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**RESEARCH ARTICLE**

# Belief in God, Confidence in the Church and Secularization in Scandinavia

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We used the three latest rounds of the religion module of International Social Survey Programme to study secularization in Denmark, Norway, and Sweden, focusing on belief in God. We restricted our sample to the affiliated with the majority Protestant churches and the unaffiliated and analyzed the trends toward disaffiliation and disbelief in God. Then, we studied the association between confidence in churches, religious/secular upbringing, and demographic controls with belief in God using multinomial logistic regression models. Our treatment of belief in God as a nominal variable allowed the inclusion of both the element of doubt and different images of God in the analyses. The trends toward disbelief in God and disaffiliation suggest that secularization in Scandinavia accelerated in 2008–2018 relative to 1998–2008. In Norway, these trends were already significant in 1998–2008. Disaffiliation and disbelief in God are strongly associated, as both ‘believing’ and ‘belonging’ decayed in the three countries and seem to be strongly intertwined. We found that confidence in churches, and the frequency of attendance at church services (even if only about yearly) during the formative years are powerful predictors of belief in God. The strength of the association between confidence and attitude toward the church’s power in society suggests that these two variables are fundamental to the conceptualization of belonging in the Scandinavian countries and very likely in a more general context.

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**Keywords:** Belief in God; Confidence in Churches; Religious Socialization; Secularization; Scandinavian countries; Multinomial logistic regression

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## Introduction

Secularization, broadly understood as the waning of religious symbols, beliefs, practices, and institutions within a society, is a phenomenon developing in most Western countries (Bruce, 2002, Norris and Inglehart, 2011, Bruce, 2011, Stolz and Könnemann, 2016, Stolz, 2020). The Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden) and the Scandinavian countries in particular (Denmark, Norway, and Sweden) are peculiar in this context, for the majority of their populations is still affiliated with the Lutheran majority churches, but their average levels of religious involvement and participation are among the lowest in the world (Inglehart and Welzel, 2005, Zuckerman, 2009, Norenzayan and Gervais, 2013). This seemingly odd condition results from two opposing forces. One is the centuries-old Protestant tradition that led to the Evangelical Lutheran churches’ establishment and integration within the states, which forged these nations’ social cohesion, political organization, and values (Dobbelaere, 2006, Nielsen and Kühle, 2011, Kasselstrand and Eltanani, 2013, Furseth, 2018c, Kühle et al., 2018). The

other is the advance of secularization in many Western countries (Cheyne, 2010, Norris and Inglehart, 2011, Lugo et al., 2012, Stolz and Könnemann, 2016, Pew-Research-Center, 2017), which leads to a decrease of the importance of religion in the peoples’ lives and is most visible in the trends toward disaffiliation from the main Protestant churches in the Nordic countries (Lüchau, 2010, Lüchau and Andersen, 2012).

## Definitions of Secularization

What is secularization, and how can it be explained? Sociologists have proposed several definitions of secularization and theories for explaining the observed changes in the importance of religion in terms of hypothesized causal mechanisms. Bryan Wilson (2016) considers secularization as the process by which religious thinking, practice, and institutions lose social significance. Steve Bruce (2002, 2011) defines secularization as the declining importance of religion for institutional role-playing in the state and economy, the decline of the social standing of religious institutions, and the decline of people’s display of religious beliefs, engagement in religious practices, and living in compliance with religious dictates. To Peter Berger (1999), secularization is the process of the waning influence of religious institutions and symbols in societies, which operates on three levels: 1) social-structural, where secular institutions progressively take over roles previ-

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ously played by religious institutions; 2) cultural, at which the art, literature, and philosophy become more detached from religion and sciences offer a more rational worldview; and 3) individual consciousness, where fewer individuals think and act based on religious dictates. The definitions by Steve Bruce and Peter Berger stress that secularization is a multidimensional phenomenon that includes both the macro (or systemic) and the micro (or individual) levels. Studies on religion may focus either on the systemic or public sphere (Furseth, 2018b) or on the level of individual religiosity (Allport and Ross, 1967, Glock and Stark, 1965, Jong et al., 1976, Gorsuch and Venable, 1983, Gorsuch and McPherson, 1989, Genia, 1993, Lemos et al., 2019). Individual religiosity is itself a multidimensional concept (Muel-ler, 1980), but the number and nature of these dimensions are still open to debate (Lemos et al., 2019). The 'believing'- 'belonging' paradigm (Davie, 1990) is often adopted as an analytical framework in secularization studies, although some authors proposed that individual religiosity should include three aspects, belonging, behaving, and believing, which must be considered together for defining a unified scale of religiosity (Keysar, 2014).

### **Theories of Secularization**

Sociologists have proposed several theories of secularization. For a recent review, see Stolz (2020). According to classical theory, advocated by the founders of sociology (Comte, Marx, Durkheim, Weber, and Spencer), the decline of religion is a consequence of modernization. Thus, the advances in science and technology and the increasing complexity and differentiation of modern societies make the waning of religion inevitable. By the mid of the twentieth century, classical secularization theory became increasingly criticized, as its predictions were not fulfilled (Luckmann, 1967). Wilson (2016) and Casanova (1994, 2001) also challenged the classical theory and emphasized the role of systemic differentiation (e.g., law, politics, education, etc.) in the secularization of a society. Casanova's theory (2001) proposes that secularization (the general transfer of functions and power from the religious to the civil spheres in modern societies) consists of three different but related processes: the historical and systemic differentiation between religious and secular institutions and norms; the general decline of religious beliefs and practices; and the "privatization" of religion. The first is the core process and the primary cause of systemic societal change, whereas the other two are its structural consequences (Casanova, 1994, 2001). Subsequent authors tried to explain how modernization leads to secularization based on quantitative analyses. Norris and Inglehart (2011) linked secularization to existential security. In their theory, religion is a device for coping with stress and anxiety that result from exposure to societal and individual risks; thus, religiosity is higher in countries exposed to these risks and low in modernized and wealthy countries. Other authors emphasized the role of education (Norris and Inglehart, 2011, Hungerman, 2014). Science and rational thinking are inherently incompatible with religious worldviews, and so the increasing levels of education lead to the individuals' gradual rejection

of religion. Parental socialization, religious or secular, is another theory explaining the intergenerational transmission of religiosity or secularization (Merino, 2012, Storm and Voas, 2012, Voas and Storm, 2012, Gervais and Najle, 2015, Maij et al., 2017). For example, religious upbringing and attendance at church services during the formative period (usually considered age 11–12) is a strong predictor of belief in God later in life (Gervais and Najle, 2015). However, it seems that parental socialization is not the only important factor. Urstad (2017) showed that having friends with different worldviews is also a significant predictor of disaffiliation in Norway. Another group of authors theorized secularization in terms of the decline of religious authority and confidence in religious institutions within societies (Hoffmann, 1998, Nicolet and Tresch, 2009, Hoffmann, 2013, Kasselstrand et al., 2017). Disappointment with the established religious institutions may lead to people's distancing from them (Lüchau and Andersen, 2012, Keysar, 2014).

One drawback of the secularization theories mentioned above is that they lack the actors' perspective (Stolz, 2020). The 'market theory' of religion is inspired by the principles of economy (Stark and Bainbridge, 1989, Iannaccone, 1991, 1992, Stark and Iannaccone, 1994, Sherkat and Wilson, 1995, Iannaccone, 1998). Accordingly, religion is a market with suppliers (churches and religious groups) and customers (believers) to which the law of supply and demand applies. Religious suppliers compete to provide 'religious goods' that the customers acquire by making rational choices. Zuckerman (2009) proposed that the monopoly of the Evangelical Lutheran Churches in the Scandinavian countries and the privileged conditions provided to them by the states led to poor performance by the Churches and thus to low levels of religiosity. The theory of religious-secular competition (Stolz and Könemann, 2016) extends the market theory by hypothesizing that secular institutions compete with religious ones for the fulfillment of the individuals' needs. The economic boom and cultural changes in the 1960's changed the regime of this religious-secular competition in favor of secular institutions (Stolz and Könemann, 2016).

### **Research Questions and Organization of the Present Work**

Most studies on secularization in the Nordic and Scandinavian countries have focused on the dynamics of religion in the public sphere (Furseth, 2018b) and the trends toward disaffiliation from the Evangelical Lutheran Churches (Lüchau and Andersen, 2012, Urstad, 2017). For example, Niemelä (2007) and Lüchau and Andersen (2012) have argued that disaffiliation in the Nordic countries is mostly associated with an attitudinal response to the perceived contribution of the Evangelical Lutheran Churches to social life, and not with a rejection of Christian faith. In comparison, the study of religious beliefs (such as belief in God) in Scandinavia has received less attention (Lüchau and Andersen, 2012). Nevertheless, religious beliefs are central in the scientific study of religion for several reasons. First, whether beliefs and practices decay at similar or different rates may provide (or not) support to the

hypothesis of the ‘privatization’ of religion (Casanova, 2001, Keysar, 2014, Furseth, 2018a). Moreover, despite the clear advance of secularization, most Scandinavians still hold some form of belief in God, even if the meaning of that belief may be diverse, and God’s significance to life small (Rosen, 2009). Finally, the association between tradition, affiliation, and attitudes toward the Evangelical Lutheran Churches and belief in God may yield interesting aspects of secularization in the Scandinavian countries.

