



## Original Research

# The psychology of pandemic policy support: unraveling the complex interplay of personal values and value congruence across 20 European countries

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## ABSTRACT

**Objectives:** We explored the roles of personal values and value congruence—the alignment between individual and national values—in predicting public support for pandemic restrictions across 20 European countries.

**Study design:** Cross-sectional study.

**Methods:** We analyzed multinational European survey data ( $N = 34,356$ ) using Schwartz's values theory and person-environment fit theory. Multilevel polynomial regression was employed to assess the linear and curvilinear effects of personal values on policy support. Multilevel Euclidean similarity analysis and response surface analysis were conducted to evaluate the impact of value congruence and delineate nuanced congruence patterns.

**Results:** Findings revealed that extreme levels of security, conformity, stimulation, hedonism, and achievement values were associated with decreased policy support. Value congruence with security, conformity, and benevolence increased support, while congruence with stimulation, hedonism, and achievement reduced it. High congruence between personal and national social focus values significantly boosted policy support. Extreme mismatches in self-direction values amplified support. Societal power exceeding personal power also increased support. Matched levels of hedonism motivated greater support, while stimulation and achievement value (in)congruence showed little impact.

**Conclusions:** We highlight the differential effects of personal values and value congruence on public attitudes toward pandemic restrictions. The findings underscore the importance of considering the interplay between individual and societal values when designing and implementing effective pandemic response strategies.

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## Introduction

The COVID-19 pandemic has highlighted the need to understand the psychological factors influencing public responses to pandemic measures. While previous research has highlighted various determinants of COVID-19 restriction support, such as personal experience, individualism, pro-sociality, trust in authorities, knowledge of government strategies, cultural values, risk

perception, perceived effectiveness of measures, and collective responsibility,<sup>1–5</sup> there is a need to elucidate how people navigate the competing motivations inherent in public health policies.<sup>6–8</sup>

Utilizing Schwartz's values theory<sup>9,10</sup> and person-environment fit theory,<sup>11</sup> we explore how personal values and value congruence—the alignment between individual and national values—predict COVID-19 restriction support, ultimately contributing to a better understanding of the psychological underpinnings of policy support or resistance.

Values, as broad, enduring beliefs that serve as guiding principles for actions and judgments,<sup>9</sup> are more influential in shaping individuals' responses to complex societal challenges like a

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pandemic compared to attitudes,<sup>12</sup> which are more specific evaluations of particular objects, people, or situations.<sup>13</sup> The value priority model posits that actions are determined by the tradeoffs among competing values, assessed through their relative importance.<sup>9,10,14,15</sup> Therefore, examining value hierarchies rather than isolated attitudes can provide deeper insights into how people navigate the inherent tensions between competing values, such as personal liberty and public health, in the context of COVID-19 restrictions.<sup>12</sup>

Schwartz's theory identifies ten basic values recognized across cultures (Table 1).<sup>16–19</sup> These values encompass a wide range of motivations, from collective interests to individual pursuits, which impact a wide range of psychological and behavioral outcomes.<sup>12,14–17,20–22</sup>

The ten basic values can be further categorized into four higher-order value domains, which can be categorized along a continuum from social focus to personal focus.<sup>10,23</sup> The social focus comprises the conservation and self-transcendence domains, as these values emphasize the importance of maintaining harmonious relationships, adhering to societal norms, and promoting the well-being of others. Conversely, the personal focus encompasses the openness to change and self-enhancement domains, as these values prioritize personal interests, autonomy, and growth.

Schwartz's theory has been extensively validated across cultures at individual and societal levels. Individually, it predicts attitudes, behaviors, political preferences, risk perception, national identification, and mortality.<sup>24–28</sup> At the country level, it maps cultural value orientations associated with modernization, crime rate, income inequality, and frequency of drinking.<sup>29–32</sup> This multilevel applicability enables meaningful value comparisons across individuals and cultures, examining how cultural contexts shape individual attitudes and behaviors.<sup>33</sup>

Recent studies highlight Schwartz's framework's utility in understanding individual and collective responses to the COVID-19 pandemic and policies.<sup>14,15,34–37</sup> It articulates tensions and motivations shaping acceptance or resistance to public health measures limiting personal freedoms for collective well-being.<sup>6–8,12</sup> Given the contrasting motivational underpinnings of social focus values, which prioritize collective interests, and personal focus values, which emphasize individual pursuits, we hypothesize that (H1) social focus values will predict increased support for stringent pandemic policies, while personal focus values will predict decreased support.<sup>12,34,35,38–42</sup>

In the context of the COVID-19 pandemic, we hypothesize that the relationship between social focus and personal focus values and policy support will exhibit a U-shaped curvilinear pattern. This hypothesis is grounded in the complex interplay of motivations and

trade-offs inherent in public health policies.<sup>6–8</sup> At low levels of social focus and personal focus values, individuals may not experience strong cognitive dissonance,<sup>43</sup> perceive significant threats to their autonomy,<sup>44</sup> engage in psychological reactance,<sup>45</sup> goal shielding,<sup>46</sup> or feel a strong need to seek external control measures to compensate for a lack of personal control.<sup>47</sup> As these values increase to moderate levels, individuals may experience heightened psychological discomfort, perceive restrictions as infringements on their freedoms, view public health measures as obstacles to their goals, and find external control measures inadequate for compensating their diminished personal control, resulting in decreased policy support. However, as social focus and personal focus values reach high levels, individuals may find ways to reconcile their values with public health measures, either by prioritizing collective welfare<sup>48</sup> or adapting their goals to the constraints of the pandemic,<sup>49</sup> leading to a resurgence in support for COVID-19 restrictions. Thus, the U-shaped curvilinear relationship between social focus and personal focus values and policy support could be explained by the dynamic interplay of cognitive dissonance, perceived threats to autonomy, psychological reactance, goal shielding processes, and the compensatory control mechanisms that occur at different levels of value prioritization (H2).

