

Witchcraft beliefs and conspiracy theorizing: Evidence from Tanzania and cross-national datasets

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Abstract

This article suggests that since people who believe in magic and those who believe in conspiracy theories produce meaning and make sense of the world by engaging in the same process of signification, they should be more likely to have one such belief if they hold the other. To test this proposition, we perform both macro- and micro-level analyses using, respectively, cross-national datasets and an original set of Tanzanian data. Our findings from both sets of analyses reveal a strong association between witchcraft beliefs and the belief in conspiracy theories.

KEYWORDS

belief in conspiracy theories, culture, political psychology, pseudo science, religion and politics, semiotics, sub-Saharan Africa, Tanzania, traditional beliefs, witchcraft beliefs

Related Articles

Gainous, Jason, and Bill Radunovich. 2008. "Religion and Core Values: A Reformulation of the Funnel of Causality." *Politics & Policy* 33(1): 154–80. <https://doi.org/10.1111/j.1747-1346.2005.tb00213.x>.

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INTRODUCTION

The purpose of the present article is not simply to show that individuals who hold witchcraft beliefs are more likely to believe in conspiracies but also to explain why that is indeed the case.

A growing body of work in recent years has investigated conspiracy theories. In doing so, the scholarship has attempted to investigate what conspiracy theories are (Douglas & Sutton, 2023), whether they matter (Uscinski & Enders, 2022), whether conspiracy theories have increased over time (Uscinski et al., 2022), whether conspiracy beliefs form belief systems (Enders, Uscinski, Klofstad, et al., 2021), whether the use of social media affects conspiracy beliefs (Enders, Uscinski, Seelig, et al., 2021), whether political extremists are more likely to have conspiracy beliefs (Enders & Uscinski, 2021), and whether conspiracy believers are more prone to believe in pseudo-science and in the paranormal (Lobato et al., 2014). More importantly, the studies conducted in this stream of inquiry have shown that conspiracy theories can be used as political tools, shape political context, and are often related to political ideologies (Douglas et al., 2019). They also have a significant impact on policy compliance, as evidenced by the fact that, in the course of the COVID-19 pandemic, they represented an obstacle to slowing down the diffusion of COVID-19 (Romer & Jamieson, 2020).

Meanwhile, a growing number of studies have explored the political consequences of traditional beliefs, including witchcraft beliefs. Gershman (2016) showed that witchcraft beliefs erode social capital, Tubadji (2022) reported that self-identified witches were more likely to be Brexit supporters, Pelizzo and Kuzenbayev (2023a) found that traditionally minded individuals in the Muslim world were less likely to have pro-democratic stances, while in Germany superstitious voters were more likely to have anti-Semitic views (Pelizzo & Kuzenbayev, 2023b). In other words, traditional beliefs, including witchcraft beliefs, have clear political implications.

The literature has, however, paid relatively little attention to whether individuals who believe in witchcraft are more inclined to believe in conspiracies. This represents a possibly valuable place to contribute to the literature on the political consequences of traditional beliefs. Indeed, it could potentially show that—in addition to having a direct impact on political values, attitudes, and behavior (Gershman, 2016; Pelizzo & Kuzenbayev, 2023b)—traditional beliefs, including witchcraft beliefs, may also have an indirect effect by influencing the population's predisposition to believe conspiracies.

In this article, we explore the conspiracy beliefs-witchcraft beliefs nexus. There are two basic reasons why we believe that such an analysis is worth conducting. The first is that we want to test, as several of the previous studies on such and related matters have already shown, whether individuals who hold unconventional beliefs are also more likely to hold other unconventional beliefs, such as witchcraft beliefs. The second reason we believe that such an analysis is worth conducting has two facets. First, the semiotic literature has already devoted considerable attention to both the semiotics of magic/witchcraft and the semiotics of conspiracy beliefs. Second, and more importantly, the process of signification, or semiosis, that characterizes both magical thinking and conspiracy theory is what Umberto Eco (1990) called hermetic semiosis. In other words, we suggest or hypothesize that since the people who believe in magic and those who believe in conspiracy theories produce meaning and, subordinately, make sense of the world by engaging in the same process of signification, they should be more likely to have one such belief if they hold the other.

The remainder of the article is structured in a fairly straightforward manner. In the first section, we provide a brief overview of the relevant literature on values, attitudes, and conspiracy beliefs. In doing so, we show that while considerable attention has been paid to the correlates and the consequences of political attitudes and values, considerably less attention has been paid to whether (and to what extent) they shape political cognition and the propensity to believe in conspiracy theories. In the second section, upon reviewing Peirce's (1955) notion



of semiosis, Eco's (2016) discussion of the differences between Peirce's notion of unlimited semiosis, and Eco's notion of hermetic semiosis, we try to show that the process of signification used both by those who believe in conspiracy theories and those who believe in witchcraft is fairly similar—if not identical. The fact that believers in witchcraft and conspiracy theories use the same process of signification to make sense of the world leads us to hypothesize that precisely for this reason—they both use hermetic semiosis—those who believe in conspiracy theories should be more likely to believe in witchcraft and vice versa. In the third section, we present the results of macro-level analyses which, consistently, show that the prevalence of witchcraft beliefs goes hand-in-hand with the diffusion of conspiracy theories. The fourth section presents the results of the micro-level analyses we conducted using original data collected in Tanzania. Interestingly, and consistently with our expectations, the belief in witchcraft is a strong (and statistically significant) predictor of the belief in conspiracy theories. In the fifth and final section, as is customary, we draw some tentative conclusions.

LITERATURE REVIEW

The Neo-Modernization theory (Inglehart & Welzel, 2005, 2010; Pelizzo, Turganov, & Kuzenbayev, 2023) has empirically explored and corroborated a claim originally advanced by the modernization theorists treading in Lipset's (1959) footsteps, namely that the process of socioeconomic development transforms the value system of society and favors the emergence of pro-democratic values and attitudes. An important corollary to this claim is represented by the fact that traditional societies (that is, societies in which traditional values and attitudes are pervasive) are less likely to have a pro-democratic stance (Pelizzo & Kuzenbayev, 2023a; Welzel & Inglehart, 2009).

The notion of tradition has been discussed extensively in the relevant literature. Certain traditionalist thinkers—such as Guenon (2001), who believed tradition to be something that existed in some mythical and eventually forgotten golden age—are now the exception. Most scholars now tend to agree that tradition “is not an empire of the dead” (Bruns, 1991, p. 5). They also agree that it is “the means for deriving the future from the past” (Glassie, 1995, p. 409) and that “it refers both to the process of handing down from generation to generation, and some thing, custom, or thought-process that is passed on over time” (Graburn, 2000, p. 6). And, more importantly, they agree that it is “not the persistence of the same; on the contrary it is the disruption of the same by that which cannot be repressed or subsumed into familiar categories” (Graburn, 2000, p. 6).

