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Trust, but verify? Understanding citizen attitudes toward evidence-informed policy making

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Abstract

In this article, we inquire to what extent different manifestations of trust are associated with public support for evidence informed policy making (EIPM). We present the results of a cross-sectional survey conducted in the peak of the second COVID-19 wave in six Western democracies: Australia. Belgium, Canada, France, Switzerland, and the United States (N = 8749). Our findings show that public trust in scientific experts is generally related to positive attitudes toward evidence-informed policy making, while the opposite is the case for trust in governments and fellow citizens. Interestingly, citizens' assessment of government responses to COVID-19 moderates the relationship between trust and attitudes toward EIPM. Respondents who do rather not trust their governments or their fellow citizens are more in favor of EIPM if they evaluate government responses negatively. These findings suggest that attitudes toward EIPM are not only related to trust, but also strongly depend on perceived government performance.

Abstract

Dans cet article, nous examinons dans quelle mesure différentes marques de confiance sont associées au soutien du public à l'élaboration de politiques fondées sur des preuves (EIPM). Nous présentons les résultats d'une

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enquête transversale menée au plus fort de la deuxième vague COVID-19 dans six démocraties occidentales: Australie, Belgique, Canada, France, Suisse et États-Unis (N = 8749). Nos résultats montrent que la confiance du public dans les experts scientifiques est généralement liée à des attitudes positives envers l'élaboration de politiques fondées sur des preuves, alors que le contraire est constaté pour la confiance dans les gouvernements et les concitoyens. Il est intéressant de noter que l'évaluation par les citoyens des réactions du gouvernement au COVID-19 modère la relation entre la confiance et les attitudes envers l'EIPM. Les personnes interrogées ne faisant plutôt pas confiance à leur gouvernement ou à leurs concitoyens sont plus favorables à la politique fondée sur des preuves lorsqu'elles évaluent négativement les réactions du gouvernement. Ces résultats suggèrent non seulement que les attitudes envers l'EIPM ne sont pas seulement liées à la confiance, mais dépendent aussi fortement de la performance perçue du gouvernement.

Abstract

In dit artikel gaan we na in hoeverre verschillende vormen van vertrouwen samenhangen met publieke steun voor empirisch onderbouwd beleid (evidence informed policy making", EIPM). We presenteren de resultaten van een cross-sectionele bevraging uitgevoerd op het hoogtepunt van de tweede COVID-19 golf in zes Westerse landen: Australië, België, Canada, Frankrijk, Zwitserland en de Verenigde Staten (N = 8749). Uit onze bevindingen blijkt dat het publieke vertrouwen in wetenschappelijke experts over het algemeen samenhangt met een positieve houding ten aanzien van EIPM, terwijl het omgekeerde het geval is voor het vertrouwen in regeringen en medeburgers. Het oordeel van burgers over de COVID-19 aanpak van overheden matigt evenwel de relatie tussen vertrouwen en attitudes ten aanzien van EIPM: respondenten die hun regering of hun medeburgers minder vertrouwen zijn meer voorstander van EIPM indien zij het optreden van hun overheid t.a.v. COVID-19 als negatief beoordelen. Deze bevindingen geven aan dat attitudes ten aanzien van EIPM niet alleen samenhangen met vertrouwen, maar ook sterk afhangen van waargenomen overheidsprestaties.

1 | INTRODUCTION

There is never just one answer to a problem, and decision makers usually have to choose the best possible option from a bouquet of different measures in addressing societal challenges. Which policy solution is eventually chosen will depend on the interaction among different factors which we can analytically capture under the umbrella of the four Is (Weiss, 1995): interests, ideology, institutional rules, and information. How these factors manifest themselves, and which ones are prioritized will logically differ across particular politico-administrative settings. Still, one may get the impression that "information" (including scientific evidence) as one of the four Is has gained in significance over time, at least when considering the current popularity of a notion as evidence-based policy making in general government discourse. In public policy discussions, as argued by Head (Head, 2016, p. 472), it is axiomatic that reliable information is integral to sound processes for formulating and implementing policies.

This axiom has particularly been pushed on the agenda by the evidence-based policy movement since the 1970s and regained in momentum in the late 1990s. Generally speaking, the movement propagates to prioritize meaningful evidence in decision-making and to improve the policy impact through the systematic incorporation of evidence (Davies & Nutley, 2000; Nutley et al., 2010; Pawson, 2006). Following fierce intellectual discussions about the feasibility of evidence-*based* policy making, in light of the nature of the political game (Daviter, 2015; Hong & Kim, 2019; Newman & Head, 2015; Sanderson, 2002a; Schlaufer et al., 2018) and considering organizational impediments (Bourgeois & Cousins, 2013; Head, 2016; Labin et al., 2012; Powell et al., 2018), many have started to use the more modest term evidence-*informed* policy making (EIPM). Despite these recent qualifications (Head, 2016), discussions about the relation between information and policy making remain in vogue, and received a strong boost with the COVID-19 crisis which put the topic high on the public and mass media's radar. Large numbers of the public voiced their skepticism about the extensive reliance of governments on scientific evidence, for example, in relation to vaccination, or lockdown measures. In literature, this skepticism is related to a plethora of factors, of psychological nature, normative, or social nature (Baghramian & Croce, 2021; Levy, 2019).

