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You'll never walk alone: Loneliness, religion, and politico-economic transformation

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Abstract

The rise of subversive religious beliefs has been recently documented as related to the politico-economic radicalization of places that feel left behind. When is the traditional local religious institution so socio-economically inefficient in providing hope for "not walking alone" to become substituted by subversive religious beliefs on the market for hope? This article suggests a detailed methodology, linking micro and macro levels, that starts from the quantification of the individual gain from religion as a source for well-being by providing the feeling of "not walking alone." This micro gain is next used: (i) to evaluate a religious institution in terms of the social welfare that it generates, and (ii) to monitor this religious institution for losing its market to subversive religious beliefs, related to radical politico-economic transformations. To illustrate this methodology, I analyze the socio-economic efficiency of the Church of England as a predictive tool for the Brexit vote.

KEYWORDS

Brexit, Church of England, cultural economics, institutional efficiency, loneliness, political polarization, political transformation, protest voting, radicalization, relative deprivation, religion and politics, social gain from religious institutions, subversive religions, United Kingdom

Related Articles

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Evidence from around the globe has accumulated, demonstrating that subversive religious beliefs are on the rise and this process coincides with the political polarization geography (see, e.g., Costa et al., 2022; Tubadji, 2022; Wrenn, 2019, 2021). This suggests that traditional religious institutions either lose part of the market for religious beliefs and this associates with political radicalization, or a new contingent of believers appears and chooses a new religious narrative rather than turning to the traditional one. Both scenarios imply a loss of social efficiency of the traditional religious institutions on the "market for hope" in the eyes of their "consumers." How can this efficiency estimation be implemented? And how can it help us to predict the future political polarization (i.e., Polanyian protest voting against relative deprivation and in favor of a grand transformation [Polanyi, 1944]) or radicalization (a Dogville Effect[1] type of demand for a full reset of the current socio-economic and political system)?

Religion is one of the oldest institutions and has certainly fomented a lot of interest in economic thought (Bénabou et al., 2022; Bénabou & Tirole, 2006; Drelichman et al., 2021; Iannaccone, 1998; Marx, 1844; Weber, 1971). However, most models either remain on the macro level only (dealing with the competition between religious institutions) or explore the substitutions-related micro choice between religious clubs and networks, once one is already a believer (Leeson & Russ, 2018; Montalvo & Reynal-Querol, 2005). The actual micro motivation to become a believer per se (i.e., to demand a religious belief) as opposed to not believing in a religious club is not clearly modeled yet.

People have historically been known to go to war for religious feelings, but religion is with us in peaceful times too, and is part of the upbringing of most people around the world. Peaceful religious feelings and differences in religious attitudes were pointed out by Max Weber (1905) and selected as a ground for his explanation for differences in productivity between people from different cultures and places—what is known as his religion and economics studies. Yet, he never elaborated on why we may want to hold these religious feelings in the first place. Moreover, elsewhere, Weber (1971) again claimed that our age should be expected to gradually become disenchanted with religion. Modern sociological literature has contested this second Weberian claim.

The current study is focused on the observed tendency that the modern world still seems to experience strong religious feelings which have been found to coincide with feelings of political polarization, hate speech, and feelings of loneliness and being left behind. These feelings have been widely discussed as main drivers of many important socio-economic events in recent global development (see Bray et al., 2022; Carr et al., 2022; Hayashi, 2022). Religiosity has also been found to increase, especially with young people, when it comes to the most widely spread religions such as Christianity, Islam, Judaism, etc. There are likewise studies documenting

[1]The term "Dogville Effect" was used for the first time in the context of the modern political radicalization to describe particularly the winning pro-ultra-right voting in support of the party Golden Dawn in Greece (see Tubadji & Nijkamp, 2019).

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the rise of alternative esoteric beliefs and subversive narratives nowadays (Wrenn, 2019, 2021). The present study argues that these facts of reality suggest that Weber's disenchantment might have been an over-optimistic prognosis since it did not factor in the extraordinary link between religion and the feelings related to economic relative deprivation and loneliness and the effects that the latter have on the utility functions of people at all times. This regards the utility function of living one's life, which is often referred to as life satisfaction. As we know, life satisfaction is derived from the way we spend our time that we divide between leisure and work and is, therefore, an economic question.

Following certain theoretical work on culture, religion, and political voting, suggested by the neo-Weberian Culture-Based Development (CBD) paradigm (Tubadji, 2012, 2013, 2020), the present article suggests to model and test the micro demand for religion on people's feeling of relative deprivation by employing the micro game and macro altruistic Vox Populi models suggested by Tubadji (2022), which studies the link between witchcraft and the Brexit vote in the UK.

The CBD model accounts for the fact that people's life satisfaction is strongly driven by their feelings. Negative feelings of social relative deprivation (such as loneliness) or economic relative deprivation (in income) can be expected to derive disutilities and to be viewed as worth trading-off some income in order to preserve higher overall levels of life satisfaction. Using the results of this test, I further explore the question of how to monitor the evolution of this religious feeling from a peaceful and cooperative religious feeling to a conflictual and non-cooperative one that can (and does) escalate to social protest. To do so, I extend the altruistic Vox Populi model suggested by Tubadji (2022) by relating it to Buchanan's theory of God (Buchanan, 1975, 2005), the Polanyian individual desire for protest (Polanyi, 1944), and the macro-great-transformation process expressed in winning protest voting and a full effective resetting of the system.

In line with Tubadji (2022), this study models religion as a tool for alleviating mental pain for relative deprivation. Additionally, this article for the first time draws attention to the role of religious institutions on the aggregate level as providers of the feeling of "not walking alone," which decreases the negative externalities from feeling alone in one's relative deprivation (such as loss of productivity, loss of cooperative redistribution, etc.) that explains why religious institutions are providers of a public good. Representative data on individual perceived relative deprivation is not readily available and surveys for quantifying it are costly to conduct. Yet, as any experienced relative deprivation is caused by the current system and its traditional public institutions, the degree of backlash from the traditional public institution is likely to be a sign of the degree of relative deprivation no longer compensated for by religion and the rest of the local institutional setting. Disenchanted with the local religion and institutions, individuals are likely to polarize and radicalize and attempt to reset the system into a new one in which hope for "not walking alone" can be found. That is the vantage point of the current study.

My aim is first to estimate how much religiosity increases the feeling of individual life satisfaction and how this compares with the effect of feelings of loneliness and feelings of relative deprivation on life satisfaction. I then derive from the micro estimate the social welfare cost–benefit analysis of the religious institution. The costs and benefits of religious institutions are evaluated for the case of the UK and the cost effectiveness of secular and clerical institutions' ability to alleviate life-satisfaction-losses are compared. The secular institution alleviating life satisfaction in this case is the mental health public service.[2] Finally, a reverse engineering from the macro loss of efficiency of the religious institution

[2]It has been elsewhere suggested that cultural and art institutions have the same function of alleviating mental health and life-satisfaction issues (Tubadji, 2021). Comparison between religious and cultural industry institutions is thus also an alternative for a continuation of the current study.

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over time is used to ascertain the average micro trade-off between being religious and not being religious. This micro trade-off, according to Tubadji (2022), can be compared to the critical threshold in the Game with God, which predicts the political radicalization of the voter.

The findings suggest that it is very likely that religious institutions exist because—evolutionarily speaking—they satisfy the demand for the alleviation of various disutilities of life (such as the here explored loneliness and relative deprivation) through religious belief. A direct statistical relationship between feelings of loneliness and feelings of religiosity is found to exist, but apparently loneliness decreases life satisfaction, while religiosity increases it. The interaction between loneliness and religiosity is also found to be statistically significant. It was likewise confirmed that what is known as a statistical pattern about feelings of life satisfaction in terms of typical age-related nonlinearity (U-shaped and hill-shaped relationships in happiness research—see Blanchflower, 2020; Blanchflower & Oswald, 2008) is also confirmed to be present as a pattern in feelings of loneliness and feelings of religiosity. As previous literature has demonstrated, the link between relative deprivation and life satisfaction and loneliness can be thought of as a form of relative deprivation in socialization. The above results can be interpreted as a confirmation of the link between the feelings of relative deprivation and religiosity as traded-off entities that determine life satisfaction. This is a triangulation and generalization of the Tubadji (2022) model of the "micro Game with God," confirming that the need for religious belief is motivated by the need for "not walking alone" in relative deprivation competitions in the real world. Finally, exploring the social welfare benefit from the public provision of religious institutions[3] shows that providing a secular solution to loneliness is more cost-efficient than the clerical version of the Church service to society. Moreover, monitoring the loss of efficiency of the religious institution observed on the macro level could inform us (after reverse engineering) about the tendencies developing on the micro level and their tipping points that are likely to reveal themselves via winning grand-transformation protest votes.

The article is structured as follows. I next discuss the literature inspiring this exploration before detailing the micro and macro theoretical motivations of the study. I then present the data, outline the novel estimation strategy, and obtain the results by estimating the micro effect of religion on life satisfaction, which I use to evaluate the social welfare benefits from the public provision of religious institutions (such as churches) that serve the religious needs of the population. I go on to show how reverse engineering—based on the loss of efficiency of the religious institution—reveals the likelihood of the social system to tip due to increased micro feelings of relative deprivation into winning political protest-voting. The approach is applied and illustrated based on an example for the case of the Church of England in the UK, which precedes my concluding remarks.

LITERATURE REVIEW

Religion

There are two main streams in the field of religion and economics, shaped by Karl Marx and Max Weber. For Marx, religion is the "opium of the people," an instrument for the institutions to hold in oppression the thinking and feeling of the masses. For Weber, religion is the source

[3]I assume that religiosity alleviates mental health issues such as depression and dissatisfaction with life, costing the religious institutions *vis à vis* a potential gain of forgone expenditures on treating light mental health cases as big as the population of believers. This assumption allows us to compare this gain in terms of the utility derived from income in order to obtain the actual benefit that society gains from the religious institution.