In this work, we studied the association between a set of variables in the International Social Survey Programme (ISSP) Religion survey related to attitudes toward churches and religious organizations, and belief in God as the outcome (or response) variable in the Scandinavian countries during the last two decades. Although it would be of interest to consider all the Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden), we had to restrict our study to Denmark, Norway, and Sweden (the Scandinavian countries) in 1998, 2008, and 2018 rounds of the religion survey, because Denmark and Sweden did not participate in the 1991 round, and Finland and Iceland only participated in the 2018 round. Considering the previous definitions of secularization, we focused on the individual level. More specifically, we addressed the relationship between attitudes toward the churches as a form of ‘belonging’ and a particular form of ‘believing,’ namely believing in God. Furthermore, we restricted our study to the two major groups, the Protestants affiliated with the Evangelical Lutheran Churches and the religiously unaffiliated. We removed the respondents affiliated with minority Protestant churches because the latter do not have historical ties with the states, and their members have levels of belief and involvement very different from those affiliated with the Evangelical Lutheran Churches. The research questions addressed in this work are: in the Scandinavian countries and the period 1998–2018 covered by the three latest rounds of the ISSP Religion survey,

- Were the trends toward disaffiliation (as representative of ‘belonging’) and disbelief in God (as a form of ‘believing’) both significant during the period considered?
- What is the relative importance of the association between confidence in the church and the type of socialization (religious or secular), and belief in God?

and

- Are there notable differences in the patterns of this association within each of the three countries (Denmark, Norway, and Sweden)?

To answer our first research question, we computed the significance of the linear trends of disaffiliation, and of belief in God for both majority Protestants and the religiously unaffiliated, for the three countries separately. To answer our second research question, we first performed a series of bivariate analyzes of the association between a set of selected independent variables (or covariates) and belief in God, based on two-way contingency tables.

Then, we built multinomial logistic regression models for the significant variables obtained in the previous step. To answer our final research question, we built multinomial models for each country separately, and compared the results using a tabular presentation method that highlights both the covariates’ significance and their effect size in a simple way.

The novelty of the present work for the empirical study of religion in Scandinavia is the consideration of the different levels of belief in God as a nominal variable, which allows for the inclusion of both the element of doubt and different concepts of God (as a supernatural agent with human-like attributes or a more abstract higher power) instead of just focusing on the proportions of people that do not believe in God or are sure that God exists. Another advantage of our approach is the focus on the association between the type of socialization (religious or secular) and confidence and authority of churches with belief in God.

The remainder of this work is organized as follows. The next section presents a review of previous works relevant to the present study. The Data and Methods section contains a description of the initial set of selected variables, the variables’ transformation, the bivariate analyses of their association with the response variable, and the methods we used for presenting the results of the multinomial logistic regression. The next three sections contain the description of the results, the discussion, and the conclusions, respectively.

### Religion in Scandinavia: Tradition vs Secularization

The dynamics of religion peculiar to the Scandinavian countries results from two opposing forces, the centuries-old Protestant tradition, and the effects of secularization. The Reformation in the sixteenth century (also called the Lutheran Reformation or the Protestant Reformation) led to the establishment of Evangelical Lutheran state churches in the Nordic (and thus in the Scandinavian) countries (Dobbelaere, 2006, Nielsen and Kühle, 2011, Furseth et al., 2018). In Denmark-Norway the Reformation was accomplished in 1536–1537, but in Sweden the process was longer (it started in 1527 and ended in 1593). The Evangelical Lutheran churches were integrated with the states, which assumed control over them, and every citizen had to be a member. The state churches held the monopoly of religion, and minority churches began to be recognized only in the nineteenth century.

Today, the Evangelical Lutheran Church of Denmark is the only remaining state church of the Scandinavian countries, with about 74% of Denmark’s population affiliated. The Church of Norway is also an Evangelical Lutheran church with nearly 69% of Norway’s population affiliated. During the nineteenth and twentieth centuries, it gradually lost most of its administrative functions to secular institutions, and in 2017 it became a legal entity separate from the state. The Church of Sweden is also an Evangelical Lutheran denomination and became independent from the state in 2000. It has a share of 56% of Sweden’s population affiliated. Thus, the historical Protestant tradition was central to the identity, continuity

with the past, social cohesion, and political organization of the Scandinavian nations (Kasselstrand and Eltanani, 2013, Furseth, 2018a). This type of systemic link to religion, strongly rooted in cultural tradition but with low levels of religious beliefs and participation is known as “Cultural religion” (Demerath, 2000).

The strong historical ties between the Evangelical Lutheran churches and the states, which persist to the present day (Dobbelaere, 2006, Nielsen and Kühle, 2011, Kühle et al., 2018), albeit to a weaker extent that differs from country to country, explain why the majority of the Danes, Norwegians, and Swedes are affiliated with the main Protestant churches, although with low levels of participation and involvement. For instance, using the ISSP 2008 religion data, Kasselstrand (2015) showed that in Sweden traditional religious beliefs (in God, heaven, and hell) are not significant predictors of belonging to the Church of Sweden relative to no religion, although they are significant predictors of belonging to other religions that are minority in the country (Free Churches, Catholic, Islam, and others). One limitation of Kasselstrand’s (2015) work is that it is restricted to Sweden and does not consider the other two Scandinavian countries. She suggests that religion in Sweden is more of a cultural nature (“cultural religion”) than an expression of involvement, and thus a form of belonging without believing. Nevertheless, other scholars suggest that religions may still shape the Scandinavian’s perceptions and beliefs, and many people turn to the church at pivotal moments in life like marriage or death (Davie, 1990, Urstad, 2017).

Why, then, do the Scandinavian countries rank among the least religious? The answer lies in the structural changes resulting from secularization and development (Norris and Inglehart, 2011, Stolz and Könnemann, 2016, Pew-Research-Center, 2017, Stolz, 2020). At the systemic level, the Scandinavian countries check almost every causal explanation proposed in the secularization theories mentioned in the Introduction: they have consistently high ranks in the Human Development Index; their populations are highly educated; and they have strong secular institutions (governmental, health, cultural, educational, etc.) that efficiently fulfill individuals’ needs that religious institutions could previously have provided (Stolz and Könnemann, 2016). These macro-level factors contribute to diminishing the importance of religion at the individual level, even though the visibility of religion remains high in several areas of public life (Furseth, 2018a), possibly because religion is so strongly rooted in culture (Kasselstrand, 2015; Demerath, 2020).

We now turn from the macro to the individual level and the relationship between different aspects of ‘belonging’ and belief in God. The first important factor to consider is the causal influence of religious or secular socialization. Previous studies demonstrated that the intergenerational transmission of religion during one’s formative period strongly influences religiosity later in life (Myers, 1996, Voas and Storm, 2012, Storm and Voas, 2012, Gervais and Najle, 2015). In the Scandinavian countries, religion is highly institutional and cultural, and having been raised Protestant or irreligious strongly influences the current

religious denomination (see e.g. a recent study by Urstad (2017) on disaffiliation in Norway). In particular, the parents’ churchgoing frequency during a child’s formative years appears to be essential for the intergenerational transmission of religion (Storm and Voas, 2012). In this context, we may mention the theory of Credibility Enhancing Displays (CREDS) (Heinrich, 2009), which provides a psychological framework for explaining the acquisition and rejection of religious beliefs due to consistent or conflicting exposures to religious experiences during the formative period (Lanman, 2012, Lanman and Burmester, 2017, Langston et al., 2018). Thus, it is appropriate to reexamine the significance and influence of the frequency of church attendance during the formative years as a predictor of belief in God later in life in the Scandinavian countries, for they should be no exception to the importance of CREDS and socialization to religiosity.

According to some authors, individual religiosity involves both a ‘believing’ or spiritual dimension and a ‘belonging’ or institutional dimension (Davie, 1990). Nicolet and Tresch (2009) propose that ‘belonging’ consists of two elements: involvement, expressed by attendance, participation, and affiliation, and assessment, which is associated with judgment, confidence, and satisfaction with the church. Thus, the trust in the church appears as a form of ‘belonging’ distinct from affiliation, although they are strongly related. For example, strongly mediated reports of priests’ child abuse, bishops with affairs, and other cleric wrongdoings undermine confidence in the church and lead to distancing from institutional religion (Field, 2014, Keysar, 2014, Bontan and Perez-Truglia, 2015, Turpin et al., 2019), even in a highly religious country like Ireland (Donnelly and Inglis, 2010). The conflict between the churches’ public positions and the societies’ principles, values, and beliefs (like sexual behavior, family issues, and political orientation) is important for the decay of ‘belonging’ in terms of confidence in the church and the trust in religious leaders (Hoffmann, 1998, Nicolet and Tresch, 2009, Lüchau and Andersen, 2012, Hoffmann, 2013, Field, 2014, Kasselstrand et al., 2017, Kasselstrand, 2019), because of the interplay between ‘cultural religion’ and cultural values in Scandinavia (Kasselstrand, 2015; Demerath, 2020).

Do ‘believing’ and ‘belonging’ decay at similar or different rates? If confidence in the church is a form of ‘belonging,’ it must have a strong association with affiliation, but is there a strong association with ‘believing’ also? Some authors claim that religious beliefs are more persistent than practices (Davie, 1990, Lugo et al., 2012, Zuckerman, 2009), but this claim is debatable, at least in the case of the Scandinavian countries. For example, the ISSP data sets show that the percentage of the religiously unaffiliated in Scandinavia increased from 14.1% to 24.5% between 1998 and 2018. In the same period, the percentage of respondents that do not believe in God increased from 14.9% to 30.0%, and the percentage of those who are sure that God exists decreased from 11.2% to 5.6%. There is little doubt that both ‘believing’ and ‘belonging’ decayed in Scandinavia. Not surprisingly, there is a



significant association between religious affiliation and belief in God (see Sherkat (2008), or Urstad (2017) for a recent study on Norway). In a recent cross-national study involving 77 countries, Kasselstrand (2019) found a nonlinear relationship between secularity, measured by the percentage of the population in a country that does not believe in God, and irreligion, measured by the percentages of self-defined atheists and individuals with no confidence at all in religions organizations in a country. However, this study has two limitations. One is the use of countries as units of analysis, and the other is that the elements of doubt and firm belief (theistic certainty) are not considered.