The study of tradition has, of course, engaged philosophers (Gadamer, 1975), anthropologists, sociologists (Bannerji, 2003), economists (Gershman, 2022), and political scientists (Inglehart & Baker, 2000) for a long time. The interest in tradition was motivated by, or associated with, three distinct streams of inquiry. One set of studies was preoccupied with developing or formulating a definition of what tradition is (Bruns, 1991; Graburn, 2000). The second set of studies was interested in operationalizing the notion of tradition (Inglehart & Baker, 2000; Lakatos, 2015; Taormina & Shamionov, 2016). A third set of studies was predominantly interested in understanding whether the presence, incidence, and prevalence of tradition and traditional beliefs could have socioeconomic and political consequences (Harakan et al., 2023; Pelizzo & Kuzenbayev, 2023a, 2023b; Pelizzo, Turganov, & Kuzenbayev, 2023; Welzel & Inglehart, 2009). While the focus of these three lines of inquiry is analytically distinct (as each of them is easily distinguishable from the other), in practice the concerns with operationalization and measurement were shared by scholars also interested in exploring the possible consequences of traditional beliefs, values, and attitudes.

Neo-modernization scholars, such as Inglehart and Baker (2000) measured a respondent's attachment to traditional values on the basis of her respect for authority, national pride,



religiosity, and aversion to abortion. More recent studies have instead suggested that tradition is a multifaceted construct, that a respondent's attachment to traditional values may be signaled by her propensity to engage in traditional practices, or her attachment to traditional beliefs (Pelizzo & Kuzenbayev, 2023a). They have also indicated that traditional beliefs exist in the plural and do not necessarily co-vary (Pelizzo, Turganov, & Kuzenbayev, 2023), and that several socioeconomic and political outcomes can be associated with traditional values variously understood (Baris & Pelizzo, 2023).

For instance, Pelizzo and Kuzenbayev (2023a) reported that, in the Muslim world, respondents who consider it acceptable under Islam to use sorcery to protect one's family, to appeal to the jinn, and to appeal to the souls of dead ancestors are more likely to prefer the authoritarian rule of a strongman to democratic rule. Pelizzo and others (2023, p. 941) reported that in Togo respondents who believe in the evil eye or in some people's ability to cast a curse are less likely to vote in elections but, if they do vote, are more likely to vote for the ruling party than for the opposition. Pelizzo and Kuzenbayev (2023b) showed that the political consequences of traditional values and beliefs can be detected not only in predominantly Muslim societies and/or in the developing world but can also be seen at work in the Global North. In this respect, they noted that in Germany respondents who believe in the supernatural powers of dead ancestors, in fortune tellers' abilities to foresee the future, in the ability of the stars to shape one's future, and in the ability of lucky charms to bring good luck are more likely to have a sympathetic view of Hitler and his regime and to have anti-Semitic views. Similarly, Tubadji (2022, p. 2) reported that in the United Kingdom, “the spatial concentration of witch self-identification from 2011 perfectly predicts the spatial distribution of the Brexit vote, both alone and in the presence of relevant controls.”

A series of papers produced in this line of inquiry have explored the factors responsible for the diffusion of traditional beliefs (Baris & Pelizzo, 2023), such as the belief in witchcraft (Gershman, 2016) as well as impact of those beliefs on trust (Gershman, 2022). Specifically in this respect, studies have consistently reported a negative association between a belief in magic (witchcraft) and trust in sub-Saharan African governments (Gershman, 2016) as well as in the rest of the world (Gershman, 2022). Geschiere and Nyamnjoh (1998) documented how witchcraft shapes urban–rural relations in Cameroon. Mihalik and Cassim (1993) discussed how beliefs in witchcraft have affected South Africa's constitutional evolution. Ekwem and others (2020) showed the important role that a belief in magic plays in the elections in Nigeria. Hoffmann (2010) explained how traditional beliefs (witchcraft) shape the practice of power and politics in parts of Nigeria. Montgomery (2021, p. 227) claimed that “there is enormous potential for Vodou to bring about democracy and inclusion in unstable places like Togo” because Vodun (or voodoo) “spirits are all about justice” which is incompatible with, and is eroded/undermined by, political corruption.

Witchcraft and politics are clearly intertwined in the African context (Geschiere, 1997) where they shape power relations, identity politics, cleavage structure, constitutional evolution, elections, democracy, and development (Kohnert, 1996). The relationship between witchcraft and politics is, however, not just an African peculiarity. The witchcraft-politics nexus has also been, extensively, documented in Brazil (Maggie, 2011), Guyana (Vidal & Whitehead, 2004), Haiti (Ramsey, 2011), Romania (Pop, 2014), the United Kingdom (Tubadji, 2022) and the United States (Magliocco, 2020).

Previous studies have shown that witchcraft beliefs still exist, and why they are, in some cases, pervasive (Baris & Pelizzo, 2023; Tubadji, 2022), and that they have detectable political implications. Less attention has been paid to whether and to what extent witchcraft beliefs also shape political cognition—that is, the way in which citizens filter, process, and interpret the political information they receive. The question is worth exploring because, with the growing popularity of conspiracy theories, one has to wonder whether and to what



extent the popularity of conspiracy beliefs is tied to the possibility that voters who believe in such theories engage in the same process of signification (or semiosis) that is used by people who believe in witchcraft. Hence, if this were the case, one could hypothesize that it is precisely because the two processes of signification are so similar, if not identical to one another, that those who believe in witchcraft are more likely to believe in conspiracy theories and, conversely, those who believe in conspiracy theory(ies) are more likely to believe in witchcraft.