When it comes to social factors underpinning support for or skepticism about EIPM, little systematic empirical research exists thus far on the role of *public trust* in particular. In the context of COVID-19, several studies showed that trust is highly correlated with the compliance and acceptance of restrictive measures (Agley, 2020; Bicchieri et al., 2021; Kreps & Kriner, 2020; Plohl & Musil, 2021). Also Cairney and Wellstead (2020) highlighted the important (albeit variable) role of different trust relations, including public trust in government and government policy, for understanding COVID-19 policy dynamics in the United Kingdom and the United States. Besides, also public trust in scientists, that is, the producers of evidence, received much scholarly attention in the context of the pandemic (Ahluwalia et al., 2021; Bennett, 2020), and reinvigorated long-existing discussions about the role and influence of scientific experts in democratic governance (e.g., Bertsou & Caramani, 2019; Dommett & Pearce, 2019; Pastorella, 2016). This being said, how public trust in various actors relates to citizen support for EIPM is unknown. Understanding this relationship is important, as it might point to cultural divides in advanced democracies and populist leaders devaluating the relevance of science in politics.

COVID-19 constitutes a unique context to investigate this issue in more depth in a cross-country setting. Other than most studies, which typically focus on one type of trust only, we consider different types of trust in one model to explain EIPM attitudes: trust in scientific experts (epistemic trust) and trust in citizens and governments (two main expressions of social trust). With trust in citizens and governments shown to be determined by different antecedents (e.g., Peters et al., 1997), we also consider it important to apply a multi-trustee approach for a full understanding of the relationship between trust and support for EIPM. In addition, our study innovatively accounts for how citizen's assessment of government performance affects this relationship.

We present the results of an original large-scale cross-sectional survey conducted in winter 2020/2021 in six Western democracies: Australia, Belgium, Canada, France, Switzerland, and the United States (total N = 8749). At the time of the survey, all six countries faced the second wave of the COVID-19 pandemic. Our findings show that public trust in scientific experts is generally associated with positive attitudes toward EIPM, while the opposite is the

4 WILEY Populic administration

case for trust in governments and fellow citizens. Interestingly, though, citizens' assessment of government responses to COVID-19 moderates the relationship between trust and attitudes toward evidence use. Respondents who do rather not trust governments or fellow citizens are more in favor of EIPM if they evaluate their government's responses negatively. These findings confirm that attitudes toward EIPM not only relate to trust, but also strongly depend on how COVID-19 performance of governments is perceived by citizens.

This article is structured as follows. Section 2 provides an overview of the literature on EIPM and presents our hypotheses. Section 3 details the research design and data collection, while Section 4 presents our findings. We proceed with a discussion of our findings in Section 5. The final section concludes by highlighting the major theoretical implications, and addresses this study's limitations and ways forward.

1.1 | Attitudes toward evidence-informed policy making and the role of trust

During the past couple of decades, EIPM¹ has been placed back in the forefront of policy making as a normative leitmotif due to increasingly more complex policy problems and the consequent reduced policy analytical capacity of governments (Davies & Nutley, 2000; Nutley et al., 2010; Pawson, 2006). The motives for integrating evidence in policy making are often said to be part of a rationalist and instrumentalist approach to policy-making (Mayer et al., 2005). In addition, EIPM is typically promoted to support the quest for more efficient and effective policy decisions. Governments, in this sense, make use of evidence "simply because they want to make the right decisions" (Peters & Barker, 1993, p. 1), in view of a proportionate and accurate spending of public money. As Peters and Barker also note (Peters & Barker, 1993, p. 1), "receiving advice helps governments to appear more open and democratic." In other words, anchoring policy making in evidence is supposed to provide policy-makers with stronger public support, and is expected to foster trust in governments (the 2021 White House Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking being a recent case in point).

Still, despite a great deal of interest in the contribution of EIPM in fostering government trust, little is known about the inverse relationship, treating trust as an independent variable. While governments may be incentivized to rely on evidence-based policy on rational motives, it is not rational per se to expect citizens to support the use of evidence in policy making, as they often know little about the process leading to this evidence (Baghramian & Croce, 2021). As such, whether citizens value the use of evidence in policy making can be expected to be a function of trust.

In this article, we inquire to what extent different manifestations of trust indeed relate to public support for the use of evidence in policy making. Rather than restricting ourselves to epistemic trust (Baghramian & Croce, 2021) only, that is, trust in scientific experts, which is commonly associated with the relationship of evidence and policy, we also explicitly consider public trust in other trustees. Consistent with one of the most frequently cited definitions (PytlikZillig & Kimbrough, 2016) we conceive trust broadly as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Mayer et al., 1995, p. 712). Trust in this line of thinking comes down to an expression of "belief," as a by-product of the embeddedness of individuals in a web of social relations (Powell, 1996, p. 62).

Scientific evidence is by nature produced by scientific experts who have an epistemic advantage over laypeople in a particular domain. This competitive advantage puts nonscientific experts inevitably in a dependence relationship, which "highlights the need for trust" (Baghramian & Croce, 2021, p. 449) and epistemic trust in particular, that is, forming beliefs on the basis of testimony of scientists or the scientific community. In the context of the COVID-19 pandemic, some even called attention for the importance of "recommendation trust" (Bennett, 2020), in the sense that citizens were not only asked to believe what scientific experts told, but also to follow expert recommendations. Irrespective the specific type of trust—epistemic or recommendation trust—both types demand a lot from nonscientific experts. Underpinning them is the very assumption that nonscientific experts predict that scientific experts

5

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will indeed behave as agreed or required by the situation, congruent with their qualifications and credentials (Ingold & Gschwend, 2014). Normative accounts of trust even go beyond this, and emphasize that nonscientific experts also count on the fact that scientific experts will behave as expected (see Baghramian & Croce, 2021 for an extensive discussion). Considering the major demands that trust in scientific experts impose on laypeople, and the goodwill that is asked from them, it is also intuitive to expect that the more the public accepts this authority in scientific experts, the more supportive they will be of the use of scientific evidence in policy making.

