

The relationship between political procedural justice and attitudes toward the political system: A meta-analysis

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Abstract

A positive relationship between assessments of procedural justice and attitudes toward the political system has been identified in many studies of various countries. To quantify this relationship, a meta-analysis was conducted on 69 samples from 50,814 respondents, reported in 37 manuscripts between 1981 and 2021. We found positive correlations between assessments of procedural justice and attitudes toward politicians, political institutions, and the political system in people of different ages and in countries with different political regimes. These positive correlations exist in real and hypothetical situations with various levels of authority. However, two factors moderated the association between the assessment of procedural justice and political attitudes. First, procedural justice as a set of norms is more strongly related to attitudes toward the system than procedural justice as a generalized assessment is. Second, the assessment of procedural justice is more strongly associated with attitudes toward political institutions and the system than attitudes toward the procedures and decisions. Moreover, the percentage of heterogeneity in the obtained models is fairly high; categorical moderators explain 43% of the variance of the effects obtained. The results should therefore be interpreted with consideration of this substantial heterogeneity in the correlations' sizes.

KEYWORDS

political institutions, political system, politicians, procedural fairness, procedural justice

INTRODUCTION

For many decades, psychologists have studied what motivates human behaviors. One direction of such research concerns the perception of justice. People use fairness as a criterion for evaluating various phenomena, from specific decisions (e.g., hiring or passing a new law) to the structure of society, as a whole (e.g., economic or gender inequality). They pay attention both to the positivity of the result that the participants receive and to the group of which they are members. To achieve a balance between personal and group interests, people consider and employ norms that allow them to assess the justice of a procedure and the result (Tyler, 2011).

The norms of justice play a large role in assessing the social interaction that takes place within formal institutions (e.g., business organizations, police and courts, public authorities). In such an interaction, participants who have more power (authorities) make decisions and take actions in relation to participants who have less power. People can evaluate the fairness of interactions in which they are participants or observers, but in research they are more likely to answer questions about their own experience of participation.

Researchers distinguish two types of justice: the justice of the result and the justice of the procedure. The justice of the result includes distributive justice, which regulates the distribution of material resources (primarily money), and retributive justice, which regulates punishments for the violation of norms (e.g., reprimands, fines, imprisonment). Procedural justice concerns the justice of the rules and procedures through which authorities make allocations (Tyler, 2011; Tyler & Van der Toorn, 2013).

The observance of procedural fairness affects the attitude toward authorities, their decisions, and the organizations in which they work. For example, meta-analyses of studies conducted in organizations have shown that the higher employees rate the fairness of leaders' actions, the more positively they perceive individual leaders and the organization as a whole, the more satisfied leaders' activities; the better employees perform their professional duties and the more willing they are to continue working in their organization (Cohen-Charash & Spector, 2001; Colquitt et al., 2001; Colquitt et al., 2013; Whitman et al., 2012).

Moreover, meta-analyses of studies conducted in legal contexts have shown that the higher citizens rate the justice of the actions of police officers and judges, the more satisfied they are with interactions with them, the more legitimate they consider their actions, the more they agree with the decisions made, and the more willing they are to collaborate with them in the future (Bolger et al., 2021; Bolger & Walters, 2019). However, we were unable to find an analysis that provides a comprehensive picture of the role of justice in political context.

Therefore, the purpose of this study is to conduct a meta-analysis of the relationship between the procedural justice and attitudes toward the political system. We analyzed how positive and homogeneous the relationship between these variables is. Furthermore, we assessed the extent to which this relationship is moderated by the characteristics of the respondents (the type of sample, the type of political regimes) and context (the type of situation, the way justice is measured, the level of authority, and the direction of the assessment). Finally, we highlighted the limitations of previous studies and directions for future research.

Procedural Justice Norms

Scholars assume that when people evaluate procedural justice, they are guided by certain norms. Over the past five decades, they have formulated several models of procedural justice (Colquitt et al., 2001; Leventhal, 1980; Thibaut & Walker, 1975; Tyler & Lind, 1992). Each model includes several norms that regulate the decision-making process and the attitude of authorities toward "ordinary" participants. They differ in the number of norms, but they are based on similar principles.

For example, Colquitt and the colleagues identified procedural, informational, and interpersonal justice. According to this model, procedural justice includes rules that guarantee “ordinary” participants the opportunity to influence a decision that affects their interests and equal treatment by the authorities; information fairness—norms that ensure that participants receive complete, honest, and timely information about how the interaction will take place; interpersonal justice—norms that guarantee a polite and respectful attitude of the authorities toward “ordinary participants” (Colquitt et al., 2001).

At the same time, Tyler (2011) identified four main norms of procedural fairness: voice (people who are affected by a decision have the opportunity to participate in the procedure for making it); neutrality (the person who makes the decision behaves honestly and without prejudice); respect (this person treats other participants politely and respectfully); and trustworthiness (this person takes care of other participants, takes into account their interests). Thus, in Tyler's model the first and the second norms correspond to procedural and, in part, informational justice, and the third norm corresponds to interpersonal justice in Colquitt's model.

Two types of questions are commonly used to measure procedural justice: compliance with a set of norms and a direct assessment. In the first case, respondents assess how the decision-making procedure complies with specific norms. In the second case, respondents are asked to rate the decision-making procedure on a scale from “totally unfair” to “totally fair” or to determine the degree of agreement with the statement that “the procedure was fair.” Thus, in the first case, the respondents follow the criteria for evaluating the procedure that were set by the researchers, and in the second, they are guided by their own idea of procedural fairness.

Procedural Justice in Politics

Procedural justice has spurred great interest among scholars who examine political processes, and analyzing the relevant scientific literature reveals two main approaches to studying this topic of justice. The first approach focuses on political institutions. Researchers who employ this approach compare the features of political institutions that meet or fail to meet the norms of procedural justice (e.g., the features of the electoral system, the involvement of citizens in political decision-making, the level of corruption in the country) with attitudes toward the political system (Anderson & Tverdova, 2003; Birch, 2007; Dahlberg & Holmberg, 2014; Gilley, 2006).

The second approach focuses on the subjective perceptions of people. Researchers who employ this approach analyze the relationship between procedural justice and attitudes toward the political system. They first ask participants to evaluate the procedural justice of specific representatives of state authority (e.g., a city mayor, a deputy, or a president) or collegial government bodies. Subsequently, they ask respondents about their attitudes toward government officials, political institutions, and the decisions made by political actors.