Though conspiracy theory is not a new phenomenon, with the advent of the Internet, social media, fake news, and “post truth” reality, conspiracy theories have become, if not more popular, more visible, and more easily transmittable (Uscinski et al., 2018; Uscinski & Enders, 2022). The COVID-19 crisis, with the long list of government-sanctioned measures that citizens were supposed to respect to slow down the spread of the virus, safeguard their health, and contain the pandemic, has contributed to an even greater popularity of conspiracy theory or theories and has stimulated a new wave of studies of this phenomenon (Erisen, 2023; Miller, 2020). Some studies have attempted to properly conceptualize the notion of conspiracy theory (Douglas et al., 2019; Napolitano & Reuter, 2023; Wood et al., 2012) to show that politicians make an asymmetric use of this term depending on whether they are describing their own or their opponents' beliefs (Uscinski & Enders, 2022). Other research has discussed whether conspiracy theories should (or should not) be regarded as a pathologic way of thinking (Butter & Knight, 2019) and has contributed toward understanding what are, if not its causes, then at least its correlates. For instance, in their analysis of the conspiracy theories surrounding COVID-19, Uscinski and others (2020, p. 2) found that “the psychological predisposition to reject expert, authoritative information (denialism), the tendency to view major social and political events as the product of conspiracies (conspiracy thinking), and partisan motivations are the strongest explanatory factors behind COVID-19 conspiracy beliefs.” But the rejection of authoritative information (Uscinski et al., 2020), the lack of trust in experts, scientists, and politicians (Renard, 2015), and higher levels of uncertainty in times of crisis (Van Prooijen & Jostmann, 2012) are only some of the reasons why people believe in conspiracy theories.

Recent studies have shown that those who believe in conspiracy theories are also more inclined to believe in the supernatural or, conversely, that those who believe in the supernatural are more inclined to believe in conspiracy theories (Van Prooijen et al., 2022). According to several studies, there is a striking similarity between religious cognition and conspiratorial cognition (see, e.g., Boudry & Coyne, 2016; Wood & Douglas, 2018). As Eco had suggested, with the growing secularization of advanced industrial societies, conspiracy theories perform the function that previously had been performed by God (Wood & Douglas, 2018). As such, conspiracy theories could (almost) be depicted as a quasi-religious mentality (Franks et al., 2013).

In spite of this rather large body of work, less attention has been paid to the possible relationship between magic/witchcraft and conspiracy beliefs. To the best of our knowledge, it has been entirely neglected in the context of developing countries from sub-Saharan Africa. We believe that exploring the relationship in this context is of particular interest and importance for at least two distinct reasons. The first is that if Franks and others (2013) are correct in positing that conspiracy theories represent some sort of religious mentality, in sub-Saharan Africa magic/witchcraft is an essential element of the religious experience. In this respect, Mbiti (1970, pp. 12–13) famously noted that:

magic is part of the religious background, and it is not easy to separate the two...
Magic belongs to the religious mentality of African people. But religion is not
magic, and magic cannot explain religion. Religion is greater than magic, and only

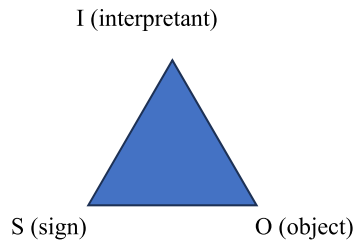


FIGURE 1 Peirce's semiotic triangle.

an ignorant outsider could imagine that African religions are nothing more than magic.¹

Hence, if conspiracy theories are akin to religious mentality, and if in sub-Saharan Africa religion and witchcraft beliefs are intertwined, then the belief in conspiracy theories should also be akin to witchcraft beliefs (and vice versa). The second reason lies in highlighting that what makes believers in conspiracy theories more likely to believe in witchcraft beliefs (and vice versa) is that the process of signification used by the former is similar to, or nearly identical to, the ones used by the latter.

A (SEMIOTIC) THEORETICAL MODEL

In contrast to the semiotic theory of Hjelmslev, who regarded the ‘sign’ as a function connecting the content plane and the expression plane, in Peirce's (1955) semiotic theory “a sign, or *representamen*, is something which stands to somebody for something in some respect of capacity” (Weiss & Burks, 1945, p. 384). The relationship between the sign and the object, in Peirce's theory, was or could be expressed by Peirce's semiotic triangle (Figure 1).

Discussing Peirce's theory, Määttänen (2007, p. 454) noted that “S stands for sign (or sign-vehicle), O for object, and I for interpretant. There are different kinds of interpretants and the chain of interpretation may continue to the indefinite future.” The continuation of the chain of interpretation in Peirce's (and in semiotic) theory is known as unlimited semiosis.

Eco (1990) noted that there is a fundamental difference between Peirce's unlimited semiosis and what Eco himself called ‘hermetic’ semiosis. In Peirce's semiosis, “a sign is something by knowing which we know something *more*” whereas in hermetic semiosis “a sign is something by knowing which we know something *else*” (Eco, 1990, p. 5). This is why, Eco (1990, p. 4) claimed “everything that has been said is in fact nothing else but an ambiguous allusion to something else.”

Eco (1990, p. 2) claimed that the basic principle of hermetic semiosis was “not only that the similar can be known through the similar but that from similarity to similarity everything can be connected with everything else so that everything can be in turn either the expression or the content of any other thing.” In other words, Eco (1990, p. 4) argued, hermetic semiosis

¹An interesting point that Mbiti (1970, p. 259) makes is that magic is the belief in the magical properties of objects which have the power to protect individuals or to make them prosperous. But the reason why, at some point, magic and religion become intertwined is that some people believe that objects have no inherent power but that they are a manifestation of God's power—a power, Mbiti (1970, p. 259) argues, that “may directly be supplied by God, or it may be through the spirits, the living-dead or as part of the invisible force of nature in the universe.”



results in producing a perennial shift and deferral of any possible meaning. The meaning of a given word or of a given thing being another word or another thing, everything that has been said is in fact nothing else but an ambiguous allusion to something else. In this sense the phantasmic content of every expression is a secret, or an enigma that sends us back to a further enigma.

The reason why this is indeed the case is that hermetic semiosis “is based upon the principles of universal analogy and sympathy, according to which every item of the furniture of the world is linked to every (or to many) other elements of the superior world by means of similitudes or resemblances” (Eco, 1990, p. 2).

Eco went on to argue, as several semiotic studies reiterated later on (see, e.g., Leone et al., 2020), that in their effort to make sense of the world or of specific phenomena and events, conspiracy theorists engage in hermetic semiosis—because “a conspiracy theorist sees even in everyday events the signs of manipulation by conspiring forces” (Madisson, 2014, p. 274).

Magical thinking, we suggest, operates along very similar lines. In magical thinking, items of this world are linked by way of resemblance to elements of the superior world. Magical thinking is also based on the twin principles of universal analogy and sympathy, and one of the most fundamental beliefs of a magical practitioner is that events and phenomena can be produced by the manipulation of the proper forces and signs. Iamblichus believed, for instance, that some animals, plants, and minerals contained the signs of the god(s) and that by manipulating these signs by proper ritual action, god(s) could be summoned and the soul could be lifted “directly into the divine” (Shaw, 1985, p. 2). This new form of magical thinking, which, according to Dodds (1951) became rather popular around 200 B.C.E., represented a

convenient supplement [to astrology]. The awkward thing about the stars had always been their inaccessibility, alike to prayer and to magic. But if each planet had its representative in the animal, vegetable, and mineral kingdoms, linked to it by an occult ‘sympathy,’ as was now asserted, one could get at them magically by manipulating these earthly counterparts.