Hypothesis H1. The higher trust in scientific experts, the more positive the attitude toward evidenceinformed policy making.

Theoretically, the relationship between trust in governments and EIPM can be associated with the ongoing "technocracy debate" (Weingart, 1999). As mentioned above, the emphasis on the role of evidence in policy making is embodied by an instrumental rationality, which has been explicitly conceived as indicative of a reinvention of "technocratic policies" (Clarence, 2002). Underpinning this association with technocracy is that evidence-informed policy tends to erode the normative basis of policy making (Sanderson, 2002b), and that it makes bureaucrats "decide for rather than with citizens, guided by scientific expertise rather than political dialogue" (Feitsma, 2018, p. 389). While some scholars indeed underline the complementary of both dimensions (e.g., Pettit, 2004; Williams, 2006), the predominant strand in literature assumes a negative trade-off between them, or between democracy and technocracy more in general (Bertsou & Caramani, 2020; Bertsou & Pastorella, 2017). Empirically, it remains difficult to derive any firm conclusions about the role of trust in governments in this context, particularly since literatures apply related but different dependent variables. Pechar et al. (2018), for instance, demonstrate a positive relationship between attitudes toward government and trust in climate science and GMO science in Germany and the United States. With the government being an important funder of scientific research in these policy fields, as they argue, the general public tends to make an association between both. Other surveys also revealed a strong correlation between trust in government and trust in science (Wellcome Global Monitor, 2018). In a study of Brewer and Ley (2013, p. 128) in the area of environmental issues, trust in government was instead not significantly related to trust in scientists. Also literature on populism hinted at the relationship between trust in governments and trust in science (e.g., Mede & Schäfer, 2020), but the empirical trend is neither unambiguous. As shown in the case of France, for instance, left-wing populists rather than right-wing populists tend to be anti-establishment and anti-government, but typically value trust in science (Rouban, 2021). In this context, Bertsou and Pastorella (2017) underscore that independent technocratic expertise should not be placed in the same category as existing political establishment, as this would particularly go against the tension between technocrats and a political system's representative democratic elite. Relying on the 2008 European Values Survey, they empirically confirmed that levels of trust in political institutions very much shape citizen's preferences for technocracy. More in particular, citizens who are distrustful of political institutions are more likely to express a positive attitude about technocracy. In line with the above-explained association of evidenceinformed policy with technocracy, we find it plausible to find the same negative relationship as Bertsou and Pastorella (2017). More in particular, we expect that citizens highly trusting their governments will less feel the need for more scientific evidence use by their governments. To put it in other words: the higher trust citizens have in their governments, the less important they will find it to have epistemic input coming from scientific experts which may potentially go against government preferences.

Hypothesis H2. The higher trust in governments, the less positive the attitude toward evidence-informed policy making.

Research on trust usually distinguishes between particularized and generalized trust (Bjørnskov, 2007; Uslaner, 2002; Yamagishi & Yamagishi, 1994). While the former is based on recurring face-to-face interactions, generalized trust is defined as "a community [that] shares a set of moral values in such a way as to create regular

expectations of regular and honest behavior" (Fukuyama, 1995, p. 153). Generalized trust also extends to people to which an individual has neither a direct connection nor concrete information. As such, it indicates whether someone believes in the good of a community to solve collective action problems. Similar to the argument for trust in governments, one could claim that generalized trust constitutes an alternative to science-based evidence in providing assistance in how to shape public policies. The lower epistemic trust citizens have in fellow citizens, the more they will appreciate epistemic input coming from scientific experts.

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Hypothesis H3. The lower public trust in citizens, the more positive the attitude toward evidence-informed policy making.

Whether citizens are appreciative of EIPM might also depend on how they evaluate their government's performance. After all, one of the rationales of EIPM is to improve the effectiveness of government responses (Nutbeam, 2020; Sager et al., 2020). Following this line of thinking, it can be assumed that citizens will demand more scientific evidence, if they are not satisfied with how their governments dealt with the pandemic. We expect this to be particularly the case when citizens distrust their governments or their fellow citizens. As we explained when presenting Hypotheses H2 and H3, citizens distrusting their governments or their fellow citizens may want politics to use more scientific evidence, which can serve as an epistemic alternative to prevailing government or citizen preferences. When citizens' assessment of government performance is low, this need will likely be more pronounced. In such negative scenario of low citizen trust in governments or fellow citizens *and* dissatisfaction with government performance, relying on scientific evidence may be the only avenue of escape (Gilley, 2017). In a more hybrid scenario where civic assessment of government performance is low but where citizens have relatively high trust in fellow citizens or the government, they will presumably have more confidence that viable policy solutions can be developed without additional scientific input.

Hypothesis H4. The more negative the evaluation of government performance, the more positive the attitude toward evidence-informed policy making, provided that public trust in fellow citizens or governments is low.