Research conducted within the second approach suggests that procedural justice is associated in several ways with attitudes toward people, institutions, and decisions that are made in the political sphere. First, people express a more positive attitude toward government officials who behave fairly; they approve of these officials and are more satisfied with their activities, trust them more, and express a greater desire to vote for them in elections (e.g., Kershaw & Alexander, 2003).

Second, people view a political system more positively when they perceive the interaction procedures to be fair (e.g., Azmi et al., 2016; Vainio, 2011; Van der Toorn et al., 2011). For example, a study in Scotland found that the more people trusted in political institutions in Scotland and the United Kingdom in general, the more positively they assessed the justice of the Scottish Parliament's petitioning process (Carman, 2010). A U.S. study similarly demonstrated that procedural justice in Congress was positively associated with the level of support for Congress and one's own representative (Farnsworth, 2003).

Third, people are more supportive of procedures and decisions proposed by government officials if procedural justice is observed in their adoption (e.g., Tyler et al., 1985; Tyler & Caine, 1981). For example, a study in Sweden demonstrated a positive correlation between how fair people deemed the actions of the management of the state-owned railway company to be and how far the participants trusted this management and agreed with their decision to build new infrastructure (Grimes, 2017).

Finally, people are more likely to protest against the actions of government officials when they consider those actions to be unfair. For example, a meta-analysis of studies conducted in different countries has shown that a low assessment of justice is one of the four key variables which encourage people to participate in protests (Agostini & van Zomeren, 2021). However, generally, the authors of such studies do not distinguish between the justice of the procedure and the justice of the result. Thus, it remains uncertain whether the protests are the result of the injustice of the procedure or the result of the interaction.

Current Study

Studies on procedural justice in the political sphere have been conducted since the mid-1980s. Their results indicate that the fairer people consider the actions of individual government officials, politicians, or authorities to be, the more positive their attitudes toward the political system are. Therefore, in this study we assumed that, in general,

Hypothesis 1. The assessment of the procedural justice of state authority is positively associated with political attitudes.

Research Question 1: In addition, we formulated several research questions. We proceeded from the fact that the relationship between the assessment of procedural justice and attitudes toward state authority may depend on the characteristics of the respondents and the specifics of the context. In all surveys, the respondents' recorded characteristics are their age and country of residence. In particular, some studies on procedural justice involve students, while others involve community members of various age groups. It can be assumed that, compared with students, adults have more often encountered representatives of state authority and have a more diverse experience interacting with them. Therefore, we compared how procedural justice is related to political attitudes in student and adult samples.

Research Question 2: Furthermore, research on procedural justice in the political sphere occurs in both democratic (e.g., Miles, 2014; Ohtomo et al., 2021; Rasinski, 1984; See, 2009; Tyler & Caine, 1981) and authoritarian (e.g., Sawmar & Mohammed, 2021; Wu & Wu, 2015; Zhong, 2020) states. The political institutions of democratic countries act according to the norms of procedural justice, while the political institutions of authoritarian countries partially or completely violate these norms. Therefore, we compared how procedural justice relates to attitudes toward the political system in countries with different political regimes.

Research Question 3: The variables of previous studies' contexts include the type of situation, the way justice is measured, the level of authority, and the direction of the assessment.¹ First, research participants evaluate either real (e.g., Grimes, 2017;

¹In meta-analyses, a distinction between cross-sectional and experimental studies is often made, since in the first case procedural fairness is only measured, while in the second it is also manipulated. However, in this case, the type of study almost completely coincided with the type of situations. Participants in cross-sectional studies, as a rule, assessed real situations, while participants in experimental studies assessed hypothetical situations. Therefore, we did not use the study type as a moderator.

Leung et al., 2007; Li et al., 2019) or hypothetical (e.g., de Fine Licht, 2014; Esaiasson et al., 2019; Wahl et al., 2010) situations. In the first case, respondents are asked to evaluate their real experiences of interactions with government officials. In the second case, they are asked to read the description of a fictitious interaction and evaluate it. Therefore, we compared the extent to which the procedural justice of real and hypothetical interactions is related to political attitudes.

Second, researchers measure procedural justice in different ways. Some ask participants to provide a direct assessment of procedural justice; for example, the participants rate how fair the decision-making process of a city authority in general. Other authors ask participants to evaluate the interaction on several criteria consistent with the norms of procedural justice. The authors then summarize the answers, from which they produce a justice index. The number of these norms varies from study to study, but their content corresponds to the theoretical models described above.

Research Question 4: Therefore, we compared how different ways of measuring procedural justice are related to political attitudes.

Research Question 5: Third, subjects can evaluate the actions of state authorities at the local (e.g., Nakatani, 2021; Riley et al., 2018; Ross et al., 2014) and federal (e.g., Azmi et al., 2016; Fisk & Cherney, 2017; Hamm et al., 2013) levels. The former includes government officials who influence individual regions (e.g., city government officials, mayors, or governors). The latter includes government officials who influence the state as a whole (e.g., members of Congress or the president). Accordingly, we compared the extent to which the procedural justice of local and federal authorities is related to political attitudes.

Research Question 6: Fourth, research participants can express attitudes toward different elements of the political system. Such elements include political institutions and the political system as a whole (e.g., Badiora, 2020; Carman, 2010; Devine-Wright, 2013; Hou et al., 2019), individual politicians and civil servants (e.g., Kershaw & Alexander, 2003), and the decisions and procedures of government officials (e.g., Chen et al., 2016; Levi & Sacks, 2009; Takenishi & Takenishi, 1992). Therefore, we compared how procedural justice is related to attitudes toward different elements of the political system.

METHOD

Inclusion Criteria

Each study had to fulfill several requirements to be included in the present meta-analysis.

Sphere of Social Interaction

Research on procedural justice occurs in organizational, legal, and political contexts. In the first case, the actions of the heads of state and commercial organizations in relation to employees, as well as the actions of teachers in relation to schoolchildren and students, are considered. In the second, the actions of the police in relation to citizens, and of judges in relation to the participants in the court session, are considered. In the third, the actions of government officials and politicians in relation to the inhabitants of the region or the country as a whole are considered. In the course of the meta-analysis, we assessed only studies on procedural justice in the political context.