(Dodds, 1951, pp. 246–247)

Furthermore, just as conspiracy theories emphasize and believe in the secret nature of the meaning, for those who believe in magic/witchcraft, all that is meaningful is secret. As Luhrmann (1989, p. 131) convincingly pointed out, “Magic is steeped in secret”—the knowledge is secret, the way of knowing is secret, and secretive is the nature of the group of magic practitioners.

What we have covered so far basically highlights the fact that individuals who believe in (the power of) witchcraft hold three different, albeit related, beliefs. First, they believe that magical manipulation is possible. Second, they believe that magical manipulation works by ritual action. Third, they believe that witchcraft works because of the principles of universal analogy and sympathy. These twin principles, originally developed in the Neoplatonic tradition (Dodds, 1951), enjoyed a sort of renaissance in the philosophy of the late Medieval period (Cassirer, 2000). The principle of sympathy assumes that the universe, the cosmos, is a sort of a great organism and ‘sympathy’ bears on the interconnectedness of all the parts of such cosmos. This interconnectedness was believed to manifest itself in various ways, the best known of which was the formal similarity of things. This underscores why, to recall a well-known example, the mandrake root, which resembles a man's genital organs, was believed to be (to Machiavelli's amusement) a powerful aphrodisiac (see Machiavelli, 2007). The principle of universal analogy essentially states not only that everything is interconnected, but also that



there is a correspondence between the macro-cosmos and the micro-cosmos (Cassirer, 2000) because “creatures are not merely things (res) but signs (vestigia)... which reveal the marks of the Creator” (Mazzeo, 1954, p. 302).

The assumptions on which witchcraft beliefs rest display striking similarities with the assumptions on which conspiracy beliefs rest with a possible, and possibly important, difference. In the thinking of the conspiracy theorists, the manipulation is perpetrated by secret, invisible, unknown individuals and groups and the purpose of the conspiracy theorist is to denounce and contrast the conspiracy of the secret conspirators. By contrast, individuals who believe in magic and/or witchcraft, believe to also have the power and the ability to manipulate signs, symbols, and the like to generate a certain outcome or cause a specific event.

If we are correct in claiming that the thinking of conspiracy theorists and the thinking of those who believe in witchcraft largely overlaps, then it is plausible to hypothesize that individuals who believe in magic/witchcraft are more likely to believe in conspiracy theories or in conspiracy theorists with which they share the same (or a very similar) way of thinking. This is precisely what we wish to test in the remainder of the present article.² We attempt to do so by performing two sets of analyses. First, we use macro-level data aggregated at the national level to see whether countries in which magical beliefs—or, to be more precise, witchcraft beliefs—are more pervasive, a larger portion of the population is inclined to believe in conspiracy theories. We perform such analyses at the macro-level because the data employed for such analyses come from different sources and it would not have been possible to conduct such an analysis at the micro-level. Second, upon completion of the macro-level analyses, we proceed to test whether the probability that a respondent believes in conspiracy theory (or theories) is higher for respondents who believe in witchcraft.

CROSS-COUNTRY EVIDENCE

For our macro-level analysis, we rely on publicly available cross-national datasets. The cross-country measure of the prevalence of witchcraft beliefs is obtained from the global dataset presented by Gershman (2022). This dataset is based on six survey waves conducted by the Pew Research Center between 2008 and 2017, specifically focusing on exploring religious beliefs. Covering 95 countries and comprising over 140,000 observations, these surveys consistently included one question about witchcraft beliefs across all waves: “Do you believe in the evil eye, or that certain people can cast curses or spells that cause bad things to happen to someone?” Gershman (2022) operationalizes a country-level measure of the prevalence of witchcraft beliefs by calculating the fraction of positive responses relative to the total number of responses. As outlined in Table 1, the descriptive statistics reveal that, on average, 43% of respondents across countries believe in witchcraft. The minimum fraction of witchcraft believers is observed in Sweden (8.9%), while the maximum fraction is noted in Tunisia (89.9%).

As cross-country measures of conspiracy theorizing, we use four indicators obtained from distinct datasets and employing different survey instruments. The first indicator (Average belief in globally recognized conspiracies) is computed by calculating the average across the following five survey questions (Hornsey & Pearson, 2022):

²We are grateful to one of the anonymous reviewers for bringing to our attention that there is another respect in which conspiracy theories and witchcraft beliefs seem to go hand-in-hand. Individuals who believe in conspiracy theories and those who believe in magic are both inclined to accept claims that are empirically unwarranted from the point of view of scientific thinking and are epistemically risky (Lobato et al., 2014; Sutton & Douglas, 2020).

TABLE 1 Descriptive statistics for cross-country measures.

Variable	Obs.	Mean	Std. dev.	Min	Max
Prevalence of witchcraft beliefs (Gershman, 2022)	95	.43	.182	.089	.899
Average belief in globally recognized conspiracies (Hornsey & Pearson, 2022)	20	2.468	.325	1.943	3.082
Average CMQ score (Imhoff et al., 2022)	23	7.186	.724	5.737	8.244
Average tendency to believe in conspiracies (Hornsey et al., 2022)	36	5.969	.606	4.747	7.083
Average belief in COVID-19 conspiracies (Van Bavel et al., 2022)	50	3.196	1.253	1.07	5.304

Regardless of who is officially in charge of governments and other organizations, there is a single group of people who secretly control events and rule the world together.

The idea of man-made global warming is a hoax that was invented to deceive people.

Humans have made contact with aliens and this fact has been deliberately hidden from the public.

The AIDS virus was created and spread around the world on purpose by a secret group or organization.

The 1969 moon landings were faked.

The second indicator (Average CMQ score) is drawn from the study conducted by Imhoff and others (2022), assessing conspiracy theorizing in 23 countries using the Conspiracy Mentality Questionnaire (CMQ). The CMQ was introduced by Bruder and others (2013) as an instrument to measure the general tendency to believe in conspiracy theories without specifying particular agents or events. This score is computed by calculating the average across the following five survey questions:

I think that many very important things happen in the world, which the public is never informed about.

I think that politicians usually do not tell us the true motives for their decisions.

I think that government agencies closely monitor all citizens.