2 | METHODS AND DATA

Prior studies on attitudes toward EIPM have either focused on government agencies (Cairney, 2021; Head, 2013, 2016; Moynihan & Pandey, 2010; Newman et al., 2016) or investigated the use of evidence in specific programs or domains (Jones & Villar, 2008; Whitty & Wisby, 2020). In order to investigate public attitudes toward EIPM, we have conducted a cross-national survey in six countries-Australia, Belgium, Canada, France, Switzerland, and the United States (N = 8749) between November 2020 and January 2021.² The selected countries reflect a most different case selection (Seawright & Gerring, 2008), covering both parliamentary and non-parliamentary democracies (Siaroff, 2003) and countries with different administrative systems (Meyer & Hammerschmid, 2010; Turgeon & Gagnon, 2013). Most crucially, the sample also provides variance for post-truth discourse (see Bundi & Pattyn, 2022). Political observers identified an increase of post-truth politics in Australia and the United States, while the other four countries in our sample restrained from this (Duncombe, 2019). These institutional and cultural differences might explain the perceived importance of evidence in policy making, as prior studies have shown that institutions are important enablers of evidence utilization (De Peuter & Pattyn, 2008; Hoerner & Stephenson, 2012), in particular during the COVID-19 crisis (Migone, 2020). Administrative traditions may not necessarily lead to different attitudes toward EIPM, but studies show that the administrative organization is related to their performance (Porumbescu, 2017; Van de Walle & Bouckaert, 2003), which might foster a higher demand for evidence in policy making. Finally, the post-truth tradition may influence the perceived credibility of scientific evidence in the public.



TABLE 1 Overview of sample

Country	N	Female (%)	Age group (mean)	University degree (%)	COVID-19 handling (mean)	EIPM (mean)
Australia	1266	58	45-54	42	7.30	7.42
Belgium	1512	51	35-44	49	4.46	7.23
Canada	1220	60	45-54	52	6.03	7.39
France	1220	65	35-44	53	4.22	7.02
Switzerland	2270	46	35-44	48	5.87	7.29
United States	1261	55	45-44	52	5.13	7.33
Total	8749	55	35-44	49	5.53	7.28

Note: The respondents were divided into six groups of age: 18–24 (1) to 65+ (6); COVID-19 Affected: I have been personally affected by the pandemic in a negative way; COVID-19 handling: 0 (extremely bad) to (extremely well); Evidence-informed policy making (EIPM): 0 (disagree) to 10 (fully agree).

According to McDermott (2019), people consider opinion to be as legitimate as objective facts in post-truth societies. The stronger this culture, the more citizens have neutral or even negative attitudes toward EIPM.

The survey was conducted in the peak of the global COVID-19 pandemic, which has substantially impacted most citizens' lives. In response to this health crisis, most governments decided to take drastic measures such as restricting personal liberties (e.g., free movement) or closing whole industries (e.g., gastronomy). Even if individuals did not directly contract the virus or knew somebody who did so, most were affected financially or socially by the public responses. At the same time, decision makers were also in active exchange with scientists to cope with the crisis, even though "science" did not speak with a single voice (Cairney & Wellstead, 2020; Lee et al., 2020; Van Dooren & Noordegraaf, 2020). While health experts advised governments to take measures against the spread of the SARS-CoV-2 virus, other scientists such as economists or psychologists called attention for other risks which could result from the COVID-19 restriction measures themselves. It can be safely argued that there has hardly been a time where scientists were as present in the political and social discourse. This makes the COVID-19 setting a particularly interesting case. Table 1 provides an overview of the sample.

In order to measure our dependent variable *EIPM*, we asked the respondents whether they fully disagree (0) or fully agree (10) with the following statement: "I would like to see policy-makers use scientific evidence more often to make decisions on specific issues." Our main independent variable *trust* is measured by asking respondents the following question: "Overall, how much trust and confidence do you have in each of the following to do a good job carrying out their responsibilities?" Citizens could rank scientific experts, fellow citizens and different governments on a scale from 1 (none) to 4 (a great deal), but we have dichotomized them for the analysis. Moreover, we combined the three variables that measure trust in the federal government, the provincial government, and the local executive to the variable "trust in governments" since they strongly correlated with each other.³ Overall, the respondents in all countries have similar levels of trust. They have the highest trust in scientific experts, followed by governments and fellow citizens. However, there are some nuances across countries. Compared to other countries, scientific experts are less often trusted in Switzerland and France, while trust in governments is higher in Switzerland. Figure 1 shows the different trust levels for the six countries.

To test whether respondents' evaluation of the COVID-19 handling (i.e., government performance) moderates the relationship between trust and attitudes toward evidence-based policy making, we asked respondents the following question: "We now turn to some questions related to the pandemic. On a scale from 0 (extremely badly) to 10 (extremely well), how well do you think your country has handled the COVID-19 pandemic so far?"⁴ We include this variable also in the regular models in order to test whether respondents' government assessment is directly associated with attitudes toward EIPM.

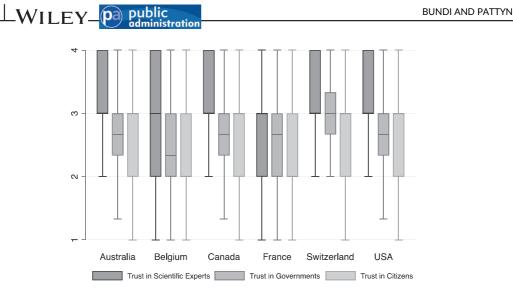


FIGURE 1 Levels of trust across countries

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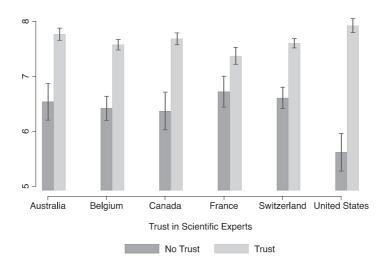
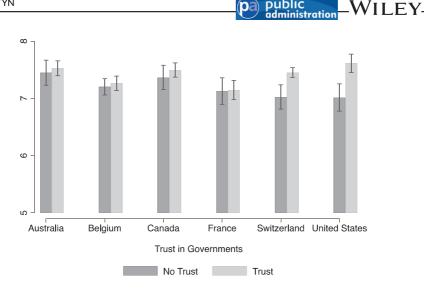


FIGURE 2 Support for evidence-informed policy making and trust in scientific experts

