parties, with right-wing extremism more strongly associated with populist attitudes in contexts where right-wing populist parties predominate.

Transitioning to ideological extremism, our findings in Model 2, as shown in Table 3, indicate a nonlinear relationship between ideological extremism and populist attitudes (edf $= 7.272$, $p < 0.05$). Similar to the analysis of ideology, Figure 3 unveils complexities in the relationship that surpass our initial expectations.

Initial observations indicate a noticeable increase in populist attitudes among individuals identified as holding moderate views (ideological extremism of 0). Furthermore, it appears that the impact of extremism on populist attitudes reaches its limit among those scoring five or higher on the ideological extremism scale; beyond this point, the influence of extremism on populist attitudes diminishes. However, upon closer examination, we attribute these trends mainly to (i) individuals inaccurately self-identifying as ideologically centrist, as previously discussed, and (ii) the constraints

[10]We also tested political interest as a control variable, as suggested by the reviewers. The results were nearly identical to those of Model 1, which aligns with expectations since the splines, which would allow for varying effects of ideology across levels of political interest, were not interacted with. The full results are in Supplementary Material D.

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Table 3. Ideological extremism and populist attitudes (generalized additive models with fixed effects)

	Model 2 (GAM: Extremism)	Re-estimated Model 2 (GAM: Extremism)
Effective Degrees of Freedom		
Extremism	7.365***	7.272***
Parametric Coefficients		
Age	0.001***	0.001***
	(0.001, 0.001)	(0.001, 0.002)
Gender		
Woman	Reference	Reference
Man	0.045***	0.048***
	(0.032, 0.058)	(0.035, 0.061)
Education	−0.079***	−0.080***
	(-0.083, -0.076)	(-0.083, -0.076)
Employment		
Employed	Reference	Reference
Unemployed	0.090***	0.084***
	(0.055, 0.126)	(0.046, 0.122)
Corruption Perception	0.391***	0.400***
	(0.382, 0.400)	(0.391, 0.409)
Economy Perception	0.069***	0.069***
	(0.063, 0.076)	(0.062, 0.076)
Intercept	2.898***	2.845***
	(2.815, 2.982)	(2.759, 2.932)
Adjusted R^2	0.312	0.317
Country/Elections	52	52
Respondents	56,318	52,043

Odds w/ 95% CIs in (parentheses). $+p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. For both Model 2 and Re-estimated Model 2, concurvities levels for extremism are below 0.20 (worst case). In both models ($p > 0.05$), we cannot reject the null hypothesis that residuals are randomly distributed.

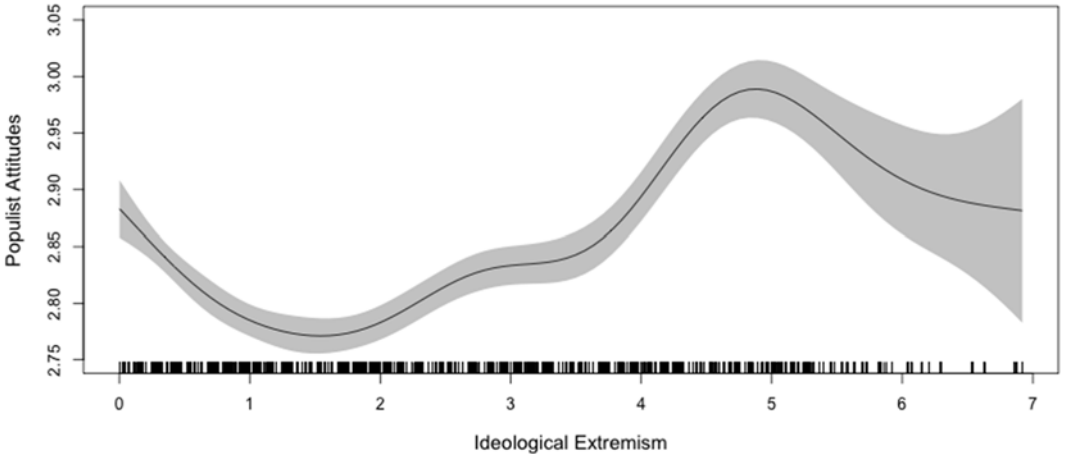


Figure 3. Model 2: populist attitudes and ideological extremism
Note: Nonlinear relationship between ideological extremism and populist attitudes from Model 2; 95%CIs.