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of differences in thinking, doing, and essentially all decision making that affects productivity in a locality. These are a top-down and a bottom-up approach to religion, but in both cases the focus is on religion and the group, rather than on the formation of individual religious belief. As noted by Gill (2021), religious institutions seem to be the oldest surviving institutions. The present study extends in this vein by noting that, potentially, from an evolutionary perspective, institutions should be expected to be somehow very efficient in serving the social need that justifies their existence. Whether this is the case is not yet precisely modeled or estimated in economic research. It remains largely only assumed in any economic modeling conducted regarding religion in economics.

Modern religion and economics have generally taken either a macro or micro perspective. In the macro perspective (a la Marx) institutions and their competition explain their abuse and prosecution of witches (see e.g., Leeson & Russ, 2018; Parro, 2021). Alternatively, following the Weberian tradition, work has been done on how religion has an impact on migration and/or innovation (see e.g., Bénabou et al., 2015; Chiswick, 2010; Knack & Keefer, 1997; McCleary & Barro, 2006). Cornerstones in the modern economics of religion are the Azzi–Ehrenberg (1975) model of religious participation and the related prolific contribution in the field by Laurence Iannaccone and others (1998) and subsequent contributions (see review by Iyer, 2016). These new generation models have given an important insight on the role of the group and the dynamics of social networks in the utility function of the believer. Yet, why people believe in religion in the first place and how this is related to their socio-economic conditions is not yet sufficiently explored.

What is the need behind the demand for religion? None of these old or new approaches deals with the mental health benefit and well-being micro mechanism behind the choice to be religious or not; i.e., to believe in God or not. In this sense, the important development in the field, briefly sketched above, still leaves the model under-specified by omitting an important aspect of the motivation to believe in God. Although relative deprivation has been acknowledged as a factor for religiosity (Iannaccone & Berman, 2006), the mental health benefits of religious hope (for "not walking alone") as a powerful factor for the alleviation of the pain caused by relative deprivation and general life uncertainty has not been sufficiently elaborated with the tools used in the modern economics of religion. Knowing how an important factor used by people affects them mentally as a multiplier of their productivity (and potentially can be used by institutions to affect people) merits a greater and deeper understanding regarding its foundations and dependencies. The only exploration, to my knowledge, that has investigated why people are religious from a well-being and moral mental calculus perspective has been suggested in the form of the first prospect theory analysis conducted by the philosopher Blaise Pascal and known as "Pascal's Wager." Meanwhile, mental-health disturbances, negative life events—such as divorce, loss of significant others, and loneliness—have long been studied as sources of negative utility in the rational life satisfaction function of the individual (see Blanchflower, 2020; Oswald & Clark, 2003). These mental health factors are distinct from relative economic deprivation (Kahneman & Deaton, 2010; Oswald et al., 2021). Apparently, so is religion (Iannaccone et al., 1998); and a link seems to exist between mental health and religiosity (Cooley et al., 2016; Mellor & Freeborn, 2011).

In consequence, Tubadji (2022) redefined Pascal's Wager into a cooperative game where the perceived relative deprivation of the individual is the foundation of their choice over whether or not to continue believing in God and religion associated with the dominant creed—which is intimately related as a proto-institution emcompassing the entire institutional context in which the individual is situated. Tubadji's (2022) model focuses on whether the deprivation caused by the institutional context is a source of agency evoking mental health pain. When that pain from deprivation becomes unsurmountable, the model shows that, by trading off with the religious social network benefits, the individual prefers to change their religious identity. This forms an expressive signal that, having lost everything, they choose to identify with alternative

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rules and norms typical for a subversive narrative, such as the religious self-identification as a witch. In other words, Tubadji's (2022) micro-CBD model of religion and economics endeavors to explain the switch in religious self-identification with feelings of psychological pain from unsurmountable relative deprivation. To show the link to agency, the model also reveals an Edgeworth's-box-motivated link between this religious expressive behavior and the expressive voting of people and places in the years after the switch in religiosity. This CBD model forms the starting point of the present exploration. What Tubadji (2022) does not detail, however, is the link between relative deprivation and life satisfaction. While this has to some extent been documented in other studies, the current article documents it for the same time period and geography as the study of Tubadji (2022).

The link between regional and economic growth and innovation has been acknowledged very seriously in modern religion and economics (Barro & McCleary, 2003; Bénabou et al., 2015, 2022; Iyer, 2010). These studies take the Weberian, bottom-up approach of documenting how religion and religiosity influence growth. They nevertheless do not elaborate on the psychological well-being multiplier effect that the good mental health of the individuals has on the aggregate productivity. This effect is known at the micro level to be present and substantial (Isham et al., 2020; Krekel et al., 2019). There have also been numerous studies on the way religious institutions step in at the absence of other public goods-providing institutions, such as education and health (Berman, 2009; Hungerman, 2005; Iyer, 2016). There has not been sufficient exploration, however, on the comparative socio-economic efficiency of clerical and secular providers of other public goods. An especially large gap exists in this sense due to the lack of knowledge on the comparability of mental health alleviation through religious institutions as opposed to mental health medical services. Other disciplines have hinted at a paramount socio-cultural disparity across time and space in the provision of secular mental health services (Foucault, 1961). This suggests that society might experience periods of significant need to improve its handling of such institutions for the greater benefit of the society. The current study contributes toward filling this gap by providing an example how the individual alleviation of mental health through religion can be used as quantitative information for estimating the social benefit of the religious institution in comparison to the mental health-serving secular sector. Finally, the link between religion and radicalization has been documented lately only empirically but is not well theoretically modeled or precisely captured quantitatively as a process at the micro level that transforms to the macro level. The current study attempts to address this gap in the literature too. A unified methodology to achieve filling all three gaps is proposed shortly.

Relative deprivation

CBD (Tubadji, 2012, 2013, 2020) has offered multiple studies on the role of relative deprivation in political behavior (voting) in Greece, the UK, and the Netherlands (Tubadji, 2021, 2022; Tubadji & Nijkamp, 2019). Indeed, the study on relative deprivation and its impact on human socio-economic behavior has very deep roots in economics (D'Ambrosio & Frick, 2007; Jones & Wildman, 2008) and psychology (Osborne & Sibley, 2013; Wickham et al., 2014). These studies document the role of relative deprivation at both the individual and local level, but they do this separately. Here I argue that understanding the individual magnitude of the alleviation of deprivation in individual utility could be helpful to estimate the social benefit offered by religious institutions concerning the provision of relative-deprivation-pain alleviation.

The COVID-19 pandemic created a situation of enclosure that made many people feel their quality of life had significantly changed relative to their own mode of living before the pandemic. Thus, feelings of relative deprivation in comparison to one's own past lifestyle are likely to have emerged. The COVID-related literature certainly has documented a relationship

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between the life satisfaction that people experienced during the pandemic and their religiosity in some countries such as the UK (see Bragard et al., 2022), or for cultural milieus where religion is traditionally known to play an important part of social life, such as Greece (see Golemis et al., 2022) and Turkey (see Yıldırım et al., 2021). This creates an excellent context for obtaining evidence on important aspects of the dynamics, temporal sensitivity, and eventual nonlinearity of the effectiveness of religion as a tool for alleviating mental health-related disutilities from loneliness.

Loneliness

Loneliness is certainly a form of social relative deprivation in terms of socialization. The most important points from the literature on loneliness that I take here from the pre-pandemic literature are twofold. First, loneliness can be objective (living alone) or subjective (feeling lonely). Living alone is a measure more typically found in the U.S. literature, and feeling alone is the measure of loneliness prevailing in the Australian literature (Burger et al., 2020; Burlina & Rodriguez-Pose, 2023). Second, there is a nonlinearity in age in relation to the utility derived from one's life—it is a U-shaped nonlinearity in relation to happiness (Blanchflower & Oswald, 2008) and a hill-shaped nonlinearity in relation to loneliness (Blanchflower, 2020).

The literature on COVID-19 and loneliness is nevertheless inconclusive on whether loneliness has increased or decreased. Based on a survey with 15,530 respondents (the nationally representative Understanding Society COVID-19 Study), Li and Wang (2020) found that over one-third of British people sometimes or often felt lonely during COVID-19. They also reported that employment and living with a partner reduced psychiatric disorders and loneliness. Using U.S. data, Killgore and others (2020) reported that loneliness was associated with increased depression and suicidal ideation during the COVID-19 period. Yet, at the same time, Luchetti and others (2020) found no effect of COVID-19 on the happiness trajectories of individuals. Tubadji and others (2020) reported that Google searches for suicide decreased during the pandemic. And while Groarke and others (2021) report sleep effects that may relate to unhappiness, the work of Berniell and others (2021) found that usually isolated (i.e., relatively deprived in socializing) elderly individuals actually felt better off in terms of their life satisfaction during the COVID-19 lockdowns, potentially because the lockdown imposed on all essentially reduced their feelings of relative social deprivation.

It therefore remains an empirical question whether loneliness increased during COVID-19 or not, on average—and it is not entirely clear why it may not have increased. We also do not know whether young people are more religious than old ones—as claimed by the Faith Research Centre at ComRes (2017). If the situation is de facto the opposite, it might be that religiosity of the elderly increased their happiness and not the improvements of relative deprivation as previously assumed. These are mechanisms to be explored further empirically to confirm what they are and by how much they affected the overall average final effect of the pandemic's shock on life satisfaction.

Disenchantment

There likewise seems to be an overlooked link between disenchantment and the actual dynamics of change in religiosity. Besides the link between religion and productivity, another of Weber's (1971) famous claims about religion was that the modern world is moving toward increasingly rational behavior and thus is becoming disenchanted with religious narratives. So, the role of religion is thus expected to diminish for contemporary generations

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(Weber, 1971). However, an abundance of anecdotal evidence is available showing a growing interest in esoteric or alternative religious self-identification—from witch-self-identification, to the Flat Earth Society, to a flourishing spread of the Prosperity Gospel (see e.g., Wrenn, 2019, 2021). Studies finding strong support for religiosity among the younger segments of society in the UK are also salient (Faith Research Centre at ComRes, 2017). Sociologists and economists argue along different lines of reasoning regarding this and ultimately converge on the opinion that the disenchantment hypothesis has altogether failed and the world has kept and grown new forms of enchantment with religion of various kinds.