Schwartz's theory emphasizes that personal values are shaped by socio-cultural contexts,<sup>18,30,33,50</sup> aligning with the person-organization fit theory, which posits that congruence between individual and organizational characteristics, such as personal and cultural values, is a crucial determinant of attitudes and performance.<sup>11,51–53</sup> Building upon this foundation, value congruence examines the interaction between personal values and cultural contexts, revealing that the alignment of personal and collective interests strengthens attitudes and behaviors.<sup>21,51,54–56</sup>

Research shows that value congruence within social and ideological groups influences policy attitudes, with higher perceived congruence leading to stronger policy support and a stronger sense of identity.<sup>57,58</sup> From a cultural perspective, deeply embedded cultural values within societal groups shape policy preferences, with congruent policies gaining more support.<sup>58,59</sup> Recent research during the COVID-19 pandemic found that policies reflecting societal values fostered public support and compliance by creating a sense of shared purpose and collective efficacy.<sup>60</sup> Building on existing foundations, value congruence between individual and cultural values is expected to significantly shape attitudes towards public health policies.

However, congruence effects vary based on the underlying values.<sup>21,54,56,61–66</sup> According to social identity theory,<sup>67</sup> individuals prioritizing collective well-being who identify strongly with a culture sharing these values could perceive supporting restrictions

**Table 1**  
Schwartz's ten basic values, higher-order value domains, and value continuum.

Ten basic values	Description	Higher-order value Domain	Value continuum
Security	Safety, harmony, and stability of society, relationships, and self	Conservation	Social focus
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms	Conservation	Social focus
Tradition	Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide	Conservation	Social focus
Benevolence	Preserving and enhancing the welfare of those with whom one is in frequent personal contact (the 'in-group')	Self-transcendence	Social focus
Universalism	Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature	Self-transcendence	Social focus
Self-Direction	Independent thought and action	Openness to change	Personal focus
Stimulation	Excitement, novelty, and challenge in life	Openness to change	Personal focus
Hedonism	Pleasure and sensuous gratification for oneself	Openness to change	Personal focus
Achievement	Personal success through demonstrating competence	Self-enhancement	Personal focus
Power	Social status, prestige, and control over people and resources	Self-enhancement	Personal focus

as protecting their ingroup and maintaining positive group identity.<sup>54</sup> Conversely, individuals prioritizing individual freedoms who identify strongly with a culture sharing these values could perceive resisting restrictions as asserting ingroup distinctiveness and defending personal goals. Therefore, we hypothesize that value congruence's impact on policy support will differ based on value type (H3), with social focus congruence positively associated with support and personal focus congruence negatively associated with support.

The relationship between value congruence and attitudes toward policy support could be more nuanced than previously thought.<sup>60</sup> The self-concordance model<sup>68</sup> and regulatory focus theory<sup>69</sup> provide a theoretical framework for understanding these nuanced patterns. For social focus values, extreme congruence between personal and cultural values could enhance motivation to support pandemic restrictions, as they are perceived as self-concordant and aligned with authentic interests. Conversely, for personal focus values, extreme congruence may reduce motivation to support restrictions, as they are seen as discordant with authentic interests. Regulatory focus theory suggests that individuals' value priorities can orient them toward prevention-focused concerns (safety and responsibilities) or promotion-focused concerns (aspirations and ideals). Thus, congruence with prevention-focused values and cultures emphasizing duty and security could escalate policy endorsement, while congruence with promotion-focused values centered on ambition and openness may reduce support for restrictive policies.

Therefore, the relationship between personal-cultural value (mis)alignment and pandemic restriction support is hypothesized to exhibit a curvilinear pattern (H4). For social focus, policy support peaks when personal and cultural values are highly congruent and decreases with increasing discrepancy, aligning with individuals prioritizing these values in congruent cultures strongly supporting restrictions as aligned with personal and collective interests.<sup>12,24</sup> Conversely, for personal focus, policy support could be lowest at high congruence and increases with greater discrepancy, as individuals prioritizing these values in congruent cultures strongly resist restrictions, viewing them as threats to personal freedoms and goals.<sup>12,15</sup>

To empirically test our hypotheses, we employ multilevel modeling techniques on comprehensive survey data from the European Social Survey (ESS),<sup>70</sup> encompassing a diverse sample of 20 European countries (Fig. 1). These countries, while sharing regional

similarities, exhibit variations in historical trajectories, political systems, and cultural orientations,<sup>71</sup> providing a rich context for testing our hypotheses. We employ polynomial regression, Euclidean similarity analysis, and response surface analysis (RSA) to investigate non-linear dynamics and identify curvilinear patterns.<sup>54,72,73</sup> Our findings have the potential to offer insights into improving public health policy adherence and informing interventions that cultivate civic values prioritizing collective welfare, which are crucial for addressing societal challenges effectively.<sup>60,74–77</sup>

## Methods

### Survey data and countries

We used ESS data, a biennial, cross-national survey with probability sampling and standardized methods,<sup>21,70,78</sup> to capture representative attitudes and behaviors. Specifically, we analyzed the COVID-19 module from Round 10 of the ESS.<sup>70</sup> Fielded across 20 European countries (Fig. 1;  $N = 34,356$ ) from September 2020 to December 2021, the ESS Round 10 gathered comprehensive data on personal values, attitudes toward COVID-19 policies, and a wide range of related topics. The ESS data, with its extensive geographic coverage and large sample size, offers a robust and representative exploration of the values and attitudes associated with public responses to the pandemic across diverse European contexts (see Table S1 for survey items).

