

## Trust and Media: Predicting Beliefs in COVID-19 Conspiracy Theories in Latin America

### *Confianza y medios de comunicación: Prediciendo creencias en teorías conspirativas sobre COVID-19 en Latinoamérica*

Camila Salazar-Fernández

Universidad de La Frontera, Temuco, Chile

María José Rivera-Baeza

Universidad Católica de Temuco, Temuco, Chile

Diego Manríquez-Robles

Rice University, Houston, Texas, USA

Tomás Caycho-Rodríguez

Universidad Científica del Sur, Lima, Perú

Paola Raipán-Gómez

Universidad de Almería, Almería, España

#### Abstract

Beliefs in COVID-19 conspiracy have shown to have broad repercussions on the population, primarily because those who adopt such beliefs express attitudes and behaviors based on misinformation and a level of distrust in both governments and scientific societies. Therefore, this study investigates the impact of trust in government, scientific societies, and media consumption on adherence to COVID-19 conspiracy beliefs in Chile, Mexico, and Colombia during the pandemic. With a sample of 2,111 participants surveyed online between December 2020 and April 2021, structural equation models reveal significant findings. Across all three countries, heightened trust in scientific and international societies, along with increased reliance on formal media, correlates with lower adherence to conspiracy beliefs. Additionally, variations exist in the relationship between trust in government and informal media use among the countries. These results illuminate key predictors of conspiracy beliefs in Latin America, providing valuable insights into the contextual factors influencing public perceptions during the unique challenges posed by the pandemic.

*Keywords:* conspiracy theories, conspiracy beliefs, trust, COVID-19, misinformation, media.

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Camila Salazar-Fernández, Doctorado en Psicología, Departamento de Psicología, Universidad de La Frontera, Temuco, Chile; Laboratorio de Interacciones, Cultura y Salud. María José Rivera-Baeza, Departamento de Psicología, Universidad Católica de Temuco, Chile; Laboratorio de Interacciones, Cultura y Salud. Diego Manríquez-Robles, Departamento de Ciencias Psicológicas, Rice University, Houston, Texas, Estados Unidos. Tomás Caycho-Rodríguez, Facultad de Psicología, Universidad Científica del Sur, Lima, Perú. Paola Raipán-Gómez, Facultad de Psicología, Universidad de Almería, Almería, España.

Correspondence concerning this article should be addressed to Dr. María José Rivera-Baeza, Department of Psychology, Universidad Católica de Temuco, Manuel Montt 56, Temuco, 4780000, Chile. E-mail: [mrivera@uct.cl](mailto:mrivera@uct.cl)



### Resumen

Las creencias conspirativas han demostrado tener amplias repercusiones en la población, principalmente porque quienes adoptan dichas creencias, manifiestan actitudes y conductas basadas en la desinformación y un nivel de desconfianza tanto en los gobiernos como en las sociedades científicas. Por lo anterior, este estudio investiga el impacto de la confianza en el gobierno, las sociedades científicas y el uso de medios de comunicación en las creencias conspirativas del COVID-19 en Chile, México y Colombia durante la pandemia. Con una muestra de 2,111 participantes encuestados en línea entre diciembre de 2020 y abril de 2021, los modelos de ecuaciones estructurales revelan hallazgos significativos. En los tres países, una mayor confianza en las sociedades científicas e internacionales, y un mayor uso de medios de comunicación formales, se asociaron con una menor adherencia a las creencias conspirativas del COVID-19. Además, se encontraron diferencias entre países en la relación entre la confianza en el gobierno y el uso de medios de comunicación informales. Estos resultados arrojan luz sobre los predictores claves de las creencias conspirativas en América Latina, proporcionando valiosos conocimientos sobre los factores contextuales que influyen en las percepciones públicas durante los desafíos únicos planteados por la pandemia.

*Palabras clave:* teorías conspirativas, creencias conspirativas, confianza, COVID-19, desinformación, medios de comunicación.

Understanding the psychological and social factors that influence public responses to health crises is crucial for effective pandemic management. During the COVID-19 pandemic, conspiracy theories – misinformed ideas suggesting hidden plots behind the virus and its management – gained traction and significantly affected adherence to public health recommendations. This study aims to examine how institutional trust and media consumption (formal vs. informal) are associated with beliefs in COVID-19 conspiracy theories in three Latin American countries: Chile, Mexico, and Colombia. By focusing on these factors, we seek to contribute to understanding the mechanisms that fuel conspiracy beliefs and their implications for public health.

The COVID-19 pandemic has caused an unprecedented worldwide impact since the World Health Organization (WHO) declared it in 2020. Governments and scientific societies in Latin America developed region-specific strategies in response to the COVID-19 pandemic (Anderson et al., 2020), adapted for Latin America (Blackman et al., 2020). Despite these efforts, the population's limited adoption of recommended measures is attributed to eroded trust in authorities amid political crises, challenging social conditions, and economic decline during the pandemic (Caycho-Rodríguez et al., 2022; Douglas et al., 2023). Conspiracy beliefs, disseminated through informal media like social networks, further undermined pandemic mitigation efforts (Joseph et al., 2022).