imposed by the limited number of observations at the high levels of extremism (see the rug plot at the bottom of Figure 3 and the confidence intervals around x-axis 5 to 7). To address these issues, following the same strategy as above, we excluded respondents who positioned themselves at the neutral point of the ideological scale (5) and who are not interested in politics.[11] The re-estimated

[11]Individuals self-positioning at 5 on the traditional left-right scale tend to occupy a middle ground that reflects an absence of clear political engagement or firm stances. This centrist positioning often corresponds to a lack of political knowledge or

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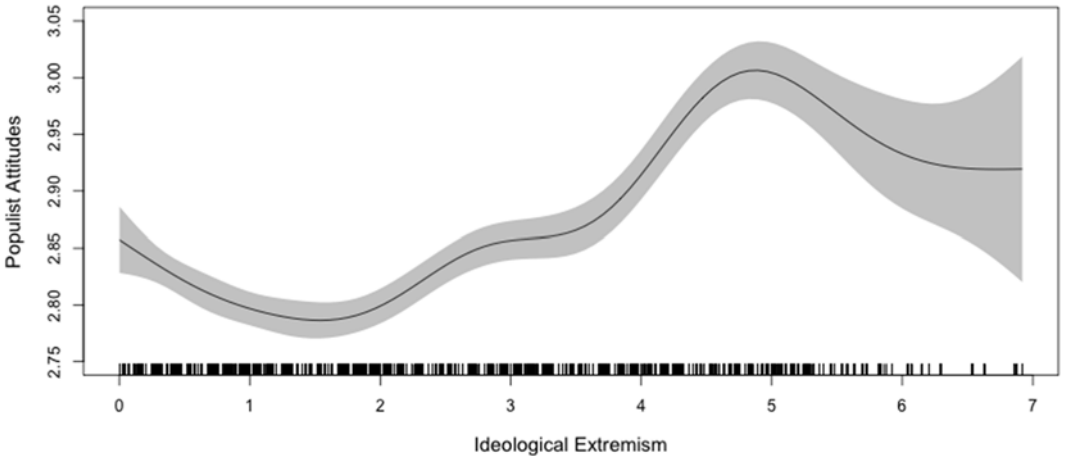


Figure 4. Re-estimated model 2: populist attitudes and ideological extremism
Note: Nonlinear relationship between ideological extremism and populist attitudes from Re-estimate Model 2; 95%CIs.

model yields a more discernible pattern, as illustrated by the re-estimated Model 2 in Table 3 and Figure 4.[12]

The association between ideological extremism and populist attitudes is now more consistent with the outcomes of the re-estimated Model 1. As individuals radicalize, their populist attitudes tend to intensify. However, this escalation manifests solely among individuals exhibiting moderate to high levels of extremism (relative to the mean position within their country); only in these cases does extremism correlate with elevated levels of populist attitudes.

In summary, our analyses compel us to reject the null hypotheses pertaining to the effects of H1. Specifically, we observe a notable upsurge in populist attitudes at both extremes of the ideological spectrum, irrespective of their left or right orientation. When examining ideological extremism, the relationship is as expected. While the overall association between individual ideology and populism resembles a "U" shape, with heightened levels of populist attitudes at both ends of the spectrum, a closer examination of these extremes reveals a somewhat exponential rise in populist attitudes for each increment in ideological extremism, discernible solely among those possessing at least average levels of ideological extremism.

6. Robustness tests

To validate the primary findings of our preceding analysis, we turn to alternative models that adhere to more conventional approaches. First, we replicate the Re-estimated Model 1, which initially provided supportive evidence for Hypothesis 1. To ensure the robustness of our results, we employ Ordinary Least Squares models, estimating distinct models to further examine the nonlinear relationship between ideology and populist attitudes. Model 1.2 assumes linearity in the ideology-populist attitudes relationship, while Model 1.3 introduces a quadratic polynomial term to capture a U-shaped curve. While Model 1.2 tests the linearity assumption, Model 1.3 serves as an alternative to the GAM. Theoretically, the quadratic transformation in Model 1.3 should better fit the data if individuals at

interest, as such individuals may not actively participate in political discourse, leading to their categorization as politically indifferent.