Indeed, valuable studies on the disenchantment hypothesis have been provided in the new field of the economics of religion, explaining (mostly theoretically) the role of competition between churches and sects on the market for religious beliefs, known as the secularization and religious belief field of the new economics of religion (Finke & Stark, 1992). The empirical literature has largely swayed again to the macro-implications from religious competition in a Weberian manner (Barro & McCleary, 2003, 2005; Gruber & Hungerman, 2008; North & Gwin, 2004; Stark & Finke, 2000). Yet, what the literature seems to have omitted (especially in economics) is to consider not only the loss of religion, but also the mechanisms for individual transitions in religiosity and switches from one religion to another[4] and their relation to individual socio-economic status and well-being conditions (see Iyer, 2016). Very few studies have considered this perspective in economics for the UK context excepting Tubadji's (2022) study on the self-identification of witches in the UK. Tubadji (2022) is the fundamental starting point on which the current article builds, as we will see in the next section.

I suggest here that the reason why Weber's disenchantment hypothesis fails rests on the fact that his "model" of religion and economics does not account for the role of the feelings of uncertainty as a main evolutionary function in human behavior. If that evolutionary psychological aspect is factored in, the link between the fear of falling behind (i.e., fears of relative deprivation) and religion becomes apparent. It persists and transforms in response not to rationality but to the socio-economic positioning of the individual. Religion serves as a narrative of hope (of "not walking alone"). Once a person falls behind and feels as if they are walking alone despite having behaved according to religious dogma, they become disenchanted not only with the particular religious narrative, but also the need for appeasing uncertainty with a cultural religious narrative remains unsatisfied. Hence, instead of disenchantment with religiosity, a person is likely to switch from one religion to a more efficiently enchanting substitute religious narrative.

While the world has become more "rational" in many ways since Weber's time, relative deprivation remains a personal circumstance of many and growing inequalities have accelerated the growth of religiosity. Moreover, "more rational people" are known to be less happy and have been consistently found to experience higher levels of doubt and uncertainty (see e.g., Buchanan, 1975, 2005; Mackinnon, 1998; Piper, 2015). This is perhaps why not less but even more enchantment is likely to be demanded by more rational people in order to appease their levels of experienced uncertainty, which might be partially traded off by their better economic status. It is an empirical question as to how this trade–off works in reality.

I propose here that feelings of relative deprivation (in any socio-economic terms and form) underpin the religious preferences of individuals and determine the effect that religiosity has

[4]Switches from mainstream to subversive religious narratives have been documented around the world. In America and the UK, the rise in the popularity of witchcraft has been discussed (Magliocco, 2010; Tubadji, 2022). Norse religion, or its contemporary version, is gaining popularity in Norway and Germany where it appeals to extreme right (neoNazi) voters (Forssling & Forssling, 2020). In Italy, the appeal of neopagan cults (Odinism, Kremmerzian, etc.) is rapidly growing and the number of followers has risen from 13,500 in 2001 to 230,000 in 2015 (Rinallo, 2009). Neopaganism has its appeal in Poland and Russia and there is a sense that its appeal is also growing in the region (Anczyk, 2016; Tomasiewicz, 2020). Given the known historical link between neopaganism and the Nazi regime in Germany and elsewhere (Baxa, 2006; François, 2023; Schuppener, 2022), it is intuitive to expect that modern switches to subversive narratives will show connections with modern polarization and radicalization in voting.

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on individual life satisfaction. It is this correction or improvement of life satisfaction that explains the need of the individual for religion and justifies the expenditures that society has traditionally made toward supporting religious institutions. Reducing pain from the loss of life satisfaction is an important benefit to people and society in terms of their mental health and the derivative effects on the productivity of people and places. In what follows next, these conjectures are further synthesized theoretically and are subjected to some initial empirical tests that can reject the main hypothesis underlying the reasoning outlined above.

A CBD THEORY OF INDIVIDUAL AND SOCIAL WELL-BEING BENEFITS FROM RELIGIOSITY

Theory

CBD is a neo-Weberian research paradigm that suggests cultural attitudes as a fundament for differences in socio-economic choice that lead to substantial differences in outcomes given the same inputs (Tubadji, 2012, 2013, 2021). CBD has recently proposed a game theoretical model that explains the choice to self-identify as a witch due to seeking alternative modes of alleviating the pain from relative deprivation caused by current institutional settings—and therefore by the cultural religious institution as a proto-institution (see Tubadji, 2022).

Religion and relative life satisfaction on the micro level

On the micro level, I here extend my earlier CBD model (Tubadji, 2022) of religious self-identification choice, suggesting that a more general interpretation of the cooperation Game with God is to think of it as a game that determines whether a person will have a propensity to enchant or disenchant with a certain religious narrative. In this sense, the study reveals the neo-Weberian angle of disenchantment present in the micro-CBD Game with God, suggesting the latter can be thought of as synonymous with the Game of Enchantment. The Game of Enchantment, as I call it here, is essentially a cooperation game with an indifferent player (God) and an individual decision maker (A), where A decides whether to cooperate (believe in God) or not, based on the probability with which God seems to support A's payoffs. The payoffs are always determined as basic utility derived from living (l), utility from the hopefulness that there is God "walking with us" who will take care of the uncertainty ($h1$), actual help in the form of resolving of one's problems successfully ($h2$), the cost of the social norms that have to be followed if one is a believer and the ex-communication tax (m), imposed by the other believers in the form of withdrawing their social capital from the one who opts not to believe in God. In this setting, $h1$ corresponds to the "You'll Never Walk Alone" metaphor. The game is presented in Table 1.

The payoff if A believes in God is: $(l+h1+ph2-n)$. The payoff if A does not believe in (cooperate with) God is: $l-pm$. Thus, by equating them and solving for the critical probability p with which God helps and its critical level when A is indifferent and a Nash equilibrium can be found is: $p=(n-h1)/(m+h2)$. This is interpreted here as the threshold of disenchantment with a religious narrative. Clearly for this probability to be positive and the

TABLE 1 The game of enchantment.

	God cooperates (helps) (p)	**God does not cooperate ($1-p$)**
A cooperates (believes) (q)	$l+h1+h2-n$	$l+h1-n$
A does not cooperate ($1-q$)	$l-m$	l

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individual to have some positive probability to be indifferent, this requires that $h1$ (or the hope that one is not walking alone) exceeds the cost of the social norm for abiding the rules set by the current institutional setting. CBD suggests that when individual A is relatively deprived in relation to identical peers, this is to be interpreted as the case that A experiences $n < h1$. In such cases, A is likely to switch to an alternative religious self-identification (such as a witch, see Tubadji, 2022) or to get enchanted with any other narrative more generally (see Bénabou & Tirole, 2016). The aim of this article is now to measure the size of the effect of $h1$ on religiosity at the individual level and ascertain how much it adds to the individual's life satisfaction. This is the crucial quantification that can allow an estimation of the aggregate efficiency of the religious institution.

Relative deprivation of some and attitude to altruism on the macro level

On the macro level, there is of course the Hirschman tunnel effect where relative deprivation leads to disenchantment. It is in line with Polanyi's (1944) system transformation tipping point and the empirical work on the political radicalization due to poverty, termed the Dogville Effect (Tubadji & Nijkamp, 2019). Buchanan (1975, 2005) explained the propensity of people to seek to alleviate feelings of uncertainty through the presence of God or public institutions that are expected to substitute each other in the provision of a never-ending need for such uncertainty alleviation. Bénabou and Tirole (2016) added to this the understanding that, once disillusioned from a belief, people are willing to buy as truth the logic of a narrative that fits best their economic interest.

CBD suggests a common cultural mechanism behind the above descriptions of beliefs, public institutions, relative deprivation, and protest behavior. People start disagreeing with identical peers on the matter of social welfare approaches not based on the measures alone but due to a strong bias concerning the attitude of fairness created by relative deprivation (Tubadji, 2022). In a nutshell, the contract curve of altruism disintegrates due to the effect of the subjective perception of every possible price as an unfair trade-off between what it will cost the relatively deprived individual to undertake this option in comparison to the better off peer. This suggestion is in line with Bénabou and Tirole (2006), but it brings forward the role of the enchantment/disenchantment mechanism linking the individual belief and the belief in the institutions on the basis of feelings of relative deprivation. Thus, according to CBD, people agree in clubs where they feel among equal peers and disagree on the same propositions coming from relatively privileged peers. This mechanism clearly has wider implications regarding the polarization of society. But the focus here is on the more immediate proposition that this mechanism explains why people disengage with some institutions and/or political powers once a relative deprivation threshold is reached.[5] Tubadji (2022) empirically explored this threshold, suggesting that is the same as the one from the enchantment Game with God, when an individual is prone to disembrace the old religious institution and substitute it with a new one (such as "the witch" narrative).

Reverse engineering the current level of perceived relative deprivation to compare against the benchmark threshold related to protest behavior

Polarization and radicalization are still considered by core economic research to be hard to characterize and predict (see Guriev & Papaioannou, 2022), although strong evidence for the utmost relevance of this link has already been provided by related disciplines (see Costa

[5]This is a micro mechanism proposed that can lie more generally behind the experience of relative disappointment with the performance of institutions on an individual level, as discussed in the literature addressed by Aassve and others (2022).