In summary, the above review suggests the interest of considering religious beliefs, particularly belief in God, for studying the recent evolution of religion in the Scandinavian countries. In the words of Luchau and Andersen (2012): “The element of individual religiosity may have been missing from previous Nordic research into disaffiliation simply because in the Nordic countries faith has low priority.” The work of Ina Rosen (2009) is an exception, but refers only to Denmark (Copenhagen area). Kasselstrand (2015) studied the relationship between belonging and believing in Sweden, based on the 2008 round of the ISSP Religion survey, and using multinomial regression models with affiliation with the Church of Sweden, other religion or no religion as the response variable, and a dichotomized covariate describing whether the respondent believes in God or not. However, she did not consider confidence in churches or the attitude toward the church’s power in society in her conceptualization of belonging, and her treatment of belief in God did not describe the influence of theistic doubt or different images of God. In this work, we attempted to address some of the limitations of previous works, by studying the association between variables related to different secularization theories and belief in God. Moreover, we used three rounds of the ISSP religion survey to describe the evolution of ‘believing’ and ‘belonging’ and used as much information as possible from the variables in the data sets.

## Data and Methods

### Data Description

At present, the ISSP Religion survey includes data from four rounds (1991, 1998, 2008 and 2018). In this work, we used data from the 1998, 2008, and 2018 surveys for the Scandinavian countries (Denmark, Norway, and Sweden), and discarded the data from 1991 because Denmark and Sweden did not participate. We retrieved the data from the 1998, 2008, and 2018 rounds from the files ZA3190 (Group, 2000), ZA4950\_v2-2-0 (Group, 2018), and ZA7570\_v2 (Group, 2020) respectively, which are available from the GESIS Leibniz Institute for the Social Sciences repository (Leibniz-Institute-for-Social-Sciences, 2008). We used R for all the data processing (R-Core-Team, 2019).

We analyzed the shares of religious groups in the three countries and the three rounds. The respondents with denomination ‘Protestant’ and ‘No religion’ (from here on designated as ‘Nones’ for simplicity) are a vast majority, despite the increase of minority groups (for example, Muslims) in 2018. We need to distinguish between Protestants affiliated with the (majority) National Lutheran Churches from those affiliated with minority Protestant Churches (Free Churches, Evangelical, Methodist, Salvation Army, etc.) because the latter have no historical-traditional link with the states. Also, minority religious groups have significantly different involvement and levels of religious belief in comparison with the majority groups (Stark, 1996, Creswell and Wilson, 1999). The coding of the minority Protestant groups is not uniform across the three countries and in the three data files. Hence, we were only able to distinguish between majority and minority Protestants, from hereon called ‘Protestant|Main’ and ‘Protestant|Other’ (we avoided calling the majority Protestants Lutheran because some minority Protestant Churches also have Lutheran roots). **Table 1** shows the number and percentage of respondents of each religious denomination for Denmark, Norway, and Sweden in the 1998, 2008, and 2018 rounds. In all subsequent steps, we only retained the respondents whose denomination, religion raised in, and parents’ denomination was either ‘None’ or ‘Protestant|Main,’ which are a clear majority.

**Table 1:** Respondents with declared religious denomination, religious upbringing, and parents’ religious denomination ‘No religion’ (None), affiliated with the National Lutheran Churches (Protestant|Main), and affiliated with minority Protestant churches (Protestant|Other) in the Scandinavian countries in the 1998, 2008 and 2018 rounds of the ISSP Religion survey, extracted from the background variables in the ZA3190, ZA4950\_v2-2-0, and ZA7570\_v2 data files, respectively.

DENOMINATION	1998			2008			2018		
	Denmark	Norway	Sweden	Denmark	Norway	Sweden	Denmark	Norway	Sweden
None	106 (10.66%)	122 (9.36%)	248 (25.59%)	185 (11.23%)	143 (15.28%)	215 (24.32%)	269 (19.61%)	269 (26.17%)	396 (27.37%)
Protestant Main	881 (88.63%)	1156 (88.72%)	680 (70.18%)	1462 (88.77%)	785 (83.87%)	669 (75.68%)	1103 (80.39%)	705 (68.58%)	1010 (69.80%)
Protestant Other	7 (0.7%)	25 (1.92%)	41 (4.23%)	0 (0%)	8 (0.85%)	0 (0%)	0 (0%)	54 (5.25%)	41 (2.83%)
Total	994 (100%)	1303 (100%)	969 (100%)	1647 (100%)	936 (100%)	884 (100%)	1372 (100%)	1028 (100%)	1447 (100%)

**Variables' Selection**

**Table 2** shows the ISSP Religion variables used in our study. We took the response to the question “Please indicate which statement comes closest to expressing what you believe about God,” abbreviated BELIEF.GOD as our outcome or response variable. This variable has six categories, “I don’t believe in God,” “I don’t know whether there is a God and no way to find out,” “I don’t believe in a personal God, but in a Higher Power of some kind,” “I find myself believing in God sometimes, but not at others,” “While I have doubts, I feel that I do believe in God,” and “I know God really exists and have no doubts about it.” For simplicity of presentation in the tables, the last level will be abbreviated as ‘Firm belief.’ The coding of this variable introduces confounding between the image of God as a supernatural agent with personal attributes or an abstract higher power (the third category), and the subjective degree of theistic (un)certainly (the other five categories). Theoretically, this implies that our response variable should not be treated as ordinal, and restricts the type of statistical models used to study its association with the

covariates (Agresti, 2010, Hosmer et al., 2013, Fagerland et al., 2017). We now describe our selection of the remaining variables in **Table 2**, which we used as covariates to study their association with BELIEF.GOD.

The respondents’ declared religious group (abbrev. DENOMINATION), with categories ‘None’ and ‘Protestant|Main,’ is relevant to our study for we wanted to compare the strength of its association with belief in God with other covariates related to different aspects of ‘belonging.’ The variables related to confidence in churches and religious institutions (abbrev. CONFIDENCE.CHURCH) and attitude toward the perceived power of the church in the society (abbrev. POWER.CHURCH) express the ‘judgment/assessment’ aspect of ‘belonging’ (Hoffmann, 1998, Nicolet and Tresch, 2009, Hoffmann, 2013, Field, 2014, Kasselstrand et al., 2017) and the individuals’ stance about the church’s authority (Hoffmann, 2013).

We also selected three variables on the respondent’s religious rising and their parent’s religion during the formers’ formative period (abbrev. RELRIN, MOTHER.DENOMINATION, and FATHER.DENOMINATION, respectively), and on

**Table 2:** Response and independent variables (covariates) of the ISSP Religion survey used in the statistical analyses. The numbers within parenthesis for some variables in the ‘Categories’ column indicate the number of levels after application of the transformations described in the text.

Designation in model	Question label	Categories	% Missing		
			1998	2008	2018
BELIEF.GOD	Please indicate which statement comes closest to expressing what you believe about God	6	0.94	1.65	0.22
DENOMINATION	RELIGGRP – Religious denomination (‘Protestant Main’ or ‘None’)	2	0.00	0.00	0.00
CONFIDENCE.CHURCH	How much confidence do you have in churches and religious organizations?	5(4)	5.13	5.89	4.97
POWER.CHURCHES	Do you think that churches and religious organizations in this country have too much power or too little power?	5(4)	12.96	12.59	14.52
RELRIN	Religion respondent was raised in (‘Protestant Main’ or ‘None’)	2	0.00	0.00	1.52
MOTHER.DENOMINATION	Denomination of respondent’s mother (‘Protestant Main’ or ‘None’)	2	0.00	0.00	3.04
FATHER.DENOMINATION	Denomination of respondent’s father (‘Protestant Main’ or ‘None’)	2	0.00	0.00	4.78
FREQ.ATTEND.11.12	What about when you were around 11 or 12, how often did you attend religious services then?	9(5)	3.22	2.58	2.76
MOTHER.ATTENDANCE	When you were a child, how often did your mother attend religious services?	9(5)	10.36	6.24	5.16
FATHER.ATTENDANCE	When you were a child, how often did your father attend religious services?	9(5)	11.27	6.41	6.16
SEX	Respondent’s gender	2	0.00	0.00	0.06
AGE	Respondent’s age	–	0.00	0.00	0.30
DEGREE	Respondent’s highest education level	6(5)	0.71	0.90	0.72
MARITAL	Respondent’s marital status	5(4)	0.65	1.04	0.83
URBRURAL	Respondent’s living environment	3	2.5	0.29	0.72
COUNTRY	Country	3	0.00	0.00	0.00
ROUND	Year of the ISSP Religion questionnaire round	3	0.00	0.00	0.00

the frequency of family churchgoing during the respondent's formative years (abbrev. `FREQ.ATTEND.11.12`, `MOTHER.ATTENDANCE`, and `FATHER.ATTENDANCE`, respectively). The selection of these variables is consistent with previous findings on the parents' influence for the intergenerational transmission of religiosity (Merino, 2012, Voas and McAndrew, 2012, Voas and Storm, 2012), the influence of ritual participation on religious bonding (Lawson and McCauley, 1990, McCauley and Lawson, 2002), and the CRED theory on the acquisition and maintenance of religious beliefs (Heinrich, 2009, Lanman, 2012, Lanman and Burmester, 2017). We also included the respondents' gender, age, highest education degree, marital status, and living environment (urban, suburb/small city, or rural) and the survey round (categorical variable with levels '1998', '2008' and '2018') as control variables, all of which are important in empirical studies on religion (Sherkat, 2008, Baker and Smith, 2009, Lugo et al., 2012, Merino, 2012, Urstad, 2017). For the marital state variable, we eliminated respondents that answered 'Separated but married' because their number was too small, and 'Civil partnership' because it was only included in the 2018 round.

We did not select the ISSP variable on the attitude toward religious leaders not influencing how people vote because this was potentially influenced by confounding factors and would add little to the selected variables `CONFIDENCE.CHURCH` and `POWER.CHURCHES`. We also omitted the political orientation because there were no responses in the category 'Far-right' for Norway and collapsing the 'Right' and 'Far-right' categories would lose relevant information. Finally, we did not include the respondent's income because this variable is coded differently for the three countries and in each round, making its aggregation very difficult.