### Measures

#### Support for stringent government COVID-19 restriction policies

The COVID-19 government policy support index measures willingness to comply with pandemic restrictions.<sup>70</sup> It comprises 5 items rated from 0 to 10 (Table S1): (1) perceived government prioritization of health protections over economic preservation; (2) perceived emphasis on population monitoring over privacy; (3) perceived importance of deference to edicts over personal decision-making; (4) perceived relevance of border closures; and (5) perceived relevance of mobility restrictions. Elevated scores reflect prioritizing infection control over economic/civil liberties. Adequate internal reliability emerged ( $\alpha = .66$ ). Despite rapid development, indicators of brevity and reliability render this index

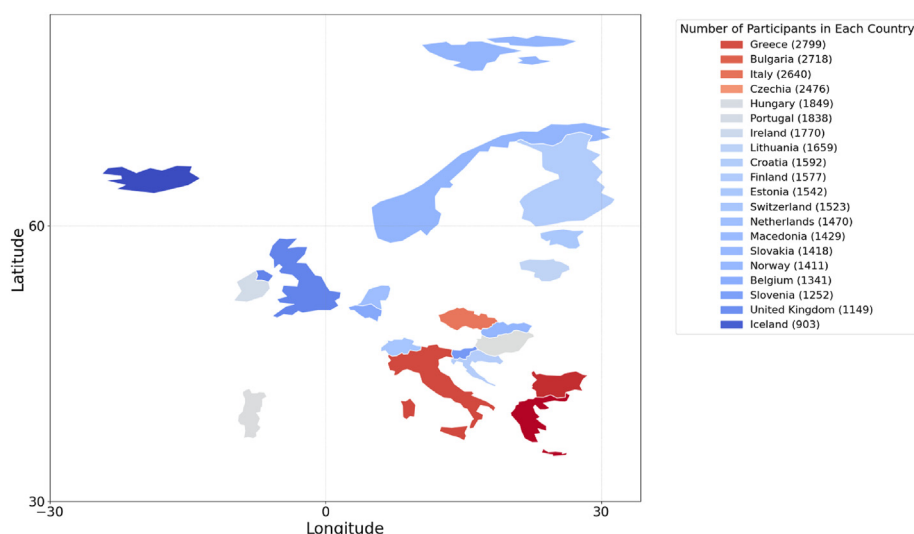


Fig. 1. Geographical distribution of participants across 20 European countries.

a potentially useful cross-national tracking tool for government policy endorsement.

### Personal values

Values were assessed using the 21-item Portrait Value Questionnaire<sup>19</sup> adapted for the ESS.<sup>78</sup> Items represent motivational domains from Schwartz's theory, and participants rated resonance with each statement on a 6-point scale, reverse-coded to signify value endorsement (Table S1). Items address both social and personal focus values.<sup>10,23</sup> By utilizing raw scores instead of ipsatizing, we gained insight into individuals' value levels and societal comparison, which is crucial for examining complex personal-societal value dynamics.<sup>21</sup> This approach also enabled polynomial regression and response surface analysis to explore intricate value congruence relationships and implications,<sup>21</sup> thereby ensuring a precise and nuanced examination of value congruence.

### Covariates

Age, gender, education level, employment status, and marital status were controlled to account for demographic differences.

### Statistical approach

We obtained country-level value scores by aggregating individual scores for each of the ten values per country across datasets,<sup>21</sup> encompassing over 400,000 respondents from 2002 to 2020, and matched these scores to participants' individual value ratings in the latest ESS survey round.

We applied the analysis weight<sup>79</sup> to ensure that samples accurately reflected national populations because there were some differences in demographic characteristics compared to the overall populations (Table S2). We applied multilevel modeling to the survey data, with individual and country-level variables group-mean and grand-mean centered, respectively.<sup>21,54,80</sup>

We calculated Euclidean distance scores ( $X = \sqrt{(X_{\text{individual}} - X_{\text{country}})^2}$ ) to assess value congruence effects. We then conducted a multilevel analysis treating the ten inverted congruence scores as fixed effects, with country memberships as a random intercept (Level-1 model:  $Y_{ij} = b_{0j} + b_{1j}(\text{Value Congruence}_{ij}) + b_{2j}(\text{Demographics}_{ij}) + r_{ij}$ ; Level-2 model:  $b_{0j} = \gamma_{00} + u_{0j}$ ).

We applied polynomial regression to probe complex non-linear effects and interactions between individual and societal values.<sup>21,54,81</sup> The full polynomial regression model for each value is succinctly represented as:<sup>54</sup>  $Y = b_0 + b_1X + b_2Z + b_3X^2 + b_4XZ + b_5Z^2 + b_6(\text{Age}) + b_7(\text{Gender}) + b_8(\text{Education Level}) + b_9(\text{Employment Status}) + b_{10}(\text{Marital Status}) + u_0 + \varepsilon$ . Here,  $Y$  is the outcome;  $X$  and  $Z$  are individual and national value scores;  $b_0$  is the intercept;  $b_1$  to  $b_5$  capture linear, quadratic, and interaction effects of  $X$  and  $Z$ ;  $b_6$  to  $b_{10}$  are coefficients for demographic controls;  $u_0$  is the random intercept for country-level variation; and  $\varepsilon$  is the error term.