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et al., 2022; De La O & Rodden, 2008; Pelizzo & Babones, 2007). The empirical task now is to quantify the micro magnitude of association between religion and life satisfaction and to use this to obtain a quantification for the social welfare benefit at the macro level from the religious institution. The ultimate point of departure is comparing this social welfare benefit to the social welfare benefit that an alternative substitute institution could produce. This can quantify the comparable loss or gain of efficiency of the religious institution in comparison to other substitute institutions that alleviate uncertainty. If the main religious institution in a locality is losing efficiency, it will be likely to be losing its market of believers to other subversive religions and this can be used as a macro-level reverse engineered signal for the presence of perceived relative deprivation in the society that may be expected to escalate to a protest voting behavior. The methodology to precisely obtain these quantifications is elaborated next.

EMPIRICS

Data

The micro-part of this study relies on two datasets with different temporal characteristics. One is for the COVID-19 period (2019–2020), the other is for a shock-neutral period (census data from 2011). Both datasets have relatively comparable information and permit an examination of the relationship between religiosity and relative deprivation in the form of loneliness or economic deprivation on the one hand and life satisfaction of the individuals in the UK on the other.[6] Notably, both datasets contain data on feelings of loneliness (i.e., a subjective measure of loneliness) and the actual state of the individual as living alone (i.e., an objective loneliness). Appendix 3 shows a breakdown of the data in the survey from 2019–2020 into data pre- and post-COVID. This examination shows us that both religiosity and loneliness increased during the pandemic, yet the association between them always existed in both pre- and post-shock periods. On the macro level, data about the performance of the Church of England were obtained from the official reports released by this institution and available online. These include *The Church Commissioners for England Annual Report 2020* from which costs for the operation of the institution were obtained, and *A Guide to Church of England Parochial Fees*.[7]

Empirical strategy

Micro impact of religion on life satisfaction through loneliness channels

The aim of this part is to establish the reason why people believe in religion and put a number on its contribution to one's life satisfaction in a reliable manner. The empirical strategy entails testing two alternative hypotheses, each with a separate dataset. The two hypotheses are:

Hypothesis 1. Religiosity is traded off for pain (unhappiness/loneliness).

Hypothesis 2. Religiosity is more typical for individuals in pain of relative deprivation.

[6]For the descriptive statistics of the Community Life COVID-19 Survey (2019–2020) see Appendix 1. For the ONS Census of 2011, see Appendix 2.

[7]Available online at https://www.churchofengland.org/resources/clergy-resources/national-clergy-hr/life-events-parochial-fees-and-guidance.

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All tests rely on a Mincer equation as a background model, where age, gender, education, ethnicity, and details about form and sector of employment are the main explanatory variables.[8] The models use regional and year fixed effects where appropriate. All the estimations use age and age squared to capture the well-known (in the happiness literature) nonlinearity of human utility in age (Blanchflower, 2020; Blanchflower & Oswald, 2008).

Hypothesis 1 is tested in four steps: (i) first ordinary least squares estimations for proxies of wage are estimated based on the Mincer equation and compared to specifications with otherwise identical model composition, but either loneliness or religiosity are the alternative outcomes; the expectation is to detect opposite signs in what drives wages and income (which derive positive utility) and loneliness (which derives negative utility); (ii) life satisfaction is used as the outcome of interest and religiosity and loneliness is used at its determinants along with the rest of the Mincer equation determinants; this serves as the main exploration to quantify the effect of Hypothesis 1 (religiosity/"not walking alone") on life satisfaction; (iii) an interaction term between the objective fact of living alone and religiosity is added to explore the channel through which religiosity impacts life satisfaction; it is expected that religiosity decreases the negative effect of living alone on the feelings of loneliness experienced by an individual; (iv) the temporal dependence of the feelings of loneliness is explored using an instrumental variable; trust and altruism are expected to be lower among people living alone but these feelings are expected to respond to previous levels of blood donation in the area where one lives; i.e., to be associated with the past cultural climate to which one was exposed rather than only on the immediate experience of the COVID shock during which the data for Hypothesis 1 was collected.

Hypothesis 2 is tested in three steps: (i) through a probit model to cross-check how being alone and being religious relate to the determinants of the Mincer equation, (ii) next a Blinder-Oaxaca detailed decomposition analysis is used to find out whether religious people are relatively deprived, and (iii) to gain further precision a propensity score matching based on the determinants of the Mincer equation is conducted for religious and nonreligious individuals or for lonely and not lonely individuals. Various forms of matching techniques are run to determine whether being religious or lonely is associated with a relative deprivation in terms of wage.

The micro part of this study has been designed to add to Tubadji (2022) a tested significance quantification of the impact of religion on life satisfaction, a main assumption behind the micro mechanism of Tubadji (2022). This micro quantitative measure is the crucial link between the micro and macro part of the methodology proposed here regarding the institutional efficiency estimation for monitoring the switch to protest voting behavior. The above tests aim to discern the exact gain that religion brings to individual life satisfaction following an optimal cross-check of the causal assumptions in Tubadji (2022).

Macro: Efficiency of the religious institution

To estimate the efficiency of the religious institution, I follow the triple alternative measures approach suggested by Dolan and others (2021) for the estimation of the efficiency of health–care institutions. I implement a cost–benefit analysis to estimate the social welfare generated by the religious institution, the break-even point beyond which it will not be efficient to produce as there will be a loss to society, and ultimately—for empirical reasons—I calculate a cost effectiveness ratio for the religious institution and compare it to the cost effectiveness of the mental health services in the UK National Health Service (NHS).

[8]Specifically, the Mincer-Lemieux-minded (see Lemieux, 2006) improved specification of the Mincer equation is emulated in the empirical operationalization here.

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This methodology hinges on the main evolutionary assumption in this study that religion serves to alleviate mental pain from uncertainty. By extension, there is a trade-off between income and religion, because if one is not religious, one is mentally less able to be at one's full productive capacity (see Krekel et al., 2019). In the first step, the individual benefit of being religious is obtained by multiplying the costs of mental health services provided by the NHS per individual by the trade-off of the obtained gain from religiosity in satisfaction and the gain from income in satisfaction—obtained from other studies (as used in Dolan et al. [2021] as well), for consistency and comparability between our work. The net benefit for society is the above-derived individual gain from religion multiplied by the number of believers in the particular religious narrative.

In a second step, another way to look at the efficiency of the religious institution is to estimate what is the critical number of believers below which the investment in the religious institution will be generating a loss. To obtain this, I make the simplifying assumptions that there are no additional variable costs associated with the downward changes in the number of believers served and I treat the current expenditure of the religious institution as a fixed cost. This is a lucrative assumption, because with it, the economic meaning of the obtained estimate is not only a break-even point, but also essentially tells us what is the number of believers that will be critical with regard to the efficiency of the Church institution, given that it keeps operating at the current costs of its operation.

Finally, as the above two estimations use the gains in satisfaction from income (which are obtained by other studies and may therefore have some bias), the cost effectiveness ratio is estimated as the ratio between the gain in life satisfaction from religiosity and the actual costs per believer. This ratio needs a benchmark for comparison, which can be the similarly calculated cost effectiveness ratio of an institution that can be considered a substitute of the religious institution in terms of alleviating mental pain from uncertainty. Clearly, a good candidate for such a comparison is the mental health institution as clarified above.

Reverse engineering of religion-based-alerts for great transformation

The methodological novelty of this article boils down to the reverse engineering of the experienced aggregate average level of perceived relative deprivation in the local community. This measure can be obtained by using the change in religiosity in the society. The purpose of obtaining it is to compare it to the nonreligiosity backlash critical threshold known from Tubadji (2022) to associate with the switch to an alternative religious (being "a witch"). This reverse engineering entails the following steps.

(i) Deriving the trade-off between notbeing religious and being religious which is experienced on average by the people who left the mainstream religion. This can be done by obtaining the average parochial fees (as the average saving if one is not using the services of the Church any longer, not even once a week) and the previously obtained coefficients of the increment in life satisfaction from religiosity and the estimated average gain from being religious in terms of mental health services that are forgone due to the positive impact of religion on one's life satisfaction.

(ii) The value of this coefficient in fiveyears' time can be predicted using the speed of losing Church followers in the past five years.

(iii) The interval between the values obtained in (i) and (ii) can be examined for including the empirically known from Tubadji (2022) critical threshold of switching between religiosity and nonreligiosity, corresponding to a winning pre-protest vote known (such as the winning Brexit vote) (i.e., a voting outcome signifying a disintegration of the Altruistic Vox-Populi model).

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Figure 1 illustrates the reverse engineering rationale. Essentially, this is a method for detecting an early warning for radicalization. It economizes on the absence of self-reported data on relative deprivation and political preferences on the individual level and infers the political behavior of the population based on the dynamics of its religious behavior.

The reverse engineering entails obtaining the current and future (in fiveyears' time) levels of the trade-off between subversive religion and relative deprivation and monitors whether the critical threshold is within this interval. To obtain an approximation for the subversive religious self-identifications in any point of time the backlash from the main religion is estimated over the past five years and this speed is used to predict the evolution of the current trade-off over the next five years.