[12]Similar to Model 1, we also tested political interest here as a control variable. The results were also nearly identical to those of Model 2, which aligns with expectations since the splines, which would allow for varying effects of ideological extremism across levels of political interest, were not interacted with. Results are in the Supplementary Material D.

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Table 4. AIC & bic comparison - ideology

	df	AIC	BIC
Re-estimated Model 1 (GAM)	66.50	120536.8	121126
Re-estimated Model 1.2 (OLS linear)	60	120821.4	121353
Re-estimated Model 1.3 (OLS quad. poly.)	61	120605.6	121146

Table 5. AIC & bic comparison - ideological extremism

	df	AIC	BIC
Re-estimated Model 2 (GAM)	67.04	120646.7	121240.7
Re-estimated Model 2.2 (OLS linear)	60	120761.4	121292.9
Re-estimated Model 2.3 (OLS exp.)	61	120761.7	121302.1

both ideological extremes, left and right, exhibit higher populist attitudes than those at the center. Detailed results are presented in Supplementary Material E.1.

Table 4 compares Re-estimated Model 1 with Re-estimated Models 1.2 and 1.3. The results highlight notable differences in model fit, as indicated by the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) values. The GAM achieves a lower AIC (120536.8) and BIC (121126) compared to the linear and quadratic polynomial OLS models, reinforcing the nonlinear relationship initially suggested by Re-estimated Model 1.

Using a similar approach, we extend our analysis to the Re-estimated Model 2. Initial findings suggest that the relationship between ideological extremism and populist attitudes exhibits features of an exponential curve while also demonstrating linear elements, as illustrated in Figure 4. To ensure robustness, we construct two additional models, with results presented in Supplementary Material E.2. Re-estimated Model 2.2 assumes a linear relationship between ideological extremism and populist attitudes, while Re-estimated Model 2.3 incorporates an exponential term for extremism. Table 5 compares their AIC and BIC values.

The findings are twofold. While the GAM yields the lowest AIC (120646.7), the linear OLS model has the lowest BIC (121292.9). This reflects the inherent trade-off between the two criteria: AIC prioritizes model fit, whereas BIC emphasizes parsimony (Claeskens, 2016), particularly penalizing models with larger sample sizes. These results suggest that while GAM provides a better overall fit to the data, the linear OLS model is more parsimonious. Ultimately, as anticipated, both models can be deemed acceptable, with the choice depending on the researcher's priorities and the specific nature of the data.

Next, we examine distinct strategies for operationalizing our populist attitudes variable, ensuring the robustness of our findings against potential biases arising from operationalization choices. Departing from the notion that populism, and consequently populist attitudes, comprises a configurable concept that necessitates the presence of all dimensions in a non-compensatory manner Castanho Silva *et al.* (2017, as argued by), we explore two alternative approaches. Initially, we adopt a multiplicative index, as advocated by Castanho Silva *et al.* (2022). This method involves normalizing the items on a 0-1 scale before computing their product, ensuring that elevated levels on the populist attitudes scale exclusively encompass individuals who consistently score high across each distinct dimension (Manichaeism, Anti-elitism, and People-centrism).

Subsequently, we implement what Wuttke *et al.* (2020) refer to as the "Goertz" approach. Unlike the previous method, this approach utilizes the minimum response among the three items to ascertain that only respondents exhibiting high scores across all populist dimensions are categorized as populists. Supplementary Materials E.3. and D.4. present the results of GAMs following both Re-estimated Models 1 and 2. The findings remain consistent with those of previous models, as evidenced by the edfs greater than 1 and significance levels of p-value < 0.05.

To further validate our findings, we test an alternative specification of the populist attitudes scale comprising only people-centrism and anti-elitism dimensions. This additional test addresses

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potential concerns regarding conceptual overlap between the Manichaean dimension and ideological extremism. While our empirical analysis already demonstrates a minimal relationship between these constructs (Spearman's $\rho = 0.10$), removing the Manichean item (MC1) from our scale allows us to explicitly test whether the observed relationships between ideological positions and populist attitudes persist independently of any potential confounding effects. Results from GAMs following our Re-estimated Models 1 and 2 (presented in Supplementary Material E.5) demonstrate remarkable consistency with our main findings, further underscoring the robustness of our conclusions.