#### **Variables' transformation and elimination**

We collapsed some categories of the covariates for which the counts in the two-way contingency tables with `BELIEF.GOD` were too few or zero. We also removed some covariates in **Table 2** from the multinomial models due to multicollinearity issues. This process is described below in the sections on Methods and Results.

#### **Methods**

Our statistical analyses comprised four steps. In the first step, we tested the significance of the trends toward disaffiliation and decay of belief in God among Protestants affiliated with the National Churches ('Protestant|Main') and Nones in the periods 1998–2008 and 2008–2018, based on the correlations between the scores of `DENOMINATION` and `BELIEF.GOD`, and the survey round (Agresti, 2010).

In the second step, we performed exploratory data analyses and  $\chi^2$  independence tests based on two-way tables of the response (`BELIEF.GOD`) vs. each covariate (except `AGE`) to look for deviations from the null hypothesis of independence via the standardized residuals (Agresti, 2010, Fagerland et al., 2017), as done by Sherkat (2008). These analyses confirmed that belief in God (at least as coded in the ISSP survey) poses ordinality issues. Thus, the use of

ordinal logistic regression models based on the proportional odds assumption would not be strictly correct from a theoretical viewpoint.

In the third step, we computed polychoric and polyserial correlation matrices for the covariates with ordinal meaning plus `AGE`, and removed some covariates that would cause multicollinearity problems in the multinomial models, following the criterion described in Hair et al. (2009).

Finally, we studied the association between the covariates and `BELIEF.GOD` using multinomial logistic regression models. To show the patterns of similarity and difference in the associations between the covariates and belief in God among the countries, we built separate models for Denmark, Norway, and Sweden. To assess the models' goodness-of-fit (GOF), we computed the deviance  $D$ , the number of degrees of freedom used by the model  $df$ , the Nagelkerke pseudo- $R^2$  goodness of fit index, and the Akaike Information Criterion (AIC).

## **Results**

### **Trends toward disaffiliation and disbelief in God**

**Table 3** shows the tests for the significance of the linear trends toward disaffiliation from the National Protestant churches, and belief in God for the periods 1998–2008 and 2008–2018 and for the two groups considered ('None' and 'Protestant|Main'). Our variable `BELIEF.GOD` is not strictly ordinal because its third level ("I don't believe in a personal God, but in a Higher Power of some kind") introduces confounding between the individual's image of God and doubt about God's existence. To circumvent this issue, we removed the respondents that scored on this level in the computation of the linear trends, and only retained the five categories that have a clear ordinal relation (we included the six original levels in the subsequent analyses, which do not depend on the ordinality of the response variable).

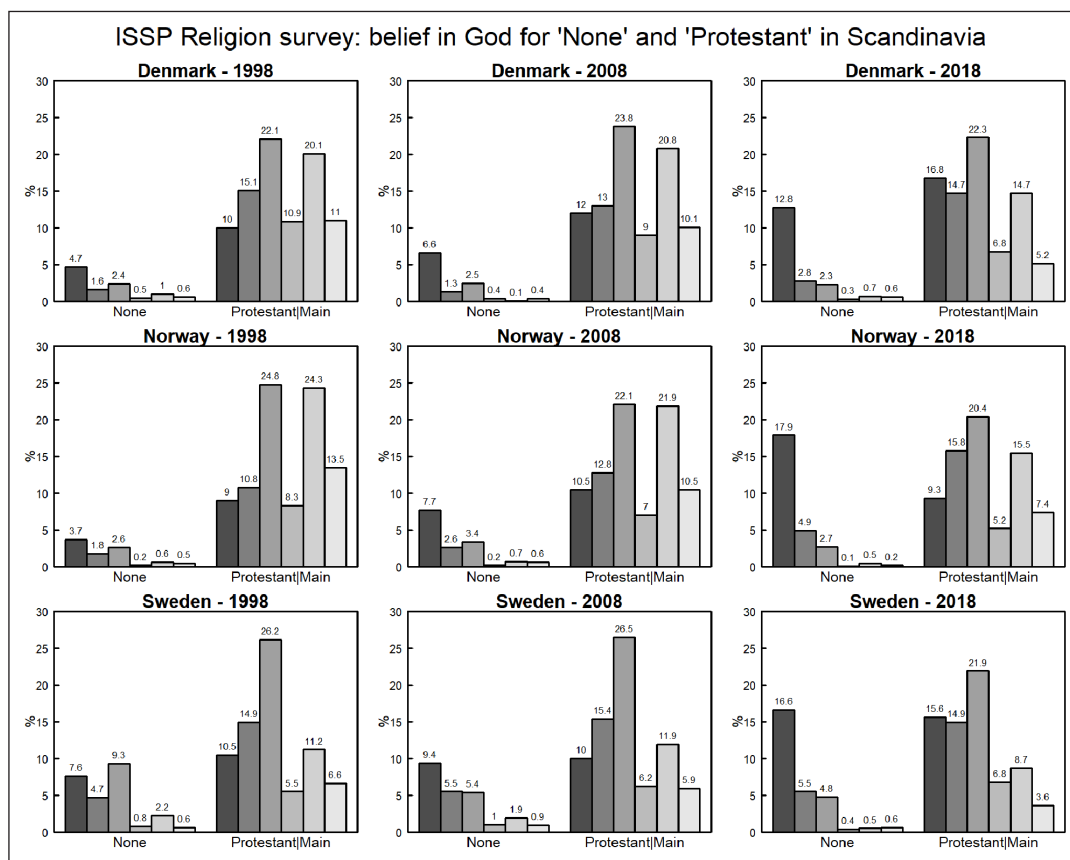
In 1998–2008 the trend toward disaffiliation was significant in Norway but not in Denmark and Sweden. Among the Protestants, the decay of belief in God was significant in Norway. Among the Nones, it was significant in Denmark and very likely also in Norway (the  $p$ -value obtained is very close to 0.05, the level of significance generally adopted in hypothesis testing). In 2008–2018, the trend toward disaffiliation was significant in the three countries, and except for the Nones in Denmark, the decline of belief in God was significant in the three countries. In summary, the waning of both affiliation and belief in God accelerated in 2008–2018 relative to the previous period 1998–2008, for the two groups. Norway is the country where the decline of affiliation and belief in God was significant in the two periods for both groups ('Protestants|Main' and 'None').

To complement the quantitative analyses of the two trends, we also examined the qualitative differences between 'Protestants|Main' and 'None' on two key variables of our study, belief in God, and confidence in churches and religious institutions, using bar charts.

**Figure 1** shows the distributions of `BELIEF.GOD` for the 'Protestant|Main' and 'None' in the Scandinavian countries and 1998, 2008, and 2018 rounds. Not surprisingly,

**Table 3:** Summary of the tests for the significance of the linear trends toward disaffiliation and disbelief in God in the Scandinavian countries in the two periods 1998–2008 and 2008–2018, based on the ISSP Religion survey. The records of the respondents that do not believe in a personal God but in a Higher Power were removed, to minimize potential spurious effects due to deviation of BELIEF.GOD from ordinal behavior. In this table,  $M = \sqrt{N-1}r$  is the test statistic (Agresti, 2010; Kateri, 2014) and  $p$  is the corresponding p-value for one-sided tests, where  $r$  is the correlation between the scores of the ROUND, and the DENOMINATION and BELIEF.GOD variables. The scores for DENOMINATION are None = 0 and Protestant|Main = 1. Negative values of the test statistic mean decreasing numbers of Protestant|Main and decreasing scores of BELIEF.GOD, respectively.

	1998–2008		2008–2018	
DENOMINATION	M	p	M	p
Denmark	-0.392	0.347	-6.408	<0.001
Norway	-4.149	<0.001	-5.841	<0.001
Sweden	0.327	0.628	-2.164	0.015
<b>BELIEF.GOD – None</b>				
Denmark	-3.247	0.001	0.021	0.508
Norway	-1.626	0.052	-2.941	0.002
Sweden	-0.386	0.350	-4.904	<0.001
<b>BELIEF.GOD – Protestant Main</b>				
Denmark	-0.645	0.259	-7.076	<0.001
Norway	-2.655	0.004	-2.676	0.004
Sweden	-0.035	0.486	-4.564	<0.001



**Figure 1:** Distributions of belief in God for the affiliated with the Evangelical Lutheran Churches and the religiously unaffiliated in Denmark, Norway, and Sweden, in the 1998, 2008 and 2018 rounds of the ISSP Religion survey. The numbers above the bars show the percentages in the total samples for each country and round. The bars represent the following levels, from left (dark gray) to right (light gray): 1 – I don't believe in God; 2 – I don't know whether there is a God and no way to find out; 3 – I don't believe in a personal God, but in a Higher Power of some kind; 4 – I find myself believing in God sometimes, but not at others; 5 – While I have doubts, I feel that I do believe in God; 6 – I know God really exists and I have no doubts about it.