Government Officials

We included studies in which respondents evaluated the actions of government officials (e.g., Kershaw & Alexander, 2003; Rasinski & Tyler, 1988), the heads of large state-owned companies (e.g., the Swedish National Rail Administration; Grimes, 2017), deputies of city and federal authorities (de Fine Licht, 2014), and political authorities in general (e.g., Azmi et al., 2016; Carman, 2010; Fisk & Cherney, 2017; Hamm et al., 2013). These officials make a variety of decisions related to transport infrastructure, natural resources, taxes, and so on. We did not consider studies that measured the procedural justice of private companies in relation to citizens, because such companies are not representatives of state authority.

Political Attitudes

We considered studies that measured different attitudes toward political institutions, individual government officials, and the decisions of the authority; such attitudes included approval, satisfaction, trust, and people's willingness to vote for these officials in elections. We did not consider public readiness and willingness for protest behavior, for two main reasons. First, in research on protest behavior, distinction is not often made between different types of justice. Second, the causes, dynamics, and consequences of protest behavior represent an independent line of research, within which meta-analyses have already been conducted (Agostini & van Zomeren, 2021).

Research Type

We analyzed cross-sectional and experimental studies in which respondents assessed procedural justice in the political context. We considered only those studies whose participants provided a comprehensive or general assessment of justice. In a comprehensive assessment, the participants assessed compliance with all norms of procedural justice, while in a general assessment they assessed the justice of the procedure's interactions as a whole. We did not consider experimental studies in which respondents were exposed but not asked about how they assessed procedural justice. Nor did we consider cross-sectional and experimental studies in which respondents were not asked to evaluate procedural justice as a whole but instead compliance with one norm only: namely, the right to vote and impartiality in a decision-making process.

Statistical Information

The meta-analysis included papers examining the bivariate relationship between political attitudes and perceived procedural justice. We considered studies in which direct (e. g. correlation, linear regression) and indirect effects (e. g. odds ratio, group comparison) were measured.

Literature Search

To identify the eligible studies, we conducted a systematic source search covering the period September–October 2021. The literature search was conducted across four electronic databases: Web of Science, Scopus, ProQuest, and EBSCO (Academic Search Ultimate, eBook Collection). To ensure that a broad spectrum of studies was included in our meta-analysis, we

placed no restrictions for the fields of subject area, type of source, or year of publication. This search provided a list of journal articles, conference abstracts, and dissertation texts.

We created broad search terms which we believed would cover every facet of the subject that we were interested in. Our search request comprised two blocks of keywords. The first block included words denoting procedural justice (“procedural justice,” “just* procedure,” “just* process,” “procedural fairness,” “fair procedure,” “fair process,” “interactional justice,” “interactional fairness,” “informational justice,” and “informational fairness”).

The second block included words related to politics (“polit*,” “civil*,” “policy,” “policies,” “institution*,” “politician*,” “president*,” “government*,” “agency,” “agencies,” “democra*,” “Parliament,” “Congress,” “elect*,” “party*,” and “parties*”). All terms within the same concept block were connected with “or”; different blocks were connected through “and.” Our request was based on the publication’s title, abstract, and the keywords.

There were four stages in the selection process for the articles (see Figure 1). First, our search produced 6,428 search results, of which we manually excluded 3,550 duplicate articles. Therefore, 2,861 potential journal articles and 17 dissertation texts met the preliminary criteria of our screening. Second, we analyzed each title and abstract to reveal possibly pertinent papers using the inclusion criteria listed above. Third, we studied the method sections to evaluate how well each work met the requirements for inclusion. Fourth, we examined the results sections to see if they contained suitable data.

During the analysis of the method sections, we found that 51 sources contained no information about how their studies assessed procedural justice. Another 67 papers explored compliance with a particular norm that did not meet the requirements for inclusion in this meta-analysis. Accordingly, these pieces of research were eliminated from further investigation. We also excluded two studies which analyze indirect measures of the relationship between variables (e.g., odds ratio) due to their small proportion to ensure a greater homogeneity in the selected studies (Bucher et al., 1997). Thus, our meta-analysis included only studies measuring direct effects.

The second, third, and fourth stages of the present study were completed concurrently by the two authors. The second stages featured a list of articles which at least one of the authors

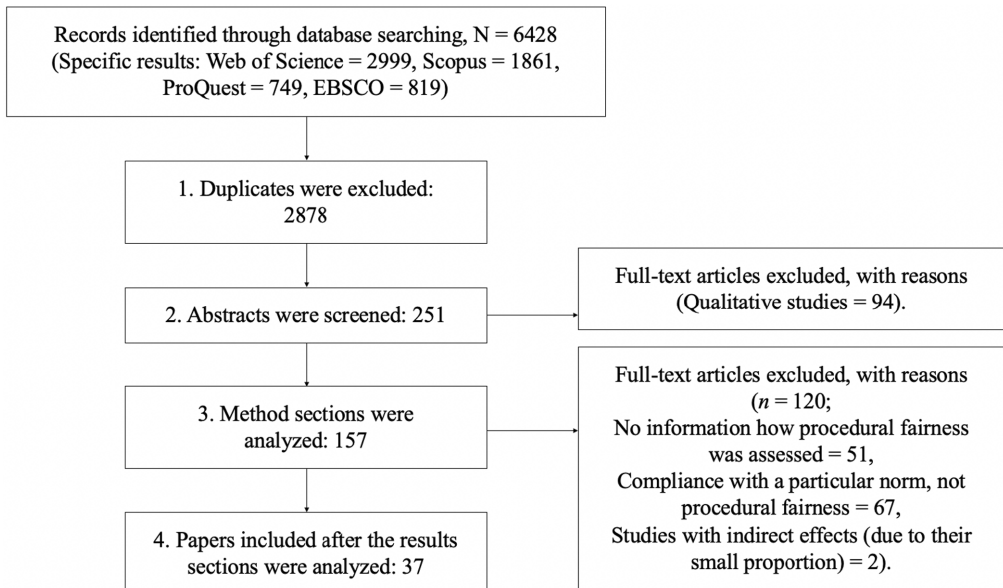


FIGURE 1 Flow diagram of the meta-analysis selection process.

had chosen. The sources chosen by both authors were used in the third and fourth stages. Following a discussion, it was debated whether to accept or reject the articles highlighted by one author but not by another.

After the fourth step, 37 sources remained on the final list, comprising 36 journal articles and one dissertation. These sources covered 69 studies, and the number of respondents in this research constituted 50,814 individuals: 27,663 individuals from studies conducted in individual countries and 23,151 from cross-country studies. A list of these studies and the coded results of the meta-analysis are described in the online supporting information.