RESULTS

Micro

Individual level benefit from religion

The tests for Hypothesis 1 are shown in Tables 2–6. As seen in Table 2, most of the determinants predicting positively high income are associated with higher life satisfaction and

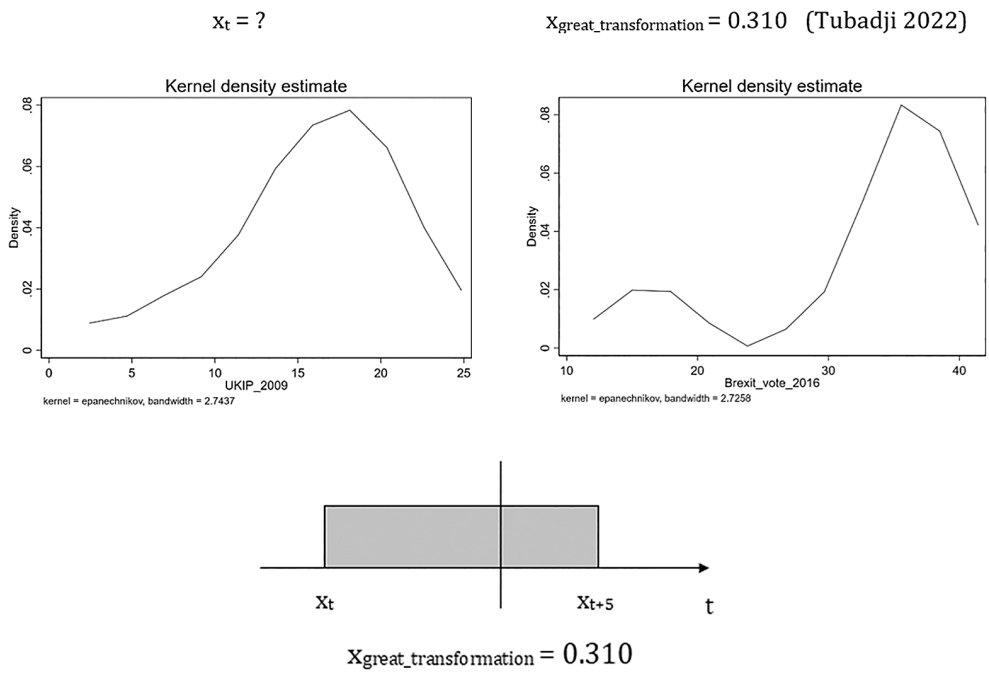

FIGURE 1 **Reverse engineering rationale.** The figure presents the kernel density for the radical voting in the UK in two periods. The image on the left corresponds to the UKIP support in the 2009 Euro-elections in the UK. The plot to the right represents the kernel density of the Brexit vote in 2016. Apparently, there is evidence for polarization of the radical vote in 2016. According to Tubadji (2022) this polarization and the win of the Brexit vote is signaled by the self-identification as a witch throughout the country. On the individual level, Tubadji (2022) reports that the self-identification as a witch in 2011 corresponds to a trade-off between subversive religion and relative deprivation equal to .310 which after five years resulted in the Brexit vote in 2016. Hence, the reverse engineering methodology proposed here uses this as a critical threshold and benchmark for an approaching tipping point in the political behavior of people that is associated with great transformation (such as Brexit).

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TABLE 2 Income and loneliness.

Variables	(1) Income	(2) Income	(3) Satisfied	(4) Living alone	(5) Not alone	(6) Not alone (help)	(7) Religious
Age	.102***	.032	−.318*	−.414***	−.066	−.020	−.050*
Age squared		.009	.052**	.050***	.007	.003	.009**
Male	.054	.054	.052	−.094***	−.063***	−.032***	−.009
BME	.494***	.492***	.142	−.022	.044	.009	−.112***
Employed	.189**	.193**	.787***	−.099***	.065**	.043***	.000
Self-employed	.307**	.306**	.897***	−.046	.123***	.049**	.048
Unemployed	−.228*	−.228*	−.441*	.128**	−.114**	−.016	−.040
Retired	.406***	.380***	1.056***	−.189***	.084**	.035**	−.009
Caregiver	−.026	−.023	.550**	−.221***	−.095*	−.033	.012
Student	.067	.041	.459*	.142***	−.015	.034	.054
Internet deprived	−.507***	−.511***	−.174	.210***	−.046	−.032**	.003
Year	−.108**	−.108**	−.065	−.010	−.006	−.012	.002
Constant	1.682***	1.798***	6.358***	1.246***	.849***	.991***	.199***
Region FE	YES	YES	YES	YES	YES	YES	YES
Observations	2807	2807	2807	2788	2807	2807	2804
R-squared	.127	.127	.067	.122	.027	.023	.030

Note: Robust standard errors in parentheses. BME, Black and ethnic minority.
***$p < .01$; **$p < .05$; *$p < .1$.

with a lower likelihood to be living alone. The case for religiosity seems to be more difficult to unpack with this set of Mincer determinants. In explaining loneliness with the Mincer determinants, the low *R*-squared allows the use of loneliness as a determinant in the life-satisfaction equation along with the Mincer determinants related to income, without collinearity issues.

Table 3 implements step (ii) of testing Hypothesis 1. It shows that the impact from $h1$ (religiosity/'not walking alone') on life satisfaction is statistically significant and amounts to .397 of the point of life satisfaction (where the latter is measured on a Likert scale from 0 to 10). It can be clearly seen that, while religiosity increases life satisfaction, loneliness decreases it in any form that loneliness is experienced (by objectively living alone or just by feeling lonely). Alternatively, when not alone and feeling there are people to ask for help increases the life satisfaction of people.

Table 4 shows that the interaction term between living alone and religiosity is clearly statistically significant and reveals that religiosity decreases the effect that living alone has on increasing the feeling of loneliness of the individual. Thus, clearly the positive effect from religiosity on life satisfaction seems to pass through the way that religion alleviates the feelings of relative deprivation in terms of being alone.

As the data used to test Hypothesis 1 is for the period 2019–2020, in a final step the temporal dependence of these results is tested by the use of an instrumental variable. Tables 5 and 6 present these results. Table 5 shows that trust and altruism are less likely among people who live alone. Table 6 demonstrates that the instrumental variable of pre-COVID (blood donation) does not erase this effect.

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TABLE 3 Religiosity and loneliness.

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	**Satisfied**	**Satisfied**	**Satisfied**	**Satisfied**	**Satisfied**	**Satisfied**
Religious	.397***					.265**
Living alone		−.996***				−.540***
Lonely			−.707***			−.583***
Not alone				1.000***		.515***
Not alone (help)					1.659***	.713***
Age	−.297	−.731***	−.400**	−.253	−.285	−.551***
Age squared	.049**	.102***	.051**	.046*	.048**	.071***
Male	.056	−.043	−.052	.115	.105	−.025
BME	.187	.091	.063	.098	.128	.050
Employed	.787***	.674***	.515***	.722***	.716***	.433***
Self-employed	.878***	.839***	.586***	.774***	.816***	.497***
Unemployed	−.426*	−.342	−.266	−.327	−.416*	−.180
Retired	1.057***	.851***	.792***	.972***	.997***	.656***
Caregiver	.545**	.316	.394	.644**	.604**	.363
Student	.438	.587**	.425*	.474*	.403	.465*
Internet deprived	−.178	.028	−.196	−.127	−.121	−.039
Year	−.065	−.070	−.051	−.058	−.045	−.046
Constant	6.277***	7.626***	8.802***	5.509***	4.714***	7.875***
Region FE	YES	YES	YES	YES	YES	YES
Observations	2804	2788	2807	2807	2807	2785
R-squared	.071	.114	.223	.114	.093	.257

Note: Robust standard errors in parentheses. BME, Black and ethnic minority.
***$p < .01$; **$p < .05$; *$p < .1$.

Thus, based on the above, Hypothesis 1 (that there is a trade-off between religiosity and pain from loneliness) is confirmed. Apparently, religiosity makes people .397 points happier in life on a 1–10 Likert scale. Put differently, religiosity trades off for the pain from social relative deprivation in terms of not having a companion and feeling alone. The tests on relative deprivation in more general terms and its relationship with loneliness, religiosity and life satisfaction follow.

The estimations related to testing Hypothesis 2 are presented in Tables 7–9. Table 7 shows that clearly religious people of any denomination are worse off than nonreligious people in terms of the Census 2011 proxy for income/wage. Loneliness seems to be negatively associated with income, which in reverse means that potentially less wealthy people are the ones who feel more lonely.

Table 8 shows the decomposition of the proxy for income/wage among people who live alone, who are religious, or who are young. As seen, all these categories are clearly relatively deprived in terms of income. Young people however are not more religious, which might be a confusing effect originating from the nonlinearity in age we have been observing in all results presented up to here. Thus, the general disenchantment hypothesis remains contestable.

Table 9 presents results that show treatment effects alternatively for being religious or being a person living alone and the association of this treatment with one's income. Individuals were initially matched on all determinants that could be expected to explain differences in wage according to Mincer's equation. As the two groups are matched on what should be explaining the wage of people, no difference between the treated and nontreated classes should be detected. If the treatment effect is statistically significant even after the propensity score matching, this can

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TABLE 4 Religiosity and its alleviating effect on loneliness from living alone.

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	**Lonely**	**Not alone**	**Not alone (help)**	**Lonely**	**Not alone**	**Not alone (help)**
Living alone	.659***	−.067***	−.042***	.697***	−.059***	−.046***
Religious	−.013	.103***	.017*	.117	.129***	.005
Living alone##religious				−.356**	−.070	.033
Age	.152	−.087**	−.035*	.144	−.088**	−.034*
Age squared	−.034**	.009	.004*	−.033**	.009	.004*
Male	−.082*	−.070***	−.036***	−.090**	−.072***	−.035***
BME	−.082	.053*	.008	−.085	.052*	.008
Employed	−.317***	.058**	.039***	−.322***	.057**	.039***
Self-employed	−.404***	.113**	.046**	−.402***	.113***	.046**
Unemployed	.165	−.101**	−.002	.161	−.102**	−.002
Retired	−.243***	.069**	.028	−.241***	.069**	.028
Caregiver	−.067	−.112**	−.042	−.068	−.112**	−.042
Student	−.138	−.011	.040	−.140	−.011	.040
Internet deprived	−.162**	−.036	−.024	−.163**	−.036	−.024
Year	.018	−.008	−.012	.015	−.009	−.012
Constant	2.640***	.911***	1.039***	2.657***	.914***	1.037***
Regional FE	YES	YES	YES	YES	YES	YES
Observations	2785	2785	2785	2785	2785	2785
R-squared	.135	.037	.033	.137	.038	.033

Note: Robust standard errors in parentheses. BME, Black and ethnic minority.
***$p < .01$; **$p < .05$; *$p < .1$.

be attributed to the category to which the treated and control group are defined. This is indeed what we see to be the case in Table 9. Moreover, apparently religiosity is more clearly associated with relative deprivation than living alone is. All tests for the treatment effect manage to detect a strong statistical significance of religiosity as a treatment.

