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The mediating effect of institutional trust in the relationship between precarity and conspiracy beliefs: A conceptual replication of Adam-Troian et al. (2023)

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Abstract

The paper reports the results of registered conceptual replications of the indirect effect of institutional trust in the relationship between precarity and the endorsement of conspiracy beliefs (CB). The original study of Adam-Troian et al. (2023; *British Journal of Social Psychology*, 62(S1), 136–159) indicated that subjective appraisals of economic hardship are associated with lower trust in governments and institutions, which in turn is associated with stronger endorsement of CB. Our Studies 1 to 3 report a series of replications using Slovak panel data. Study 4 reports a replication of the mediation model using data from the European Social Survey Round 10 collected in 17 countries. To provide a quantitative synthesis of these and previous results, we conducted mini meta-analysis ($N = 50,340$). Although the strength of the observed relationships differed across the studies to some degree, the original patterns of relations remained robust, supporting the original model. The study corroborates the view that to curb the spread of CB, it is necessary to address structural issues, such as growing financial insecurity, socioeconomic inequalities, and the deficit of institutional trust. Finally, we discuss the role of cultural and political settings in conditioning the mechanisms through which precarity enhances the endorsement of CB.

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KEYWORDS

conspiracy beliefs, institutional trust, mini meta-analysis, precarity, registered replication

INTRODUCTION

The literature consistently shows that individuals' socioeconomic status is among the most robust antecedents of their adherence to conspiracy beliefs (CBs; Douglas et al., 2019; Freeman et al., 2020; van Prooijen, 2017). Yet, people may react and adapt differently to long-term financial strain; thus, objective material deprivation (*poverty*) may not be the main driver of their beliefs or behaviour (Adamus & Grežo, 2021; Gasiorowska, 2014; Marchlewska et al., 2022). Instead, subjective appraisal of economic insecurity and uncertainty (*precarity*) may come to the foreground and become a key to understanding the current spread and prevalence of CBs (van Prooijen, 2017). We need to remember, however, that *precarity* is a multidimensional phenomenon associated with social status, and apart from subjective appraisal of the financial situation (also referred to as financial insecurity), the experience of precarity encompasses relative deprivation (i.e., a belief they are worse off compared to their desired social status), social exclusion and marginalization, low prestige and esteem, and limited mobility across hierarchically arranged social rungs and as such is persistently associated with the sense of existential threat (Adam-Troian et al., 2023; Standing, 2011).

Precarity as a source of CBs

A recent study by Adam-Troian et al. (2023) provides the first systematic evidence that the experience of precarity is a significant factor that fosters CBs endorsement. These authors proposed a sociofunctional model positing that an individual's place in society is associated with a persistent risk of being exploited or harmed, urging people to be constantly vigilant to potential threats (Cottrell & Neuberg, 2005; Kraus et al., 2012). The sociofunctional approach further assumes that individuals who experience precarity may have limited resilience to cope with and respond to existential threats. At the individual level, the experience of precarity may be associated with various harmful outcomes, including a decline in mental and physical health, as well as lower educational attainment and the deterioration of cognitive abilities, such as analytic and scientific thinking (de Bruijn & Antonides, 2020; Fiksenbaum et al., 2017; Haushofer & Fehr, 2014), which are among protective factors that insulate against the endorsement of CBs (Erllich et al., 2023; Swami et al., 2014). Thus, if precarity has debilitating effects on cognition, then it is possible for its damaging consequences to include an enhanced CBs endorsement as well. Moreover, as a group, precariat experiences enhanced levels of existential threats associated with permanent financial insecurity and may thus show more anti-establishment sentiments and distrust towards political elites whom they hold responsible for the dire situation. Consequently, since the tendency to endorse CBs about members of outgroups (elites and the establishment in this case) is an inherent feature of human psychology (van Prooijen & van Vugt, 2018), this may make people who experience precarity more prone to endorse CBs and, in line with the sociofunctional model, use them to explain their own disadvantaged position, shift the blame from themselves, identify the malevolent culprits, and demand that they be punished (Adam-Troian et al., 2023; Douglas et al., 2019; Gabriel et al., 2023; Standing, 2011; van Prooijen, 2023; van Prooijen & van Vugt, 2018).

Structural factors that enhance CBs endorsement

The fact that the experience of precarity is associated with enhanced endorsement of CBs points to another research avenue. The advent of the precariat is a feature of modern economies that focus

on flexibility and growth even at the cost of the sense of stability and security (Standing, 2011). Thus, the tendency to endorse CBs is perhaps shaped not only by individual characteristics but may be augmented by cultural environments (Adam-Troian et al., 2021). In other words, sense-making processes may be an inherent aspect of human psychology and a response to existential threats, but the tendency to endorse CBs and the disposition to seek meaningful patterns (where there are none) manifest more easily under specific structural settings. Recent literature about CBs points to structural factors that remain beyond the control of individual citizens and yet affect their living experiences considerably as CBs catalysts. The quality of democratic institutions and governance, corruption, socioeconomic inequality, slower economic development, and low GDP per capita could all be used as indicators that the sociopolitical fibre is crooked and protective social norms eroded (Alper, 2023; Cordonier et al., 2021; Hornsey et al., 2023; Hornsey & Pearson, 2022; Jetten et al., 2022). Each of these factors – or their subjective appraisal – fosters hyper-sensitivity to even the subtlest cues of malicious intent, because under such cultural settings the chances of being thwarted by the elites are skewed.