An additional analysis of 37 sources showed that 19 articles had correlations, 11 articles had regression coefficients, six sources had SEM coefficients, and one article had path analysis. To unify the data, we contacted the authors of 12 papers published in the last 5 years which used regression coefficients and SEM data, asking them to send the correlation coefficients. The required data were sent by the authors of three papers. In other cases, we left the data that were present in the articles.

Information Retrieved From the Studies

Based on a protocol created by the research team, each study was independently coded by the two authors. This research entailed six coding characteristics.

First, we fixed a type of sample: students versus mixed sample/adults ([Research Question 1](#)). The student sample never represented the population of the country as a whole, while the adult sample could be either representative or unrepresentative in terms of key sociodemographic characteristics (gender, age, education, income, and so on).

Second, we examined the political regime ([Research Question 2](#)). To do so, we distinguished between full or flawed democracies, on the one hand, and hybrid or authoritarian regimes on the other. For this purpose, we used the Democracy Index (https://en.wikipedia.org/wiki/Democracy_Index) for the year when the article was published.

Third, we coded the type of situation: real versus hypothetical ([Research Question 3](#)). In a real situation, the respondents were asked about an experience of a real interaction with bodies and individuals such as government authorities and agencies (e.g., Azmi et al., 2016; Sawmar & Mohammed, 2021). In a hypothetical situation, the description of a fictitious event was formulated for and presented to the respondents. They were then asked to imagine themselves in the described situation and to assess the procedural justice of the imagined interaction (Esaïsson et al., 2019).

Fourth, we noted the methods which researchers used to measure procedural justice: direct assessment of procedural justice versus assessment of compliance with procedural justice norms ([Research Question 4](#)). In the first case, the researchers asked respondents to evaluate generally how fair or unfair the decision-making process was (Esaïsson et al., 2019; Ohtomo et al., 2021). In the second case, the researchers asked participants to rate how far a set of norms were respected in political interactions and then calculated an overall index of procedural justice (e.g., Azmi et al., 2016; Badiora, 2020; Hou et al., 2019; Leung et al., 2007; Vainio, 2011; Van Dijke et al., 2019).

Fifth, we fixed the level of authority at local versus federal ([Research Question 5](#)). The local level included city government (Herian et al., 2012), regional government (See, 2009), and local agencies (e.g., City Administration Bureau, Hou et al., 2019). The federal level included the heads of state companies (e.g., Swedish National Rail Administration, Grimes, 2017), government agencies (Azmi et al., 2016), the government (Leung et al., 2007), and the president of the country (e.g., Kershaw & Alexander, 2003).

Sixth, we coded the directions of assessment of the political system: attitudes toward political institutions versus individual representatives of government authority versus political decisions (**Research Question 6**). In the first case, the respondents were asked to evaluate approval of, satisfaction with, or trust in political institutions or the political system as a whole (e.g., Hou et al., 2019; Mah et al., 2014). In the second case, participants were asked to express their approval of, satisfaction with, or trust in particular authorities (e.g., Kershaw & Alexander, 2003; Tyler et al., 1985). In the third case, the respondents were asked to assess the rules, plans, laws, decisions, systems, and other activity effected by politicians (e.g., Bhattacharjee, 2001; Chen et al., 2016).

Analytical Strategy

Meta-analysis and further construction of the meta-regression model were performed using R 4.2.2 and Comprehensive Meta-Analysis (CMA) 3.0 software. The correlation and regression coefficients were transformed into Fisher z -scores for all studies and all measures within them. For the convenience and clarity, we provided the average effect sizes obtained in each of the articles included in the analysis. These average effect sizes offer a summary measure of the relationships examined in each study, allowing for a comparison and overview of the findings (see **Figure 2**). The further analysis used individual effect sizes alongside categorical variables as hypothesized moderators of the relationship between political attitudes and perceived procedural justice.

Before beginning the analytical procedures, we checked the data for publication bias (see below). We relied on the Egger test and distribution of standard errors of Fisher's Z values (Egger et al., 1997). We then described the data obtained and the total number of effect sizes analyzed.

We calculated the mean correlation between political attitudes and perceived procedural justice and tested the hypothesis that the distribution of effect sizes met the normality criteria. We constructed generalized fixed-effects and random-effects models while checking for heterogeneity in the models, and we calculated values of I^2 and τ . For both models, we calculated pooled effect sizes.

We constructed a meta-regression model in which the predictors were the available categorical variables describing the parameters of the studies included in the meta-analysis. This model included only statistically significant predictors. We tested the hypothesis that all coefficients (excluding the intercept) were equal to zero, calculated goodness-of-fit parameters for the model, calculated between-study variance (intercept only), and calculated the proportion of total between-study variance explained in the model (Van Houwelingen et al., 2002).

To address the research questions proposed for the study, we constructed random-effects models with each relevant categorical moderator. Using between-groups comparison and meta-regression models with a categorical variable as a predictor, we revealed a moderation or no moderation in each case.

Publication Bias

We found significant heterogeneity in observations, mostly due to the variety of methods which the analyzed studies employed. We also detected a publication bias, as evidenced by the Egger test ($t = .460$, p value = .000); this bias is not asymmetrical. The Funnel Plot of Standard Error by Fisher's Z is presented in **Figure 3**.