It is noteworthy that across all specifications the nonlinearity of the relationship between age and life satisfaction and the disutility from loneliness and relative deprivation was confirmed as follows. Being "not-alone" is U-shaped in age (in line with Blanchflower & Oswald, 2008). Loneliness is hill-shaped in age (in line with Blanchflower, 2020, on unhappiness). Religiosity is U-shaped in age—but clearly it is only an opium that affects the subjective experience of loneliness as a result of living alone and does not in itself result in people less often living alone. Thus, it is an opium that does not solve the problem, but alleviates the pain from it only.

The results show that Hypothesis 2 (stating that religiosity is associated with relative deprivation in economic terms) cannot be rejected. Clearly, these results seem to confirm the premises of the CBD Game of Enchantment, in the sense that on the individual level, *h*1, the hope of "not walking alone," seems to be a strong addition to the general life satisfaction by decreasing the feelings of loneliness in an individual. This makes a clear case for religious institutions to claim that they deliver a social welfare service. Yet, whether they provide this social welfare service efficiently and effectively remains to be analyzed on the macro level. The above micro analysis can inform this macro analysis as follows.

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TABLE 5 Trust and altruism in loneliness.

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	**Lonely**	**Not alone**	**Not alone (help)**	**Lonely**	**Not alone**	**Not alone (help)**
Living alone	.658***	−.044**	−.041***	.698***	−.058***	−.046***
Religious	.145*	.119***	.001	.122	.100***	.001
Living alone##religious	−.376***	−.063	.036*	−.360***	−.063	.035*
Age	.129	−.082*	−.032	.150	−.093**	−.036*
Age squared	−.029**	.008	.004	−.034**	.010*	.005*
Male	−.101**	−.068***	−.034***	−.092**	−.066***	−.034***
BME	−.064	.044	.005	−.085	.046	.007
Employed	−.313***	.053**	.038***	−.323***	.057**	.039***
Self-employed	−.351***	.094**	.039**	−.401***	.103**	.045**
Unemployed	.131	−.091*	.002	.159	−.101**	−.001
Retired	−.222**	.062*	.025	−.243***	.067*	.027
Carergiver	−.070	−.112**	−.041	−.068	−.107**	−.041
Student	−.105	−.025	.035	−.145	−.022	.039
Internet deprived	−.194***	−.024	−.020	−.165**	−.022	−.022
Year	.007	−.006	−.011	.015	−.007	−.012
Trust	−.269***	.103***	.036***			
Volunteer (informal)				.028	.045**	.004
Volunteer (formal)				−.052	.060***	.013
Constant	2.744***	.881***	1.025***	2.646***	.898***	1.036***
Region FE	YES	YES	YES	YES	YES	YES
Observations	2785	2785	2785	2785	2785	2785
R-squared	.148	.049	.040	.138	.043	.034

Note: Robust standard errors in parentheses. BME, Black and ethnic minority.
***$p < .01$; **$p < .05$; *$p < .1$.

Macro

Social welfare analysis of religious institutions

The cost of supporting the work of the Church of England service in 2019 is GBP 8.7 billion (bn), according to The Church Commissioners for England Annual Report (2020). In this section, I estimate whether this expense is worth it in economic and social welfare terms. First, I conduct a well-being cost–benefit analysis, estimating the benefit from the Church activity to religious citizens of Christian self-identification. I wish to calculate the trade-off between not being religious and income, as I assume that being religious alleviates mental health problems and thus saves money for mental healthcare to the individual who is religious. Put differently, I can allocate economic benefit to religiosity by considering the gain it represents in terms of how it increases life satisfaction—and considering the latter as a contribution against light mental health problems such as anxiety and depression which cost the society expenses for mental healthcare. According to the Office for National Statistics, the costs in the UK for mental health in 2019 amounted to GBP 12.2bn and there were in total 1,350,695 patients who benefited from UK NHS mental healthcare. Thus, the average

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TABLE 6 Lack of cultural persistence of altruism in loneliness.

Variables	(1) Volunteer (formal)	(2) Religious	(3) Volunteer (formal)	(4) Not alone
Blood donation	.000		.000	
Predicted volunteer (formal)		.160***		.086***
Age	.088**	−.060**	.097***	−.093**
Age squared	−.010*	.010***	−.011**	.010*
Male	−.063***	−.011	−.058***	−.071***
BME	.018	−.115***	.018	.041
Employed	−.012	−.004	−.015	.057**
Self-employed	.093**	.046	.086*	.117***
Unemployed	−.033	−.036	−.030	−.105**
Retired	.001	−.013	−.003	.067*
Caregiver	−.041	.004	−.033	−.112**
Student	.020	.056	.020	−.005
Alone living	−.012	−.026**	−.012	−.070***
Internet deprived	−.113***	.009	−.113***	−.037
Year	.023	.002	.018	−.007
Religion FE	−.153*	.052*	−.130	−.067
Constant	−.061	.233***	−.110	.935***
Observations	2788	2785	2807	2788
R-squared	.028	.066	.033	.037

Note: Robust standard errors in parentheses. BME, Black and ethnic minority.
***$p < .01$; **$p < .05$; *$p < .1$.

cost of mental health per person with mental health problem is 12.2bn/1,350,695 = GBP 903,238. Thus, by avoiding mental health problems a person avoids an expense of GBP 903,238. On average, the individual-level analysis data shows that religiosity benefits the believers by increasing their overall life satisfaction measured on a zero-to-ten Likert scale by .397 points. According to Sacks and others (2010), a change of 1% in log annual gross household income increases life satisfaction in England in 2019 with .007 points. Dolan and others (2021) use this estimate with the gross household income in England in 2019–2020 estimated at GBP 7400. That is how it can be estimated that a counterfactual scenario where the believers in the UK were nonreligious (and thus suffered mental health trauma due to increased anxiety and depression), expressed in the foregone life satisfaction that religiosity brings, on average, GBP (90 × .397/.007) = 5104.28. It would take each individual an additional GBP 5104.28 to reach the same level of satisfaction if they were not religious. The religious people within the Christian denomination in England and Wales in 2020 were about 59% of the total population of 63.2bn people in the UK. Thus, a total of GBP ([59% × 63.2] × 5104.28) = 190,317bn.

This is likely to be the uppermost bound of the benefit because it is not certain that everyone who lost some life satisfaction will need expenses for mental healthcare. However, the benefit seems clearly larger than the cost of GBP 8.7bn, namely the net benefit being GBP 190.309bn. Yet, this is potentially the social cost benefit analysis that is evolutionarily explaining why the religious institutions are one of the oldest (Gill, 2021) and have survived over time as a buffer for huge costs for mental health issues.

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TABLE 7 Economic relative deprivation and religiosity.

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	**Alone (all types)**	**Alone (all types)**	**Alone (all types)**	**Religious**	**Religious**	**Religious**
Male	−.126***	−.130***	−.128***	−.175***	−.173***	−.174***
Single	1.930***	1.609***	2.040***	−.040	−.112***	−.056
Separated (married)	2.362***	2.348***	2.367***	−.010	−.012	−.008
Widow	2.994***	3.081***	3.042***	.087	.122	.070
Student household	−.191***	−.454***	−.205***	.171***	.147***	.178***
Immigrant	.148***	.167***	.171***	−.152***	−.162***	−.159***
Health (positive)	−.323***	−.492***	−.323***	−.120*	−.149**	−.121*
White	.023	.057	.027	.383***	.389***	.382***
Employee	−.273***	−.269***	−.271***	−.065	−.088**	−.063
Self-employed	−.350***	−.299***	−.381***	−.000	−.010	.007
Unemployed	.112*	.230***	.152**	.072	.058	.065
Full-time student	.031	.148*	.120	−.051	−.069	−.070
Agriculture	−.276***	.456***	−.164	.334**	.390***	.295**
Mining	−.237***	.497***	−.139**	.135**	.192***	.101
Construction	−.347***	.360***	−.241***	.222***	.276***	.187**
Wholesale	−.218***	.471***	−.101*	.039	.089	.002
Hospitality	−.029	.659***	.079	.029	.079	−.006
Transport	−.180**	.561***	−.082	−.085	−.027	−.118
Finance	−.287***	.459***	−.175*	−.123	−.061	−.158
Real estate	−.199***	.530***	−.091	−.098	−.045	−.133*
Public administration	−.183***	.582***	−.092	−.125*	−.063	−.158**
Education	−.284***	.464***	−.193***	.051	.119*	.020
Healthcare	−.113*	.617***	−.016	.122*	.178***	.088
Socialworker	−.211***	.491***	−.102	.002	.054	−.033

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TABLE 7 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	**Alone (all types)**	**Alone (all types)**	**Alone (all types)**	**Religious**	**Religious**	**Religious**
Age	.711***		.697***	−.047		−.019
Age squared	−.055***		−.053***	.015***		.011*
Young		−.320***	−.233***		−.032	.044
Old		.077*	−.150**		.366***	.097
Constant	−2.724***	−1.187***	−2.763***	1.012***	1.103***	.987***
Observations	19,649	19,649	19,649	19,649	19,649	19,649

Note: Robust standard errors in parentheses.

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

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TABLE 8 Various forms of deprivation and religiosity.