In this paper, we distinguish between conspiracy theories, which refer to speculative narratives suggesting secret plots by powerful actors, and conspiracy beliefs, which reflect individual's agreement or endorsement, or acceptance of those theories (Douglas et al., 2019). In tandem with the spread of COVID-19, numerous beliefs regarding its origin and possible treatments emerged. These beliefs typically had various conspiracy theories as their basis, presupposing that an entity works secretly to achieve a purpose of public interest, although rarely discussed at the societal level. These beliefs find greater

acceptance in the current world because they satisfy psychological needs for certainty, understanding, control, and security in constant uncertainty. More importantly, these beliefs shape the attitudes and behaviors of those who adopt them, establishing who can be trusted (van Prooijen & Douglas, 2017).

The study of belief in conspiracy theories has become increasingly relevant due to its broad implications across various areas, particularly in health. Such theories indirectly diminish the intentions to seek healthcare by reducing trust and fostering heightened feelings of helplessness (Natoli & Marques, 2021). Globally, there have been observed negative health outcomes associated with conspiracy beliefs (Rivera-Baeza et al., 2021; Baeza-Rivera et al., 2021; Pummerer et al., 2022; Salazar-Fernández et al., 2023a; Soveri et al., 2021). Individuals embracing conspiracy beliefs are less likely to follow government-recommended safety measures, leading to negative consequences (Romer & Jamieson, 2020).

Despite the thorough investigation into the repercussions of beliefs in conspiracy beliefs within scientific literature (van Mulukom et al., 2022), the origins and mechanisms of their dissemination have garnered relatively less attention. As a result, this paper explored factors that could be associated with beliefs in COVID-19 conspiracy beliefs. Specifically, it will examine the influence of trust in institutions and the media.

### **Institutional Trust and Beliefs in Conspiracy Beliefs**

The level of trust in institutions significantly influences the acceptance of conspiracy beliefs (Syropoulos & Gkinopoulos, 2023). Institutional trust denotes individuals' confidence in political or healthcare institutions, rooted in perceptions of stability and continuity despite membership changes. Trust levels vary based on perceived proximity to institutions and contextual factors. In politics, it encompasses trust in government institutions, fostered by ethical conduct, efficiency, and positive interactions. In healthcare, institutional trust in providers hinges on belief in high-quality services, supported by scientific evidence and genuine concern for well-being (Campos-Castillo et al., 2016). When individuals perceive institutions as lacking transparency, providing insufficient information, or offering unreliable information, they are more likely to endorse conspiracy beliefs (van Mulukom, 2020). Therefore, institutional trust emerges as pivotal in curbing the spread of conspiracy beliefs. Increased transparency and credibility can help reduce the endorsement of such beliefs among the population (Murphy et al., 2022).

Confidence in government authorities frequently assumes a significant function in various conspiracy beliefs (Freeman et al., 2022). Recent research has discovered that individuals who exhibit low confidence in the government are more susceptible to developing conspiracy beliefs (van Prooijen et al., 2022). These conspiracy beliefs typically center on the notion that government institutions are concealing information or manipulating facts. This assumption fosters greater distrust in the government and consequently amplifies the dissemination of conspiracy beliefs (Pagliaro et al., 2021).

Trust in scientific societies significantly influences the acceptance of conspiracy beliefs. When individuals question the integrity and objectivity of scientific research, they are more likely to embrace such beliefs (Sallam et al., 2020). Doubts about scientific advancements and research accuracy can fuel

alternative interpretations and misinformation about COVID-19, including conspiracy beliefs (Agle & Xiao, 2021; Andersen et al., 2020). International investigations indicate that increased skepticism toward scientists and health organizations correlates with higher adherence to conspiracy beliefs, while greater exposure to science and scientists tends to reduce conspiracy beliefs (Humprecht et al., 2020; van Mulukom, 2022). This is particularly significant in Latin America, where residents often have limited knowledge of public health issues and reduced trust in scientific endeavors (Argote et al., 2021).

### **Media and Beliefs in Conspiracy Beliefs**

The association between conspiracy beliefs and the media is intricately connected (Islam et al., 2020). In the contemporary era, the media plays a crucial role in spreading information, perspectives, and messages to a global audience. The use of platforms such as social media has enabled information to reach a wider audience and facilitated its consumption due to the interactive nature of communication (Padilla-Bautista et al., 2023). However, this influence has also presented challenges, especially during the COVID-19 pandemic (Zeno-Zencovich, 2019). Inaccurate information from both formal and informal media has fueled the "infodemic." This term describes the overwhelming volume of information, often containing falsehoods, that obstructs access to accurate, verified COVID-19 information (Zarocostas, 2020).

One can categorize media into two main channels: formal and informal. Formal media comprises established organizations that responsibly collect, verify, and professionally disseminate information, following ethical and professional standards. In contrast, informal media includes noninstitutionalized or unconventional information channels, lacking formal organizational structures, and driven by individuals or groups, promoting broader public involvement. While informal media fosters diverse perspectives and public engagement, it has also played a role in spreading pandemic-related conspiracy beliefs and misinformation (Zeno-Zencovich, 2019). A study conducted in Mexico on media and COVID-19 identified two major categories of media: critical and non-critical. Critical media contrast the information they present—either through technical consultation or scientific content—which fosters the development of critical thinking. In contrast, non-critical media, including some digital platforms, do not verify information. As a result, individuals who rely on critical media or sources that contrast information through official channels tend to show a higher intention to get vaccinated, as they are more likely to make informed decisions (Padilla-Bautista et al., 2023).