I think that events which superficially seem to lack a connection are often the result of secret activities.

I think that there are secret organizations that greatly influence political decisions.

The third indicator is drawn from the study conducted by Hornsey and others (2022) in 36 countries, measuring conspiracy theorizing using a single-item scale introduced by Lantian and others (2016). Respondents were initially presented with a preamble stating:



Some political and social events are debates and it is suggested that the “official version” of events could be an attempt to hide the truth to the public. This “official version” could mask the fact that these events have been planned and secretly prepared by a covert alliance of powerful individuals or organisations (for example, secret services or government). What do you think?

They were then asked to indicate the extent to which they believe the following statement to be true: “I think that the official version of the events given by the authorities very often hides the truth.”

Additionally, we incorporate the averaged belief in COVID-19 conspiracies from the study conducted by Van Bavel and others (2022) in 69 countries:

The coronavirus (COVID-19) is a bioweapon engineered by scientists.

The coronavirus (COVID-19) is a conspiracy to take away citizen's rights for good and establish an authoritarian government.

The coronavirus (COVID-19) is a hoax invented by interest groups for financial gains.

The coronavirus (COVID-19) was created as a cover up for the impending global economic crash.

Following Kantorowicz-Reznichenko and others (2022), we exclude countries with fewer than 400 responses to items related to COVID-19 conspiracies, resulting in data for 50 countries. Table 1 presents the summary statistics for all the aforementioned cross-national measures of conspiracy theorizing.

In Table 2, we present the intercorrelations between the cross-country measures of witchcraft beliefs and conspiracy theorizing. Notably, while some measures of conspiracy theorizing do not exhibit significant correlations with each other, the prevalence of witchcraft beliefs demonstrates a statistically significant positive correlation with every measure of conspiracy theorizing.

Figure 2 illustrates the relationships between the prevalence of witchcraft beliefs and conspiracy theorizing. Once more, it is evident that a higher prevalence of witchcraft beliefs in a country is associated with a higher prevalence of conspiracy beliefs. Witchcraft beliefs are strongly,

TABLE 2 Pearson correlations (country-level).

Variables	(1)	(2)	(3)	(4)	(5)
(1) Prevalence of witchcraft beliefs (Gershman, 2022)	1.000				
(2) Average belief in globally recognized conspiracies (Hornsey & Pearson, 2022)	.681*** (<i>df</i> =14)	1.000			
(3) Average CMQ score (Imhoff et al., 2022)	.481** (<i>df</i> =18)	.180 (<i>df</i> =8)	1.000		
(4) Average tendency to believe in conspiracies (Hornsey et al., 2022)	.460** (<i>df</i> =24)	.640** (<i>df</i> =11)	.324 (<i>df</i> =10)	1.000	
(5) Average belief in COVID-19 conspiracies (Van Bavel et al., 2022)	.553*** (<i>df</i> =35)	.657*** (<i>df</i> =16)	.190 (<i>df</i> =17)	.354* (<i>df</i> =25)	1.000

*** $p < .01$; ** $p < .05$; * $p < .1$.

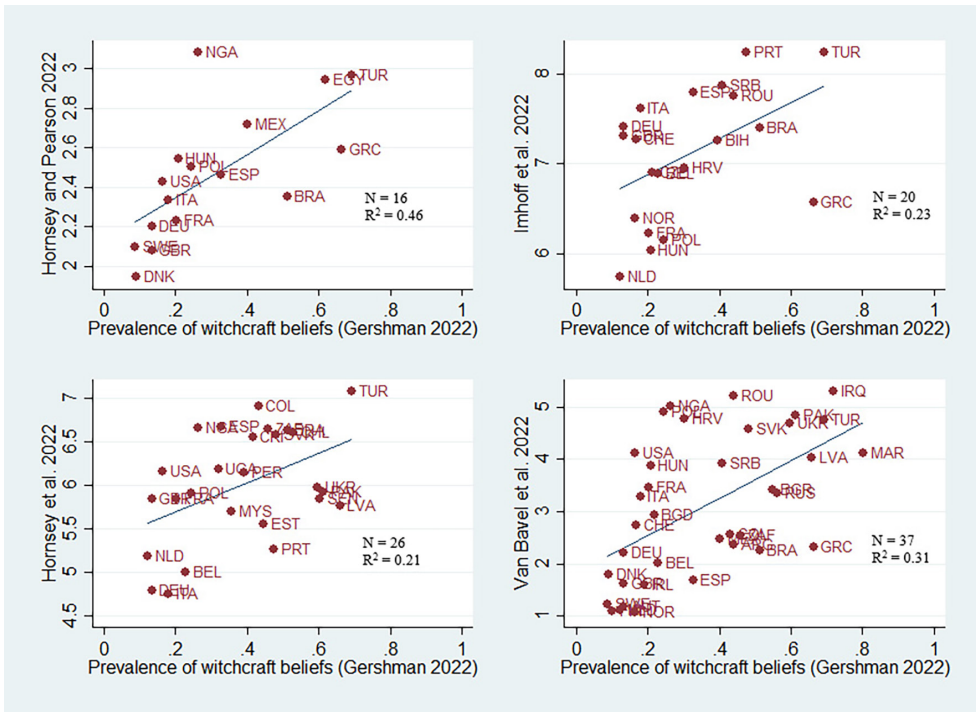


FIGURE 2 The relationship between the prevalence of witchcraft beliefs and conspiracy theorizing.

positively, and significantly related to both globally recognized conspiracies and the average tendency to believe in a conspiracy. The correlation of witchcraft beliefs with average belief in recognized conspiracies yields a stronger ($r = .68$) correlation coefficient than the correlation between witchcraft beliefs and average tendency to believe in conspiracy ($r = .46$). Prima facie these results seem to suggest, contra Sutton and others (2024), that familiarity with conspiracies matters. We are not sure whether it is legitimate to make such an inference or claim from our findings. Quoting Swami and others (2011), Sutton, Douglas, and Trella (2024, p. 51) noted that “endorsements of novel and familiar conspiracy theories are so correlated that familiarity may not be very important.” In other words, a conspiratorial mind is inclined to endorse a conspiracy regardless of whether it is a familiar or a novel one. Our analyses show that while a witchcraft believer is more likely to believe in conspiracy, he/she is also more inclined to embrace familiar conspiracies than novel ones. This finding is not terribly surprising. Witchcraft beliefs are, along with superstition, part of what Baris and Pelizzo (2023) regarded as traditional beliefs and previous studies have shown that individuals with traditional beliefs are more inclined to embrace the known than the unknown and to prefer the status quo to change (Harakan et al., 2023; Pelizzo, Koepko, et al., 2023). This is why, we suspect, familiarity with a conspiracy is important for a witchcraft believer but less so for someone who believes in conspiracy theories.