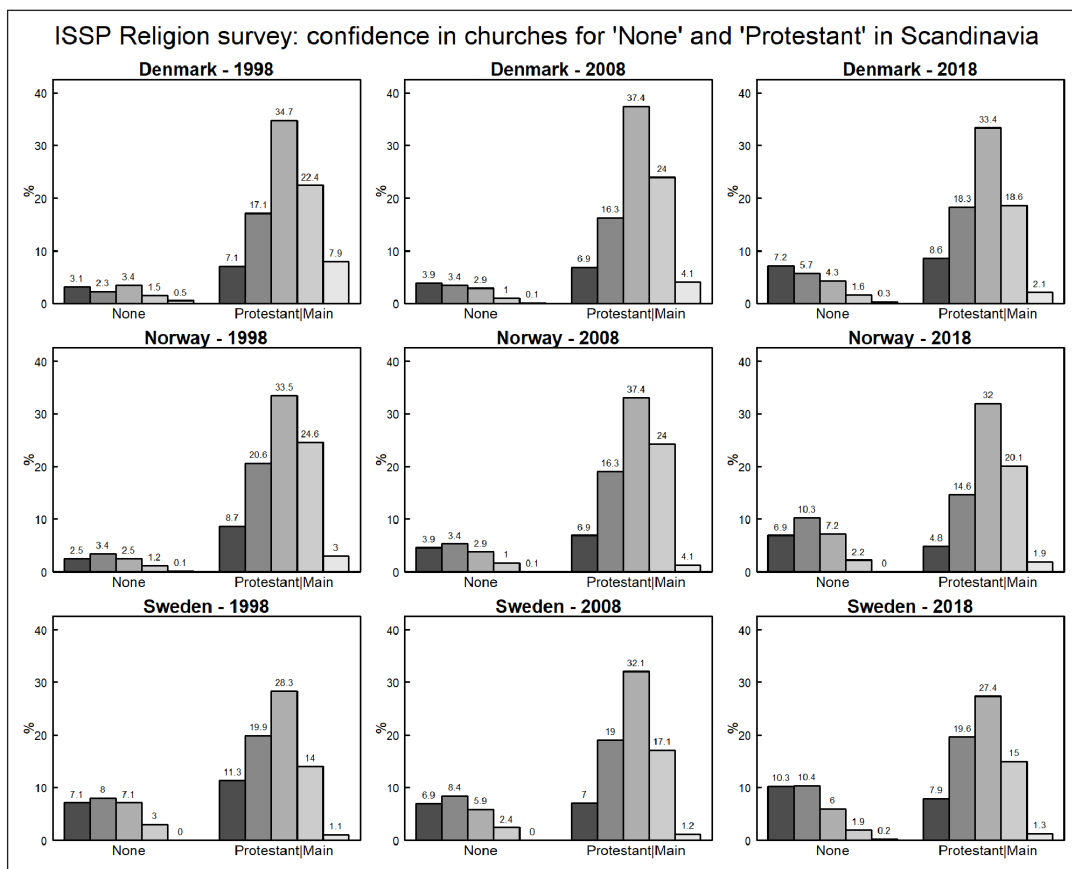
there is a marked difference between the two groups, which is qualitatively similar in the three countries in the period 1998–2018. For the Nones, the most frequent response was ‘I don’t believe in God’ in all distributions except for Sweden in 1998. Considering only the Nones in 2018, the share of those who answered “I don’t believe in God” was 65.6% in Denmark, 68.1% in Norway, and 58.5% in Sweden. In contrast, the share of Nones that believe sometimes, believe when in doubt, or are sure that God exists was only 8.2% in Denmark, 3.0% in Norway, and 5.3% in Sweden. For those affiliated with the Protestant National churches, the levels of belief in God are significantly higher than for Nones. Among these majority Protestants in 1998 and 2008, the two most frequent levels were ‘I don’t believe in a personal God, but in a Higher Power of some kind’ and ‘While I have doubts, I feel that I do believe in God.’ Among the majority Protestants, the share of firm believers decreased, while the share of those who do not believe in God increased. These changes are notorious in the period 2008–2018, which is consistent with the results in **Table 3**.

**Figure 2** shows the distributions of confidence in churches and religious institutions for the two groups in Denmark, Norway, and Sweden, for 1998, 2008, and 2018 rounds of the ISSP Religion survey. The distributions are again very different for the two groups. Nones are distrustful, while most majority Protestants have at least some degree of confidence in churches. In the three rounds, and

for the three countries, most Protestants affiliated with the National Lutheran Churches have at least some confidence in churches and religious organizations, and thus hold either a neutral or positive stance about trust in religious institutions. In contrast, most of the Nones declared to have no confidence or very little confidence in churches and religious organizations, and thus expressed a negative feeling toward religious institutions. We note that the proportion of respondents with ‘Complete confidence’ in the church is small for both denominations and, in some cases, null. For this reason, we collapsed the two categories ‘A great deal of confidence’ and ‘Complete confidence’ prior to building the multinomial models. This situation is illustrative of the cases shown in **Table 2**, where we had to reduce the number of categories of some covariates to proceed with the analyses.

**Analyses of two-way contingency tables**

We used two-way contingency tables for each categorical covariate vs. the response variable (BELIEF.GOD) to analyze the patterns of deviation from independence and identify situations that required covariates’ transformation (collapsing levels) prior to building the multinomial models. The  $\chi^2$  tests of independence showed that the individual association with BELIEF.GOD is significant for all the covariates in **Table 2**. Further, the analysis of the standardized residuals showed that the response variable deviates from an ordinal behavior.



**Figure 2:** Distributions of confidence in churches and religious institutions for the affiliated with the Evangelical Lutheran Churches and the religiously unaffiliated in Denmark, Norway, and Sweden, in the 1998, 2008, and 2018 rounds of the ISSP Religion survey. The numbers above the bars show the percentages in the total samples for each country and round. The bars represent the following levels, from left (dark gray) to right (light gray): 1 – No confidence at all; 2 – Very little confidence; 3 – Some confidence; 4 – A great deal of confidence; 5 – Complete confidence.

**Table 4** illustrates this deviation from ordinal behavior for the association between denomination and belief in God for Denmark, Norway, and Sweden. In the three countries, the standardized residuals for ‘None’ and ‘I don’t believe in God’ show that the observed counts are much higher than expected under the null hypothesis of independence, and that the reverse is true for ‘Protestant|Main.’ For the response categories that imply some definite level of belief, the deviations are negative for ‘None’ and positive for ‘Protestant|Main,’ but they are not monotone across the response levels, as would be expected for an ordinal response variable.

The  $\chi^2$  tests also signaled situations that required merging some of the covariates’ categories, as mentioned before for confidence in churches and religious institutions (see **Figure 2**). In this way, we merged the categories for the frequency of church attendance (FREQ. ATTEND.11.12, MOTHER.ATTENDANCE, and FATHER.ATTENDANCE) into ‘Never,’ ‘Less than yearly,’ ‘Yearly,’ ‘Monthly,’ and ‘Weekly.’

We treated AGE as numeric and analyzed its significance using univariate multinomial models with belief in God as the response variable and tested for linearity using the Box-Tidwell test (Tabachnick and Fidell, 2014, Hosmer et

**Table 4:** Two-way contingency tables of BELIEF.GOD ~ DENOMINATION and results of the  $\chi^2$  tests of independence for Denmark, Norway and Sweden, based on the 1998, 2008 and 2018 rounds of the ISSP religion survey. This table shows the counts, percentages, and standardized residuals within parentheses. The standardized residuals are defined as  $e_{ij} = (O_{ij} - E_{ij}) / \sqrt{E_{ij}(1 - p_{i+})(1 - p_{+j})}$ , where  $O_{ij}$  are the observations (counts),  $E_{ij}$  are the expected values under the hypothesis of independence, and  $p_{i+}$  and  $p_{+j}$  are the row and column marginal probabilities, respectively. Standardized residuals with absolute value  $\geq 2$  mean significant deviation from independence.

	<b>I don't believe in God</b>	<b>I don't know whether there is a God, and no way to find out</b>	<b>I don't believe in a personal God, but in a Higher Power</b>	<b>Find myself believing in God sometimes, but not at others</b>	<b>While I have doubts, I feel that I do believe in God</b>	<b>I know God really exists and have no doubts about it</b>
<b>Denmark</b>						
None	325 8.32% (23.24)	73 1.87% (-1.83)	93 2.38% (-4.76)	15 0.38% (-5.58)	22 0.56% (-9.73)	20 0.51% (-4.78)
Protestant Main	514 13.17% (-23.24)	551 14.11% (1.83)	889 22.77% (4.76)	340 8.71% (5.58)	727 18.62% (9.73)	335 8.58% (4.78)
	$\chi^2 = 569.56$	df = 5	P < 0.001			
<b>Norway</b>						
None	279 9.18% (23.51)	91 2.99% (1.61)	86 2.83% (-4.47)	6 0.2% (-5.61)	19 0.62% (-10.47)	13 0.43% (-6.56)
Protestant Main	290 9.54% (-23.51)	395 12.99% (-1.61)	687 22.60% (4.47)	212 6.97% (5.61)	637 20.95% (10.47)	325 10.69% (6.56)
	$\chi^2 = 619.8$	df = 5	P < 0.001			
<b>Sweden</b>						
None	364 12.04% (16.15)	160 5.29% (-0.15)	187 6.18% (-5.03)	21 0.69% (-5.55)	41 1.36% (-6.65)	21 0.69% (-4.42)
Protestant Main	381 12.6% (-16.15)	455 15.05% (0.15)	739 24.44% (5.03)	189 6.25% (5.55)	312 10.32% (6.65)	154 5.09% (4.42)
	$\chi^2 = 300.28$	df = 5	P < 0.001			

al., 2013). We found that AGE is significantly associated with belief in God, and its influence on the response is linear.

### **Multicollinearity issues**

After the transformations described above, we computed correlation matrices for the covariates based on tetrachoric, polychoric, and polyserial correlations for Denmark, Norway, and Sweden separately to identify potential multicollinearity problems. Following the criterion in Hair et al. (2009), we removed the variables DENOMINATION, MOTHER.RELIGION, FATHER.RELIGION, MOTHER.ATTENDANCE, and FATHER.ATTENDANCE, because they had correlations with an absolute value greater than 0.7 in at least one country with RELRIN (religion raised in), and FREQ.ATTEND.11.12, respectively. We selected RELIN instead of DENOMINATION because the former variable is a causal antecedent of belief in God and directly describes the influence of religious tradition and socialization during the formative period.