Employing RSA, we derived parameters  $a_1$  ( $b_1 + b_2$ ),  $a_2$  ( $b_3 + b_4 + b_5$ ),  $a_3$  ( $b_1 - b_2$ ), and  $a_4$  ( $b_3 - b_4 + b_5$ ) from regression coefficients to define slope and curvature along congruence/incongruence axes.<sup>21,54,56,62,72,73,81–86</sup> This was facilitated using the 'RSA' package in R.<sup>87</sup> Specifically, positive  $a_1$  indicates heightened support with greater high-level congruence; negative  $a_1$  denotes support with greater low-level congruence. Positive  $a_3$  suggests support is higher when personal exceeds national values; negative  $a_3$  indicates the opposite. Regarding curvature, positive  $a_2$  signifies optimized support when values match at extreme rather than moderate levels; negative  $a_2$  reflects peaked support at moderate congruence. Finally, positive  $a_4$  indicates greater incongruence improves support; negative  $a_4$  suggests congruence is preferable.

We visualized response surfaces using *Python* to aid interpretation of whether policy support optimizes under high/low congruence, discrepancy, or alignment.<sup>21,54</sup>

Using individual RSA parameters to test value congruence effects follows established precedent.<sup>21,54,62,72,73,82,85</sup> While some argue for utilizing multiple parameters,<sup>88</sup> single parameters reveal specific congruence aspects, like linear or non-linear relationships.<sup>54,56,62,72,73,82,85</sup> Separate testing aligns with (in) congruence hypotheses predicting distinct effects.<sup>72,85</sup> It also assesses reproducibility and provides parsimonious insights when samples or power are limited.<sup>89</sup> Finally, different parameters contain unique information;<sup>73,85</sup> thus, focused examination provides parsimonious, nuanced insights.

According to RSA studies,<sup>54,72,73,85</sup> we applied  $a_4$  to test if value congruence outperformed incongruence. We also used  $a_1$  and  $a_2$  to jointly test the linear relationship between personal and national values at high/low levels while ensuring non-linear effects were not present. We evaluated  $a_3$  to test the direction of value discrepancies related to policy support and  $a_2$  to detect potential curvilinear patterns. This targeted parametric testing offers a sophisticated yet parsimonious perspective into the intricate effects of value (in)congruence on policy support.

## Results

Intraclass correlation coefficients showed that 3–13% of value variance, 1–4% of value congruence variance, and 11% of policy support variance were due to country differences (Table S3). As shown in Fig. 2A (Table S4), prioritizing social focus values significantly and positively correlated with policy support. In contrast, emphasizing personal focus values significantly and negatively correlated with policy support. Fig. 2B (Table S5) illustrates that congruence with social focus values was also significantly and positively correlated with policy support, achieving significance for all values except conformity and tradition. Conversely, congruence with personal focus values significantly and negatively correlated with policy support except for power.

Fig. 3 (Table S6) shows multilevel analysis of value congruence scores (inverted Euclidean distance) predicting COVID-19 policy support, controlling for demographics. Congruence with security, conformity, and benevolence significantly and positively predicted policy support. In contrast, congruence with stimulation, hedonism and achievement significantly and negatively predicted policy support.

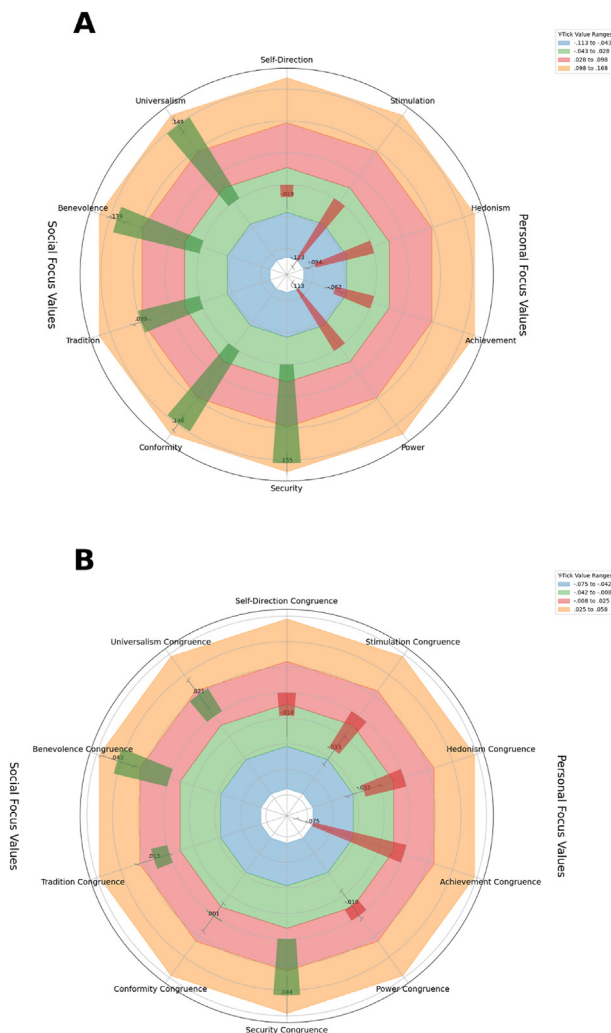
Ten multilevel polynomial regressions tested the linear, curvilinear, and interaction effects for each of the ten values based on the full model, controlling for demographics (Tables S7–S16).