Institutional trust has a special place among factors associated with CBs. Even though the two are most likely interrelated, multiple studies corroborate the view that low institutional trust is systematically associated with enhanced CBs endorsement (Meuer & Imhoff, 2021; Pummerer, 2022; Pummerer et al., 2022). The sociofunctional model suggests that lower institutional trust could be a mechanism that links the experience of precarity with CBs. When indicators of structural conditions are unfavourable and the sense of anomie spreads, distrust may actually have rational foundations (Hornsey et al., 2023; Nera et al., 2022; Salvador Casara et al., 2022). Trusting potential villains too much and underestimating or overlooking the threats they pose may have the gravest repercussions for those who are already disadvantaged (Alper & Imhoff, 2023). Moreover, the experience of precarity itself induces the sense that the elites are trying to deceive and harm those on the lower social rungs, because the elites' hidden motive is to benefit from causing social problems, such as wars, economic crises, or unemployment (Nera et al., 2021). The blame-shifting process attenuates trust towards institutions, elites, and the establishment as accomplices in the process of plotting against and taking advantage of *ordinary* people (Jovančević & Milićević, 2020; Meuer & Imhoff, 2021; Wagner-Egger et al., 2022). Consequently, in a climate of widespread distrust, CBs flourish particularly among those who believe they have a reason to feel disadvantaged and exploited. In the alleged absence of protective norms and reliable institutions, it makes sense to them to be ever more cautious. Concurrently, apart from indicating that people experiencing precarity endorse CBs more, the study by Adam-Troian et al. (2023) also points to low institutional trust as a mechanism bridging experiences of precarity and CBs. The results of the original research show that the experience of precarity is associated with both lower institutional trust and greater support for CBs and that institutional trust mediates the relationship between precarity and CBs. The effects seem to remain robust regardless of the operationalizations of precarity (i.e., “material deprivation,” “struggling to make ends meet,” or “COVID-related economic worries”), the type of conspiracies (e.g., electoral fraud, conspiracy mentality, conspiracies about the COVID-19 pandemic, or the 9/11 terrorist attacks), and after controlling for numerous covariates (e.g., religious affiliation, political ideology and extremism, physical health, life satisfaction, education, income, age, and sex). However, further examination with regard to different operationalizations and across cultural settings is needed to facilitate a deeper understanding of the phenomenon and its potential boundary conditions.

Therefore, the present set of studies aimed at conceptually replicating the results reported by Adam-Troian et al. (2023). The overall idea behind the current conceptual replication was to examine the extent to which the proposed theory is sensitive to context and whether the main pattern of the observed results will hold after altering the operationalizations of the main variables. *Conceptual replication* is understood as a prospective method of scientific progress towards a cumulative social science (Crandall & Sherman, 2016). In the current replication, we sought to highlight a crucial aspect that underlies the research in social psychology – that the context in which human behaviours occur is highly variable socially, culturally, and historically, which can often constrain the generalizability of observed effects (Crandall & Sherman, 2016).

OVERVIEW OF THE STUDIES

The current paper reports the replication of the original research of Adam-Troian et al. (2023) conducted in different social settings and using various operationalizations of the key variables. The overall goal was to examine the robustness of the original effects as well as to delve deeper into the role of subjectively perceived socioeconomic status, along with structural or class divisions in predicting an endorsement of CBs and to test the model of conspiracy beliefs based on precarity (mediated by trust) as presented by Adam-Troian et al. (2023). Given the multidimensional character of the experience of precarity (Standing, 2011) and the call for greater generalizability and validity of psychological measures and research (Yarkoni, 2022), we used available datasets with various operationalizations as approximations of precarity. The core aspect of precarity – financial insecurity – was directly reflected by the question about feelings of insecurity associated with a person's current income present in the European Social Survey (ESS) questionnaire (Study 4), the Financial Threat Scale (Marjanovic et al., 2015) used in Studies 1a and 1b, and questions about financial worries (Study 3). Moreover, subjective social status (SSS) expressed by the ladder task (Cantril, 1965) was used to capture additional dimensions, such as hierarchy, social mobility, and esteem (Studies 1–3). The aspects of esteem and hierarchy are reflected in the ladder task directly by the reference to a person having or not having a socially respected job and their relative position in the social hierarchy. More importantly, Singh-Manoux et al. (2003, p. 1321) showed that SSS is determined, among others, by “the feeling of financial security regarding the future” and “an assessment of current and future economic/material conditions.” Therefore, these results support the claim that the ladder task is directly associated with financial insecurity but also with the perception of future prospects and indicate that the task could be used as a meaningful measure of key aspects present in the experience of precarity.

First, Studies 1a, 1b, 2, and 3 used panel data collected from the adult population in Slovakia (an overview of the replication studies is presented in Table 1). We chose to situate Studies 1–3 in Slovakia, a former communist country that joined the European Union in 2004 and which was officially recognized as a high-income economy by the World Bank in 2005. Nevertheless, according to numerous scientific reports, many Slovak citizens experience above-average financial anxiety and are increasingly concerned about making ends meet compared to other European countries (Adamus & Grežo, 2021; Intrum, 2019). The country also has struggled with low levels of institutional trust for a long time (Grežo et al., 2022). Moreover, recent studies conducted in Slovakia show that conspiracies and epistemically suspect beliefs are widespread among diverse segments of the adult population there (Čavojová et al., 2022). All these factors make Slovakia sufficiently different from the old-EU countries included in the original study (i.e., France and Italy) and, thus, an interesting candidate for the replication.

Second, to verify the robustness of the original results in a larger European context, we sought in Study 4 to replicate the original model by examining data from the ESS (Round 10) collected in 2020–2022. Established in 2011, the ESS is a biennial, academically driven social survey that charts and examines the interactions between Europe's shifting institutions and the attitudes, beliefs, and behaviours of its diverse populations. The ESS uses cross-sectional probability samples representative of the population aged over 15. Study 4 aimed to answer the question of whether the associations between experiences of precarity, lower trust in institutions, and endorsement of CBs remain significant and robust even when examined in a wider international (European) context. Additionally, by employing the ESS data, we sought to examine whether the associations remain significant when employing a different operationalization of precarity, institutional trust, and CBs compared to the World Values Survey used in the original study.

The results of the present set of studies and Studies 1–3 from Adam-Troian et al. (2023) are summarized with a mini meta-analysis ($N = 50,340$) with the aim of providing a quantitative synthesis of the observed effect sizes. Meta-analysis is considered a powerful research summarization technique able to produce higher statistical power and better precision (Miller & Schwarz, 2011), and the variability of effect size is crucial in determining the probability of replication. In particular, we used a meta-analytic

TABLE 1 Overview of the studies.