The investigations have documented that the media can exert a considerable influence on the dissemination and acceptance of conspiracy beliefs in society (Zarocostas, 2020). Specifically, it has been determined that individuals with conspiracy beliefs often tend to avoid traditional media channels like television, radio, and newspapers (De Coninck et al., 2021). Instead, they predominantly acquire information through informal media channels, including the internet and social media (Humprecht et al., 2020). Thus, increased engagement with formal media correlates with a reduction in the inclination to endorse conspiracy beliefs and false information (De Coninck et al., 2021).

Informal media, such as social media and online forums, play a significant role in the rapid dissemination of conspiracy beliefs (Marchal & Au, 2020; Rovetta & Bhagavathula, 2020). These

platforms provide immediate and attention-grabbing content, contributing to the swift spread of beliefs like the belief that governments exaggerate the severity of the virus for control or harm purposes (Imhoff & Lamberty, 2020). While not all content on informal media relates to conspiracy beliefs (Ahmed et al., 2020), their nature allows for rapid transmission without prior verification, reaching diverse audiences swiftly (Bruns et al., 2020; Pulido et al., 2020). Using social media as an information source correlates with belief in conspiracy beliefs, with individuals who obtain COVID-19 information from online platforms more likely to endorse pandemic-related conspiracies than those using formal media channels (Freeman et al., 2022).

### **The present research**

In this study, we examined the role of institutional trust – specifically in government and scientific societies – and the influence of media consumption (formal and informal) on the endorsement of COVID-19 conspiracy beliefs. These associations were explored within the Latin American context, focusing on three countries: Chile, Mexico, and Colombia. Our study addresses the following research question: How are institutional trust and types of media consumption (formal vs. informal) associated with beliefs in COVID-19 conspiracy theories in Chile, Mexico, and Colombia?

Based on previous literature, we formulated the following hypotheses: (1) Lower levels of trust in public institutions – both governmental and scientific – will be associated with greater endorsement of COVID-19 conspiracy beliefs. (2) Greater reliance on informal media (e.g., social media) will be associated with greater endorsement of conspiracy beliefs, whereas reliance on formal media (e.g., newspapers) will be associated with lower endorsement. (3) The strength of these associations will vary across national contexts (Chile, Mexico, and Colombia).

To address these questions, we conducted a quantitative study using survey data collected during the COVID-19 pandemic in three Latin American countries. This approach allowed us to examine associations between institutional trust, media consumption and beliefs in conspiracy theories. The analysis focused on identifying patterns of belief and testing the predictive role of trust and media exposure on the endorsement of COVID-19 beliefs in conspiracy theories.

Studying trust, misinformation, and conspiracy beliefs globally is crucial. Existing research mostly focuses on Europe and the United States, leaving gaps in understanding their impact in Latin America. Latin America has unique cultural, political, and social traits, as noted by Medina (2020). The region faces disparities in social well-being, economic hardship, and informal employment, affecting pandemic management effectiveness. Healthcare access, chronic disease burden, and governance challenges are prevalent (Americas Society & Council of the Americas, 2021), necessitating a regional approach (Blackman et al., 2020). Political history, with conspiracies and coups, fosters belief in hidden motives and threats (Romer & Jamieson, 2020). Investigating how these historical factors influence vulnerability to COVID-19 conspiracy beliefs is crucial. Our research aims to examine the connection between government trust, media utilization, and beliefs in COVID-19 conspiracies in Chile, Mexico, and Colombia.

## Method

### Participants

A total of 2,886 persons from Chile, Mexico, and Colombia participated in the study. They were selected through no probabilistic international sampling and responded to an online survey. Participants with more than 50% missing data on study variables, totaling 775 individuals, were excluded. The final sample size was of 2,111 individuals. According to Soper (2023), this sample size exceeds the minimum required ( $n = 1,258$ ) to detect small effects, assuming a statistical power of .80 for the relationship pattern in this study. Within this sample, 49% were of Chilean origin, 26% were Mexican, and 25% were Colombian. Inclusion criteria specified participants above 18 years of age who were residents in their respective countries during the COVID-19 pandemic. The majority of participants were female (70%), with ages ranging from 18 to 89 years ( $M = 35.07$ ,  $SD = 14.61$ ). Appendix (Table A1) shows the sociodemographic characteristics of participants from Chile, Mexico and Colombia.

### Instruments

#### *Trust in the government and in scientific and international societies*

An adapted version of the items proposed by Storopoli et al. (2020) was used to assess trust in the government in relation to pandemic management. The assessment included two items: one addressing trust in local government (municipalities and town halls), and the other focusing on trust in the national government (government, ministries, and state). Additionally, trust in scientific societies and international organizations was evaluated with two more items specifically targeting trust in health scientific societies, professional health associations, and entities like the World Health Organization (WHO) and the Pan American Health Organization (PAHO). Participants indicated their level of trust in pandemic management by each institution using a scale ranging from "None" (0) to "A Lot" (4). The trust in government scale showed acceptable reliability in Chile ( $\omega = .71$ ), Mexico ( $\omega = .84$ ), and Colombia ( $\omega = .79$ ), as well as the trust in scientific authorities' scale (Chile:  $\omega = .75$ , Mexico:  $\omega = .83$ , and Colombia:  $\omega = .79$ ).