**Individual-level linear effects ( $b_1$ ).** Individuals prioritizing security ( $B = 0.36$ ,  $P < .001$ , 95% CI [0.33, 0.39]), conformity ( $B = 0.32$ ,  $P < .001$ , 95% CI [0.30, 0.35]), tradition ( $B = 0.18$ ,  $P < .001$ , 95% CI [0.15, 0.20]), benevolence ( $B = 0.27$ ,  $P < .001$ , 95% CI [0.23, 0.31]), and universalism ( $B = 0.32$ ,  $P < .001$ , 95% CI [0.28, 0.36]) showed higher policy support. In contrast, stimulation ( $B = -0.13$ ,  $P < .001$ , 95% CI [-0.16, -0.10]), and power ( $B = -0.06$ ,  $P < .001$ , 95% CI [-0.09, -0.03]) negatively predicted support.

**Country-level linear effects ( $b_2$ ).** At the country level, tradition ( $B = 0.20$ ,  $P = .053$ , 95% CI [-0.003, 0.400]) and power ( $B = 0.14$ ,  $P = .056$ , 95% CI [-0.003, 0.288]) displayed potential positive relationships.

**Individual-level curvilinear effects ( $b_3$ ).** The results showed that moderate levels of security ( $B = 0.02$ ,  $P = .083$ , 95% CI [-0.002, 0.040]), conformity ( $B = 0.02$ ,  $P = .016$ , 95% CI [0.004, 0.042]), stimulation ( $B = 0.04$ ,  $P < .001$ , 95% CI [0.02, 0.05]), hedonism ( $B = 0.05$ ,  $P < .001$ , 95% CI [0.03, 0.06]), and achievement ( $B = 0.06$ ,





**Fig. 2.** Analysis of personal values and value congruence in relation to support for government COVID-19 restriction policies. Note. (A) Personal values. (B) Value congruence. Green bars = positive correlation coefficients; red bars = negative coefficients. Gray lines indicate 95% confidence intervals. (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)

$P < .001$ , 95% CI [0.05, 0.08]) corresponded to lower policy support, whereas low and high levels corresponded to higher support.

**Cross-level interaction effects ( $b_4$ ).** For security ( $B = 0.45$ ,  $P < .001$ , 95% CI [0.32, 0.57]), conformity ( $B = 0.62$ ,  $P < .001$ , 95% CI [0.50, 0.74]) and tradition ( $B = 0.58$ ,  $P < .001$ , 95% CI [0.46, 0.70]), effects strengthened in nations prioritizing those values. However, self-direction effects diminished in cultures not emphasizing autonomy ( $B = -0.48$ ,  $P < .001$ , 95% CI [-0.73, -0.22]). Hedonism's positive influence increased in pleasure-valuing societies ( $B = 0.15$ ,  $P < .001$ , 95% CI [0.06, 0.24]), while Power's negative impact was enhanced within hierarchical cultures ( $B = -0.17$ ,  $P = .001$ , 95% CI [-0.27, -0.06]).

**Country-level curvilinear effects ( $b_5$ ).** There were no significant country-level curvilinear value effects on policy support.

We elaborated on the RSA parameters for each of the ten response surfaces as shown in Fig. 4 (Table S17).

**Security value.** The positive, significant  $a_1$  ( $B = 0.53$ ,  $P < .001$ , 95% CI [0.28, 0.79]) paired with non-significant  $a_2$  indicated a high-level congruence effect, whereby personal-national security value alignment at extremely high rather than low levels linearly related to increased restriction support. Notably, extreme incongruence

potentially correlated with substantially lower support ( $a_4$ ,  $B = -0.66$ ,  $P = .055$ , 95% CI [-1.34, 0.01]), suggesting congruence was preferable. Fig. 4A shows primarily linear effects along the congruence line, but potential concave curvature with extreme incongruence.

**Conformity value.** The significant  $a_1$  ( $B = 0.39$ ,  $P < .001$ , 95% CI [0.23, 0.55]) and non-significant  $a_2$  indicated high-level conformity congruence was more beneficial than low-level alignment for restriction support. However, the positive  $a_3$  ( $B = 0.26$ ,  $P = .002$ , 95% CI [0.10, 0.42]) showed support was higher when personal conformity exceeds national levels versus the reverse. While both alignment and divergence boosted attitudes on average, tentatively, extreme mismatches reduced support ( $a_4$ ,  $B = -1.33$ ,  $P = .084$ , 95% CI [-2.83, 0.18]), suggesting congruence was better. Fig. 4B highlights how conformity both facilitates and hinders policy backing, depending on (in)congruence severity.

**Tradition value.** The significant positive  $a_1$  ( $B = 0.38$ ,  $P < .001$ , 95% CI [0.17, 0.58]) coupled with the non-significant  $a_2$  suggested a linear increase in policy support when personal and national tradition values matched at high response categories compared to matches at low categories. Critically, extreme tradition value mismatches between individuals and country related to substantially lower support ( $a_4$ ,  $B = -0.82$ ,  $P = .011$ , 95% CI [-1.46, -0.19]), indicating that congruence between personal and national tradition values resulted in better outcomes than incongruence. Fig. 4C shows amplification of policy support when tradition alignment reinforced shared cultural respect.