We include several other variables in order to account for possible other factors that might be related to variance of attitudes toward EIPM. First, a significant positive association between female respondents and EIPM could indicate a selection bias in our sample, since we have an over-representation of women in our sample (see Table 1). Okamura (2016) shows that women are less likely than men to rely on scientific experts for policy decisions. Second, we assume that respondents with an education degree are in general more positive toward scientific evidence, as they are in principle more familiar with such evidence due to their educational training. In addition, older respondents are presumably more negative toward the use of scientific evidence, since they might weight personal life experience as more important for policy making than evidence. Third, show that language is positively correlated with the support to include of scientific experts in the policy-making process. English speakers were shown to support stronger scientific experts in policy-making than other language groups. We cannot rule out the fact that the same tendency applies to citizen support for EIPM. Fourth, prior studies indicated



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FIGURE 3 Support for evidence-informed policy making and trust in governments

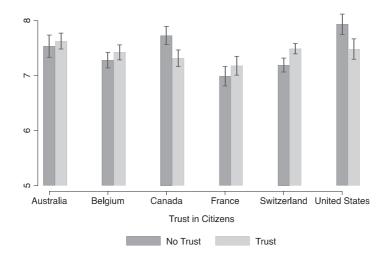


FIGURE 4 Support for evidence-informed policy making and trust in citizens

that citizens who ideologically lean to the political right are in general more skeptical toward scientific evidence due to their aversion to uncertainty and ineffectually that they associate with science (Beck, 1992; Gauchat, 2015). Fifth, we assume that political interest interferes positively with interest of scientific research, which is why respondents that are more interested in politics presumably have a more positive attitude. Sixth, we include different items such as regional identity, attitudes toward uniformity and subsidiarity to account for the fact that our sample is mainly based on federal states. All variables and their operationalization can be found in Table A1 in the appendix.

Empirically, we rely on a multilevel mixed effect regression model with random intercepts at the country level due to the hierarchical structure of our data. Our observations are grouped in countries that might potentially influence our dependent variable, as it violated an important assumption of multi-level models and results might interfere from individual-level to country-specific patterns.

TABLE 2 Trust and attitudes towards evidence-informed policy making (basic models)

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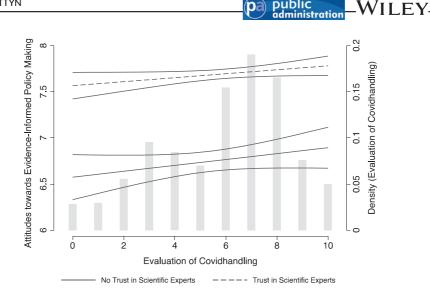
	Basic model (1)	Socio-economic model (2)	Political model (3)	Full model (4)
Trust in Scientific Experts	1.147***	1.110***	1.026***	0.980***
·····	(0.055)	(0.054)	(0.057)	(0.058)
Trust in Governments	-0.056	-0.107*	-0.185***	-0.205***
	(0.048)	(0.048)	(0.052)	(0.053)
Trust in Citizens	-0.091*	-0.123**	-0.151**	-0.150**
	(0.044)	(0.044)	(0.046)	(0.046)
Female		-0.085*	-0.076	-0.074
		(0.043)	(0.044)	(0.045)
Education		0.245***	0.218***	0.228***
		(0.043)	(0.045)	(0.045)
Age		-0.036**	-0.060***	-0.055***
		(0.014)	(0.014)	(0.014)
English versus French		-0.311***	-0.280***	-0.308***
		(0.052)	(0.055)	(0.056)
German		-0.619***	-0.667***	-0.638***
		(0.083)	(0.084)	(0.084)
Italian		0.137	0.155	0.131
		(0.077)	(0.080)	(0.083)
Dutch		-0.253**	-0.182*	-0.169*
		(0.081)	(0.084)	(0.086)
Other		-0.196	-0.224	-0.311*
		(0.115)	(0.118)	(0.122)
Left-right			-0.045***	-0.034***
			(0.009)	(0.010)
Political Interest			0.211***	0.217***
			(0.032)	(0.032)
Evaluation of COVID-19 Handling			0.015	0.017
			(0.010)	(0.010)
Regional Identity				0.047
				(0.025)
Uniformity				0.310***
				(0.030)
Subsidiarity				0.104***
				(0.030)
Constant	6.610***	6.826***	6.593***	5.316***
	(0.074)	(0.085)	(0.124)	(0.180)
Ν	6282	6240	5694	5350
Log. likelihood	-12196.99	-12034.00	-10858.34	-10083.58
AIC	24405.97	24096.00	21750.68	20207.15
BIC	24446.448	24190.338	21863.684	20338.848

Note: Results are from a multilevel mixed regression model. Standardized regression coefficients shown with robust standard errors in parentheses.

*p <0.05. **p <0.01. ***p <0.001.

10

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FIGURE 5 Trust in scientific experts and evaluation of COVID-19 handling

3 RESULTS

As a first step, we descriptively analyze the relationship between attitudes toward EIPM and the different forms of trust in our investigated countries (Figures 2-4). Even though the overall support for EIPM is quite high (7.28), we observe substantial differences across types of trust and countries. Figure 2 shows that the biggest difference in evidence support is among respondents with no trust in scientific experts and those who indeed place trust in them. In all countries is the difference statistically significant and in the United States in particular pronounced. The other forms of trust do not correlate as distinct as trust in scientific experts. The difference between respondents that trust governments and those who do not is not systematic and is only significant in Switzerland. The same is true for trust in fellow citizens, where we additionally observe a significant negative relationship in Canada and the United States. This may be due to a strong decline of social capital in both countries (Hulse & Stone, 2007; Putnam, 2015).