As an additional robustness check, we incorporate socioeconomic status as a control variable. Although previous research indicates socioeconomic factors may influence populist attitudes e.g., Rico and Anduiza (2019), including these variables reduces our sample by 13 countries due to missing data in the fifth wave of the CSES. To preserve comprehensive cross-national coverage of our primary analysis while still testing for socioeconomic effects, we present these supplementary models in Material E.6. The results once again confirm the stability of our findings, with no substantial changes to our core conclusions regarding the relationship between ideology and populist attitudes.

Finally, to address potential contextual variation in the relationship between populist attitudes and ideology, we conduct an additional analysis that incorporates the supply-side dynamics of populism. Drawing on data from the V-Party (Lindberg *et al.*, 2022), we classify countries based on the ideological orientation of their populist parties. We first identify populist parties using a threshold score of 0.5 on V-Party's populism measure - a relatively inclusive criterion that allows us to capture a broad range of populist actors. We then categorize countries according to the ideological distribution of their populist parties using V-Party's left-right scores: countries with exclusively right-wing populist parties are labeled as "right," those with only left-wing populist parties as "left," those with centrist populist parties as "center," and countries featuring populist parties spanning multiple ideological positions as "diverse." We conduct a sub-group analysis by dividing the sample based on these classifications and fitting GAMs to each subgroup. This approach allows us to investigate whether the relationship between individual-level ideology and populist attitudes systematically varies according to the ideological orientation of populist supply in each country, thereby addressing how political context conditions the interplay between citizens' ideological predispositions and their populist attitudes.

The sub-group analysis, presented in Table 6 and Figure 5, reinforces our primary findings regarding the nonlinear relationship between ideology and populist attitudes. Across varying supply-side configurations, the data consistently exhibit nonlinear patterns in the relationship between ideological positions and populist attitudes. In countries where right-wing populist parties predominate, the U-shaped pattern is especially pronounced (edf $= 5.115$, $p < 0.05$), with respondents on the right reporting generally higher levels of populist attitudes. In contrast, this asymmetry notably diminishes in contexts where the populist supply is exclusively left-wing, though it remains nonlinear (edf $= 3.402$, $p < 0.05$). Systems featuring ideologically diverse populist actors reveal more complex patterns (edf $= 6.489$, $p < 0.05$), yet they uphold the fundamental nonlinear relationship identified in our analysis.

7. Discussion and conclusion

This study presents a nuanced exploration into the relationship between populist attitudes and political ideologies, advancing our understanding of populism from both ideational and empirical perspectives. Our analysis, based on cross-national data from the fifth wave of the Comparative Study of Electoral Systems, reveals intricate patterns in how populist attitudes are associated with ideological orientations.

Our findings highlight a significant nonlinear relationship between populist attitudes and ideological positions. This complexity is evident in the -shaped pattern observed in the association between

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Table 6. Sub-group analysis - ideology and populist attitudes (generalized additive models with fixed effects)

	Model 3 (Right-Wing)	Model 4 (Left-Wing)	Model 5 (Center)	Model 6 (Diverse)
Effective Degrees of Freedom				
Ideology	5.115***	3.402***	5.332***	6.489***
Parametric Coefficients				
Age	–0.001	–0.001	0.005***	0.002***
	(-0.002, 0.0003)	(-0.002, 0.0001)	(0.004, 0.006)	(0.001, 0.002)
Gender				
Woman	Reference	Reference	Reference	Reference
Man	0.034*	–0.021	0.074***	0.070***
	(0.003, 0.065)	(-0.051, 0.009)	(0.039, 0.110)	(0.048, 0.092)
Education	–0.062***	–0.038***	–0.076***	–0.095***
	(-0.071, -0.053)	(-0.047, -0.029)	(-0.086, -0.067)	(-0.102, -0.089)
Employment				
Employed	Reference	Reference	Reference	Reference
Unemployed	–0.005	0.125***	0.145*	0.111***
	(-0.088, 0.078)	(0.055, 0.196)	(0.027, 0.263)	(0.046, 0.176)
Corruption Perception	0.400***	0.322***	0.443***	0.412***
	(0.380, 0.420)	(0.300, 0.343)	(0.419, 0.467)	(0.397, 0.428)
Economy Perception	–0.026***	0.083***	0.065***	0.134***
	(-0.039, -0.013)	(0.067, 0.099)	(0.044, 0.086)	(0.121, 0.146)
Political Interest				
Interested	Reference	Reference	Reference	Reference
Not-interested	0.045**	0.082***	0.202***	0.140***
	(0.011, 0.079)	(0.049, 0.115)	(0.149, 0.255)	(0.115, 0.165)
Intercept	3.231***	2.373***	1.647***	1.796***
	(3.094, 3.367)	(2.253, 2.493)	(1.519, 1.775)	(1.704, 1.889)
Adjusted R^2	0.327	0.279	0.267	0.305
Country/Elections	6	14	8	19
Observations	8,787	9,989	7,427	20,570