#### *Use of informal and formal media communication*

Participants were required to indicate their use of informal media (Twitter, Facebook, Instagram, Reddit, and WhatsApp) and formal media (television, radio, print newspapers and/or online newspapers, and government websites) as sources of information about COVID-19, based on Rosen et al. (2013). The response format used was a dichotomous scale (No = 0, Yes = 1). A total score was calculated for each type of media: informal, with a range of 0 to 5 points, and formal, with a range of 0 to 4 points. In both scales, a higher score represents greater use of the respective media. To assess the reliability of these instruments, the Kuder-Richardson-20 (KR-20) coefficient, suitable for dichotomous data, was used. For the use of informal media, the KR-20 values for each country were acceptable (Chile = .60, Mexico = .61, and Colombia = .61). For the use of formal media, the KR-20 values reflected excellent internal consistency (Chile = .91, Mexico = .93, Colombia = .94).



### ***Beliefs in COVID-19 conspiracy theories***

The instrument created by Salazar-Fernández et al. (2022) was used, which consists of five items assessing beliefs in conspiracy theories regarding the origin of COVID-19 and the COVID-19 vaccine. To answer these items, participants responded using a 5-point Likert format, ranging from completely disagree (1) to completely agree (5). High scores on this scale reflect greater adherence to COVID-19 conspiracy beliefs. The reliability of this scale was acceptable for all countries (Chile:  $\omega = .80$ , Mexico: 0.87, and Colombia:  $\omega = .88$ ).

### **Control variables**

Participant age and education level served as statistical controls, consistent with previous findings linking these variables to COVID-19 conspiracy beliefs (van Mulukom et al., 2022).

### **Procedure**

This study is part of a larger project and was conducted following the principles of the Declaration of Helsinki and was approved by the ethics committees of universities in Chile (65/20 2020), Mexico (POSG/021-1-01), and Colombia (PRYINT-203-2021). Using QuestionPro, an online platform, the data collection began from December 2020 to April 2021 and was distributed through various social networks, such as WhatsApp, Facebook, Twitter, and Instagram. The survey included an informed consent that explained the study's objectives and ensured confidentiality and anonymity in responses. It also provided contact information for the researchers. The questionnaire took approximately 15 minutes to complete, and no financial or any other incentives were offered to participants.

Following the recommendations of Muñiz et al. (2013), the instruments used in this study were translated into Spanish through a forward and backward translation process. A committee of experts then carried out a cultural adaptation to ensure semantic and conceptual equivalence of the items. This process provided evidence of content validity. In addition, statistical analyses were conducted to support construct validity. These strategies helped minimize potential biases related to cultural differences and ensured the appropriateness of the instrument for the target population. A preliminary pilot study was also conducted with participants sharing similar characteristics to the target sample. This allowed for the assessment of item clarity and the implementation of minor adjustments before the final administration.

### **Analysis Plan**

Descriptive analyses were conducted for each country. The McDonald's omega coefficient was used to assess internal consistency (Revelle & Zinbarg, 2009). Subsequently, multigroup structural equation models were constructed using the *lavaan* package in R software (Rosseel, 2012). Given the cross-sectional nature of the data, the paths in these models reflect associations rather than causal relationships (Hoyle, 2023). The DWLS (Diagonally Weighted Least Squares) estimator, which is more suitable for ordinal data (Flora & Curran, 2004), was used. Model invariance was then evaluated.

According to Milfont & Fischer (2010), invariance involves applying successive constraints to the model and assessing whether the fit of the model deteriorates with these constraints. By placing constraints on form, factor loadings, intercepts, and residuals, configural, metric, scalar, and residual invariance are achieved, respectively. According to Sass & Schmitt (2013), to make valid and direct comparisons between groups (i.e., countries), scalar invariance must be achieved. Each of these estimated models was evaluated with the following global fit indicators:  $\chi^2$ , the comparative fit index (CFI), the Tucker–Lewis index (TLI), the standardized root mean square residual (SRMR), and the root mean square error of approximation (RMSEA), with a 90% confidence interval. Conventional goodness-of-fit criteria were used to interpret these indices: CFI and TLI  $>.95$  and SRMR and RMSEA  $\leq .08$  (Marsh et al., 2004; Schermelleh-Engel et al., 2003).

According to Rutkowski & Svetina (2016) and Sass et al. (2014), if  $\Delta\text{CFI} < .010$  and  $\Delta\text{RMSEA} < .015$ , model invariance is rejected, indicating that the fit of the more restrictive model is worse than that of the previously estimated model. If scalar or residual invariance is achieved, it is possible to compare models. Then, the structural invariance model will be evaluated in which the coefficients of regression associated with the pattern of relationships in the model are constrained to be equal, assuming that the model works similarly for the three countries. If the fit of the structural model deteriorates, this indicates that the regression coefficients are not similar between the groups. The Wald test will be used to identify specific differences between these coefficients (Klopp, 2020). The data to be analyzed can be found at the following link: <https://doi.org/10.17605/OSF.IO/EY23J>

## Results

Correlations were made between the variables of interest for Chile, Mexico and Colombia (see Appendix Table A2). It was found that there were statistically significant negative correlations of small magnitude between the items of beliefs in conspiracy theories about COVID-19 and trust in government. Additionally, the correlations between beliefs in conspiracy theories and trust in scientific and international societies are significant and range in magnitude from small to moderate. Furthermore, there are significant negative correlations of small magnitude between the items of beliefs in conspiracy theories and the use of formal media, while the correlations between beliefs in conspiracy theories and the use of informal media are positive and of small magnitude.