Next, we will analyze the relationship between different forms of trust and EIPM in a multivariate multilevel regression level (Table 2). The findings show that trust in scientific experts is positively related to support for evidence use in policy making. Respondents who trust scientific experts have on average a 1.1 higher value for EIPM. Trust in governments and citizens are both significant and negatively related to support in evidence use albeit both values decrease only very marginal (0.11 resp. 0.14). However, the latter relation could be potentially influenced by the respondents of Canada and the United States, which may suggest that the relationship can be dependent on the societal context. The coefficients decrease if we include other variables, but remain significant (Models 2-4). Hence, our empirical analysis provides evidence for Hypotheses H1, H2, and H3 even though the effect sizes are small.

Regarding personal characteristics, we see that some characteristics correlate significantly with attitudes toward EIPM, but the effects are rather small. Citizens' educational level is correlated with attitudes toward EIPM, while older respondents tend to be more negative. Moreover, English-speaking respondents display more positive attitudes toward EIPM, in particular compared to German Speaking citizens. This is not surprising, since the German sample consists of Swiss-German respondents, where anti-elite and scientific expert attitudes take a prominent role in the political discourse (Cranmer, 2011). In addition, Model 3 shows that left-oriented respondents are more likely to support EIPM, while citizens on the right spectrum are more skeptical about the involvement of scientific expertise in policy making. Interestingly, the evaluation of the COVID-19 response seems to be related with EIPM, while political interest and less federalism are positively associated with it.



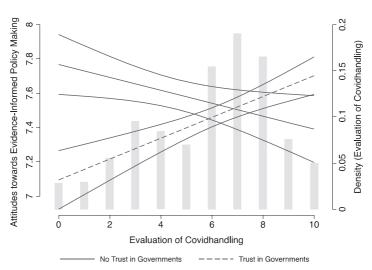


FIGURE 6 Trust in governments and evaluation of COVID-19 handling

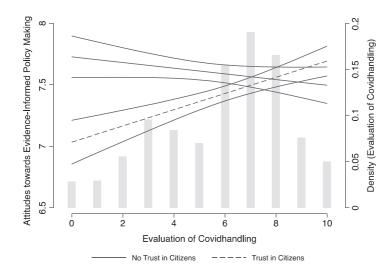


FIGURE 7 Trust in citizens and evaluation of COVID-19 handling. Marginal effect of attitudes toward evidenceinformed policy making (Y-axis), as a function of the interaction between the evaluation of the COVID-19 handling (0 = extremely bad; 10 = extremely well) and no trust toward scientific experts, governments, and citizens. The bars indicate the density (right Y-axis) of each of the 10 gradations on the COVID-handling evaluation scale (X-axis), that is, the observed percentage of the responses that fall into each of the 10 ordinal categories. The density of the evaluation of COVID-19 handling refers to the proportion of a given quantity participates in the size distribution in the characteristic interval of this variable

In a next step, we estimate interaction models between different types of trust and citizens' assessment of their country's COVID-19 handling. Model 5 shows that people who trust scientific experts not significantly differ across different COVID-19 handling assessment levels. In addition, citizens' assessment of COVID-19 handling does positively moderate the relationship between trust in governments and in fellow citizens and attitudes toward EIPM. In short, respondents who do not trust governments or fellow citizens are more positive toward evidence if they

TABLE 3 Trust and attitudes towards evidence-informed policy making (interaction models)

	Expert interaction model (5)	Government interaction model (6)	Citizen interaction model (7)	Full interaction model (8)
Trust in Scientific Experts	1.036***	0.971***	0.970***	1.196***
	(0.130)	(0.058)	(0.058)	(0.131)
Trust in Governments	-0.204***	-0.768***	-0.204***	-0.711***
	(0.053)	(0.113)	(0.053)	(0.117)
Trust in Citizens	-0.149**	-0.165***	-0.689***	-0.610***
	(0.046)	(0.046)	(0.112)	(0.114)
Trust in Scientific Experts*	-0.011			-0.044
Evaluation of COVID-19 Handling	(0.022)			(0.022)
Trust in Governments*		0.113***		0.094***
Evaluation of COVID-19 Handling		(0.020)		(0.021)
Trust in Citizens*			0.095***	0.073***
Evaluation of COVID-19 Handling			(0.018)	(0.019)
Female	-0.074	-0.071	-0.077	-0.073
	(0.045)	(0.045)	(0.045)	(0.045)
Education	0.228***	0.224***	0.217***	0.214***
	(0.045)	(0.045)	(0.045)	(0.045)
Age	-0.055***	-0.060***	-0.055***	-0.058***
	(0.014)	(0.014)	(0.014)	(0.014)
English versus French	-0.308***	-0.310***	-0.290***	-0.292***
	(0.056)	(0.056)	(0.056)	(0.056)
German	-0.639***	-0.637***	-0.628***	-0.632***
	(0.084)	(0.084)	(0.084)	(0.084)
Italian	0.132	0.099	0.112	0.090
	(0.083)	(0.083)	(0.083)	(0.083)
Dutch	-0.169*	-0.173*	-0.156	-0.162
	(0.086)	(0.086)	(0.086)	(0.086)
Other	-0.313*	-0.311*	-0.308*	-0.316**
	(0.122)	(0.121)	(0.121)	(0.121)
Left-right	-0.034***	-0.037***	-0.037***	-0.039***
	(0.010)	(0.010)	(0.010)	(0.010)
Political Interest	0.217***	0.213***	0.214***	0.211***
	(0.032)	(0.032)	(0.032)	(0.032)
COVID-19 Handling	0.026	-0.050**	-0.033*	-0.051*
	(0.020)	(0.016)	(0.014)	(0.022)
Regional Identity	0.047	0.044	0.048	0.046
	(0.025)	(0.025)	(0.025)	(0.025)
				(Continues