Coefficients with 95% CIs in (parentheses). * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ All models include country fixed effects. Concurvities levels for extremism are below 0.20 (worst case). We cannot reject the null hypothesis that residuals are randomly distributed ($p > 0.05$).

individual ideology and populism, with heightened levels of populist attitudes at both ideological extremes. The analysis employing GAMs robustly supports our initial hypothesis that the relationship is nonlinear, thus rejecting a simplistic linear interpretation.

Further, the study delves into the nuances of ideological extremism and its correlation with populist attitudes. Here, our results confirm our second hypothesis, indicating that higher degrees of ideological extremism, irrespective of whether they lean toward the extreme left or right, are associated with greater populist attitudes.

An important caveat emerges, however, when examining cross-national variation. While the nonlinear, U-shaped pattern is consistent across diverse political contexts, we observe a subtle asymmetry that is conditioned by the supply-side characteristics of each political system. In contexts dominated by right-wing populist parties, populist attitudes are more pronounced among right-leaning respondents, whereas this asymmetry diminishes in systems with left-wing or ideologically diverse populist actors. This contextual conditioning effect underscores the complex interplay between individual predispositions and political opportunity structures, suggesting that the psychological mechanisms linking extremism to populist attitudes are moderated by the available political expressions of populism within each system. Future research should further investigate these contextual dynamics to develop a more comprehensive understanding of how supply and demand factors interact in shaping populist sentiments across different political environments.

The robustness of our findings is further validated through alternative modeling approaches and operationalizations of the populist attitudes variable. Across various model specifications and operationalizations, the core insights remain consistent, affirming the nonlinear nature of the relationship between ideology and populist attitudes and the significant role of ideological extremism.

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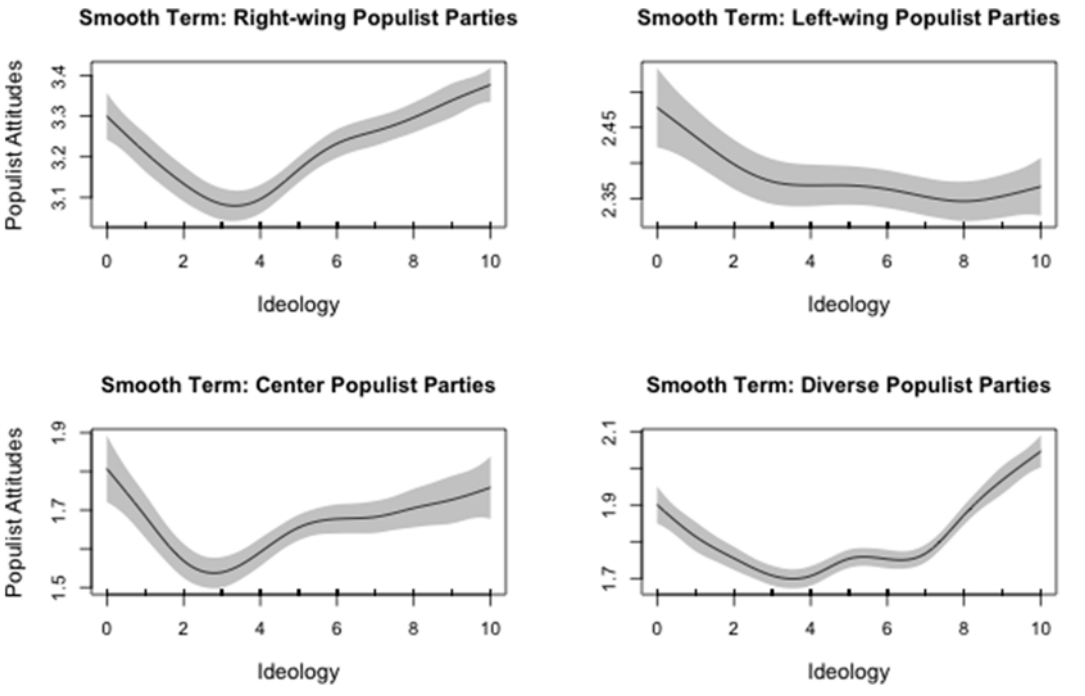