### Model Evaluation

A model was estimated to examine the relationships between trust in the government, scientific societies, and the use of both formal and informal media to beliefs in COVID-19 conspiracy theories. By controlling variables such as age and education level, the model showed an excellent fit to the data,  $\chi^2(64) = 554.99$ ,  $p < .01$ , CFI = .95, TLI = .94, SRMR = .05, RMSEA = .06 [90% CI: .05, .06]. When analyzing the results by country, the model had an optimal fit for Colombia and an acceptable fit for Chile and Mexico (see details in Table 1).



CONSPIRACY THEORIES IN LATIN AMERICA

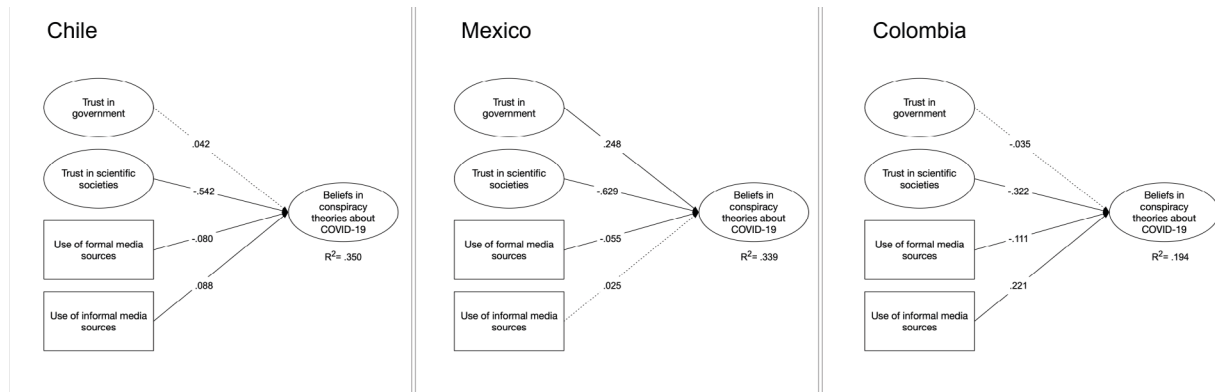
**Table 1**  
*Invariance of the model by country*

Model	$\chi^2$ (gl)	<i>p</i>	CFI	TLI	RMSEA [90% IC]	SRMR	Model comparison	$\Delta CFI$	$\Delta RMSEA$	$\Delta SRMR$
Colombia	102.909 (64)	< .001	.986	.983	.033 [.020, .040]	.044	-	-	-	-
Chile	435.139 (64)	< .001	.924	.904	.076 [.069, .083]	.067	-	-	-	-
Mexico	216.790 (64)	< .001	.943	.928	.068 [.058, .078]	.065	-	-	-	-
M1: Configural	502.723 (168)	< .001	.968	.958	.053 [.048, .059]	.049	-	-	-	-
M2: Metric	540.157 (180)	< .001	.965	.958	.053 [.048, .059]	.052	M2 vs. M1	-.003	.000	.003
M3: Scalar	615.377 (192)	< .001	.959	.954	.056 [.051, .061]	.055	M3 vs. M2	-.006	.003	.003
M4: Residual	668.656 (210)	< .001	.956	.955	.056 [.051, .061]	.060	M4 vs. M3	-.003	.000	.005
M5: Structural model	814.038 (222)	< .001	.943	.944	.062 [.057, .066]	.067	-	-.013	-.006	.007

**Invariance Analysis**

After confirming a good fit in each country, the model's invariance was evaluated (see Table 1). In this process, configural, metric, scalar, and residual models were examined to assess their fit. The models did not worsen with the inclusion of limitations on factor loadings, intercepts, and residuals, as per the thresholds outlined by Rutkowski & Svetina (2016) and Sass et al. (2014). These results imply that meaningful comparisons between countries are possible, and a structural invariance model was estimated, constraining regression coefficients to equal across countries. This model showed a decline in  $\Delta CFI$ , suggesting that the regression coefficients associated with structural relationships are different for each country. Consequently, specific differences in these coefficients were evaluated by country (see Figure 1). The analysis of these models and their differences is detailed by country in the following section.

Figure 1  
 Comparisons between countries



### Model of Relationships Predicting Conspiracy Beliefs

*Chile.* This model explained 35% of the variability in beliefs in COVID-19 conspiracy theories. In this model, trust in the government did not significantly predict belief in conspiracy theories ( $\beta = .04$ ,  $p = .25$ ), while trust in scientific and international societies significantly and negatively predicted belief in conspiracy theories ( $\beta = -.54$ ,  $p < .05$ ). In other words, higher trust in scientific and international societies is associated with lower adherence to beliefs in COVID-19 conspiracy theories. Regarding the use of formal media, it was found that these were significantly associated with lower belief in COVID-19 conspiracy theories ( $\beta = -.08$ ,  $p < .05$ ), while the use of informal media was associated with higher belief in COVID-19 conspiracy theories ( $\beta = .08$ ,  $p < .05$ ).

*Mexico.* This model explained 34% of the variability in beliefs in COVID-19 conspiracy theories. In this model, trust in the government significantly predicted higher belief in COVID-19 conspiracy theories ( $\beta = .24$ ,  $p < .05$ ). Additionally, it was found that trust in scientific and international societies significantly and negatively predicted belief in conspiracy theories ( $\beta = -.64$ ,  $p < .05$ ). In other words, higher trust in scientific and international societies is associated with lower adherence to beliefs in COVID-19 conspiracy theories. Regarding the use of formal media, these were significantly associated with lower belief in COVID-19 conspiracy theories ( $\beta = -.05$ ,  $p < .05$ ), while the use of informal media did not show statistically significant associations with belief in COVID-19 conspiracy theories ( $\beta = .02$ ,  $p = .40$ ).