	Operationalization of precarity (independent variable)	Operationalization of trust (mediator)	Operationalization of CBs (DV)	Covariates	Sample size	Results
Study 1a 1st wave of a longitudinal panel study	Subjective experience of financial anxiety due to the pandemic (Financial Threat Scale)	Personal trust in each of 8 institutions	Agreement with conspiracy beliefs related to COVID-19 theories, measurements, treatment and vaccinations (the COVID-19 Unfounded Beliefs Scale)	Sex, age, education, religiosity	1682 (903 women) aged 18 to 85 years ($M=46.06$, $SD=16.14$), 33% primary school education or incomplete secondary school education, 45% completed secondary school education, and 22% higher education or completed college education	IE ($\beta = -.11, p < .001$, 95% CI [-0.14, -0.08]) of subjective socioeconomic status on CBs through trust (DE was not significant) DE ($\beta = .05, p = .007$, 95% CI [0.02, 0.08]) and IE ($\beta = .07, p < .001$, 95% CI [0.04, 0.10]) of financial threat on CBs through trust
Study 1b 2nd wave of a longitudinal panel study	Subjective experience of financial anxiety due to the pandemic and Ukraine war (Financial Threat Scale)	Personal trust in each of 10 institutions	Agreement with conspiracy theories related to COVID-19, measurements, treatment and vaccinations (the COVID-19 Unfounded Beliefs Scale)	Sex, age, education, religiosity	1426 (706 women) aged 18 to 86 years ($M=47.54$, $SD=15.97$), 28% primary school education or incomplete secondary school education, 46% completed secondary school education, and 26% higher education or completed college education	IE ($\beta = -.08, p < .001$, 95% CI [-0.12, -0.05]) of subjective socioeconomic status on CBs through trust (DE was not significant) DE ($\beta = .09, p < .001$, 95% CI [0.05, 0.14]) and IE ($\beta = .10, p < .001$, 95% CI [0.07, 0.14]) of financial threat (COVID-19) on CBs by trust DE ($\beta = .08, p = .002$, 95% CI [0.03, 0.12]) and IE ($\beta = .09, p < .001$, 95% CI [0.06, 0.13]) of financial threat related to war on CBs by trust
Study 2 Slovak panel study	Subjective perception of one's own socioeconomic status (Subjective social status; ladder)	Personal trust in 7 institutions	Agreement with conspiracy theories (the Conspiratorial Thinking Scale)	Sex, age, education	313 (278 women) aged 18 to 77 years ($M=34.49$, $SD=13.64$), 3% no or up to 9 years of education, 14% up to 12 years of education, 27% without a college degree, 49% college degree, and 8% PhD	IE ($\beta = -.17, p < .001$, 95% CI [-0.23, -0.11]) of subjective socioeconomic status on CBs through trust (the direct effect was not significant)

(Continues)

TABLE 1 (Continued)

	Operationalization of precarity (independent variable)	Operationalization of institutional trust (mediator)	Operationalization of CBs (DV)	Covariates	Sample size	Results
Study 3 Slovak part of an international panel study	Subjective perception of one's own socioeconomic status (Subjective social status; ladder) Financial fear (worries about worsening of their income, the general economic situation, and inability to make ends meet if the pandemic situation continues)	Personal trust in 3 institutions	Agreement with general conspiracy theories (the Conspiratorial Thinking Scale) Agreement with COVID-19 conspiracy theories (the Conspiratorial Thinking Scale)	Sex, age, education	1880 (1003 women) aged 16 to 85 years ($M = 43.93$, $SD = 14.76$), 25% primary or incomplete secondary school education, 44% completed secondary school education, and 30% higher education or complete college education	DE ($\beta = -.11$, $p < .001$, 95% CI [-0.14, -0.07]) and IE ($\beta = -.10$, $p < .001$, 95% CI [-0.13, -0.07]) of subjective socioeconomic status on general CBs by trust DE ($\beta = -.09$, $p < .001$, 95% CI [-0.12, -0.05]) and IE ($\beta = -.11$, $p < .001$, 95% CI [-0.14, -0.07]) of subjective socioeconomic status on COVID-19 CBs by trust DE ($\beta = .17$, $p < .001$, 95% CI [0.14, 0.21]) and IE ($\beta = .09$, $p < .001$, 95% CI [0.07, 0.12]) of financial fear on general CBs by trust DE ($\beta = .15$, $p < .001$, 95% CI [0.12, 0.18]) and IE ($\beta = .10$, $p < .001$, 95% CI [0.07, 0.13]) of financial fear on COVID-19 CBs by trust
Study 4 European Social Survey, Round 10	Subjective feelings about household's income today (4-point scale)	Personal trust in 7 institutions (parliament, legal system, police, politicians, political parties, European Parliament, United Nations)	Agreement with conspiracy beliefs related to COVID-19 origin, manipulation of evidence by scientists, decision-making in the world politics	Sex, age, age squared, education, religiosity, political ideology and extremism, physical health	17 countries, 21,306 (10,991 women) aged 15 to 90 years ($M = 50.46$, $SD = 17.71$), 17% have primary, 15% lower secondary, 37% upper secondary, and 30% tertiary education	DE ($\beta = .11$, $p < .001$, 95% CI [0.09, 0.12]), and IE of precarity on conspiracy beliefs through trust ($\beta = .11$, $p < .001$, 95% CI [-0.10, -0.11])

Abbreviations: DE, direct effect; IE, indirect effect.

structural equation modelling (Cheung, 2021) to synthesize the indirect effects (Cheung, 2022) across seven studies, assess the homogeneity, and examine potential moderators. Prior to the analysis of the data, the present replication was preregistered at https://osf.io/afu97/?view_only=a7974489f8c64b42a92d82adb6001554.

All the reported studies use secondary datasets that were shared with us by the original authors or were publicly available. No data were collected directly for the present replication. Consequently, the research protocol was not evaluated by a research ethics committee prior to the data collection. However, according to the guidelines issued by the Research Ethics Committee of the Masaryk University in Brno, the study protocol – as a cross-sectional analysis of adult samples that included no manipulation or deception – was waived from the obligation to obtain formal ethical approval. All the datasets are available at https://osf.io/kbr9s/?view_only=04849b4c38454e50a5677f02874b9427.

STUDIES 1A AND 1B

In Studies 1a and 1b, we used data from the APVV-20-387 project (a larger longitudinal study of the psychological context of unfounded information and beliefs related to the COVID-19 pandemic) collected in October 2021 and June 2022 using an online questionnaire created in Qualtrics.

The mediation analyses present in Studies 1–3 were calculated using the *mediation* package (Tingley et al., 2014) in R. Each mediation model had its confidence intervals estimated using nonparametric bootstrap ($N_{\text{bootstraps}} = 2000$) with the Percentile Method. Supplementary figures and details are available in [Appendix 1 \(Figure A\)](#).