Figure 5. Sub-group analysis: Populist attitudes and ideology
Note: Nonlinear relationship between ideological extremism and populist attitudes from Model 2; 95%CIs.

In light of these findings, our study makes three primary contributions to the field. First, it provides a comprehensive cross-national examination of the interplay between populist attitudes and political ideologies, addressing a critical gap in the literature. While existing studies have often examined populist attitudes within single-country or region-specific contexts, there has been a notable absence of research investigating how this relationship manifests across a diverse set of national settings. Our study is the first to systematically explore the extent to which the relationship between populist attitudes and political ideologies exhibits universal trends or country-specific variations. By utilizing cross-national data, we offer new insights into whether populist attitudes consistently correlate with ideological extremity across different political systems, cultures, and levels of democratic development, thereby enhancing the field's understanding of populism as a global phenomenon.

Second, it applies methodologically rigorous approaches to uncover these patterns. Our study employs both Ordinary Least Squares regression and GAMs, which allow us to identify and robustly model nonlinear relationships that may be obscured by conventional linear approaches. By integrating these advanced methods, we provide a more precise and nuanced understanding of the relationship between populist attitudes and political ideologies, avoiding oversimplified interpretations. The use of multiple operationalizations of populist attitudes further ensures the reliability and validity of our findings, demonstrating their applicability across diverse measurement strategies.

Third, our research offers a novel conceptual contribution by highlighting the significant role of ideological extremism as a driving factor behind populist attitudes. While the ideological foundations of populism have been widely debated, few studies have explicitly focused on the intersection of ideological extremity and populist attitudes at the individual level. Our analysis reveals that ideological extremism, whether aligned with the far left or far right, intensifies the salience of populist attitudes, thereby elucidating the psychological and behavioral underpinnings of this relationship.

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Nonetheless, this relationship operates within contextually bounded parameters. Our empirical findings demonstrate that the manifestation and intensity of this relationship vary systematically across different political configurations, particularly contingent upon the ideological composition of populist supply within each system. This contextual conditionality suggests that theoretical frameworks must integrate both psychological dispositions and institutional opportunity structures to fully explicate the dynamics of populist attitude formation. These nuanced insights not only advance theoretical debates on populism but also provide a foundation for future studies to investigate the broader implications of ideological polarization in shaping democratic processes and populist mobilization across diverse political environments.

Ultimately, this study not only fills a gap in the literature by addressing the intricate relationship between populist attitudes and political ideologies on a global scale but also opens new avenues for further research. While our focus has not been on establishing causal mechanisms, the findings presented here provide a foundational framework for subsequent studies to explore the dynamics of causality in greater depth. Future research could build on this pioneering work to investigate the causal pathways that link ideological extremity and populist attitudes, examining how these relationships evolve over time and across diverse political contexts.

Additionally, our findings invite further in-depth exploration of why these dynamics occur. By delving into the psychological, cultural, and structural factors underlying the observed relationships, subsequent studies could offer a more comprehensive understanding of the mechanisms at play. We hope that this study serves as a catalyst for such investigations, inspiring future scholarship to advance the field and address the complexities of populism and ideology with greater nuance. Understanding these dynamics is not only academically significant but also essential for addressing the broader implications of populism in shaping political behavior and democratic resilience.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/psrm.2025.10045. To obtain replication material for this article, https://doi.org/10.7910/DVN/BNIRXP.

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