TANZANIA'S CONTEXT

Belief in witchcraft is widespread in Tanzania. Many of such beliefs are not harmful, and, as Baris and Pelizzo (2023, pp. 855–856) have shown, are “important correlates, and/or determinants, of individual attitudes and values and of what has been regarded, at the aggregate level, as national culture.” Baris and Pelizzo (2023, p. 855) claim that superstitious, witchcraft and

traditional beliefs “are useful, personally or socially stem from adaptive behavior” (Baris & Pelizzo, 2023, p. 856) and in some cases they “contribute to solving the coordination and cooperation problems in a community” (Baris & Pelizzo, 2023, p. 863).

Yet, while superstitious, witchcraft and traditional beliefs emerged “in response to the problems faced by the members of different societies” (Baris & Pelizzo, 2023, p. 863), they may also pose serious risks with potentially detrimental consequences for society. This is so in the case of the loss of trust documented by Gershman (2022), aversion to vaccination (Lu et al., 2019), the presence of witchcraft-related crimes (Petrus, 2008), and slow economic growth and socioeconomic backwardness (Leistner, 2014).

At times, traditional beliefs also have deleterious socioeconomic consequences in the Tanzanian context. For instance, people with albinism in Tanzania have in the past been abducted, mutilated, murdered, or sold alive to witchdoctors, who use their body parts to make charms “which can bring fortune” to people like politicians and business people not just in Tanzania but across East and Southern Africa (McNeish, 2015). The underlying beliefs range from claims that the hair of people with albinism attracts fish to fishermen's nets, to their sprinkled blood detects where minerals deposits are for miners, to a belief that their bones hold the ultimate power for politicians to clinch elections (McNeish, 2015). As a result, the body parts of individuals with albinism, such as hands, limbs, and bones, command exorbitant prices, reaching as high as TZS 100 million in Tanzania and beyond its borders (McNeish, 2015). To cover the murderous spree of people with albinism, witchdoctors, politicians, and business people alike have long perpetuated a lie that people with albinism “do not die but they disappear.” Only in recent times has there been an awareness that they are actually hunted for their body parts and sometimes buried alive for the ultimate charm prize (Daghar, 2022). This obvious abuse of human rights against people with albinism has profound socioeconomic implications. It instills fear among individuals with albinism and their loved ones. Moreover, this belief system has economic repercussions, diverting individuals from engaging in productive activities as they opt for the misguided belief that using body parts of people with albinism leads to success. Additionally, the violence against people with albinism results in a reduction in the workforce, as many of them either live in hiding due to fear or tragically lose their lives at a young age.

Another socioeconomically harmful belief involves denying women access to mining sites as their presence can make “minerals disappear” (Huggins & Kinyondo, 2019; Kinyondo & Huggins, 2020). This is an obvious gender discrimination in the workplace, representing a lost opportunity for economic growth, as research clearly shows that women bring unique skills to the workforce, enhancing overall performance (see, e.g., Jacobs, 2023; Foster, 2022).

So far, we have outlined beliefs that exist without official backing from the government, making efforts to address them relatively more manageable. An exception, however, happened in 2020 when the then-president of Tanzania, H.E. John Joseph Pombe Magufuli, joined the bandwagon of COVID-19 deniers. A strong COVID-19 skeptic, President Magufuli—a trained scientist with a Ph.D. in chemistry—mocked the pandemic by calling it “just flu” and denounced COVID vaccines as a Western conspiracy to decimate the population of Africa (Aljazeera, 2021). While he did not go to the extent of stopping people from wearing masks, he was skeptical of “foreignmade masks.” In their place, he encouraged people to wear locally made masks because, to him, Tanzania was experiencing an “economic war” and people should not think that the West loved Tanzania that much by helping them fight the pandemic. Prayers, the use of local herbs and other locally made untested remedies were ultimately encouraged to fight the pandemic as Magufuli refused to allow universally recommended measures such as lock down. Ultimately, updates on COVID-19 prevalence were abolished effective from May 2021 when it was reported that Tanzania had experienced 21 deaths and 509 cases (Aljazeera, 2021). This was a dangerous move as it could possibly result in mass casualties and related socioeconomic effects (see Kinyondo & Pelizzo, 2021).

Micro-level evidence from Tanzania

To examine whether the positive relationship between beliefs in witchcraft and beliefs in conspiracy theories persist at the individual level, we conducted a survey involving 200 participants in Tanzania. The average age of respondents was 29.26 years, with 49% identifying as female. Of the respondents, 25% had completed a university-level education. In terms of religious affiliation, 117 respondents (58.5%) identified as Muslims, while the remaining 83 (41.5%) identified as Christians.

We measured beliefs in witchcraft by asking participants the following question: “Do you believe in witchcraft or sorcery?” Their responses were coded as 1 for ‘Yes’ and 0 for ‘No.’ Of the respondents, 74.5% answered positively, a proportion closely aligned with the 80.36% fraction of witchcraft believers in Tanzania reported in Gershman's (2022) cross-country dataset. As an indicator of belief in the COVID-19 conspiracy, respondents were asked to indicate the extent to which they agree that COVID-19 was deliberately developed and spread by certain individuals. The responses were recorded using a 5-point Likert scale: 1 = “Strongly disagree,” 2 = “Somewhat disagree,” 3 = “Neither agree nor disagree,” 4 = “Somewhat agree,” 5 = “Strongly agree.”

Finally, to assess an individual's general inclination toward believing in conspiracy theories, we used the 5-item Generic Conspiracist Beliefs scale (GCB-5) developed by Kay and Slovic (2023). This scale is a reliable shortened version of GCB-15 (Brotherton et al., 2013), which has demonstrated its ability to predict belief in a wide range of specific conspiracy theories. Within our survey, participants were asked to express their level of agreement with five statements from the GCB-5, utilizing a 5-point Likert scale:

Experiments involving new drugs or technologies are routinely carried out on the public without their knowledge or consent.

Certain significant events have been the result of the activity of a small group who secretly manipulate world events.

New and advanced technology which would harm current industry is being suppressed.

The government permits or perpetrates acts of terrorism on its own soil, disguising its involvement.

Evidence of alien contact is being concealed from the public.

Summary statistics for all the mentioned variables and measures can be found in [Table 3](#).

[Table 4](#) presents the correlations among the main variables of interest. Belief in witchcraft demonstrates a positive and significant (point-biserial) correlation with both GCB-5 scores and belief in COVID-19 conspiracy.