Method

Participants

Participants were recruited by an external agency (and compensated according to the agency's internal scoring system) to be representative of the Slovak population in terms of age, gender, region, and education. Of the 1838 total participants, 156 were excluded from the analyses (they completed the survey in a suspiciously short time). Thus, the first wave sample consisted of 1682 participants (903 women) aged 18 to 85 years ($M = 46.06$, $SD = 16.14$); 33% of the sample had a primary school education or an incomplete secondary school education, 45% had completed secondary school education, and 22% had higher education or a completed college education. In the second wave, a total of 1426 (706 women) adults aged 18 to 86 years ($M = 47.54$, $SD = 15.97$) participated in data collection; 28% of the sample had a primary school education or an incomplete secondary school education, 46% had completed secondary school education, and 26% had higher education or completed college education.

Measures

All methods were performed according to American Psychological Association (APA) standards; all materials and raw data are available at https://osf.io/kbr9s/?view_only=04849b4c38454e50a5677f02874b9427.

Precurity

Precarity was measured as the subjective experience of financial anxiety due to the pandemic and the subjective perception of one's own socioeconomic status. To measure subjective socioeconomic status, we used the Cantril ladder (Cantril, 1965), and participants had to rank themselves on one of the ten rungs of the ladder (the top rung of the ladder (10) represents people who are best off, have the most money,

the best education, and the most prestigious job; the bottom rung (1) represents people who are worst off, have the least money, the least prestigious job or no job at all). A higher position indicates higher subjective social status (1st wave: $M=5.45$; $SD=1.57$; 2nd wave: $M=5.48$; $SD=1.65$). Financial anxiety related to the COVID-19 pandemic was measured using six items that asked participants to indicate how they feel about their current financial situation (e.g., “How uncertain do you feel?”) from the modified version of the Financial Threat Scale (FTS; Marjanovic et al., 2015). Participants were required to indicate how they rated the stability and security of their personal finances during the pandemic (5-point scale, from 1 = not at all to 5 = very much; 1st wave: $M=2.58$; $SD=0.97$; $\omega_{\text{total}}=0.93$; 2nd wave: $M=2.89$; $SD=1.05$; $\omega_{\text{total}}=0.96$). In the second wave, financial anxiety related to the war in Ukraine was also measured using six items from the modified version of the Financial Threat Scale (FTS; Marjanovic et al., 2015; 5-point scale, from 1 = not at all to 5 = very much; $M=2.99$; $SD=1.05$; $\omega_{\text{total}}=0.96$).

Conspiracy beliefs

Conspiracy beliefs were measured using 18 items from the COVID-19 Unfounded Beliefs Scale (C19-UB; Teličák & Halama, 2022). Participants were asked to indicate their agreement with conspiracy beliefs related to COVID-19 (5 items, for example, “COVID-19 was planned long ago to weaken the economy and cause unemployment,”) measurements (4 items, for example, wearing protective masks is dangerous for schoolchildren and the elderly), treatment (5 items, for example, intravenous (injectable) use of sodium chlorite has proven to be effective against COVID-19), and vaccinations (3 items, for example, vaccines against COVID-19 contain substances that cause infertility or abortion). Higher mean scores indicate higher endorsement of conspiracy theories (5-point scale, from 1 = totally disagree to 5 = totally agree; 1st wave: $M=2.41$; $SD=1.02$; $\omega_{\text{total}}=0.97$; 2nd wave: $M=2.40$; $SD=1.07$; $\omega_{\text{total}}=0.98$).

Trust

Trust was measured as institutional trust. We asked participants to what extent they personally trusted each of eight institutions, or ten institutions (for example, Ministry of Health of the Slovak Republic, European Medicines Agency, Slovak Academy of Sciences, doctors and health professionals) in the second wave (10-point scale, from 1 = absolutely do not trust to 10 = absolutely trust; wave 1: $M=4.87$; $SD=2.38$; $\omega_{\text{total}}=0.94$; wave 2: $M=4.72$; $SD=2.38$; $\omega_{\text{total}}=0.95$).

Covariates

Participants were asked about their sex (1 = man, 2 = woman), age, education (from 1 = primary school to 6 = university), and religiosity (from 1 = very strongly religious to 7 = very strongly secular; 1st wave: $M=3.78$; $SD=1.43$; 2nd wave: $M=3.77$; $SD=1.46$).

Results and discussion

Correlations

In the first wave, subjective socioeconomic status was negatively related to conspiracy belief, $r=-.18$, $p<.001$, 95% CI [-0.22, -0.13], and financial threat was positively related to conspiracy belief, $r=.17$, $p<.001$, 95% CI [0.12, 0.21]. Next, subjective socioeconomic status was associated with trust, $r=.21$, $p<.001$, 95% CI [0.17, 0.26], and financial threat was negatively related to trust, $r=-.14$, $p<.001$, 95% CI [-0.18, -0.09]. Finally, trust correlated negatively with conspiracy beliefs, $r=-.71$, $p<.001$, 95% CI [-0.73, -0.69] (all correlations are reported in Table A1 in Appendix 1).

In the second wave, subjective socioeconomic status was negatively related to conspiracy belief, $r=-.12$, $p<.001$, 95% CI [-0.17, -0.07]; financial threat (COVID-19) was positively related to conspiracy belief, $r=.25$, $p<.001$, 95% CI [0.20, 0.30], and financial threat related to war correlated positively with conspiracy beliefs, $r=.22$, $p<.001$, 95% CI [0.17, 0.27]. Next, subjective socioeconomic status was related to trust, $r=.17$, $p<.001$, 95% CI [0.12, 0.22]; financial threat (COVID-19) was negatively related to trust,

$r = -.21, p < .001, 95\% \text{ CI } [-0.25, -0.16]$, and financial threat related to war was negatively associated with trust, $r = -.18, p < .001, 95\% \text{ CI } [-0.23, -0.13]$. Finally, trust correlated negatively with belief in conspiracies, $r = -.64, p < .001, 95\% \text{ CI } [-0.67, -0.61]$ (all correlations are in [Table A2](#) in [Appendix 1](#)).