*Colombia.* This model explained 19% of the variability in beliefs in COVID-19 conspiracy theories. In this model, trust in the government did not significantly predict belief in COVID-19 conspiracy theories ( $\beta = -.03, p = .64$ ). Furthermore, trust in scientific and international societies negatively and significantly predicted belief in conspiracy theories ( $\beta = -.32, p < .05$ ). In other words, higher trust in scientific and international societies is associated with lower adherence to belief in COVID-19 conspiracy theories. Concerning the use of formal media, these were significantly associated with lower belief in COVID-19 conspiracy theories ( $\beta = -.11, p < .05$ ), while the use of informal media showed a positive and statistically significant association with beliefs in COVID-19 conspiracy theories ( $\beta = .22, p < .05$ ).

### **Differences in the Model by Country**

As seen in Figure 1, confidence in the government was not statistically significantly associated with beliefs in COVID-19 conspiracy theories in Chile and Colombia, whereas this association was positive and statistically significant for Mexico. Regarding confidence in scientific and international societies, all three countries displayed negative and moderately to highly significant correlations. When comparing these coefficients between countries, it was observed that this coefficient did not differ significantly between Chile and Mexico,  $\chi^2(1) = 1.45, p = .22$ . However, statistically significant differences were found between Chile and Colombia,  $\chi^2(1) = 15.33, p < .05$ , and between Mexico and Colombia,  $\chi^2(1) = 6.35, p < .05$ . This implies that this coefficient is significantly lower in Colombia than in Chile and Mexico.

Concerning formal media communication, no statistically significant differences were found between these coefficients across countries ( $p$ 's  $> .05$ ). Finally, in the case of informal media communication, a statistically significant association was found only in the case of Chile and Colombia. Specifically, the Wald test indicated that this coefficient was significantly higher in Colombia than in Chile,  $\chi^2(1) = 8.36, p < .05$ .

## **Discussion**

This research aimed to explore the correlation between confidence in governmental authorities, trust in scientific organizations, the use of formal and informal media communication, and the endorsement of beliefs in COVID-19 conspiracy theories in Chile, Mexico, and Colombia. The study underscores the high invariance of the model, enabling meaningful cross-country comparisons. In Chile, Mexico, and Colombia, trust in scientific/international organizations and reliance on formal media were linked to lower inclination towards COVID-19 conspiracy beliefs. However, variations among countries were noted in the relationship between government trust and informal media use. These findings offer valuable insights for predicting conspiracy beliefs in the Latin American context (Salazar-Fernández et al., 2023b; 2023c).

Trust in scientific organizations and international entities correlates with reduced belief in conspiracy theories, as evidenced in Chile, Mexico, and Colombia. These results echo earlier studies by De Coninck et al. (2021) and van Mulukom (2022), indicating that individuals trusting information from these sources are less likely to adopt beliefs in COVID-19 conspiracy theories, which may, in turn, lead to a higher intention to get vaccinated against COVID-19 (Villanueva Bustamante et al., 2023). These findings challenge prior reports of low science trust in Latin American countries, according to

Argote et al. (2021). Notably, during the pandemic, Chile, Mexico, and Colombia show increased trust in science and its representatives, including scientific societies. These findings underscore the importance of fostering scientific communication and building trust in these entities, effective strategies against conspiracy beliefs (Agle & Xiao, 2021). It is worth noting that, overall, these scientific organizations are generally perceived as more transparent compared to political, governmental, or economic sectors.

Formal media usage inversely correlates with COVID-19 conspiracy belief adoption in Chile, Mexico, and Colombia. This is consistent with previous findings by De Coninck et al. (2021), Hollander (2018), Padilla-Bautista et al. (2023) indicating that reliance on traditional media like newspapers and TV news reduces susceptibility to beliefs in conspiracy theories. Formal media prioritize accuracy and journalistic integrity, actively debunking conspiracies (Henke et al., 2023). Their robust verification processes and access to experts provide evidence-based perspectives. Consequently, people who use critical media—where information is verified through scientific or official sources—are more likely to intend to get vaccinated, as this supports informed decision-making (Padilla-Bautista et al., 2023). In this study, participants' high educational levels are relevant; higher education improves discernment, reducing susceptibility to conspiracies. So, as suggested by van Mulukom et al. (2022), we controlled for educational level.

Trust in government pandemic responses and COVID-19 conspiracy beliefs varied across Chile, Mexico, and Colombia. While no significant association was found in Chile and Colombia, Mexico showed a positive and significant relationship. This suggests that government pandemic management may influence conspiracy beliefs adherence, particularly in the Mexican sample. These findings contrast with Douglas et al. (2019), argument but align with Parra Saiani et al. (2024) observation of lower political trust levels in Latin American countries. Regional differences may explain why effects seen in Europe by Douglas et al. (2019) don't appear similarly in Latin America. Unexplored variables, such as participants' political alignment with the ruling party's pandemic handling, may influence perceptions (Schlippshak et al., 2022). Future studies should investigate these variables to gain a thorough comprehension of trust in authority and conspiracy beliefs, particularly within the changing sociopolitical landscapes of Latin America.