To further examine the identified positive relationship between belief in witchcraft and conspiracy theorizing, we conducted a series of univariate and multivariate Ordinary Least Squares (OLS) regressions. The estimation results, outlined in [Table 5](#), indicate a positive and significant association between belief in witchcraft and conspiracy thinking. Importantly, this relationship remains statistically significant even after controlling for age, gender, education, and religious affiliation. [Figure 3](#) illustrates the relationship between the predicted values of GCB-5 (from Model 2) and respondents' beliefs in witchcraft, while [Figure 4](#) depicts the relationship between the predicted levels of belief in the COVID-19 conspiracy (from Model 4) and belief in witchcraft.

TABLE 3 Descriptive statistics.

Variable	Description	Obs	Mean	Std. dev.	Min	Max
Age	Respondent's age in years	200	29.255	10.177	15	68
Female	A dummy for the respondent's self-reported gender: 1 if female, 0 if male	200	.49	.501	0	1
Degree	A dummy for the respondent's educational attainment: 1 if completed university-level education, 0 otherwise	200	.25	.434	0	1
Muslim	A dummy for the respondent's religious affiliation: 1 if Muslim, 0 if Christian	200	.585	.494	0	1
Belief in witchcraft	A dummy for the respondent's belief in witchcraft: 1 if 'Yes,' 0 if 'No'	200	.745	.437	0	1
GCB-5	Generic Conspiracist Beliefs Scale (GCB-5)	195	3.401	.916	1	5
Belief in COVID-19 conspiracy	Respondent's degree of belief in COVID-19 conspiracy	200	3.365	1.408	1	5

TABLE 4 Pearson/point-biserial correlations.

Variables	(1)	(2)	(3)
(1) Belief in witchcraft	1.000		
(2) GCB-5	.142** (<i>df</i> =193)	1.000	
(3) Belief in COVID-19 conspiracy	.193*** (<i>df</i> =198)	.322*** (<i>df</i> =193)	1.000

*** $p < .01$; ** $p < .05$; * $p < .1$.

Epistemic riskiness

So far, we have not distinguished between different measures of conspiracy theorizing. However, the measures we utilized differ significantly in one important aspect: epistemic riskiness. Epistemic riskiness refers to the probability of beliefs being true (see Douglas & Sutton, 2023). In our macro analyses, the measures we employed—such as the CMQ (Bruder et al., 2013) used by Imhoff and others (2022), or the single-item measure of conspiracy theorizing (Lantian et al., 2016) used by Hornsey and others (2022)—were designed to assess people's general inclination to believe in conspiracy theories. Consequently, these measures do not inquire about any specific conspiracy theory. Hence, they are less epistemically risky (less likely to be falsified) than the measures that inquire about specific conspiracy theories, such as belief in the globally recognized conspiracies in YouGov's 2020 survey (Hornsey & Pearson, 2022) or belief in COVID-19 conspiracies (Van Bavel et al., 2022).

Witchcraft beliefs are also epistemically risky, likely even more so than any conspiracy theories. If the readiness to subscribe to epistemically unwarranted beliefs serves as the common denominator for both witchcraft beliefs and conspiracy beliefs, then we can expect that witchcraft beliefs will exhibit a stronger association with beliefs in specific conspiracies.³

³We express our gratitude to Robbie Sutton for bringing this issue to our attention and for providing valuable suggestions that have enhanced the quality of our work.

TABLE 5 Regression results.

	Model 1	Model 2	Model 3	Model 4
	GCB-5	GCB-5	Belief in COVID-19 conspiracy	Belief in COVID-19 conspiracy
Belief in witchcraft	.297** (.149)	.305** (.152)	.622*** (.225)	.615*** (.230)
Age		-.00121 (.00676)		.00411 (.0102)
Female		.0524 (.133)		-.00372 (.200)
Degree		-.0521 (.160)		.0207 (.239)
Muslim		-.141 (.134)		-.159 (.201)
Constant	3.180*** (.129)	3.280*** (.265)	2.902*** (.194)	2.876*** (.402)
<i>N</i>	195	195	200	200
<i>R</i> ²	.020	.027	.037	.041

Note: Standard errors in parentheses.

*** $p < .01$; ** $p < .05$; * $p < .1$.

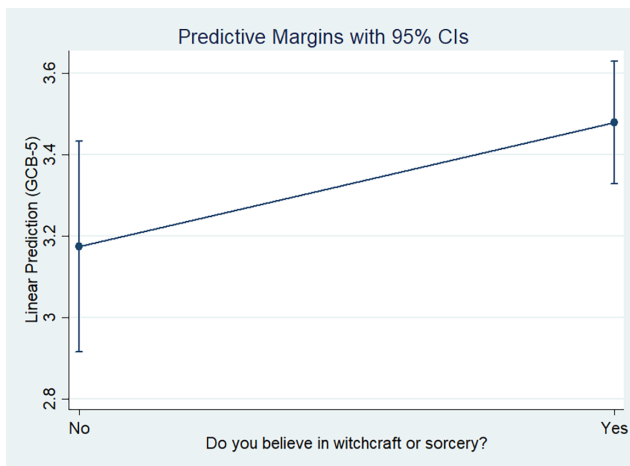


FIGURE 3 Plot of the relationship between the predicted GCB-5 scores (from Model 2) and belief in witchcraft.

The correlations presented in Table 2 show that the prevalence of witchcraft beliefs demonstrates a stronger association with the average belief in globally recognized conspiracies ($r = .681$, $p = .0037$) and the average belief in COVID-19 conspiracies ($r = .553$, $p = .0004$) than with the average CMQ scores ($r = .481$, $p = .0317$) or the average tendency to believe in conspiracies ($r = .460$, $p = .0180$).

For further analysis, we estimate partial correlations, which are outlined in Table 6. In each model, we include one measure of belief in specific conspiracies and one measure

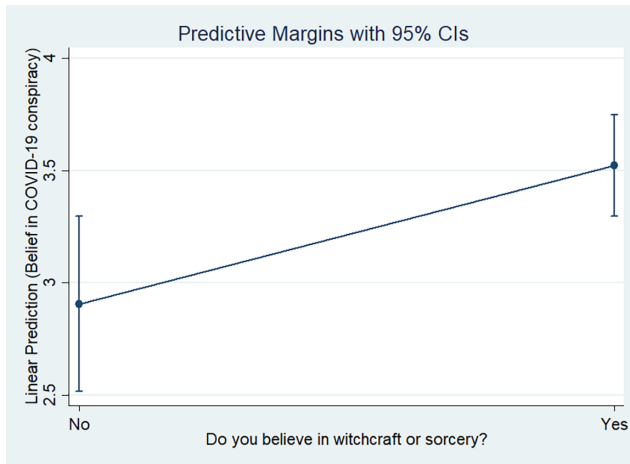


FIGURE 4 Plot of the relationship between the predicted level of belief in COVID-19 conspiracy (from Model 4) and belief in witchcraft.