Mediation analysis

In the first wave, mediation analyses supported a model with indirect effects of subjective socioeconomic status on conspiracy beliefs through trust, controlling for sex, age, education, and religiosity ($\beta = -.11, p < .001, 95\% \text{ CI } [-0.15, -0.08]$). The direct effect was not significant ($\beta = .01, p = .619, 95\% \text{ CI } [-0.03, 0.05]$). Similarly, mediation analyses supported a model that included both direct ($\beta = .05, p = .007, 95\% \text{ CI } [0.01, 0.08]$) and indirect effects of financial threat on conspiracy beliefs through trust, controlling for sex, age, education, and religiosity ($\beta = .07, p < .001, 95\% \text{ CI } [0.04, 0.10]$).

In the second wave, mediation analyses supported a model with indirect effects of subjective socioeconomic status on conspiracy belief through trust, controlling for sex, age, education, and religiosity ($\beta = -.08, p < .001, 95\% \text{ CI } [-0.12, -0.05]$). The direct effect was not significant ($\beta = .02, p = .386, 95\% \text{ CI } [-0.03, 0.06]$). Next, mediation analyses supported a model that included both direct ($\beta = .09, p < .001, 95\% \text{ CI } [0.05, 0.14]$) and indirect effects of financial threat (COVID-19) on conspiracy beliefs by trust ($\beta = .10, p < .001, 95\% \text{ CI } [0.07, 0.14]$). Similar results occurred for the predictor financial threat related to war: a model including direct ($\beta = .08, p = .002, 95\% \text{ CI } [0.03, 0.12]$) and indirect effects of financial threat related to war on conspiracy beliefs by trust, controlling for sex, age, education, and religiosity ($\beta = .09, p < .001, 95\% \text{ CI } [0.06, 0.13]$) was supported.

STUDY 2

In Study 2, we used Slovak data from the COVIDiSTRESS project (study of the global impact of COVID-19 during the first months of the 2020 pandemic) collected in June–August 2021 using an online survey created in Qualtrics.

Method

Participants

Participants were recruited through local teams (word of mouth, press releases, email lists, and social media). The overall sample consisted of 15,740 individuals from 137 countries. We used data from 313 Slovaks (278 women) aged 18 to 77 years ($M = 34.49, SD = 13.64$), 3% with no or up to 9 years of education, 14% with up to 12 years of education, 27% without a college degree, 49% with a college degree, and 8% with a PhD. Missing data (~6%) were imputed using the MissForrest algorithm via the *missRanger* package (Mayer, 2021).

Measures

All methods were conducted according to APA standards; all materials and raw data are available at https://osf.io/kbr9s/?view_only=04849b4c38454e50a5677f02874b9427.

Precarity

Precarity was measured as the subjective perception of one's own socioeconomic status. The Cantril ladder (Cantril, 1965) was used to measure subjective socioeconomic status, as in Studies 1a and 1b (the top rung of the ladder (10) represents people who are best off, have the most money, the best education,

and the most prestigious job, and the bottom rung (1) represents people who are worst off, have the least money, the least prestigious job or no job at all; $M = 5.57$; $SD = 1.59$).

Conspiracy beliefs

Conspiracy beliefs were measured using four items (for example, “Much of our lives are being controlled by plots hatched in secret places”) from the Conspiratorial Thinking Scale (Uscinski et al., 2020). The higher the mean, the greater the agreement with conspiracy theories (7-point scale, from 1 = totally disagree to 7 = totally agree; $M = 3.44$; $SD = 1.94$; $\omega_{\text{total}} = 0.89$).

Trust

Trust was measured using the Trust Scale, and participants indicated their personal trust in seven institutions, such as the national government, health and security, scientists, or the World Health Organization (10-point scale, from 1 = do not trust at all to 10 = trust absolutely; $M = 4.40$; $SD = 1.94$; $\omega_{\text{total}} = 0.88$).

Covariates

Participants were asked to indicate their sex (1 = man, 2 = woman, 3 = other), age, and education (from 1 = no education to 7 = doctorate).

Results and discussion

Correlations

Subjective socioeconomic status was negatively related to conspiracy belief, $r = -.24$, $p < .001$, 95% CI [-0.34, -0.13]. Next, subjective socioeconomic status was associated with trust, $r = .31$, $p < .001$, 95% CI [0.20, 0.41], and trust correlated negatively with conspiracy beliefs, $r = -.58$, $p < .001$, 95% CI [-0.65, -0.51] (all correlations are in Table A3 in Appendix 1).

Mediation analysis

Mediation analyses supported a model with indirect effects of subjective socioeconomic status on conspiracy beliefs through trust, controlling for sex, age, and education ($\beta = -.17$, $p < .001$, 95% CI [-0.23, -0.11]). The direct effect was not significant ($\beta = -.06$, $p = .276$, 95% CI [-0.16, 0.04]).

STUDY 3

In Study 3, we used data from the APVV-20-319 (a large-scale longitudinal project on a representative sample of Slovak inhabitants focused on (post)pandemic mental health and its risk/protective factors). The respective data were collected in December 2021, during one of the peaks of the pandemic in Slovakia.

Method

Participants

A representative sample of Slovaks aged over 16 (quota characteristics for gender, age, education, and region were applied) was recruited online by an external agency specialized in data collection. After the removal of careless participants (based on a combination of short completion time, failed attention checks, Mahalanobis distance, and long strings, 9.1% of the initial sample was excluded), the sample consisted of 1880 adults (1003 women) aged 16 to 85 years ($M = 43.93$, $SD = 14.76$), 25% of the sample

had a primary or incomplete secondary school education, 44% had completed a secondary school education, and 30% had higher education or a complete college education.

Measures

All methods were carried out following APA standards; all materials and raw data are available at https://osf.io/kbr9s/?view_only=c4c46ad3da5f4a32ab08edc3839ac3e9.

Precarity

Precarity was measured as the subjective perception of one's own socioeconomic status and financial fear. To measure subjective socioeconomic status, the Cantril ladder (Cantril, 1965) was used, as in Studies 1a, 1b, and 2 (the top rung of the ladder (10) represents people who are best off, have the most money, the best education, and the most prestigious job, and the bottom rung (1) represents people who are worst off, have the least money, the least prestigious job, or no job at all; $M = 5.40$; $SD = 1.63$). Pandemic-related financial fear ($M = 4.01$, $SD = 1.79$) was measured on a 7-point scale (from 1 = no stress at all to 7 = very high stress; $\omega_{\text{total}} = 0.96$) via three items focused on participants' worries about (1) the worsening of their income, (2) the general economic situation, and (3) the inability to make ends meet if the pandemic situation continues.