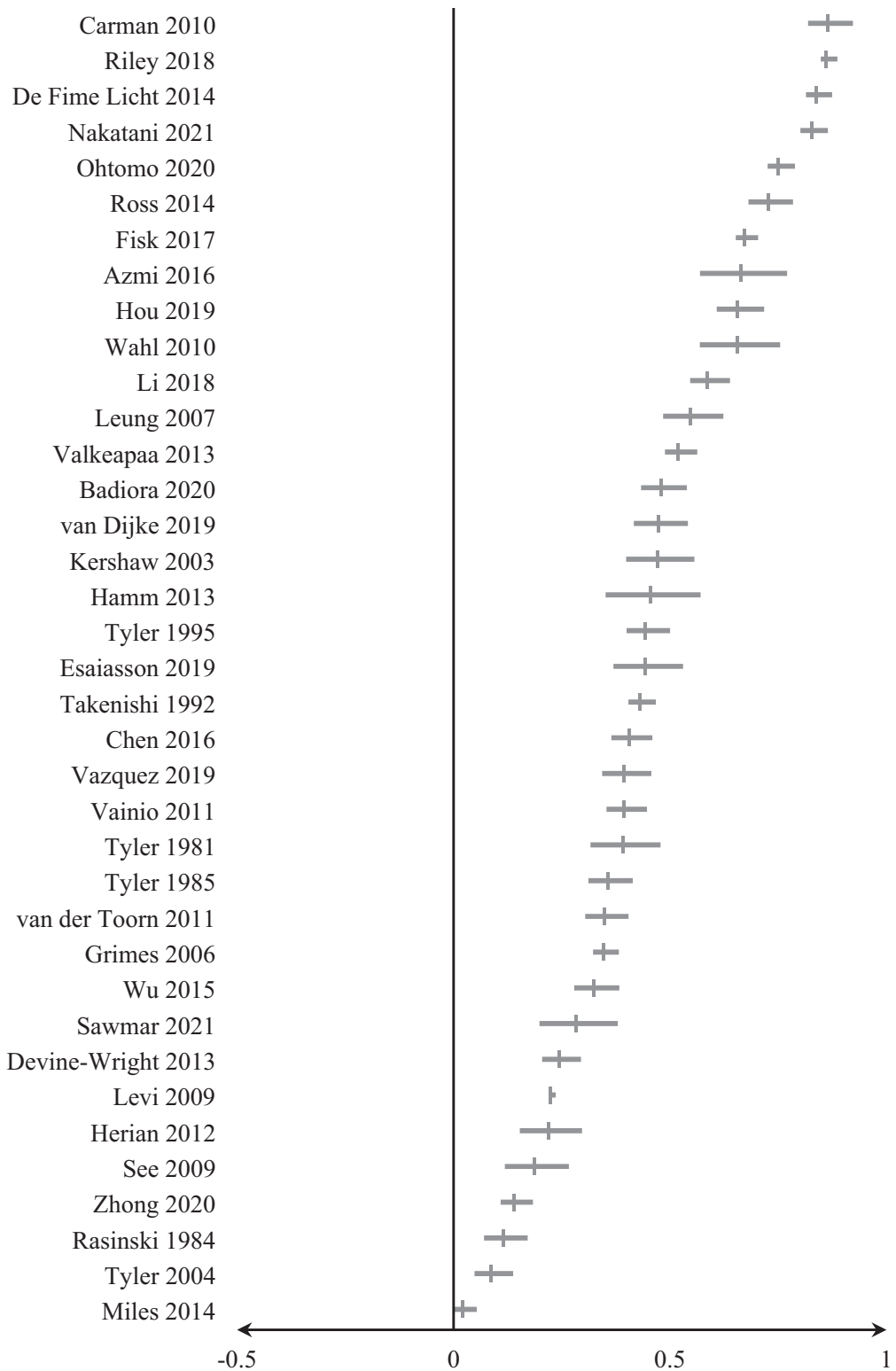


FIGURE 2 Fisher's Z distribution across all studies (clustered).

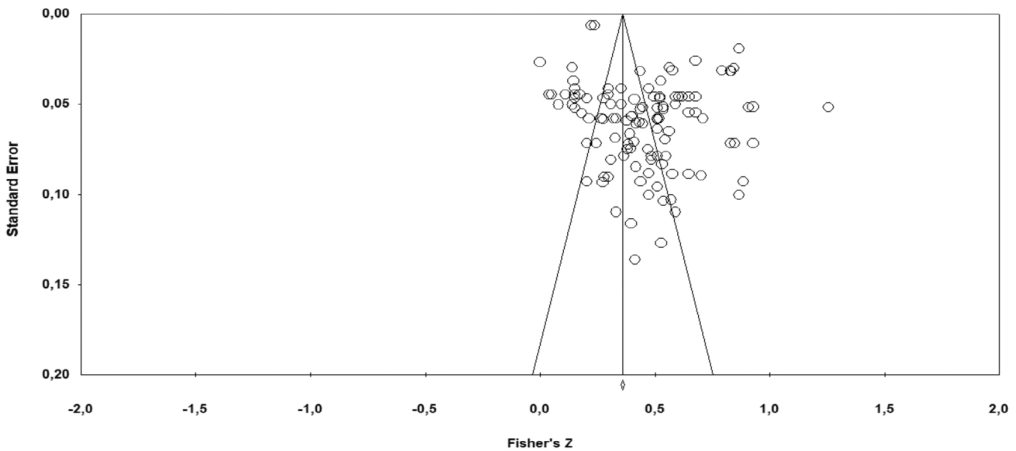


FIGURE 3 Funnel Plot of Standard Error by Fisher's Z.

RESULTS

Characteristics of the Dataset

The dataset comprised data aggregated from 37 sources. In each of them, we found a number of measurements of the relationship of interest between political attitudes and perceived political justice which varied from 1 to 27. The total number of effect sizes included in the analysis is 118; the total number of respondents is 50,814. The years of publication ranged between 1981 and 2021, with the median year being 2013.

General Relationship Between Procedural Justice and Political Attitudes

The mean correlation between political attitudes and perceived political justice is equivalent to .411 (95 CI: .380, .443); the standard deviation is .176 for the 118 measures included in the further analysis. There is no reason to reject the null hypothesis that the distribution of extracted correlations is consistent with normal parameters (Shapiro–Wilk criteria = .988, p value = .380), which benefits any further analysis.

The fixed-effects model indicates a positive relationship between the perceived procedural justice of political authorities and political attitudes with a pooled effect size of .344 (95 CI: .337; .351), p value = .000. Nevertheless, the obtained effect sizes vary depending on the study, as evidenced by the heterogeneity found in the model ($Q=4781.963$, $df=117$, p value .000).

The percentage of variation across studies which stems from heterogeneity rather than sampling error, as evidenced by $I^2=97.553$, is extremely high and shows substantial heterogeneity (Hardy & Thompson, 1998). Such heterogeneity is to be expected when considering that the studies were based on different scales and measured attitudes toward a variety of political authorities.

It provides sufficient evidence for turning to random-effects and mixed-effects models that are, in turn, more sensitive to the variation observed between the studies included in the meta-analysis. The random-effects model indicates a positive relationship between the perceived procedural justice of political authorities and political attitudes with a pooled effect size of .428 (95 CI: .379; .475), p value = .000.