Blinder-Oaxaca	**Decomposition**			***N*** **= 13,881**	**Blinder-Oaxaca**	**Decomposition**			***N*** **= 13,881**
	1	Alone (all types)	=	0		1	Young	=	0
	2	Alone (all types)	=	1		2	Young	=	1
	Proxy for income	Coef.	Std. Err.	*z*		Proxy for income	Coef.	Std. Err.	*z*
Differential					Differential				
	Prediction_1	5.006	.026	192.15		Prediction_1	4.907	.026	186.56
	Prediction_2	4.476	.038	118.05		Prediction_2	4.669	.037	125.14
	Difference	.530	.046	11.52***		Difference	.238	.046	5.22***
Blinder-Oaxaca	**Decomposition**			***N*** **= 13,881**	**Blinder-Oaxaca**	**Decomposition**			***N*** **= 19,649**
	1	Religious	=	0		1	Young	=	0
	2	Religious	=	1		2	Young	=	1
	Proxy for income	Coef.	Std. Err.	*z*		Religious	Coef.	Std. Err.	z
Differential					Differential				
	Prediction_1	5.291	.069	76.20		Prediction_1	.907	.002	375.69
	Prediction_2	4.787	.023	211.31		Prediction_2	.877	.005	191.48
	Difference	.504	.073	6.91***		Difference	.030	.005	5.73***

***$p < .01$.

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TABLE 9 Relative deprivation, loneliness, and religiosity.

The treatment is *alone (all types)*						The treatment is *religious*					
Alone (all types)	**Freq.**	**Percent**	**Cum.**			**Religious**	**Freq.**	**Percent**	**Cum.**		
0	13,281	67.59	67.59			0	1980	10.08	10.08		
1	6368	32.41	100			1	17,669	89.92	100		
Total	19,649	100				Total	19,649	100			
	***n*. treated**	***n*. control**	**ATT**	**Std. error**	***t*-value**		***n*. treated**	***n*. control**	**ATT**	**Std. error**	***t*-value**
Nearest neighbor matching	6368	8877	−.33	.11	−3.07	Nearest neighbor matching	17,669	1340	−.37	.06	−6.13
Kernel matching	6368	13,273	−.12	.09	−1.40	Kernel matching	17,669	1980	−.54	.08	−6.87
Stratified matching	6368	13,273	−.13	.12	−1.04	Stratified matching	17,669	1980	−.51	.10	−5.31

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Yet, according to Max Weber, an age of disenchantment exists, which means that the percentage of believers should be gradually decreasing over time. Even though this is contestable, what is the break-even number of still-enchanted believers that will still justify the existence of the Church of England? If we consider the current costs for delivering the service of the Church as fixed costs, and assume that no further variable costs could exist, then the break-even point of number of believers is BEP = (8.7bn/9032 − 0) = 963,200 people. Put differently, the Church of England can still be of benefit to the society at its present costs without incurring a social loss as long as there are at least around a million believers in its teachings. This would also be true depending on whether the psychological alleviation effect from religion might vary with the mass of followers of the religion (as club theory might suggest, see Iannaccone, 1992), but that is what is assumed here for simplicity.

The above well-being cost–benefit analysis could be sensitive to biased estimation of the income coefficient. Therefore, an alternative quantification of the social benefit could be sought through an income-free estimate or the so-called cost-effectiveness measure. The cost-effectiveness ratio for the Church of England can be estimated as an average cost effectiveness ratio: (.397)/(8.7bn/37.288bn) = .0017. This can be compared with the cost-effectiveness of the NHS England health program Improving Access to Psychological Therapies (IAPT), which targets serving patients with mild depression and anxiety. By using what is reported by Gyani and others (2013) and Layard and Clark (2014) about the IAPT, Dolan and others (2021) calculate that the cost effectiveness ratio for IAPT amounts to .0042. Thus, apparently, while the clerical service does generate social welfare, the mental health therapeutics of its civil counterpart (the NHS) seem to be more than twice as cost effective in curing losses of life satisfaction. Thus, while being useful, the religious institution is not the most efficient way of handling the social costs of loneliness and its related mental health issues. It is however not as crowded out as its lower efficiency would suggest (Gruber & Hungerman, 2007). Thus, its long-term survival and the current persistence of enchantment pose an interesting paradox that is worth further exploration.

Monitoring transformation

Reverse engineering of relative deprivation and religion trade-offs

According to the Game of Enchantment and Vox-Populi framework presented earlier, there is an individual trade-off between switching to being religious in a subversive religion and relative deprivation. The places that accumulated higher shares of such individuals appeared to be places that voted more for Brexit in 2016 than against it. So, the concentration of people signaling to others their loss of hope for not walking alone by switching to subversive religions provides a fairly reliable early warning signal concerning how many people in the overall distribution of voters will tip toward protest voting as places left behind.

Starting from this vantage point, I can derive the currently experienced trade-off between the mainstream religion and relative deprivation in any point of time. Next, I can check the speed of loss of religious supporters experienced in the past five years and use it to predict the coefficient in fiveyears' time, assuming this to be the speed of increase in the current experienced trade-off over the next five years. I consider the derived current and future trade-off levels as an interval of varying efficiency of religion to cure relative deprivation and compare it against the critical threshold trade-off level found to be associated with the Brexit vote, for which I know that once the country tipped over this threshold and ended in the Brexit protest voting. This threshold is the reported religious trade-off with relative deprivation leading to self-identification as a witch—of .310 (Tubadji, 2022). Thus, I can monitor whether this threshold is within the derived current and future trade-off interval. If the threshold is within the interval, the current system is approaching closer to a protest vote that is likely to disrupt the

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current socio-economic system. Thus, a religious-efficiency-for-social-well-being alert system becomes salient that can inform us early on whether a Polanyian-type "Great Transformation" event is soon to erupt due to untreated relative deprivation in which the individual feels left behind and "walking alone."

Namely, to implement this methodology, I obtain here the average parochial fees of the Church of England (which amounts to 130.58 GBP) and employ the previously discussed monetarized gain in life satisfaction due to religion (amounting to GBP 9056) and previously discussed trade-off between income (i.e., economic gain) and life satisfaction: .007. Thus, by substitution in the marginal rate of the substitution formula, we reverse engineer the average aggregate trade-off between being religious and not being religious in the country in 2011 to amount to: $(.007 \times 90)/1.3058 = .48$. Thus, .48 seems to be the trade-off between being a follower of the Church of England and not being a member of this Church in 2011. This apparently is coming close to the coefficient of the trade-off in times of pre-Brexit escalation which Tubadji (2022) reports to be .310 (the propensity score matching coefficient linking identification as a witch as the cure for pain from relative deprivation).

To predict the trajectory of this trade-off in the next five years, I obtained the change of Church of England membership between 2006 and 2011. The Church of England reports 1.7 million (mln) people at least once a week at church in 2005 and 600,000 people having departed from membership in the Church of England over the five-year period until 2011, when the Church of England reported 1.1 mln people at least once a week at church. I use this speed of change to predict the 2016 trade-off between religion and nonreligion as in: $(.6–1.7)/1.7 = -.65$. Then, using the estimated trade-off between following a religion and nonreligiosity estimated at .48 and assuming it can be expected to change in the next five years up to: $(.48–.65 \times .48) = .168$. Thus, approximately .17 is the predicted trade-off between religiosity and nonreligiosity in 2016.

I can now compare whether the trade-off between religion and relative deprivation known from Tubadji (2022) is between the brackets of the current and predicted religion and nonreligion trade-offs in, respectively, 2011 and 2016. As we see, the predicted by Tubadji (2022) critical threshold level of the trade-off is .310 and it is between .48 and .17, so the critical inflection point related to individual religion–nonreligion trade-off where the system switches from cooperation to collapsing of the contractual curve in the Altruistic Vox Populi was expected to be reached within the period 2011 to 2016 as the critical level of .03 reported by Tubadji (2022) was predictably surpassed within this period 2011–2016. This is how in 2011, using data for the loss of efficiency of the religious institution in serving the "not walking alone" need of people led to the overall Brexit win vote, which qualifies as a reset of the entire UK political system with regard to its EU position.

CONCLUSIONS

The current analysis confirms that religiosity is associated with different forms of relative deprivation (loneliness in terms of social relative deprivation and income in terms of economic deprivation). The feelings of pain from the deprivation seem to be traded successfully for the hope of not walking alone that is delivered by religiosity to the believer. Identifying this mechanism linking religiosity to life satisfaction helps to put a number to the increment that the hope of not walking alone adds to individual life satisfaction, which in the data under analysis seems to amount to .397 of a point on a scale from 0 to 10. This number informs us on the micro-trade-off between religion and income and allows us to derive the aggregate social welfare contribution of religion-related institutions and to find their costeffectiveness. The latter is compared against the cost effectiveness of alternative secular channels for the alleviation of mental health and depression, i.e., loss of life satisfaction. It appears that the secular health

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program is more than twice as efficient as the religious institution. Ultimately, a new methodology is showcased that uses monitoring the efficiency of the religious institution in alleviating the pain from relative deprivation through the hope of "not walking alone" (which seems to be its painkillerfunction to the individual) in order to predict the likelihood of a "Great Transformation" of the political scenery due to game-changing protest voting. Specifically, this methodology entails reverse engineering the current average individual relative deprivation level in the UK and predicts its level in a five-year period. The interval between current and predicted relative deprivation is examined for inclusion of the relative deprivation threshold at which the political system tips in a Polanyian sense into a protest and a re-setting the system transformation.

Thus, the current analysis is complementary to the study of Tubadji (2022) on self-identification as a witch in the UK and the Brexit vote in two ways. Tubadji (2022) showed that relative deprivation associates with disenchantment with the traditional religious institution and self-identification with a subversive religious belief such as witchcraft on the individual level and that next the special clustering of this self-identification in 2011 predicts the Brexit vote. The current study adds to this first by clearly identifying the well-being mechanism assumed in Tubadji (2022) as an explanation for the religious self-identification—namely, the impact of relative deprivation on the level of happiness and life satisfaction of the individual and the ability of religion to mediate this effect. Tubadji (2022) and earlier studies such as Hatcher and others (2006) found statistical associations hinting toward the presence of this link. The current study is the first to empirically test the presence of this well-being and economics mechanism behind religious self-identification. Second, Tubadji (2022) examines the link between individual self-identification clustered on the regional level and the local Brexit vote, while the current study shows that the overall win of the Brexit vote on the UK level could also be predicted as a general reset of the system by using the novel reverse-engineering methodology offered here.