Conspiracy beliefs

General conspiracy beliefs were measured using eight items modified from Uscinski et al. (2020), for example, "Even if we live in a democracy, a few people will always rule everything." COVID-19 conspiracy beliefs were measured using seven items inspired by Uscinski et al. (2020), Han et al. (2022), and narratives that were prevalent in Slovak alternative media (for example, "Pharmaceutical companies have created COVID-19 to profit from vaccines"). In both cases, higher mean scores indicate higher agreement with conspiracy theories (7-point scale, from 1 = totally disagree to 7 = totally agree; general conspiracy beliefs: $M = 4.19$; $SD = 1.73$; $\omega_{\text{total}} = 0.94$; COVID-19 conspiracy beliefs: $M = 3.37$, $SD = 2.02$; $\omega_{\text{total}} = 0.97$).

Trust

Trust was measured as personal trust in three institutions (national government, scientists, and the World Health Organization; 7-point scale, from 1 = absolutely do not trust to 7 = absolutely trust; $M = 3.30$; $SD = 1.62$ $\omega_{\text{total}} = 0.89$).

Covariates

Participants were asked about their sex (1 = man, 2 = woman), age, and education (from 1 = primary school to 5 = doctoral degree).

A planned missingness design was utilized for both conspiracy beliefs scales, leading to ~16% of data missing. The missing data were imputed using the MissForrest algorithm via the *missRanger* package (Mayer, 2021).

Results and discussion

Correlations

Subjective socioeconomic status was negatively related to general conspiracy beliefs, $r = -.26$, $p < .001$, 95% CI [-0.30, -0.22], and with COVID-19 conspiracy beliefs, $r = -.26$, $p < .001$, 95% CI [-0.30, -0.21]. Next, subjective socioeconomic status was associated with trust, $r = .19$, $p < .001$, 95% CI [0.15, 0.24]. Finally, trust correlated negatively with general conspiracy beliefs, $r = -.64$, $p < .001$, 95% CI [-0.66, -0.61], and COVID-19 conspiracy beliefs, $r = -.66$, $p < .001$, 95% CI [-0.69, -0.64] (all correlations are in Table A4 in Appendix 1).

Mediation analysis

Mediation analyses supported a model with both direct ($\beta = -.11, p < .001, 95\% \text{ CI } [-0.14, -0.07]$) and indirect effects of subjective socioeconomic status on general conspiracy beliefs by trust, controlling for sex, age, and education ($\beta = -.10, p < .001, 95\% \text{ CI } [-0.13, -0.07]$). Similar results occurred for the predictor COVID-19 conspiracy beliefs: A model was corroborated with direct ($\beta = -.09, p < .001, 95\% \text{ CI } [-0.12, -0.05]$) and indirect effects of subjective socioeconomic status related to war on conspiracy beliefs through trust, controlling for sex, age, and education ($\beta = -.11, p < .001, 95\% \text{ CI } [-0.14, -0.07]$).

Finally, mediation analyses supported a model with both direct ($\beta = .17, p < .001, 95\% \text{ CI } [0.14, 0.21]$) and indirect effects of financial fear on general conspiracy beliefs through trust, controlling for sex, age, and education ($\beta = .09, p < .001, 95\% \text{ CI } [0.07, 0.12]$). Similar results occurred for the predictor COVID-19 conspiracy beliefs: A model was verified with direct ($\beta = .15, p < .001, 95\% \text{ CI } [0.12, 0.18]$) and indirect effects of financial fear related to war on conspiracy beliefs through trust, controlling for sex, age, and education ($\beta = .10, p < .001, 95\% \text{ CI } [0.07, 0.13]$).

STUDY 4

In Studies 1–3, it was found and replicated that trust mediated the relationship between precarity and conspiracy beliefs. However, previous studies were limited in two main ways. First, they were conducted only in Slovakia. Second, there are potential confounders which were not assessed in the previous set of studies, but which could be important in the present context, such as political extremism. Therefore, to delve deeper into potential factors across cultures, in the final study we used the ESS data collected in 17 countries and accounted for potential confounders in terms of sex, age, education, religiosity, ideology, political extremism, and subjective health.

Method

Participants

To delve deeper into potential cultural differences, we replicated the findings using the ESS data collected in 17 countries. The sample included 21,306 individuals who were interviewed face to face (92%) and via web video (8%) between September 2020 and April 2022. Individuals were 15 to 90 years old ($M = 50.49; SD = 17.71$); women comprised 52% of the sample, 17% with primary, 15% with lower secondary, 37% with upper secondary, and 30% with tertiary education.

Measures

Precarity

Subjective feelings about a household's current income were used to measure precarity (4-point scale, from 1 = living comfortably on present income to 4 = very difficult on present income; $M = 1.95; SD = 0.83$).

Conspiracy beliefs

General CBs are measured with three items related to COVID-19 origin, manipulation of evidence by scientists and decision-making in world politics, for example, "A small secret group of people is responsible for making all major decisions in world politics" (5-point scale reverse-coded, from 1 = disagree strongly to 5 = agree strongly; $M = 2.74; SD = 1.03; \omega_{\text{total}} = 0.81$).

Trust

Seven measures on personal trust in institutions (parliament, legal system, police, politicians, political parties, European Parliament, United Nations) are averaged to create a composite index (11-point scale, from 0 = no trust at all to 10 = complete trust; $M = 4.96$; $SD = 2.09$; $\omega_{\text{total}} = 0.91$).

Covariates

We include the set of potential confounding factors, such as sex, age, age squared, education (1 = primary, 2 = lower secondary, 3 = upper secondary, 4 = tertiary), religiosity (belonging to particular religion or denomination, $M = 0.59$; $SD = 0.49$), ideology (11-point scale, from 0 = left to 10 = right; $M = 5.31$; $SD = 2.34$), political extremism (derived from the political ideology question, distance from the scale centre, 6 points, $M = 1.72$; $SD = 1.61$), and subjective health (5-point scale, from 1 = very good to 5 = very bad; $M = 2.10$; $SD = 0.88$).