TABLE 3 (Continued)

	Expert interaction model (5)	Government interaction model (6)	Citizen interaction model (7)	Full interaction model (8)
Uniformity	0.310***	0.297***	0.304***	0.296***
	(0.030)	(0.030)	(0.030)	(0.030)
Subsidiarity	0.105***	0.109***	0.111***	0.114***
	(0.030)	(0.030)	(0.030)	(0.030)
Constant	5.268***	5.727***	5.619***	5.744***
	(0.205)	(0.194)	(0.189)	(0.215)
Ν	5350	5350	5350	5350
Log. likelihood	-10083.46	-10067.83	-10069.71	-10057.26
AIC	20208.92	20177.67	20181.42	20160.52
BIC	20347.199	20315.951	20319.702	20311.967

Note: Results are from a multilevel mixed regression model. Standardized regression coefficients shown with robust standard errors in parentheses.

*p < 0.05. **p < 0.01. ***p < 0.001.

evaluate their governments' response negatively, while those who do trust their governments are more positive toward evidence if they evaluate these positively. Figures 5–7 show the plots of the interaction effect using the coefficients of all interaction terms presented in Model 8.⁵ As a consequence, our analyses provide certain evidence for our fourth hypothesis (H4).

4 | DISCUSSION

As our findings show, public trust is a multifaceted issue, and so is its relationship with support for EIPM. First, and perhaps least surprising, we indeed confirmed that more positive attitudes toward scientific experts come along with a more positive attitude toward EIPM. Both constructs (epistemic trust and EIPM) are often named in one single breath. Of the multiple reasons why citizens are skeptical about resorting to scientific evidence, and of the trust types investigated, the lack of trust in scientific experts turns out to be a key distinguishing factor.

Moreover, our research indicates that EIPM also has the potential to serve as a substitute when citizens lack trust in their governments, or when they lack trust in their fellow citizens. Trust in citizens can also be conceived from an epistemic perspective, with trust implying belief in the epistemic credentials of peers. Citizens whose views all have legitimate political standing in the debate may vary widely in terms of these epistemic credentials, and the (informal) evidence they draw on (Edenberg, 2021, p. 130). This may also explain that citizens who feel a lack of epistemic peer agreement, can turn to scientific evidence to fill up this lacuna. The same type of reasoning can apply to governments. When citizens are in epistemic disagreement with the approach applied by their governments, or when they do not have a belief in their governments, this may incentivize them to support the reliance on scientific evidence. More in-depth research ideally investigates this in more depth, including the underlying causal mechanism.

Last, but not least, one should account for how citizens evaluate their governments' performance, which we approached here as appraisals of COVID-19 handling. As we have shown, these citizen evaluations mediate the relationship between trust and EIPM. When government performance is assessed negatively, and when citizens do not trust governments or fellow citizens, they tend to be more in favor of EIPM.

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CONCLUSION While EIPM acquired an almost sacred status in policy circles, and is promoted as an important element for good governance, it is far from evident that also citizens uncritically support it. This article is among one of the first to investigate at a cross-country level how citizen attitudes for EIPM relate can be explained by different manifestations of public trust (trust in scientific experts, governments, and fellow citizens). The COVID-19 constitutes a unique setting to also account for citizen attitudes on their country's response to the pandemic. Beyond its empirical novelty, the article brings interesting theoretical implications which add nuance to existing literature on the consequences of trust, and the antecedents for citizen attitudes about EIPM. First, the study confirms the importance of citizen trust in scientific experts for EIPM to be supported by citizens. EIPM in essence boils down to putting trust in scientific procedures and findings, which are often beyond the control of citizens (Baghramian & Croce, 2021). While this puts citizens in a dependence relationship from scientific experts, our study shows that governments committed to EIPM de facto also depend on citizen's trust in scientific experts. Second, EIPM is about governments relying on scientific evidence. Importantly, we showed that the higher trust citizens have in their governments, the less they feel the need for more scientific evidence. A possible interpretation is that citizens trusting their governments may not feel a need to have "more" epistemic input from other parties, that is, scientists' input which may not be necessarily aligned with epistemic preferences of trusted governments. This observation resonates with the empirical study of Bertsou and Pastorella (2017) in which they reveal how trust in representative democratic political institutions is negatively related to citizen attitudes about technocracy, conceptualized as expert-decision making. While EIPM is perhaps a softer form of technocracy, our findings hint at a similar trade-off. The results also contribute to populist literature. Citizens highly distrusting their governments not necessarily reject them to use scientific evidence. In other words, the intellectual and political elites are not necessarily connected in the eyes of citizens (see also Bertsou & Pastorella, 2017, p. 447). From a practical stance, these results

teach us that governments may benefit from investing more in EIPM particularly when being confronted with low or declining social trust (i.e., low government trust, low citizen trust) and when citizens voice skepticism about their performance. As our study reveals, citizens who are negative about their governments are not negative per se about the government using scientific results. The results warrant a careful interpretation though. It may well be the case that highly trusted governments already use scientific evidence, but that citizens do not want their governments to use more such evidence (the operationalization of our dependent variable). We did not account for the extent in which governments already work in an evidence-informed way, which may itself also contribute to citizen trust. It may be worth scrutinizing this in more depth. Part of such follow-up study could also investigate whether citizens indeed conceive EIPM as a manifestation of technocracy, consistent with normative debates in scholarly literature (Clarence, 2002; Sanderson, 2002b). Third, the study adds to the vast literature dealing with the link between trust and public perception of policy capacity (see Frewer & Salter, 2002; Hartley & Jarvis, 2020; Wallner, 2008). Public trust is not related per se to more positive attitudes toward EIPM, but depends on the perception of government performance. In particular, we document a varying association between trust and EIPM when citizens perceive their government performance as low. The question remains then of course which factors influence performance evaluation in the eyes of citizens, knowing that such observations are not necessarily impartial.