TABLE 6 Country-level partial correlations.

	Prevalence of witchcraft beliefs (Gershman, 2022)			
Average belief in globally recognized conspiracies (Hornsey & Pearson, 2022)	.752**		.199	
Average belief in COVID-19 conspiracies (Van Bavel et al., 2022)		.304		.390
Average CMQ score (Imhoff et al., 2022)	.240	.388		
Average tendency to believe in conspiracies (Hornsey et al., 2022)			.573	.487**
<i>N</i>	10	17	10	18

*** $p < .01$; ** $p < .05$; * $p < .1$.

of conspiracy mentality (the general tendency to believe in conspiracies). The partial correlation between the prevalence of witchcraft beliefs and the average belief in globally recognized conspiracies, with the average CMQ scores as a control variable, is high and statistically significant ($r_{\text{part}} = .752, p = .0193$). Conversely, the partial correlation between the average CMQ scores and the prevalence of witchcraft beliefs, controlling for the average belief in globally recognized conspiracies, is not statistically significant ($r_{\text{part}} = .240, p = .5347$). However, in the last model, the partial correlation between the prevalence of witchcraft beliefs and the average belief in COVID-19 conspiracies, with the average tendency to believe in conspiracies as a control, is not significant ($r_{\text{part}} = .390, p = .1221$), while the partial correlation between the prevalence of witchcraft beliefs and the average tendency to believe in conspiracies, with the average belief in COVID-19 conspiracies as a control variable, is statistically significant ($r_{\text{part}} = .487, p = .0473$). These somewhat inconsistent results may be attributed to an incorrect level of analysis. Hence, we now turn to micro-level data from Tanzania for further exploration.

In our micro analyses, we used two measures of conspiracy theorizing: belief in COVID-19 conspiracy and GCB-5 (Kay & Slovic, 2023). Among these two measures, belief in coronavirus conspiracy is epistemically riskier because it inquires about a specific conspiracy, unlike GCB-5, which, similar to CMQ, aims to gauge people's general tendency to believe in conspiracies

TABLE 7 Individual-level partial correlations (Tanzanian data).

	Belief in witchcraft
Belief in COVID-19 conspiracy	.148**
GCB-5	.089
<i>N</i>	195

*** $p < .01$; ** $p < .05$; * $p < .1$.

without specifying particular theories. Consequently, we can expect that belief in witchcraft would exhibit a stronger association with belief in COVID-19 conspiracy than with GCB-5. The point-biserial correlations presented in Table 4 support this expectation, indicating that belief in witchcraft demonstrates a stronger association with belief in COVID-19 conspiracy ($r = .192, p = .0063$) than with GCB-5 scores ($r = .142, p = .0482$).

The partial correlations presented in Table 7 further reinforce this finding. The partial correlation between belief in witchcraft and belief in COVID-19 conspiracy, controlling for GCB-5, is positive and statistically significant ($r_{\text{part}} = .148, p = .0388$). Conversely, the partial correlation between belief in witchcraft and GCB-5 is not statistically significant ($r_{\text{part}} = .089, p = .2190$) when we control for belief in COVID-19 conspiracy. Thus, the micro-level analysis suggests that the readiness to subscribe to epistemically unwarranted beliefs may indeed serve as the common denominator for belief in witchcraft and conspiracy theorizing.

CONCLUSIONS

The purpose of this article was to investigate whether those who believe in witchcraft are more likely to believe in conspiracy theories. There are three basic reasons why we believed that this analysis was worth conducting. The first is that conspiracy theories, which have existed throughout history, have become increasingly popular in recent years, and seem to have a wide range of political implications—which is why we consider that it is worth understanding why some individuals are more likely than others to believe in conspiracy theories. The second reason is that while the literature has consistently shown that those who believe in some conspiracy theories are more likely to believe in other conspiracy theories and in the supernatural, less attention has been paid to whether someone who believes in witchcraft is more inclined to believe in conspiracy theories. While our analyses of macro-level and micro-level data sustain the claim that those who believe in witchcraft are more likely to believe in (general and COVID-19-related) conspiracy theories, in this article we also argued that the reason those who believe in witchcraft are more likely to also believe in conspiracy theories is that they engage in the same process of signification. In other words, they believe in the ultimately secretive nature of meaning and that every sign can refer to any other sign. They also believe that every item in the world is connected to any other one thanks to the principles of universal analogy and sympathy, that the items of the immanent world are linked in the same way (analogy and sympathy) to various elements of the superior world, and that manipulation is possible if not inevitably necessary.

Our results speak to the relationship between these two sets of beliefs and, at least, in the Tanzanian context they show something rather interesting. While the belief in witchcraft has a strong and (statistically) significant impact on general conspiracy beliefs, it has *a much stronger* and more (statistically) significant impact on the belief in COVID-19-related conspiracy theories. Why this is the case is something on which we can formulate some more-or-less educated guesses. It may be because the COVID-19 pandemic in Tanzania was more salient than some other events or phenomena on which conspiracy theories flourish. And/or it may be because of

the political discourse of President Magufuli who denied the threat posed by COVID-19 and the benefits of anti-COVID vaccines. Or it may be because witchcraft and white magic are still believed to be of particular importance in Tanzania for safeguarding one's health.

Given the correlational nature of our study, future research may focus on developing a deeper understanding of the relationship between witchcraft beliefs and conspiracy theorizing. Additionally, more attention will probably have to be paid in both the Global North and the Global South to the fact that, in a world that is making fast technological progress, witchcraft beliefs remain fairly widespread and have wide ranging social, economic, and political implications.

ACKNOWLEDGMENTS

We would like to express our gratitude to the anonymous referees at *Politics & Policy* for their invaluable feedback and constructive suggestions, which have greatly contributed to improving the quality of this work.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

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How to cite this article: Kinyondo, Abel, Nygmetzhan Kuzenbayev and Riccardo Pelizzo. 2024. "Witchcraft Beliefs and Conspiracy Theorizing: Evidence From Tanzania and Cross-national Datasets." *Politics & Policy* 00(0): 1–22. <https://doi.org/10.1111/polp.12639>.