Results and discussion

Correlations

Precarity was positively correlated to CBs, $r = .23$, $p < .001$, 95% CI [0.22, 0.24], and negatively correlated to trust, $r = -.26$, $p < .001$, 95% CI [-0.29, -0.25]. Personal trust correlated negatively with conspiracy beliefs, $r = -.45$, $p < .001$, 95% CI [-0.46, -0.44].

Mediation analysis

Mediation analyses ($N_{\text{bootstrap}} = 1000$) supported a model with both direct ($\beta = .11$, $p < .001$, 95% CI [0.09, 0.12]) and indirect effects of precarity on conspiracy beliefs through trust ($\beta = .11$, $p < .001$, 95% CI [-0.10, -0.11]). Supplementary figures and details are available in [Appendix 1 \(Table A5\)](#).

META-ANALYTIC SUMMARY

To systematically integrate the findings from the present set of studies with those originally reported by Adam-Troian et al. (2023), we used a meta-analytic structural equation modelling (MASEM; see Cheung, 2021; Cheung, 2022 for a detailed discussion of MASEM and its potential benefits in the context of examining indirect effects). In particular, a two-stage (TSSEM) approach was implemented to examine the mediation model with precarity (IV),¹ trust (mediator), and conspiracy beliefs (DV), with $N = 50,340$ across seven studies.

Results and discussion

The results provided support for the hypothesis that trust mediates the relationship between precarity and conspiracy beliefs. More specifically, in the first stage of the analysis, we estimated the average correlation matrix with a random-effect model. The average correlations were -0.20 (precarity and trust), -0.48 (trust and conspiracy), and 0.22 (precarity and conspiracy). The results indicated that the population of correlation matrices was heterogeneous ($\chi^2(\text{df} = 18) = 1839.42$, $p < .001$), and the heterogeneity variances τ^2 (and their I^2) of the pairs were 0.005 (0.96), 0.29 (0.99), and 0.02 (0.93),

¹Precarity has been used to integrate various types of IV across studies. In particular, IV were recoded to capture precarity for the analysis (e.g., higher levels of ledger, indicating a higher SES, were equivalent to lower level of precarity).

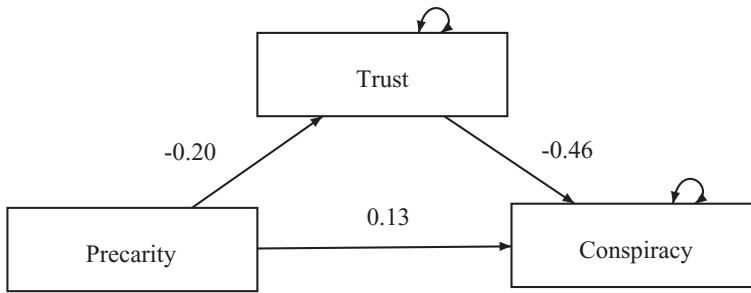


FIGURE 1 Meta-analytic path diagram.

respectively. Based on the second step of the analysis, estimated path coefficients with 95% likelihood-based CIs are provided (note that fit indices are not provided, as the mediation model was saturated). The results showed that there was a direct effect of precarity on conspiracy beliefs (0.13, 95% CI [0.07, 0.18]). Importantly, there was also a significant indirect effect of precarity on conspiracy beliefs via trust (0.09, 95% CI [0.06, 0.13]). As graphically depicted in Figure 1, precarity was negatively related to trust (-0.20 , 95% CI [-0.25 , -0.14]), while trust was negatively related to conspiracy beliefs (-0.46 , 95% CI [-0.59 , -0.33]).² We also tested the hypothesis that the direct effect equals the indirect effect. The results indicated that both direct and indirect effects were of similar magnitude ($\chi^2(df=1) = 0.673$, $p = .412$).

As the results indicated a substantial amount of heterogeneity in the population of correlation matrices, we further examined the role of potential moderators. We therefore conducted an exploratory subgroup analysis, where we analysed three separate groups of findings: (a) the results of Adam-Troian et al. (2023) and (b) the results of the present set of studies with two types of precarity operationalizations. In particular, (b1) ladder and (b2) threat were differentiated to examine potential differences between the two types of operationalizations of precarity. Other comparisons were not conducted due to the limited number of studies (see Figures C1–C3 and Table A in Appendix 3). In sum, we interpret these results as providing strong evidence that, conditional on model assumptions (precarity \rightarrow trust \rightarrow conspiracy beliefs), our statistical test shows that trust can account for a significant portion of variance. Stated more colloquially, a significant positive association between precarity and conspiracy beliefs is mediated by a lack of trust. However, the strength of the path coefficients varied across the set of the studies to some degree (i.e., the sizes of the effect of paths a and b were stronger in both sets of present studies compared with previous studies), but further studies are needed to uncover the role of potential moderators.

GENERAL DISCUSSION

The present set of preregistered studies sought to conceptually replicate the findings of Adam-Troian et al. (2023) on the role of institutional trust in mediating the relationship between precarity and CBs. The original research suggests that precarity generates institutional distrust, which in turn translates into a tendency to endorse conspiracy beliefs. Together, these processes are seen as yielding a range of deteriorating societal outcomes by impacting interpersonal, within-group, and between-group relationships

²Due to assumption constraints, the present structural equation modelling meta-analysis included only one effect size *per* study. However, as some studies reported results using more than one operationalisation, it was of interest to examine how sensitive the results are to the different operationalizations of the variables. Also, there were two waves of data collection in Study 1, but only one was included in analysis. To examine the robustness of the results, we conducted a sensitivity analysis. The results are reported online (see Figure B, Appendix 2). In sum, the sensitivity analysis indicated that the results are quite robust when different sets of the results are included.

(see also van Prooijen et al., 2022). The overall idea behind the current conceptual replication was to examine the extent to which the proposed theory is sensitive to context and whether the main pattern of the observed results would hold after altering the operationalizations of the main variables. We thus sought to study the generalizability of effects across socially, culturally, and historically variable contexts (Crandall & Sherman, 2016). Across the set of studies, we found that individuals' experiences of precarity were positively associated with their adherence to conspiracy beliefs. Precarity was found to be significantly associated with lower levels of trust in institutions and public authorities, whereas lower trust was associated with CBs, thus corroborating the view that institutional trust mediates the relationship between precarity and the endorsement of conspiracy beliefs.