In contrast to studies by Imhoff et al. (2018), Karić & Međedović (2021), and Miller et al. (2016), which typically link lower government trust to higher belief in conspiracy theories, Mexico presents a unique setting. Historical, political, and sociocultural factors influence public confidence in the government, especially during the COVID-19 pandemic. Populist attitudes and anti-elitism predict COVID-19 conspiracy beliefs (Eberl et al., 2021; Oana & Bojar, 2023), frequently observed in studies connecting beliefs in conspiracy theories to political extremism. Notably, countries led by right-wing populist leaders like Brazil and the United States exhibit a connection between COVID-19 conspiracy beliefs and government trust (van Mulukom, 2022; van Prooijen & Douglas, 2017). In Mexico, the populist president perpetuates this trend (de la Cerda & Martinez-Gallardo, 2022). Conspiracy beliefs are used to strategically polarize the public against elites, framing the leadership as victims (Monsiváis-Carrillo, 2023), which safeguards them from criticism and crafts a crisis narrative that shifts focus from their failings. Misinformation and polarization have fueled the spread of fake news and increased susceptibility to conspiracy beliefs during the socio-sanitary crisis caused by COVID-19 (Castanho Silva et al., 2017; Eberl et al., 2021; Pirro & Taggart, 2023).

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Our model also investigated the correlation between informal media usage and beliefs in COVID-19 conspiracy theories, revealing disparities across Chile, Mexico, and Colombia. In Chile and Colombia, a small yet statistically significant positive association was observed, indicating that individuals relying more on informal media tend to adopt more conspiracy beliefs, consistent with previous studies (Humprecht et al., 2020).

This trend mirrors findings by Allington et al. (2021) and Portero (2020), identifying social networks and messaging apps as key channels for conspiracy beliefs and medical misinformation dissemination. During the pandemic, there was a surge in online COVID-19 searches, increasing by 50% to 70% across age groups (Douglas & Leite, 2017; Pan American Health Organization, 2020), with informal media often amplifying unverified or false information (Casero-Ripolles, 2020). Moreover, there was a notable shift towards informal media over traditional sources, influenced by their speed and constant updates, as well as the dissemination of unverified information by public figures and governments through formal media (Castro Carvalho et al., 2021). In Mexico, the lack of a significant association may be due to lower utilization of informal media platforms, such as Twitter, Facebook, Instagram, Reddit, and WhatsApp, for pandemic-related information, as suggested by our descriptive data.

The smaller proportion of variance explained in the Colombian model ( $R^2 = .194$ ) compared to Chile and Mexico ( $R^2 = .350$  and  $R^2 = .339$ , respectively) may reflect sociopolitical and cultural factors unique to Colombia. Notably, in Colombia the weakest path in the model was the association between trust in scientific societies and conspiracy beliefs ( $\beta = -.322$ ), which was considerably lower than in Chile ( $\beta = -.542$ ) and Mexico ( $\beta = -.629$ ). This suggests that trust in scientific institutions plays a less central role in shaping conspiracy beliefs in the Colombian context. One possible explanation is that trust in public institutions, including scientific and healthcare organizations, has been historically undermined by decades of armed conflict and violence. These events eroded social cohesion and fostered enduring patterns of distrust toward institutional authorities (Filippidou & O'Brien, 2020). Furthermore, during the COVID-19 pandemic, there was a notable lack of effective communication channels between scientists and public institutions, leading to an absence of coordinated and visible scientific messaging. This gap reinforced public perceptions of science as elitist and disconnected from societal needs (López-López, 2020). Together, these factors suggest that the determinants of conspiracy beliefs in Colombia may extend beyond institutional trust and media use, highlighting the potential role of unmeasured variables such as historical mistrust and perceived institutional distance from everyday citizens. Future studies should explore these topics in greater depth.

This study advances understanding of COVID-19-related conspiracy beliefs, particularly in Latin America, where research on these variables is limited. Understanding conspiracy beliefs is crucial for countering misinformation during pandemics, given sociopolitical factors and the pandemic's impact on healthcare services (Manríquez-Robles, 2022). Factors like trust in government, scientific organizations, and media are associated with these beliefs, informing tailored intervention strategies for each country. These insights are globally relevant, aligning with the World Health Organization's recognition of an 'infodemic' and UNESCO's efforts against misinformation, emphasizing the need for collective action, especially on social media.

This study's strengths include large and representative sample sizes, covering diverse locations in Latin America. The cross-country comparison deepens understanding of regional variations. The exclusive focus on Latin America provides crucial data for local policymakers, researchers, and communication professionals, enhancing the relevance and applicability of the results. In contrast, the study is limited by its cross-sectional design, preventing the establishment of causal relationships. Longitudinal research is needed to more robustly assess the temporal associations and potential causal links between variables like institutional trust and media use on COVID-19 vaccination beliefs. Online data collection may have excluded those without internet access, necessitating more inclusive methods in future research. The study predates mass vaccination campaigns, capturing a period marked by conspiracy beliefs. Nonetheless, these findings can serve as a foundation for investigating psychosocial variables in future vaccination processes for diseases like respiratory syncytial virus, malaria or Ebola.

This study underscores the links between government and scientific trust, media consumption, and COVID-19 conspiracy adherence in Chile, Mexico, and Colombia, highlighting scientific societies' and formal media's influence on public opinions. However, variances in governmental trust and informal media use across these nations stress the need to account for cultural nuances in crafting interventions and communication approaches.