**Benevolence value.** The significant  $a_1$  ( $B = 0.40$ ,  $P = .007$ , 95% CI [0.11, 0.69]) combined with the non-significant  $a_2$  indicated high-level benevolence congruence rather than low-level alignment related to heightened restriction support. Additionally, at extreme mismatches, no meaningful effect intensification or reversal emerged. Fig. 4D shows benevolence alignment could stably and consonantly boost collective health policy backing across (in)congruence levels.

**Universalism value.** The significant  $a_1$  ( $B = 0.57$ ,  $P < .001$ , 95% CI [0.24, 0.90]) combined with the non-significant  $a_2$  indicated a high-level congruence effect, whereby universalism alignment at higher rather than lower levels associated with heightened restriction support. However, incongruence and extreme (in)congruence showed no reliable impacts. Fig. 4E shows that shared emphasis on universalism consonantly boosts public health compliance, while value conflicts do not substantially shape attitudes either way.

**Self-Direction value.** A significant positive curvature along the line of incongruence emerged ( $a_4$   $B = 1.07$ ,  $P = .020$ , 95% CI [0.17, 1.97]), suggesting extreme personal-national mismatches on self-direction might amplify policy attitudes in ways not captured by simple (in)congruence. Fig. 4F shows self-direction's overall policy support impact was subtle without a clear (in)congruence pattern.

**Stimulation value.** RSA revealed non-significant effects along both lines of congruence and incongruence. Fig. 4G shows neither alignment nor conflict between personal and cultural novelty-seeking noticeably impacted public COVID-19 policy perspectives.

**Hedonism value.** The significant positive  $a_2$  ( $B = 0.51$ ,  $P = .021$ , 95% CI [0.08, 0.95]) indicated extreme hedonism congruence rather than moderate alignment related to escalated restriction support. Fig. 4H shows that shared cultural-personal emphasis on hedonism, whether highly or weakly valued, associated with increased backing, perhaps due to heightened national identity and purpose. However, non-significant  $a_1$  and  $a_3$  signify (in)congruence otherwise, they showed little linear effects. Alignment or mismatch did not markedly shape policy perspectives.

**Achievement value.** RSA revealed non-significant effects of achievement value congruence on COVID-19 policy support. Neither alignment nor conflict between personal and cultural

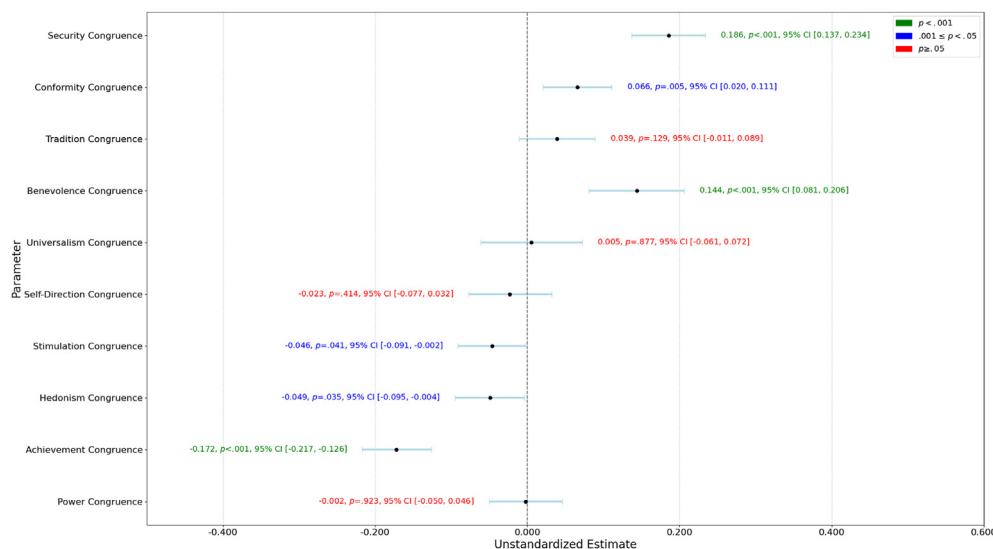


Fig. 3. Multilevel Euclidean distance analysis of value congruence effects on COVID-19 policy support.

achievement orientation noticeably impacted perspectives. Fig. 4I indicates no curvilinear or interactive effects.

**Power value.** A negative slope emerged along the incongruence line ( $a_3, B = -0.21, P = .007, 95\% \text{ CI } [-0.35, -0.06]$ ). Specifically, restriction support was comparatively higher when national power values exceeded personal values rather than the reverse mismatch. Fig. 4J shows a weak directional effect and absence of curvature or interaction effects.

To ensure the robustness of our findings, we conducted all analyses without weighting the data and compared the results to the weighted analyses. The non-weighted multilevel analysis of value congruence scores (Table S18) and multilevel polynomial regression results (Tables S19–S28) largely mirrored the weighted findings, with minor variations in effect sizes and significance levels. Key RSA parameters (Table S29) were consistent across both sets of analyses, supporting the robustness of our conclusions. Nevertheless, we focused on the weighted results, as they provided a more accurate representation of the population parameters by accounting for the sampling design and non-response bias.

## Discussion

Using Schwartz's value framework,<sup>9,10</sup> person-environment fit theory,<sup>11</sup> and advanced statistical methods, our findings partially supported the hypotheses (H1 to H4) and offered novel insights into the roles of personal values and value congruence in predicting public support for pandemic restrictions across 20 European countries.