Specifically, in Studies 1–3 we found that the mediation model reported in the original research was significant when using panel data collected from the adult population in Slovakia at different time points. Although Slovakia, strictly speaking, cannot be considered a non-WEIRD country (Western, Educated, Industrialized, Rich and Democratic), these findings lend credence to the original hypothesis about structural sources of the endorsement of CBs across the traditional division between “old” and “new” EU countries.

Second, to verify the robustness of the original results in a larger European context, we replicated the original model by examining data from the ESS Round 10, collected in 2020–2022. Our choice of the ESS allowed us to incorporate three questions on specific conspiracy beliefs (e.g., questions related to COVID-19 origin, manipulation of evidence by scientists, and decision-making in world politics). Taken together, our analysis of the ESS Round 10 data showed the same trend in results as the original paper (Adam-Troian et al., 2023) and the current replication Studies 1–3.

With the goal of providing a quantitative synthesis of the effect sizes observed in the present and previous studies, we conducted a mini meta-analysis in which we aggregated the indirect associations reported in Studies 1–4 with those reported by Adam-Troian et al. (2023) and calculated their overall magnitude and direction. In particular, we used a meta-analytic structural equation modelling to synthesize the indirect effects across studies, assess the homogeneity, and examine potential moderators. The cumulative results of our mini meta-analysis maximize statistical power by combining individual-level data from each study and provide additional evidence that a significant positive association between experienced precarity and CBs is mediated by a lack of trust in political elites. This kind of approach has been previously considered (Miller & Schwarz, 2011, p. 359).

To summarize, the current conceptual replication revealed that across various cultural settings and using different operationalizations of the main variables, the experience of precarity was consistently associated with an enhanced endorsement of CBs. Although the strength of the relationships was found to vary across countries – possibly due to subtle local conditions we were unable to capture in this study – the general pattern remains robust. These findings corroborate the sociofunctional approach proposed by the original research, which argues that the endorsement of CBs may be associated with a group-level response to existential threats and, thus, could be linked with class and structural divisions.

Taken together, our research contributes to a larger scientific debate concerned with the role of people's deteriorating economic conditions, suspicion of institutions, and conspiracy theories in affecting societies. The emergence of the COVID-19 pandemic induced a sense of economic insecurity across households at all levels of income (Gould & Kassa, 2020; van der Zwet et al., 2022). Furthermore, looming geopolitical risks involving Russia's full-scale invasion of Ukraine in 2022 have had immediate global implications resulting in higher inflation, rising costs of living, lower growth, and disruptions to financial markets and global supply chains. In view of the economic turmoil of recent (and probably also upcoming) years, it is plausible to expect that the sense of financial uncertainty and its adverse consequences will persist and affect people's lives in both high- and low-income economies. Therefore, the current contribution helps to understand how the increasing economic insecurity and low institutional trust may foster the endorsement of CBs.

Limitations and directions for future research

As with all empirical research, certain limitations need to be mentioned. One major limitation of the current research is that we used available samples. Therefore, the results from Studies 1–3 might be context-specific. Despite the results being convincing, it is possible that if we conducted the replication in a non-WEIRD context and added a larger set of control variables (e.g., satisfaction with life, extreme political, or ideological beliefs), the original pattern of the results would not hold. Thus, the results of this replication urge us to look for other, potentially intertwined factors that could interfere with the primary results and potentially investigate these relationships with non-WEIRD populations.

Second, across the five studies we relied mostly on cross-sectional data in our analysis. As has been argued in the literature, the relation between people's distrust in political institutions and their adherence to conspiracy theories is in all likelihood bidirectional (van Prooijen et al., 2022). In fact, our research shows that institutional trust is sensitive to contextual changes (e.g., elections, economic crises) and could reflect changes of confidence in institutions during particularly turbulent times (Hornsey et al., 2023). Future research would benefit from longitudinal studies using a rigorous methodology able to establish whether a change in one's precarious life conditions would lead to a decrease in beliefs in conspiracy theories. Likewise, future replications might examine the between-person and within-person associations between precarity, trust, and endorsement of CBs over time while controlling for crucial individual variables, such as individuals' self-reported conservatism, political disaffection, and beliefs in science, which have proven to affect the variability of the aforementioned associations over time. Other minor drawbacks of the current replication might be addressed by future studies aimed at delving deeper into the relationships between various operationalizations of precarity, institutional trust, and specific, context-dependent CBs.

CONCLUSIONS

Conceptual replications are prospective tools of scientific progress towards a cumulative social science. The aim of the current conceptual replication was to investigate whether the psychological phenomena observed by Adam-Troian et al. (2023) pertaining to individuals' precarity distrust in institutions and elites and the adherence to conspiracy beliefs are universal rather than context-dependent patterns. Across four studies, we found that the original theoretical model was replicated consistently, thus suggesting its generalizability despite altered operationalization of the constructs and across different populations and cultural contexts. Therefore, the present replication shows that the sociofunctional approach proposed by the authors of the replicated study (Adam-Troian et al., 2023) may be an interesting research avenue providing insights into factors enhancing the endorsement of CBs and the process of tackling the spread of CBs. Our replication suggests that understanding structural factors behind people's increased adherence to CBs is of paramount importance, and the recognition of such factors may soon become a prerequisite for shielding society and its most vulnerable, precarious members against conspiracies and the negative consequences that CBs may bring about.

AUTHOR CONTRIBUTIONS

Magdalena Adamus: Conceptualization; writing – original draft; supervision; methodology. **Eva Ballová Mikušková:** Conceptualization; writing – original draft; data curation; methodology; formal analysis. **Pavol Kačmár:** Data curation; formal analysis; writing – original draft. **Martin Guzi:** Writing – original draft; formal analysis; data curation. **Matuš Adamkovič:** Writing – original draft; formal analysis; data curation. **Maria Chayinska:** Writing – original draft. **Jais Adam-Troian:** Formal analysis; data curation; writing – original draft.

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CONFLICT OF INTEREST STATEMENT

All authors declare that they have no conflicts of interest to disclose.

DATA AVAILABILITY STATEMENT

All datasets are available at https://osf.io/kbr9s/?view_only=c4c46ad3da5f4a32ab08edc3839ac3e9.

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