We built a meta-regression model with all potentially relevant moderators. Sample type ($p=.9785$), political regime ($p=.3605$), and level of authority ($p=.1077$) have no statistically

significant effect at a 99% confidence level. A final meta-regression constructed with the inclusion of statistically significant moderators of the relationship between perceived procedural justice and political attitudes (see Table 1) explains some of the variance between studies, as suggested by $RI = .43$ ($Q = 38.21$, $df = 4$, $p = .000$).

However, as the goodness-of-fit test for the model illustrates ($\tau = .1816$, $Q = 2430.97$, $df = 113$, $p = .000$), there are factors not included in the model which explain the variations in the results obtained by the studies included in the meta-analysis.

Regarding Hypothesis 1, we note that there is an overall statistically significant positive relationship between subjectively perceived procedural justice and political attitudes. According to the generalized mixed-effects model, the pooled effect size varies from .391 to .464.

Having constructed a general meta-regression, we turn to the consideration of variables as single categorical moderators of the relationship between political attitudes and perceived procedural justice. The results of these analytical procedures are summarized in Table 2.

Sample Type

We investigated sample type as a potential categorical moderator of the relationship between political attitudes and perceived procedural justice. We compared two groups of studies: those with student samples (Group 1) and those with adult samples (Group 2). The mixed-effects model for the first group of studies ($N = 35$) indicates an estimated effect size of .395 (95 CI: .360; .429), p value = .000, while the mixed-effects model for the second group of studies ($N = 83$) indicates an estimated effect size of .439 (95 CI: .393; .483), p value = .000. No statistically significant differences were found between the two groups ($Q = 2.350$, $df = 1$, p value = .125).

A meta-regression including the type of sample as a predictor similarly confirms that there are no statistically significant differences between the groups of studies ($b = .0483$, p value = .3437). Therefore, addressing Research Question 1, we note that there are no statistically significant differences in the effect sizes between political attitudes and perceived procedural justice between student and adult (or mixed) samples.

TABLE 1 Meta-regression with statistically significant moderators.

	Coefficient	Standard error	95 CI Lower bound	95 CI Upper bound	Z	p-value
Intercept	.6070	.0343	.5397	.6742	17.69	.0000
Type of situation (hypothetical situation)	.1560	.0458	.0662	.2458	3.41	.0007
Method of assessment (compliance with a set of norms)	-.1958	.0426	-.2793	-.1123	-4.60	.0000
Assessment of the political system (evaluation of the politicians or other officials)	-.1759	.0718	-.3167	-.0351	-2.45	.0143
Assessment of the political system (evaluation of the rules/ plans/ laws/ decisions/ systems etc.)	-.1385	.0410	-.2188	-.0582	-3.38	.0007

TABLE 2 Summary of categorical moderators.

	Group 1	Group 2	Group 3	Between-Groups Comparison	Meta-Regression With Unique Categorical Predictor
Sample type (Group 1: students Group 2: adults)	.395 (95 CI: .360; .429) <i>p</i> value = .000	.439 (95 CI: .393; .483), <i>p</i> value = .000	-	<i>Q</i> = 2.350 df = 1 <i>p</i> value = .125	<i>b</i> = .0483 <i>p</i> value = .3437
Political regime (Group 1: full/flawed democracies Group 2: hybrid/authoritarian regimes)	.412 (95 CI: .368; .454), <i>p</i> value = .000	.475 (95 CI: .414; .531) <i>p</i> value = .000	-	<i>Q</i> = 2.759 df = 1 <i>p</i> value = .097	<i>b</i> = .0779 <i>p</i> value = .1334
Type of situation (Group 1: a real situation Group 2: a hypothetical situation)	.425 (95 CI: .369; .479), <i>p</i> value = .000	.433 (95 CI: .333; .522), <i>p</i> value = .00	-	<i>Q</i> = .028 df = 1 <i>p</i> value = .867	<i>b</i> = .0088 <i>p</i> value = .8507
Method of assessment (Group 1: direct assessment of justice Group 2: compliance with a set of norms)	.490 (95 CI: .438; .539), <i>p</i> value = .000	.374 (95 CI: .328; .418), <i>p</i> value = .000	-	<i>Q</i> = 10.964 df = 1 <i>p</i> value = .001	<i>b</i> = -.1433 SE = .0418 <i>p</i> value = .0006
Level of the authority (Group 1: federal Group 2: local)	.420 (95 CI: .375; .463), <i>p</i> value = .000	.439 (95 CI: .375; .499), <i>p</i> value = .000	-	<i>Q</i> = .231 df = 1 <i>p</i> value = .631	<i>b</i> = .0230 <i>p</i> value = .6022
Assessment of the political system (Group 1: political institutions or the political system as a whole Group 2: the politicians or other officials Group 3: rules/ plans/ laws/ decisions/ systems etc.)	.506 (95 CI: .447; .561), <i>p</i> value = .000	.343 (95 CI: .240; .439), <i>p</i> value = .000	.395 (95 CI: .352; .435), <i>p</i> value = .000	<i>Q</i> = 11.770 df = 2 <i>p</i> value = .003	Group 1 and Group 3 <i>b</i> = -.1396 SE = .0437 <i>p</i> = .0014

Political Regime

The next potential categorical moderator was the kind of political regime in the country in which the studies were conducted. We considered two groups of studies, comprising those conducted in full or flawed democracies and those conducted in hybrid or authoritarian regimes. The mixed-effects model for the first group of studies ($N=89$) indicates an estimated effect size of .412 (95 CI: .368; .454), p value=.000, while the mixed-effects model for the second group of studies ($N=29$) indicates an estimated effect size of .475 (95 CI: .414; .531), p value=.000. No statistically significant differences were found between the two groups ($Q=2.759$, $df=1$, p value=.097).

A meta-regression including the political regime as a predictor similarly confirms that there are no statistically significant differences between the groups of studies ($b=.0779$, p value=.1334). Therefore, addressing [Research Question 2](#), we consider that there is sufficient evidence to suggest that the kind of political regime does not moderate the relationship between political attitudes and perceived procedural justice.

Type of Situation

We constructed a mixed-effects model for two distinct groups of studies: those that asked participants to evaluate either a real or a hypothetical situation. The mixed-effects model for the first group of studies ($N=75$) indicates an estimated effect size of .425 (95 CI: .369; .479), p value=.000, while the mixed-effects model for the second group of studies ($N=43$) indicates an estimated effect size of .433 (95 CI: .333; .522), p value=.000. No statistically significant differences were found between the two groups ($Q=0.028$, $df=1$, p value=.867).