### **Multinomial Logistic Regression Models**

Tables A.1–A.3 in the Appendix show the results of the multinomial models with response variable BELIEF.GOD for Denmark, Norway, and Sweden, respectively. **Tables 5–7** below show the odds ratios (OR) and their 95% confidence intervals and significance levels for the model coefficients that are significant ( $p < 0.05$ ). The OR yield a better comparison of the strength of the association between different covariates across the response levels than the coefficients themselves, and **Tables 5–7** are easy to interpret using the following guidelines:

1. The odds ratios  $OR_{ij}$  for a covariate  $X_c$  are the ratios of the probabilities of the response (BELIEF.GOD) falling in category  $j$  and in the reference category ('I don't believe in God'), when the covariate  $X_c$  has level  $i$  or, in the case of AGE, the odds change per year of age. For example, in **Table 5**, we see that being female instead of male increases the odds of believing in a 'Higher Power' instead of not believing in God nearly threefold in Denmark.
2. Odds ratios of say 4 and 0.25 mean a fourfold increase and reduction of the odds, respectively, and thus reflect the same effect size but in opposite directions (enhancement (when  $>1$ ) and inhibition (when  $< 1$ ) of the response, respectively). Thus, thinking that the church has too little and too much power increases and decreases the odds of being a firm believer by nearly fourfold relative to thinking that the church has the right amount of power in Denmark (**Table 5**).
3. **Tables 5–7** allow the interpretation of the association between each pair of covariate and response levels in terms of:
  - a. *The patterns of the significant OR.* For example, in **Table 5**, all levels of CONFIDENCE.CHURCH affect the odds of believing when in doubt or being a firm believer in Denmark, but the odds of not knowing whether God exists significantly

change for those with 'No confidence at all' only.

- b. *The variation of the OR across the covariates' and response levels.* For example, in **Table 5**, belief in God decreases with the level of confidence in churches in Denmark.
- c. *The overlapping of the 95% confidence intervals of a covariate across the covariates' and response levels.* For example, **Table 5** shows that the odds of believing when in doubt or being a firm believer are significantly different for people with a great deal of confidence in the church because the two 95% confidence intervals are disjoint.

### **Discussion**

Our trend analyses suggest that both disaffiliation from the Evangelical Lutheran Churches (traditional/institutional 'belonging') and disbelief in God ('believing') progressed in the three Scandinavian countries, particularly in 2008–2018. The unaffiliated (Nones) have substantially lower levels of belief in God than those affiliated with the Evangelical Lutheran Churches. Thus, disaffiliation and disbelief in God are strongly associated. Moreover, disbelief in God progressed among both groups in 2008–2018. Norway seems to have had a distinctive evolution, for the trends toward both disaffiliation and decreasing belief in God were already significant in 1998–2008.

The analyses of the two-way contingency tables and the correlations between the selected covariates showed three notable points.

The first is that the distributions of belief in God of Nones and Protestants affiliated with the National Lutheran Churches are very different in the three countries and for the three rounds. The differences between these denominations are far more pronounced than differences between Protestant or Nones across the three countries. For the Nones the distributions seem to be monotonically decreasing (thus ordinal), but for the majority Protestants the distributions are nearly bimodal and resemble those shown by Argyle in his psychological characterization of religious beliefs (Argyle (2000), page 81). There is a very important structural difference of the levels of belief in God between the two groups: most Nones do not believe in God and very few believe sometimes, when in doubt, or are sure that God exists, but among the majority Protestants the most frequent categories were believing in a 'Higher Power' and believing when in doubt. Thus, disaffiliation and disbelief in God are strongly associated.

We propose the following explanation for the distributions shown in **Figure 1**. Religious beliefs involve not just agreement to propositions (like "God exists") but emotional attitudes and commitment to behavior. Thus, people may react to inconsistencies and incomplete evidence either by rejecting the beliefs or finding a way of accommodating these inconsistencies. Most Nones reject God, whereas the Protestants affiliated with the Evangelical Lutheran Churches have two forms of accommodation: either believing in an abstract power to reduce logical inconsistencies with the reality or admitting the doubt and 'keep it going.'

**Table 5:** Odds ratios and their 95% confidence intervals for the covariates' significant coefficients ( $\alpha = 0.05$ ) in the multinomial logistic regression models for Denmark. p-value: \* < 0.05; \*\* < 0.01; \*\*\* < 0.001.

	<b>DontKnow</b>	<b>HigherPower</b>	<b>Sometimes</b>	<b>InDoubt</b>	<b>Firm</b>
Intercept	-	0.48* (0.23, 0.99)	0.2** (0.07, 0.57)	0.1*** (0.04, 0.24)	0.02*** (0.01, 0.07)
<b>CONFIDENCE . CHURCH</b>					
NoneAtAll	0.28*** (0.19, 0.42)	0.23*** (0.16, 0.34)	0.12*** (0.06, 0.23)	0.07*** (0.04, 0.14)	0.14*** (0.06, 0.34)
VeryLittle	-	0.54*** (0.4, 0.72)	0.47*** (0.31, 0.7)	0.28*** (0.19, 0.4)	0.34*** (0.19, 0.61)
GreatDealOf	-	-	-	1.92*** (1.36, 2.7)	4.53*** (3, 6.82)
<b>POWER . CHURCHES</b>					
TooLittle	-	-	-	-	4.08** (1.69, 9.83)
TooMuch	0.61** (0.45, 0.82)	0.5*** (0.38, 0.67)	0.45*** (0.3, 0.69)	0.43*** (0.3, 0.6)	0.23*** (0.12, 0.42)
FarTooMuch	0.5** (0.31, 0.8)	0.28*** (0.16, 0.48)	0.39* (0.16, 0.9)	0.52* (0.27, 1)	-
<b>RELRLIN</b>					
Protestant Main	2.27*** (1.66, 3.1)	3.17*** (2.29, 4.37)	5.62*** (3.15, 10.01)	9.06*** (5.17, 15.86)	5.27*** (2.5, 11.12)
<b>FREQ. ATTEND. 11.12</b>					
Never	-	0.5*** (0.36, 0.67)	0.59* (0.39, 0.89)	0.36*** (0.25, 0.53)	0.29*** (0.17, 0.51)
LessThanYearly	-	-	-	0.7* (0.5, 0.98)	-
Monthly	-	-	-	-	3.38*** (1.75, 6.55)
Weekly	-	-	-	-	2.77** (1.38, 5.56)
<b>SEX</b>					
Female	1.42** (1.09, 1.83)	2.98*** (2.34, 3.79)	2.22*** (1.62, 3.05)	2.57*** (1.97, 3.36)	2.49*** (1.78, 3.49)
<b>AGE</b>					
	-	-	-	1.010* (1, 1.023)	1.023*** (1.011, 1.035)
<b>DEGREE</b>					
None/Lowest	-	-	-	2.61** (1.49, 4.57)	2.4* (1.2, 4.82)
AboveLowest	-	-	2.65** (1.3, 5.41)	2.97*** (1.6, 5.51)	2.9** (1.3, 6.5)
Secondary	1.59* (1.09, 2.32)	1.86** (1.29, 2.69)	2.58*** (1.58, 4.2)	2.64*** (1.75, 4.01)	3.04*** (1.77, 5.21)
AboveSecondary	-	1.89*** (1.37, 2.6)	1.94** (1.24, 3.06)	2.21*** (1.53, 3.2)	2.03** (1.24, 3.32)
<b>MARITAL</b>					
Widowed	-	-	-	-	-
Divorced	-	-	-	-	-
Single	-	-	-	-	-
<b>URBRURAL</b>					
Urban	0.74* (0.55, 1)	-	0.65* (0.44, 0.94)	-	0.54** (0.35, 0.82)
Rural	-	-	-	-	-
<b>ROUND</b>					
2008	-	-	-	-	-
2018	-	-	-	-	-

N = 3309 D = 9725.4 df = 125 AIC = 9975.4 Nagelkerke pseudo-R<sup>2</sup> = 0.408.  
 Reference categories: BELIEF.GOD - I don't believe in God; CONFIDENCE.CHURCH - Some confidence; POWER.CHURCHES - About the right amount of power; RELRLIN - No religion; FREQ. ATTEND.11.12 - Yearly; SEX - Male; DEGREE - University; MARITAL - Married; URBRURAL - Suburb/Small City; ROUND - 1998.



**Table 6:** Odds ratios and their 95% confidence intervals for the covariates' significant coefficients ( $\alpha = 0.05$ ) in the multinomial logistic regression models for Norway. p-value: \* < 0.05; \*\* < 0.01; \*\*\* < 0.001.