Aligning with prior research,<sup>34–36,38</sup> social focus values positively associated with COVID-19 policy support, while personal focus values negatively associated with it, reflecting Schwartz's theory on communal motivations encouraging compliance versus individual pursuits fostering resistance.<sup>10,12,23</sup>

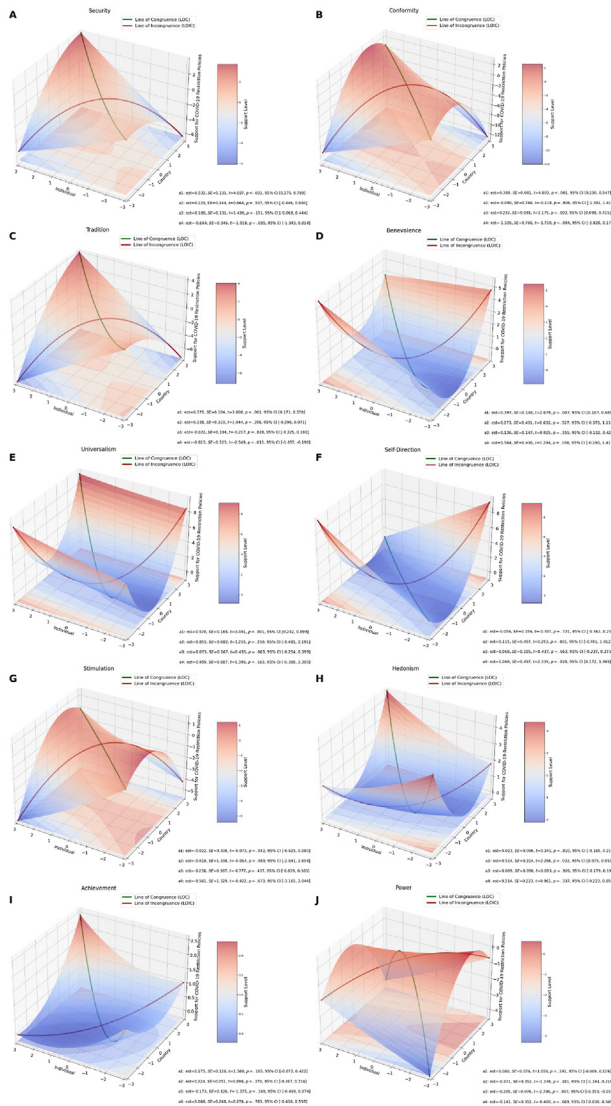
The U-shaped curvilinear effects of value prioritization on COVID-19 restriction policy support can be explained by the complex interplay of motivations and trade-offs inherent in public health policies.<sup>6–8</sup> At low levels of security, conformity, stimulation, hedonism, and achievement values, individuals may not experience strong cognitive dissonance,<sup>43</sup> perceive significant threats to their autonomy,<sup>44</sup> feel motivated to oppose restrictions,<sup>45,46</sup> or view external control measures as necessary for restoring a sense of order and stability.<sup>47</sup> However, as these values increase to moderate levels, individuals may experience heightened psychological

discomfort, view restrictions as infringements on their freedoms, and experience conflicts between their desires for excitement, pleasure, and goal pursuit and the constraints of public health measures.<sup>90,91</sup> This may lead to psychological reactance<sup>45</sup> and goal shielding,<sup>46</sup> decreasing policy support. Conversely, at high levels of these values, individuals may find ways to reconcile their values with public health measures, either by prioritizing collective welfare<sup>48</sup> or by finding alternative ways to satisfy their desires and goals within the constraints of the pandemic,<sup>49</sup> resulting in increased support for COVID-19 restrictions.

Our multilevel analysis of Euclidean distance between personal and cultural values provided initial insights into how value congruence shapes attitudes toward policies, aligning with content-specific effects across domains.<sup>21,54,61–66</sup> Importantly, the extent to which individuals adhered to these policies was contingent on their underlying motivations. Greater person-culture similarity in social focus values security, conformity, and benevolence—prioritizing collective stability and care—predicted heightened support for public health restrictions, sacrificing personal interests for protection.<sup>12,15</sup> This extends findings that such congruence increases wellbeing<sup>21</sup> and in-group belonging,<sup>54</sup> likely by heightening coherence, fit, and embeddedness. Conversely, for stimulation, hedonism and achievement—emphasizing individualistic gratifications—greater congruence associated with lower support, suggesting shared autonomy and self-interest reinforce non-compliance.

RSA provided a sophisticated, multifaceted understanding of value congruence effects by testing combinations of personal-cultural priorities.<sup>73,81,84,86</sup> Results indicated positive effects on policy support with high alignment between personal and national social focus values versus low alignment. Endorsement increases when self-rated and cultural priorities for security, conformity, tradition, benevolence and universalism are jointly elevated, reflecting motivations valuing order and tradition. High congruence strengthens national identity,<sup>54</sup> predicting greater pandemic policy adherence.<sup>92</sup>

Complex response surface patterns for self-direction warrant examination. Despite no straightforward congruence effects, extreme personal-societal incongruence amplified support. This aligns with self-direction's curvilinear effect but points to complexity.<sup>55,56</sup> Compensatory control theory<sup>47</sup> explains that when autonomy is low due to value contrasts, endorsing external structures like policies helps regain control.<sup>93</sup> Thus, divergence in self-



**Fig. 4.** Response surface plots for ten basic values: (A) security, (B) conformity, (C) tradition, (D) benevolence, (E) universalism, (F) self-direction, (G) stimulation, (H) hedonism, (I) achievement, (J) power.

direction increases adherence, potentially to reinforce independence.