A meta-regression including this dichotomous categorical variable as an exclusive predictor similarly confirms that there are no statistically significant differences between the groups of studies ($b=.0088$, p value=.8507). Therefore, addressing [Research Question 3](#), we suggest that the type of situation that participants evaluate does not moderate the relationship between political attitudes and perceived procedural justice.

Method of Assessment

As a potential moderator of the interaction between political attitudes and perceived political justice, we considered the method used to assess perceived justice. We distinguished and compared two groups of studies: those that operationalized justice as compliance with a set of norms of justice (Group 1), and those that asked participants to provide a direct assessment of justice (Group 2). The mixed-effects model for the first group of studies ($N=53$) indicates an estimated effect size of .490 (95 CI: .438; .539), p value=.000, while the mixed-effects model for the second group of studies ($N=65$) indicates an estimated effect size of .374 (95 CI: .328; .418), p value=.000. Statistically significant differences were found between the two groups ($Q=10.964$, $df=1$, p value=.001).

A meta-regression including the measuring method of perceived justice as a predictor similarly confirms that there are statistically significant differences between the groups of studies ($b=-.1433$, $SE=.0418$, p value=.0006). Therefore, addressing [Research Question 4](#), we observe that there are statistically significant differences in effect sizes, contingent on how procedural justice was measured. The effect size between political attitudes and perceived procedural justice is higher in the group of participants who assessed justice by compliance with a set of specific norms, as compared to the group in which a direct assessment of justice was required.

Level of the Authority

We followed a similar procedure for another two groups of studies: those which measured the perceived procedural justice of federal authorities, and those that evaluated perceived justice at the local level. The mixed-effects model for the first group of studies ($N=68$) indicates an estimated effect size of .420 (95 CI: .375; .463), p value = .000, while the mixed-effects model for the second group of studies ($N=50$) indicates an estimated effect size of .439 (95 CI: .375; .499), p value = .000. No statistically significant differences were found between the two groups ($Q = .231$, $df = 1$, p value = .631).

A meta-regression including the level of authority as a predictor similarly confirms that there are no statistically significant differences between the groups of studies ($b = .0230$, p value = .6022). Therefore, addressing [Research Question 5](#), we assume that the level of authority judged by participants does not moderate the relationship between political attitudes and perceived procedural justice.

Assessment of the Political System

We also evaluated the elements of the political system as a categorical moderator of the relationship between perceived procedural justice and political attitudes. We understand the elements of the political system to comprise three groups. Group 1 includes political institutions or the political system as a whole; Group 2, politicians or other officials; and Group 3, rules, plans, laws, decisions, systems, and other kinds of political activity. For this purpose, separate mixed-effects models were first constructed for each group. The mixed-effects model for Group 1 ($N=37$) shows an estimated effect size of .506 (95 CI: .447; .561), p value = .000; for Group 2 ($N=9$), the estimated effect size is .343 (95 CI: .240; .439), p value = .000; and for Group 3 ($N=72$), the estimated effect size is .395 (95 CI: .352; .435), p value = .000. There are reasons for rejecting the null hypothesis that there are no statistically significant differences in the effect sizes in the groups ($Q = 11.770$, $df = 2$, p value = .003).

As evidenced by the results of the meta-regression with the inclusion of the categorical variable as a unique moderator of the relationship under consideration, statistically significant differences are observed between Group 1 and Group 3 ($b = -.1396$, $SE = .0437$, $p = .0014$). Although we assume the potential existence of differences between Group 1 and Group 2, and the absence of such differences between Group 2 and Group 3, it is not feasible to test this assumption with statistical precision. This is because of the lack of statistical power caused by a relatively small number of observations in Group 2. Therefore, addressing [Research Question 6](#), we presume that there is a greater effect on the perception of the procedural justice of political institutions or the political system as a whole as compared to the perception of the procedural justice of rules, plans, laws, decisions, systems, etc. The effect size between perceived procedural justice and political attitudes is significantly higher when participants assess the political and institutional system as a whole as compared to when they assess the justice of specific procedures and decisions.

DISCUSSION

The present research reports findings from the meta-analysis of the relationship between the procedural justice of political interactions and political attitudes. We examined whether there are differences in the correlations which stem from the age of respondents (student vs. adult sample), the type of political system (democratic vs. authoritarian regime), the type of interaction (real vs. hypothetical), the method for measuring procedural justice (compliance with a

set of norms vs. direct assessment), the level of authorities (local vs. federal), and the type of political attitudes (political institutions and political system as a whole vs. individual representatives of government authority vs. political decisions and procedures). The results of this meta-analysis led to several conclusions.

Relationships Between Procedural Justice and Attitudes Toward The Political System

The perceived procedural justice of political interactions is related to attitudes toward government authority. The higher that people rate the procedural justice of authorities, the more positively they evaluate political institutions and the political system as a whole, individual representatives of power, and also decisions made and established procedures. These results are consistent with the theoretical notion that the procedure of social interaction is an important factor which influences participants' attitudes and their behavior toward people in power (Tyler, 2011; Tyler & Van der Toorn, 2013).

The positive relationship between the assessment of procedural justice and political manifests consistently for different people and across different settings. In particular, it is evident in people of different ages (students vs. adult people) and residents of countries with different political regimes (full or flawed democracies vs. hybrid or authoritarian regimes), in real and hypothetical situations, and when measuring attitudes toward different levels of government (federal vs. local). These data support the idea that procedural justice is a universal criterion for evaluating political interactions.

This may be the case because fair procedures satisfy basic human needs. For instance, self-determination theory posits that all people have basic psychological needs: autonomy, competence, and relatedness (Ryan & Deci, 2017). The ability to influence decisions allows people to satisfy the need for autonomy because it allows them to act in accordance with their values; equal treatment satisfies the need for competence, as it allows people to achieve success in some areas; and respect and care from the authorities satisfy the need for relationships, because they allow a person to feel and appreciate the good attitudes of others.

However, two factors influence the relationship between the assessment of procedural justice and political attitudes. The first factor is the method of measuring procedural fairness. Our meta-analysis has shown that procedural fairness as compliance with a set of specific norms is more strongly associated with attitudes toward the political system than is procedural fairness as a direct assessment. This may occur because, in the first case, the researchers focus respondents' attention toward specific aspects of the interaction. In the second, the respondent decides for himself what procedural fairness is; therefore, people can be guided by additional norms that are important only for them.