	Don't Know	Higher Power	Sometimes	In Doubt	Firm
Intercept	-	-	0.13** (0.04, 0.46)	0.26** (0.1, 0.7)	0.03*** (0.01, 0.13)
<b>CONFIDENCE.CHURCH</b>					
NoneAtAll	0.31*** (0.19, 0.51)	0.46** (0.3, 0.72)	0.24*** (0.11, 0.52)	0.17*** (0.09, 0.33)	-
VeryLittle	-	-	0.47** (0.28, 0.76)	0.41*** (0.27, 0.61)	0.44** (0.23, 0.81)
GreatDealOf	-	-	-	2.04** (1.33, 3.13)	4.1*** (2.49, 6.77)
<b>POWER.CHURCHES</b>					
TooLittle	-	-	-	-	26.93** (3.33, 217.5)
TooMuch	0.65* (0.47, 0.92)	0.49*** (0.36, 0.67)	0.47** (0.29, 0.74)	0.32*** (0.22, 0.46)	0.17*** (0.09, 0.32)
FarTooMuch	0.46** (0.29, 0.72)	0.22*** (0.14, 0.35)	0.28** (0.13, 0.6)	0.17*** (0.09, 0.33)	0.21*** (0.09, 0.51)
<b>RELRLIN</b>					
Protestant Main	2.53*** (1.67, 3.83)	3.34*** (2.19, 5.09)	4.26** (1.84, 9.86)	5.09*** (2.65, 9.77)	3.27* (1.25, 8.56)
<b>FREQ.ATTEND.11.12</b>					
Never	-	0.48*** (0.34, 0.69)	0.22*** (0.11, 0.42)	0.33*** (0.21, 0.52)	0.29** (0.14, 0.6)
LessThanYearly	-	-	-	0.45*** (0.3, 0.68)	0.5* (0.28, 0.88)
Monthly	-	-	2.96* (1.2, 7.26)	4.33*** (2, 9.4)	6.83*** (2.99, 15.59)
Weekly	-	-	-	-	4.76*** (2, 11.31)
<b>SEX</b>					
Female	-	1.91*** (1.45, 2.51)	1.84** (1.25, 2.71)	2.39*** (1.76, 3.24)	2.95*** (2.01, 4.35)
<b>AGE</b>					
	-	1.014* (1.003, 1.026)	-	1.021** (1.008, 1.034)	1.035*** (1.019, 1.051)
<b>DEGREE</b>					
None/Lowest	-	1.88* (1.03, 3.43)	2.6* (1.16, 5.83)	2.47** (1.29, 4.75)	2.84** (1.3, 6.23)
AboveLowest	-	-	2.64** (1.48, 4.71)	1.86** (1.16, 2.99)	2.19** (1.24, 3.89)
Secondary	-	-	-	1.57* (1.07, 2.3)	-
AboveSecondary	-	-	2.27* (1.11, 4.6)	-	2.36* (1.16, 4.8)
<b>MARITAL</b>					
Widowed	-	-	-	-	-
Divorced	0.56* (0.32, 0.98)	-	-	0.51* (0.3, 0.88)	-
Single	-	-	-	-	-
<b>URBRURAL</b>					
Urban	-	-	-	-	-
Rural	-	-	-	-	1.55* (1.01, 2.4)
<b>ROUND</b>					
2008	-	-	-	-	0.59* (0.37, 0.94)
2018	-	0.38*** (0.26, 0.55)	0.29*** (0.17, 0.5)	0.28*** (0.19, 0.43)	0.22*** (0.13, 0.38)

N = 2511 D = 7187.8 df = 125 AIC = 7437.8 Nagelkerke pseudo-R<sup>2</sup> = 0.448.

Reference categories: BELIEF.GOD - I don't believe in God; CONFIDENCE.CHURCH - Some confidence; POWER.CHURCHES - About the right amount of power; RELRLIN - No religion; FREQ.ATTEND.11.12 - Yearly; SEX - Male; DEGREE - University; MARITAL - Married; URBRURAL - Suburb/Small City; ROUND - 1998.

**Table 7:** Odds ratios and their 95% confidence intervals for the covariates' significant coefficients ( $\alpha = 0.05$ ) in the multinomial logistic regression models for Sweden. p-value: \* < 0.05; \*\* < 0.01; \*\*\* < 0.001.

	Don't Know	Higher Power	Sometimes	In Doubt	Firm
Intercept	-	-	0.28* (0.08, 0.96)	0.3* (0.1, 0.89)	0.12** (0.03, 0.5)
<b>CONFIDENCE.CHURCH</b>					
NoneAtAll	0.41*** (0.27, 0.63)	0.29*** (0.19, 0.45)	0.17*** (0.08, 0.39)	0.14*** (0.07, 0.3)	0.14** (0.04, 0.48)
VeryLittle	-	0.69* (0.5, 0.96)	0.39*** (0.23, 0.66)	0.38*** (0.23, 0.6)	0.39* (0.18, 0.83)
GreatDealOf	-	-	-	1.79* (1.12, 2.86)	4.78*** (2.65, 8.62)
<b>POWER.CHURCHES</b>					
TooLittle	-	-	-	3.88* (1.37, 11.03)	12.77*** (4.44, 36.73)
TooMuch	0.6** (0.44, 0.84)	0.64** (0.47, 0.88)	0.53* (0.31, 0.9)	0.39*** (0.23, 0.65)	0.28* (0.1, 0.74)
FarTooMuch	0.48** (0.28, 0.79)	0.45** (0.27, 0.76)	0.15* (0.03, 0.68)	-	-
<b>RELIN</b>					
Protestant Main	-	2.03** (1.34, 3.06)	-	-	-
<b>FREQ. ATTEND. 11.12</b>					
Never	0.56** (0.39, 0.79)	0.31*** (0.22, 0.44)	0.27*** (0.15, 0.48)	0.24*** (0.15, 0.41)	0.17*** (0.08, 0.38)
LessThanYearly	-	0.55*** (0.39, 0.77)	0.56* (0.34, 0.94)	0.4*** (0.24, 0.64)	0.25*** (0.12, 0.53)
Monthly	-	-	-	2.1* (1.01, 4.39)	-
Weekly	-	-	-	-	2.68* (1.14, 6.34)
<b>SEX</b>					
Female	-	1.78*** (1.36, 2.33)	-	1.95*** (1.36, 2.78)	2.14** (1.33, 3.46)
<b>AGE</b>					
	-	1.011* (1.001, 1.021)	-	1.016* (1.002, 1.030)	-
<b>DEGREE</b>					
None Lowest	2.54** (1.44, 4.48)	2.64*** (1.55, 4.52)	5.78*** (2.82, 11.85)	5.14*** (2.71, 9.76)	5.79*** (2.55, 13.16)
AboveLowest	-	1.62** (1.15, 2.29)	2.1** (1.23, 3.57)	2.26*** (1.43, 3.56)	2.02* (1.06, 3.85)
Secondary	-	-	-	-	2.91** (1.48, 5.72)
AboveSecondary	-	-	-	-	-
<b>MARITAL</b>					
Widowed	-	-	-	-	-
Divorced	-	2.1** (1.29, 3.43)	-	-	-
Single	-	-	-	-	-
<b>URBRURAL</b>					
Urban	-	-	-	-	-
Rural	-	-	-	-	-
<b>ROUND</b>					
2008	-	-	-	-	-
2018	0.64* (0.43, 0.96)	0.41*** (0.28, 0.59)	-	0.51** (0.31, 0.85)	0.37** (0.19, 0.73)

N = 2121 D = 5946.5 df = 125 AIC = 6196.5 Nagelkerke pseudo-R<sup>2</sup> = 0.393.

Reference categories: BELIEF.GOD - I don't believe in God; CONFIDENCE.CHURCH - Some confidence; POWER.CHURCHES - About the right amount of power; RELIN - No religion; FREQ. ATTEND.11.12 - Yearly; SEX - Male; DEGREE - University; MARITAL - Married; URBRURAL - Suburb/Small City; ROUND - 1998.

It is also important to note that belief in a 'Higher Power' does not involve the emotional attachment and commitment to action as belief in a personal God. The relatively high prevalence of this more abstract form of belief in God among the majority Protestants in Scandinavia may be a cause of their increasing feeling that God is not important in their lives, and ultimately to their indifference toward religion. Believing in an abstract 'Higher Power' reduces the emotional bond to God and forms of commitment (like petitionary praying and ritual participation) that are essential for sustaining religion (Argyle, 2000).

The second important point is that the Nones and majority Protestants also have markedly different levels of confidence in churches. The former tend to be mistrustful, while the latter have at least some degree of confidence. This suggests that confidence in churches is an important dimension of belonging, at least in Scandinavia, as was also shown by the multinomial models. It seems that disbelief in God and disillusionment with the church go together, so that believing and belonging decay together.

Finally, tradition and religious family socialization are still powerful influences in the dynamics of religion in Scandinavia: the correlation between the current denomination and religious or secular uprising is very high, and the correlations between respondents' and their parents' churchgoing frequencies during the formers' formative period are also very high.

We now step to discuss the multinomial models' results, which provided useful information for answering our research questions. We first note that the patterns of significant OR, and the quantitative relationships between the OR values for different covariates and response levels, are similar in the three countries. This result probably reflects the countries' similar historical relationships between the states and the Evangelical Lutheran Churches, values, social and political organization, and development paths.

### ***The judgmental side of 'belonging'***

This dimension is captured by the covariates CONFIDENCE.CHURCH and POWER.CHURCHES. Confidence in churches and religious organizations is strongly associated with belief in God. The OR change significantly for the three levels other than the reference ('Some confidence'), being negative for 'No confidence at all' and 'Very little confidence' ( $OR < 1$ ), and positive for 'A great deal of confidence' ( $OR > 1$ ). Also, the pattern of this association is asymmetric. The two levels that express lack of trust in churches significantly reduce the odds for several belief categories but having 'A great deal of confidence' only increases the odds of 'believing when in doubt' or being a 'firm believer.' At this point, we can ask:

*Is the strength of the association with belief in God significantly different for 'No confidence at all' and 'Very little confidence'?*

and

*For each level of confidence, is the association significantly different across the various levels of belief in God?*

The results in **Tables 5–7** suggest that the strength of the association with belief in God is different for 'No confidence at all' and 'Very little confidence,' but the 95% confidence intervals for these two confidence levels overlap for some response categories (say, for 'Sometimes' and 'In doubt' in Norway and Sweden). Thus, we cannot conclude that the strength of the association is significantly different for these two covariate levels. Likewise, for a given level of confidence, the strength of the association seems to increase with the level of belief in God, but there is substantial overlapping of the confidence intervals, and so we cannot say that such increase is statistically significant. One exception is the difference between the odds of believing when in doubt and being a firm believer for people with a great deal of confidence in the church in Denmark (**Table 5**).

The above considerations about confidence in churches also apply to the association between the attitude relative to the churches' power in society and belief in God, which is also strong and asymmetric. People who think that churches have excessive power have lower odds of holding any form of belief in God, while those who think that the churches should have more power have high odds of being firm believers. The large OR and wide 95% confidence interval for 'Too little power' and firm belief in Norway (**Table 6**) result from the small number of respondents in the sample with these levels of POWER.CHURCHES and BELIEF.GOD, respectively.