Notwithstanding the advantages of the design-being very timely and providing evidence for different institutional contests-we also acknowledge some limitations. Our empirical analysis is based on observational, crosssectional data, which does not allow to identity causal inference between trust and EIPM (which has hardly ever been done in prior studies). A logical path for future research would be to directly manipulate different forms of trust in order to test their impact on attitudes toward EIPM. This research is not very straightforward, however, which explains why most experimental studies have focused on explaining trust (see e.g., Ares & Hernández, 2017; Dinesen, 2013). Moreover, our results could be biased due to the current COVID-19 pandemic. Our findings might overestimate the importance of evidence, as the role of science has significantly increased during the health crisis (Lunn et al., 2020; Van Bavel et al., 2020). Furthermore, our case selection is based on a most-different case

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approach that tries to study similar phenomena in different political systems (Gerring & Cojocaru, 2016). This being said, we focus exclusively on six Western countries. The study of public attitudes toward evidence in less democratic countries such as China and Singapore would be an extremely interesting future research avenue (see Barr, 2006). Yet considering these challenges, we believe that our study is an important starting point for a broader line of research into a novel and timely question.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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ENDNOTES

- ¹ In this article evidence informed policy making (or EIPM) is straightforwardly approached as the use of *scientific* evidence in the policy process, also consistent with the predominant focus on this type of evidence in literature on knowledge utilization.
- ² The survey was conducted through Qualtrics who work with local survey companies in order to guarantee an evenly balanced sample. Language minority were oversampled to receive a substantial number of respondents for every main official language group in the four multilingual countries.
- ³ Cronbach's *α* >0.72.
- ⁴ We also asked respondents how they evaluate the governments of the different state levels (federal, regionalm, and local). However, our data suggests that respondents could not really distinguish between different governments, as the Cronbach's alpha of the three items is 0.79. The Cronbachs' alpha between the general assessment and the index of the three items is 0.54 (99% level significance). Moreover, many government responses have been coordinated vertically (see Liu et al., 2021), which is why it is hard for citizens to evaluate the different governments. Thus, we decided to keep the general evaluation.
- ⁵ The coefficients are based on multi-level mixed regression results presented in Table 3 (Models 5-7).

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20 WILEY- Pa public administration

APPENDIX

TABLE A1 Operationalization and descriptive statistics

Variable	Operationalization		Descriptive statistics			
Valiable		Mean	SD	Min	Max	
Dependent variable						
Evidence- Informed Policy Making	I would like to see policy-makers use scientific evidence more often to make decisions on specific issues. $0 = fully$ disagree, $10 = fully$ agree	7.23	1.87	0	10	
Independent variabl	es					
Trust in	Overall, how much trust and confidence do you have in each of the following to do a good job carrying out their responsibilities? $1 =$ none, $2 =$ not very much, $3 =$ a fair amount, and $4 =$ a great deal					
Scientific Experts	Scientific experts	2.98	0.84	1	4	
Governments	The federal government	2.70	0.89	1	4	
	Your provincial government	2.70	0.84	1	4	
	Local level executive	2.65	0.85	1	4	
Citizens	Your fellow citizens	2.55	0.80	1	4	
Evaluation of COVID-19 Handling	How well do you think has Switzerland/Belgium/France/Canada/United States/Australia) handled the COVID-19 pandemic so far? 0 = extremely badly, 10 = extremely well	5.53	2.61	0	10	
Gender	Gender of respondent: $0 = male; 1 = female$	0.55	0.50	0	1	
Education	Level of education: $0 = No$ University Degree; $1 = University$ Degree	0.49	0.50	0	1	
Age	Age of the respondent $1 = 18-24$ years old, $2 = 25-34$ years old, $3 = 35-44$ years old, $4 = 45-54$ years old, $5 = 55-64$ years old, and $6 = 65$ years or older	3.39	1.62	1	6	
Language	English (32.5%), German (8.7%), French (37.3%), Italian (8.6%), Dutch (8.6%), Other (4.2%)					
Left-right	In political matters, people often talk of "the left" and "the right." How would you place your own views on a scale from 0 (left) to 10 (right), generally speaking? 0 = left, 10 = right, numeric	5.36	2.43	0	10	
Political Interest	How interested would you say you are in politics at the different levels? $1 = not$ at all interested, $2 = not$ very interested, $3 = somewhat$ interested, and $4 = very$ interested	2.82	0.80	1	4	
Regional Identity	Which one of the following, if any, best describes the way you think of yourself? $1 =$ only country, $2 =$ more country than region, $3 =$ country and region equally, $4 =$ more region than country, and $5 =$ only region	2.67	0.94	1	5	
Uniformity	The federal government should be able to define the rules that apply in the whole country. This ensures that everybody is treated equally—regardless of where they live or what language group they belong to. $1 = \text{fully disagree}, 2 = \text{rather}$ disagree, $3 = \text{rather agree}, \text{ and } 4 = \text{fully agree}$	3.23	0.78	1	4	
Subsidiarity	It is better for as many decisions as possible to be made at the higher levels of government: 1—strongly have that view—9 (strongly does not have this view)	5.02	0.78	1	9	