The second factor is the direction of assessment of the political system. The assessment of procedural justice is more strongly associated with attitudes toward political institutions and the political system as a whole than toward the procedures and the decisions the authorities make. In our opinion, this happens because the evaluation of political procedures and decisions depends on two factors: an assessment of the justice and positivity of the result, examples of the latter including the perceived effectiveness of the program or the bonuses that the citizen received from its implementation (e.g., Levi & Sacks, 2009; Sawmar & Mohammed, 2021; Van der Toorn et al., 2011; Zhong, 2020).

Moreover, the assessment of procedural justice interacts with the positivity of the outcome. For example, the authors of one study analyzed data from the sixth wave of the European Social Survey, which included respondents from 29 countries. This study demonstrated that satisfaction with the state of the country's economy interacted with the assessment of

procedural justice: the less that people were satisfied with the state of the economy, the more procedural justice predicted attitudes toward the government in the country (Magalhães & Aguiar-Conraria, 2019). The positivity of the result therefore strongly influences political attitudes.

However, it can be assumed that this factor plays a more serious role when evaluating specific decisions and procedures than when evaluating political institutions and the political system as a whole. Political decisions and procedures have specific positive or negative impacts on the lives of citizens (e.g., increased income, improvement of the ecological situation). Political institutions take different actions that lead to different results, among which there can be both positive and negative outcomes. Under these conditions, it is more difficult for people to assess the overall favorability of the outcome obtained by the political institutions, and they pay greater attention to procedural justice.

Limitations and Future Research Directions

It should be reiterated that the percentage of heterogeneity in the obtained models is fairly high. As demonstrated above, the highlighted categorical moderators explain 43% of the variance of the obtained effect sizes: the type of situation, the method of assessment of procedural justice, and the assessment of the political system. It is likely that other factors account for an unexplained portion of the variation in effect sizes. We therefore interpret our results with caution, recognizing that there are potentially unaccounted-for factors that moderate the relationship between political attitudes and perceived political justice.

Moreover, as with any meta-analysis, our confidence in our conclusions is limited by the data provided by the available studies. It is crucial to properly contextualize the results of the present meta-analysis in order that they can be correctly interpreted. Therefore, we describe below the main limitations of existing research on the relationship between procedural justice and attitudes toward the political system. In doing so, we also offer some directions for further research which can address these limitations.

First, substantially more research has been conducted in full or flawed democracies than in countries with hybrid or authoritarian regimes. It can be assumed that this difference has objective grounds. In democratic countries, representatives of the authorities more readily and visibly support the norms of procedural justice than do representatives in authoritarian states. Therefore, in democratic countries procedural justice is a more overt, important part of public life and consequently attracts more attention from researchers. However, as a result, scholars seem to underestimate the importance of procedural justice in authoritarian states. It would hence be worthwhile to conduct further research in countries with authoritarian regimes to provide more data.

Second, we found relatively few studies comparing complex assessments of procedural justice with attitudes toward the political system. In many cases, researchers have measured subjects' responses to compliance or noncompliance with one norm, most often the right to vote. This has perhaps occurred because this norm corresponds to an essential and widespread political procedure that can be easily reproduced in experimental studies: voting for a politician in an election or a specific referendum. However, procedural justice is a complex phenomenon that cannot be simply reduced to the presence or absence of a vote. It is therefore worth pursuing research that measures compliance with different norms of justice in the political sphere.

Third, scholars of procedural justice pay little attention to people's attitudes toward specific politicians. Most studies examining the relationship between assessments of procedural justice and political attitudes measure public attitudes toward political institutions or political systems as a whole or toward specific decisions and procedures. The few politicians that are mentioned in the studies are, generally, members of Congress or presidents. Existing research

therefore does not consider the relationship between procedural justice and the treatment of specific representatives of authority, especially if they work at the local level. More research can thus be conducted which considers specific politicians' actions.

Fourth, the studies analyze very different decisions and procedures effected by representatives of local and federal authorities. The most common decisions and procedures are related to the modes of communication between citizens and government officials, ecology (for example, waste management, forests, and nuclear energy), and the payment of tax. However, these phenomena are very different from each other and cannot readily be classified into one coherent group. We therefore cannot compare the role of procedural justice in evaluating decisions affecting such different aspects of life, society, and politics. It is thus necessary to conduct studies that compare the role of fairness in the evaluation of different decisions and procedures.

Fifth, researchers make a distinction between three factors that influence attitudes toward organizations, authorities, and decisions: the outcome favorability, the fairness of the outcome, and the fairness of the process. Research shows that these factors predict attitudes toward others in different ways (Tyler & Blader, 2000) and interact with each other (Brockner & Wiesenfeld, 1996; De Blok & Kumlin, 2022; Magalhães & Aguiar-Conraria, 2019; Van den Bos, 2001). However, many studies conducted in the political realm measure only procedural fairness, so we cannot make a reliable conclusion based on how it interacts with distributive fairness and the positivity of the outcome. Thus, it is worthwhile to conduct studies that measure all three factors.

Sixth, some studies have shown that the importance of observing procedural justice depends on the individual characteristics of people, such as their personal values (e.g., Esaiasson et al., 2019; Kershaw & Alexander, 2003) and the characteristics of the situation, including levels of uncertainty or threats (e.g., Herian et al., 2012; Ohtomo et al., 2021). However, scholars who study political processes tend to pay little attention to such factors. At present, we therefore cannot confidently state that the observance of procedural justice in the political sphere has the same effect on all people or under all circumstances. Accordingly, in research on political justice, it remains important to consider the specific characteristics and contexts of both the people observed and the situations analyzed.

Finally, during the construction of our meta-analysis models, we took into account the possibility of data clustering to align with the hierarchical structure of coefficients nested within samples and samples nested within articles. Unfortunately, we faced limitations due to the small number of observations per article available in our dataset, preventing us from implementing this clustering approach effectively. To address this challenge, researchers typically recommend a minimum of 10–15 measurements per level of clustering (Austin & Leckie, 2018; Clarke, 2008). In our specific scenario, only two articles, namely Esaiasson et al. (2019) and Tyler et al. (1985), met this criterion, while the majority of articles contained only 2–4 coefficients. However, applying clustering would likely lead to considerable uncertainty in estimating random effects and imprecise overall effect-size estimates. Instead, we have chosen to incorporate additional pertinent categorical predictors into our model. This approach allows us to investigate their relationships with the outcome variable and explore potential sources of heterogeneity across studies.

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