In a broader context, the present study raises a few noteworthy points. First, it seems that loneliness is a feeling that persists over time that is indifferent to shocks. This suggests that a treadmill of unhappiness might exist. As we know from Prospect Theory, negative feelings are more intense and hence probably stickier. Thus, the nonlinearities in loneliness and unhappiness are worth further scholarly attention. Second, this study shows the well-being-related mechanism of the formation of religious beliefs (enchantment) that underlies the cost and benefit analysis of this club. If one feels as if they are walking alone, religious faith seems to be a rational choice taken to decrease the pain from uncertainty in one's life. This is in line with Douglas North's general take on culture and institutions as a means for decreasing uncertainty in human interaction (Denzau & North, 2000; North, 2010) and Buchanan's claim that people prefer to live in uncertainty rather than face the full responsibility of one's choices (Buchanan, 2005). Thus, on the demand side (rather than the classical supply side) of the religious choice as an opium for the masses, the Marxist hypothesis seems to emerge as a conclusion from the findings in the present study. Religion is a self-administered opium where people choose to believe in order to alleviate the mental health suffering that stems from uncertainty. The study also adds to the recent literature on well-being and the trade-off between pain and employment. While Piper and others (2021) robustly documented with panel data the trade-off between physical pain and employment, the current study demonstrates that a trade-off between psychological pain from uncertainty is also regularly traded off for economic gains. Finally, this article is the first to provide strong evidence that radicalization is literally a process of the "madness of the crowd," where the madness—the tipping into radical behavior—is shown to be a function of mental pain from relative economic deprivation beyond the hope of help from the current system.

The limitations of this study are entailed in the imperfect datasets and measures and their scales. Yet, this study has the merit of outlining an analytical approach to quantify the impact

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of intangible cultural capital such as religious beliefs; it also demonstrates how, on the individual level, this impact can be used for quantifying and analyzing the efficiency and effectiveness of institutions catering for the provision of such softer social needs of the population that they serve. Thus, the novelty of this study is dual: (i) it obtains the quantification of the individual effect of an immeasurable part of human behavior; and (ii) it proposes a related to the micro-quantification macro-methodology for the evaluation of the effectiveness of the institutions serving this same part of human behavior.

Finally, this analysis is part of a larger agenda for exploration of the link between individual beliefs in cultural narratives and the social costs and benefits from the institutions that maintain those narratives through their power, pursued by the CBD paradigm (see Tubadji, 2021, 2022). For the cases of religiosity and loneliness, a further exploration of interest will be the comparison between the cost effectiveness of art participation programs that have a similar mental-health-pain alleviation effect (see Tubadji, 2021). Art services can be compared with religious services, following the methodology for estimating the cost effectiveness of the Church and the health service programs for mental health, as shown in this study. It is also worthwhile to explore the chain of the effect from religiosity and loneliness to loneliness and productivity. It is well known that life satisfaction affects individual worker productivity. It is interesting to note here that the literature reports an association (but a negative one) between religiosity and innovation (Bénabou et al., 2015, 2022). How the improvement from religiosity on productivity through improved life satisfaction gets lost in the process of seeking innovation hides interesting pockets in which to explore the balance in the dynamics between religiosity and life satisfaction and how they change over time. The magnitude of the changes in both religiosity and life satisfaction in response to shocks such as the COVID-19 pandemic and their potential mutually neutralizing effects that leave happiness levels unaffected is also an avenue that might merit further exploration.

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APPENDIX 1

Descriptive statistics of *community life COVID-19 survey (2019–2020)* dataset

Variable	Definition	Obs	Mean	*SD*	Min	Max
Lonely	Self-reported frequency of feeling lonely	2812	2.67	1.21	1	5
Living alone	Not living in a couple	2793	.39	.49	0	1
Not alone	Having more than one person to talk to	2812	.70	.46	0	1
Not alone (help)	Having someone to help if need be	2812	.96	.20	0	1
Religious	Member of religious organization	2809	.11	.32	0	1
Satisfied	Self-reported level of life-satisfaction	2812	6.97	2.09	0	10
Trust	Self-reported trust in people in the community	2812	.44	.50	0	1
Volunteer (informal)	Informal volunteer during the last 12 months	2812	.46	.50	0	1
Volunteer (formal)	Formal volunteer during the last 12 months	2812	.17	.38	0	1
Blood donation	Number of donors of blood	2812	16,217	6502	229	25,113
Income	Category of index of deprivation	2812	2.91	1.38	1	5
Age	Category defined per decade after 18 years old	2807	4.29	1.43	1	6
Male	Gender male	2812	.42	.49	0	1
BME	Non-white by ethnicity & race	2812	.88	.33	0	1
Employed	Economic status—employed	2812	.43	.50	0	1
Self-employed	Economic status—self-employed	2812	.04	.20	0	1

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APPENDIX 1 (Continued)

Variable	Definition	Obs	Mean	*SD*	Min	Max
Unemployed	Economic status—unemployed	2812	.04	.21	0	1
Retired	Economic status—retired	2812	.26	.44	0	1
Carer	Economic status—carer	2812	.04	.20	0	1
Student	Economic status—student	2812	.03	.18	0	1
Internet deprived	Wheter using internet more than once a day	2812	.11	.31	0	1
Year	Whether during COVID (==1)	2812	.60	.49	0	1
North	Based on variable R_GOR	2812	.12	.32	0	1
Yorkshire	Based on variable R_GOR	2812	.08	.27	0	1
East Midlands	Based on variable R_GOR	2812	.08	.27	0	1
West Midlands	Based on variable R_GOR	2812	.10	.30	0	1
East of England	Based on variable R_GOR	2812	.11	.31	0	1
London	Based on variable R_GOR	2812	.23	.42	0	1
South East	Based on variable R_GOR	2812	.16	.37	0	1
South West	Based on variable R_GOR	2812	.09	.28	0	1

APPENDIX 2

Descriptive statistics of *uk census 2011* dataset

Variable	Obs	Mean	*SD*	Min	Max
Male	19,649	.49	.500	0	1
Single	19,649	.50	.500	0	1
Separated married	19,649	.03	.176	0	1
Widow	19,649	.05	.218	0	1
Student household	19,649	.23	.420	0	1
Immigrant	19,649	.06	.245	0	1
Health (positive)	19,649	.94	.230	0	1
White	19,649	.98	.133	0	1
Employee	19,649	.36	.480	0	1
Self-employed	19,649	.07	.247	0	1
Unemployed	19,649	.04	.187	0	1
Agriculture	19,649	.02	.123	0	1
Mining	19,649	.10	.295	0	1
Construction	19,649	.06	.238	0	1
Wholesale	19,649	.13	.332	0	1
Hospitality	19,649	.04	.191	0	1
Transport	19,649	.04	.205	0	1
Finance	19,649	.02	.140	0	1
Real estate	19,649	.06	.241	0	1
Public administration	19,649	.05	.227	0	1
Education	19,649	.06	.246	0	1

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APPENDIX 2 (Continued)

Variable	Obs	Mean	*SD*	Min	Max
Healthcare	19,649	.09	.289	0	1
Social worker	19,649	.03	.179	0	1
Age	19,649	3.80	2.185	1	8
Young	19,649	.26	.440	0	1
Alone (all types)	19,649	.32	.468	0	1
Proxy for income	13,881	4.84	2.538	1	9

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APPENDIX 3

Descriptive statistics before and after COVID-19, *community life COVID-19 survey (2019–2020)* dataset

Pre-COVID	Income	Age	Satisfied	Lonely	Living alone	Not alone	Not alone (help)	Religious	Trust	Blood	Volunteer (informal)	Volunteer (formal)
Income	1											
Age	.1985	1										
Satisfied	.1602	.0679	1									
Lonely	−.1175	−.208	−.4395	1								
Living alone	−.2232	−.0941	−.2323	.2533	1							
Not alone	−.0193	−.0036	.2334	−.1997	−.0918	1						
Not alone (help)	.0398	.0389	.1485	−.1159	−.083	.2134	1					
Religious	.0009	.0349	.0184	−.0058	.0149	.0443	−.0075	1				
Trust	.2658	.1779	.2641	−.2068	−.1848	.1205	.1092	.0035	1			
Blood	.0841	.0526	−.0395	.0069	−.001	.0157	.0137	−.0007	.0702	1		
Volunteer (informal)	.0705	.0634	.1007	.0053	−.0279	.0465	.0346	.1798	.1216	.004	1	
Volunteer (formal)	.0445	−.032	.0292	−.0201	−.0513	.0924	.0632	.1599	.0802	.0411	.2051	1

COVID	Income	Age	Satisfied	Lonely	Alone living	Not alone	Not alone (help)	Religious	Trust	Blood	Volunteer (informal)	Volunteer (formal)
Income	1											
Age	.1575	1										
Satisfied	.2272	.1862	1									
Lonely	−.1347	−.2016	−.4393	1								
Alone living	−.2240	−.1520	−.2493	.3062	1							
Not alone	.0479	−.0093	.2280	−.2575	−.0450	1						
Not alone (help)	.0775	−.0150	.1907	−.1871	−.0996	.2943	1					
Religious	.0431	.0833	.0998	−.0320	−.0394	.0927	.0545	1				
Trust	.2820	.2475	.2695	−.1819	−.1810	.1276	.1127	.1003	1			
Blood	.0609	−.0211	−.0219	.0342	.0351	.0366	−.0020	.0242	−.0173	1		
Volunteer (informal)	.1419	.0861	.1625	−.0329	−.0400	.1103	.0400	.1999	.2140	.0640	1	
Volunteer (formal)	.0922	.0567	.1112	−.0210	−.0217	.0796	.0317	.2001	.1265	.0412	.2876	1

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