### **Contribution statement**

Camila Salazar-Fernández and María José Rivera-Baeza performed the conceptualization, data curation, methodology, project management, fundraising, resources, software, supervision, visualization, and original draft writing. Camila Salazar-Fernández also performed the formal analysis. Camila Salazar-Fernández, María José Rivera-Baeza, Diego Manríquez-Robles, Tomás Caycho-Rodríguez and Paola Raipán-Gómez participated in the validation and final writing, review, and editing of the manuscript, contributing critically to its final version.

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### **Conflicting Interests**

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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**About authors:**

**Camila Salazar-Fernández**  Psychologist. PhD in Psychology. Academic at the University of La Frontera. Co-director of the Interactions, Culture, and Health (INCUS-Lab). Her research focuses on intergroup relations, stereotypes, emotions, and behaviors toward disadvantaged minorities, as well as psychosocial factors associated with the intention to vaccinate.

**María José Rivera-Baeza**  Psychologist. PhD in Psychology. Associate Professor at the Catholic University of Temuco. Co-director of the Interactions, Culture, and Health Laboratory (INCUS-Lab). Her research focuses on the relationship between cultural and psychological processes as antecedents of health behaviors, especially in disadvantaged groups.

**Diego Manríquez-Robles**  M.A. in Psychology. Research Scientist in the Department of Psychological Sciences at Rice University. His research employs quantitative methods to examine how structural conditions shape psychosocial and behavioral mechanisms influencing health and institutional functioning.

**Tomás Caycho-Rodríguez**  Psychologist. PhD in Psychology. Senior Researcher at the Universidad Científica del Sur. His research interests focus on the psychological consequences of grief.

**Paola Raipán-Gómez**  M.A. in Psychology. Researcher at the Department of Psychology and the Centre for the Study of Migration and Intercultural Relations (CEMyRI), University of Almeria, Spain. Her research focuses on majority acculturation and the psychosocial variables shaping this bidirectional process.

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**Appendix**

**Table A1**  
*Sociodemographic characteristics and comparison between groups*

	Chile	Mexico	Colombia	Difference test
Sex				$\chi^2(4) = 6.68, p = .154$
Women	731			
Men	288			
Age	36.285(13.77)	29.025(11.01)	39.395(17.23)	$F(2,2107) = 80.453, p < .001$
Marital status				$\chi^2(10) = 3233.399; p < .001$
Single	528	366	232	
Married	301	72	180	
Widowed	15	101	13	
Divorced	51	10	13	
Separated	34	4	15	
Cohabiting	94	10	69	
Socioeconomic status				$\chi^2(8) = 134.577, p < .001$
Lower class	21	12	50	
Lower-middle class	126	79	86	
Middle class	420	320	199	
Upper-middle class	333	137	127	
Upper class	119	15	57	
Educational level				$\chi^2(18) = 767.529, p < .001$
No formal education	1	3	0	
Complete primary and middle school	3	1	3	
Incomplete high school	6	1	62	
Complete high school	105	10	69	
Incomplete higher education	248	19	61	
Complete higher education	375	118	195	
Incomplete postgraduate degree	62	129	32	
Complete postgraduate degree	222	178	98	

**Table A2**  
*Correlations between the variables of interest and descriptive statistics for each country*

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Government trust - item 1	-										
2. Government trust - item 2	.568*	-									
3. Trust in scientific societies - item 1	.357*	.308*	-								
4. Trust in international health organizations - item 2	.320*	.353*	.638*	-							
5. Formal media	.201*	.176*	.166*	.129*	-						
6. Informal media	.099*	.012	.037	.008	.391*	-					
7. Conspiracy beliefs - item 1	-.098*	-.099*	-.268*	-.322*	-.056*	.111*	-				
8. Conspiracy beliefs - item 2	-.105*	-.111*	-.263*	-.311*	-.073*	.103*	.807*	-			
9. Conspiracy beliefs - item 3	-.071*	-.080*	-.243*	-.269	-.010	.106*	.526*	.541*	-		
10. Conspiracy beliefs - item 4	-.114	-.113*	-.256*	-.265*	-.048*	.094*	.624*	.648*	.593*	-	
11. Conspiracy beliefs - item 5	-.104*	-.112*	-.265*	-.334*	-.015	.129*	.623*	.623*	.558*	.659*	-
Descriptive statistics											
Range	1 - 5	1 - 5	1 - 5	1 - 5	0 - 4	0 - 5	1 - 5	1 - 5	1 - 5	1 - 5	1 - 5
Chile (n = 1024)	3.001 (1.118)	2.862 (1.203)	4.258 (0.896)	3.813 (1.087)	2.055 (1.252)	1.503 (1.190)	2.217 (1.254)	2.159 (1.253)	1.576 (0.907)	1.963 (1.115)	2.088 (1.154)
Mexico (n = 563)	2.703 (1.078)	2.821 (1.125)	3.821 (1.056)	3.742 (1.121)	1.513 (0.966)	0.853 (0.786)	2.131 (1.141)	2.187 (1.164)	1.364 (0.741)	2.004 (1.092)	1.915 (1.043)
Colombia (n = 524)	3.274 (1.171)	3.217 (1.199)	3.900 (1.070)	3.781 (1.117)	1.850 (1.310)	1.468 (1.325)	2.657 (1.190)	2.539 (1.185)	1.772 (0.882)	2.282 (1.119)	2.414 (1.079)