Extreme hedonism congruence also increased endorsement versus mid-range alignment. While hedonism emphasizes pleasure-seeking,<sup>10,12,23</sup> extreme congruence heightens national identity,<sup>54</sup> predicting cooperation with interventions enabling collective normalcy resumption.<sup>92</sup>

In the context of power value, the personal-cultural incongruence manifests when individuals do not personally prioritize power and status, but live in a society that does. In societies highly valuing power, an overarching narrative emphasizes collective obedience and policy support as patriotism, exerting normative pressure.<sup>14</sup> Hence even those personally devaluing power exhibit increased restriction endorsement.

Finally, the non-significant stimulation and achievement effects likely stem from tenuous links between excitement/success motivations and public health policies amidst crises. Seeking stimulation, individuals may pursue variable fulfillment avenues during restrictions.<sup>49</sup> With survival threats hindering normal

achievements,<sup>94–96</sup> traditional success metrics become secondary, rendering policy assessments neutral.

### Theoretical and policy implications

Results provide confirmation within Schwartz's framework<sup>9,10</sup> that motivational compatibilities/conflicts shape judgments in value-relevant contexts.<sup>12,34,35,38</sup> Prioritization of social focus values corresponds to greater willingness to accept constraints for communal protection. Conversely, emphasizing personal focus values associates with non-compliance when collective obligations limit agency or aspirations. Moreover, by demonstrating specific forms of value congruence strengthen attitudes aligning personal/collective interests,<sup>21,54,61–66</sup> we meaningfully extend person-environment fit theory.<sup>11,51</sup> Furthermore, by leveraging response surface analysis,<sup>54,72,73,81,84,85</sup> we identify subtle tipping points illuminating shifts from concordance to discord.

Optimizing public health policy support requires culturally sensitive, values-aligned messaging. Policymakers and health communicators could develop 'clumsy solutions' that integrate diverse cultural perspectives and utilize the power of narratives.<sup>74–77</sup> In countries prioritizing security, messaging could emphasize safeguarding collective well-being, e.g. 'By adhering to these temporary restrictions, we protect our communities and preserve the safety and security we all cherish.' In nations valuing benevolence, communications could highlight how individual actions demonstrate care for others, e.g. 'By following these guidelines, you show compassion for the most vulnerable among us.' Persuasive narratives tailored to cultural biases can also be effective,<sup>75</sup> emphasizing personal responsibility and economic benefits in individualistic societies and following expert guidance and contributing to a coordinated response in hierarchical cultures. As we navigate the challenges of the COVID-19 pandemic and prepare for future crises, this values-based approach offers a promising path forward for effective public health communication and disease containment, ultimately building more resilient and responsive public health systems.<sup>60</sup>

Our findings reveal that while value congruence generally predicts policy support, personal values exceeding national levels can sometimes drive even greater adherence. Thus, messaging should aim to activate and amplify individual values beyond societal baselines. For conformity, appeals could underscore how adherence demonstrates respect for norms and contributes to a unified response, such as: 'Join the 85% of [citizens] who are diligently following public health guidelines to protect our community.' For stimulation and hedonism, communications could emphasize how collective action enables a safer and quicker return to cherished freedoms and experiences, like: 'By working together now, we can soon enjoy the activities and adventures we love.' However, extreme mismatches between personal and societal values can undermine support, particularly for security, conformity, and tradition. In these cases, messaging should bridge discrepancies by finding common ground and emphasizing shared goals and benefits of cooperation, such as: 'While we may have different perspectives, we all want to keep our loved ones safe and rebuild our economy.' Targeted interventions based on value congruence are also essential, with reinforcing messages for individuals whose values align with national priorities and personalized, persuasive messaging for those with incongruent values to address concerns and offer tailored rationales for compliance.

### Limitations and future directions

This research elucidates the multifaceted role of personal values and value congruence in shaping COVID-19 policy attitudes, with some limitations. First, contextual differences across the 20



European countries<sup>71</sup> may influence how individual values interact with societal values, potentially moderating the observed patterns. Future research should examine these contextual factors' impact on the interplay between individual psychology, cultural forces, and policy attitudes during public health crises. Second, despite weighted analyses, perfect representativeness may not have been achieved, necessitating more representative sampling or advanced weighting techniques. Third, the cross-sectional data prevents causal claims; longitudinal tracking could establish temporal dynamics.<sup>97,98</sup> Fourth, experimental work manipulating value salience could substantiate directions.<sup>12</sup> Fifth, extending inquiries across diverse global regions may reveal cultural nuances.<sup>99</sup>

## Conclusion

Our findings show extreme value positions can undermine public health policy support. Greater alignment in social focus values between individuals and their culture predicts increased support for restrictions.

## Author statements

### Ethical approval

This research analyzed openly accessed and publicly available datasets that have been published for use by the research community. As such, it was not necessary to obtain ethical approval or individual consent for the use of these datasets. However, the authors conducted the research in an ethical manner and handled the data responsibly.

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### Competing interests

The authors have no conflicts of interest to declare.

### Availability of data and materials

Research data can be found via this Open Science Framework (OSF) repository: [https://osf.io/k5p2u/?view\\_only=09fb1d2d085749bb8d0317a18e391484](https://osf.io/k5p2u/?view_only=09fb1d2d085749bb8d0317a18e391484).

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.puhe.2024.07.022>.

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