How can the asymmetry of these associations be explained? We propose that the answer lies in that belief in God is strongly related to its meaning and importance in one's life (Rosen, 2009, Lemos et al., 2019). Those with positive (above average) attitudes toward the church have higher odds of believing when in doubt or being firm believers because both God and the church play an important role in their lives. If God does not play an important role, a negative attitude toward religion likely affects both confidence in the church and multiple levels of belief in God.

### ***Religious or secular socialization during the formative period***

Looking at the significant OR for 'Protestant|Main' relative to 'None' for RELRIN, we see that having had religious socialization significantly increases the odds of holding some degree of belief in God in Denmark and Norway (**Tables 5 and 6**). In Sweden, religious socialization only seems to increase the odds of believing in a 'Higher Power.' Since only one of the five OR is significant (**Table 7**), and a 'Higher Power' is an image of God distinct from the one in the Christian doctrine, it is unclear whether the religious socialization still influences belief in God in Sweden.

The frequency of churchgoing during the formative years is a significant predictor of belief in God, as shown in **Tables 5–7**. Recall that we chose 'Yearly' as the reference category for FREQ.ATTEND.11.12 because most Scandinavians went to church once or twice a year. Relative

to this reference level, those who never did have significantly lower odds of believing in a 'Higher Power,' sometimes, when in doubt, or having a firm belief, in the three Scandinavian countries. Those who went to church less than once a year also have lower odds of believing, at least in Denmark and Sweden. Those who went more frequently than yearly have significantly higher odds of believing in God. The association between frequent churchgoing during the formative years and firm belief (being sure that God exists) is significant in Denmark and Norway, but for Sweden the results are somewhat inconclusive.

To sum up, the multinomial models confirmed that religious socialization strongly influences belief in God later in life. This result was expected, but the difference between having attended church services about once/twice a year (perhaps by Easter or Christmas) or never is somewhat surprising. McCauley and Lawson's theory of religious ritual competence may provide a plausible explanation for this finding (Lawson and McCauley, 1990, McCauley and Lawson, 2002). These authors consider two types of religious rituals, one characterized by high frequency and low levels of sensory stimulation (a weekend mass) and another by low frequency and high levels of sensory stimulation (such as baptisms, confirmations, and weddings). It is plausible to assume that festivities like Easter or Christmas also carry an increase of collective emotional arousal that prevails beyond these church events. So, their psychological bonding effect is still significant, despite the low frequency of regular church attendance.

#### **Educational degree**

Previous studies on the Scandinavian countries showed that education is a significant factor of disaffiliation from the Evangelical Lutheran Churches (Lüchau and Andersen, 2012, Urstad, 2017). Does the educational degree influence belief in God as well? **Tables 5–7** show that people with a university degree have significantly higher odds of not believing in God in the three countries. Moreover, our results suggest that having a university degree mostly inhibits forms of belief in a personal God (sometimes, when in doubt, and firm belief). However, the results are inconclusive about how the differences between the education levels other than university (tertiary) are associated with significantly different levels of belief in God. Also, the differences of belief in God between people with the lowest and university education seem to be larger in Sweden than in the other two countries, especially for the levels related to a personal God ('Sometimes,' 'When in doubt,' and 'Firm'), as shown in **Table 7**. Recalling that the average educational level is high in the Scandinavian countries, our results support the argument that reinforcing compulsory schooling leads to declining religiosity (Hungerman, 2014, Stolz, 2020).

#### **Gender**

Gender-related issues are central in sociological studies of Scandinavia. In a recent work about the non-religious in Norway, Urstad (2017) found it surprising that gender is not a significant predictor of disaffiliation. Is that the case for belief in God? Our results clearly show that women

have consistently higher levels of belief in God than men. In particular, the odds of believing when in doubt or being a firm believer are at least about twice for women than for men. This finding is consistent with the results obtained in many empirical studies (Francis, 1997, Walter and Davie, 1998, Flere, 2007, Voicu, 2009, Trzebiatowska and Bruce, 2012, Lemos et al., 2019). The higher religiosity of women relative to men have been attributed to women's structural roles in family and child rearing (Mahlamäki, 2012, Trzebiatowska and Bruce, 2012, Furseth et al., 2018). However, Scandinavian women have high levels of education and full-time employment rates. Also, gender equality is an entrenched value in the Scandinavian societies and the states' welfare systems encourage both women and men's involvement in child rearing tasks (Furseth et al., 2018). Hence, the evolution of gender differences in religiosity remains an interesting topic for further studies.

#### **Age**

**Tables 5** and **6** show that the levels of belief in God increase with age in Denmark and Norway and for believing when in doubt or having a firm belief. We note that the odds ratios for AGE in **Tables 5–7** are for a one-year increase. Thus, the odds of being a firm believer increase 26% in Denmark and 41% in Norway for an age difference of one decade. For Sweden, the levels of belief in God also seem to increase with age (**Table 7**). Moreover, the effect of age on the odds of being a firm believer is not significant in Sweden, which is somewhat surprising. Nevertheless, our results are consistent with other empirical studies, which show that youngsters have lower levels of belief in God than older people (Lemos et al., 2019).

#### **Marital status**

Marriage (or divorce) and having children are pivotal events in life, which arguably influence the maintenance or revival of religious belief (Sherkat, 2008). Our results show that the association between the marital status and belief in God in Scandinavia is not significant when compared with the covariates related to trust and power of the church, and to religious socialization.

#### **Urban/rural distinction**

The difference in religiosity between urban and rural communities is a relevant topic in the sociology of religion. Stölz and Könnemann (2016) proposed that these differences widen during urban growth, and then decrease as the new lifestyle spreads from the city to the countryside. Our results show that the people living in urban areas have significantly lower belief in God than people living in suburbs or rural areas only in Denmark. This finding suggests that the second stage of the process hypothesized by Stölz and Könnemann is more advanced in Norway and Sweden.

#### **Survey rounds**

In our multinomial models, the survey round describes the associations with belief in God not accounted for by other covariates. Our results confirm that belief in God shrank significantly in Norway and Sweden in 2018 relative to the reference level (1998). These results are partially consist-



ent with the trends shown in **Table 3**, but some discrepancies need to be analyzed. For example, we expected a significant decrease in the levels of belief in Denmark, at least in 2018. In Norway, we expected to detect a diminution for the 2008 round. These discrepancies between the multinomial models and the linear trend analyses are probably due to ROUND being a weaker predictor of belief in God when compared to the other covariates in the former (multinomial) models.

### Conclusion

We studied secularization in the Scandinavian countries (Denmark, Norway, and Sweden) based on data from 1998, 2008, and 2018 rounds of the ISSP Religion survey, in terms of the decay of belief in God among Protestants affiliated with the Evangelical Lutheran churches and the religiously unaffiliated (Nones), and its association with other ISSP variables (covariates) that we selected based on secularization theories. The selected covariates belong to three groups: confidence and attitude toward churches to represent the judgmental aspect of 'belonging,' religious or secular socialization to describe the influence of tradition and intergenerational transmission of religiosity, and demographic controls.

We first analyzed the significance of the trends toward disaffiliation and decaying belief in God for the two denomination groups in the three countries and the periods 1998–2008 and 2008–2018. Then, we carried bivariate analyses of the association between each covariate and belief in God using two-way contingency tables and found that belief in God does not behave as an ordinal variable. Finally, we computed multinomial logistic regression models for each of the three countries separately, with belief in God as the response variable.

Our trend analyses suggest that secularization in Scandinavia progressed faster in 2008–2018 than in 1998–2008, for in the former period, both disaffiliation and decay of belief in God were significant in the three Scandinavian countries. The structure of belief in God is very different for majority Protestants and Nones. Among the former, most members hold some form of belief in God, particularly belief in an abstract 'Higher Power' or a tendency for believing when in doubt, whereas the most frequent response among the latter is 'I don't believe in God.' Moreover, belief in God decayed among both majority Protestants and Nones. This finding suggests that disaffiliation in Scandinavia is also due to important changes in the people's worldviews and not just to negative reactions to the churches' performance in the public sphere. In other words, both 'believing' and 'belonging' decayed, and seem to be strongly intertwined.

We found that confidence in the church and the attitude toward the power of churches in society are very significant and strong predictors of belief in God in the three Scandinavian countries. Negative levels (distrust and excessive perceived power) strongly reduce the odds of believing in a 'Higher Power,' sometimes, when in doubt, or having a firm belief (theistic certainty), whilst positive levels (being confident and wishing more powerful churches) only increase the odds of holding believing

when in doubt and (especially) having a firm belief. The strength of the association between confidence and attitude toward the church's power in society suggests that these two variables are fundamental to the conceptualization of belonging in the Scandinavian countries and very likely in a more general context.

Regarding the influence of religious or secular socialization on belief in God later in life, the frequency of churchgoing during the formative period is also a strong predictor of belief in God. Surprisingly, people who just attended church services yearly (possibly by Christmas and or Easter) have at least nearly twice the odds of holding some belief than those who never went to church or did so less than yearly. These findings suggest that by setting up long-lasting psychological bonds with religion, ritual participation during the formative period may be very important for retaining religious beliefs, even in highly secular countries such as the Scandinavian.

Regarding the influence of the control variables (sex, age, educational degree, marital status, and survey round), we found that women in Scandinavia hold higher levels of all forms of belief in God (other than rejection of belief) than men, and that having a university degree significantly inhibits the odds of believing in God when in doubt or being a firm believer (being sure that God exists). Also, belief in God increases with age.

In terms of country differences, Sweden stands out for several reasons. Firstly, its share of Nones is higher than those of Denmark and Norway in the 1998, 2008, and 2018 rounds. Secondly, and contrary to the cases of Denmark and Norway, formal religious socialization (RELIN) is a weak predictor of belief in God when compared with confidence in the Church, attitude toward the power of churches, and the frequency of churchgoing during the formative years. Together, these findings suggest that secularization is more advanced in Sweden than in the other two Scandinavian countries. Norway was the country with the most persistent trends toward disaffiliation and erosion of belief in God in both 1998–2008 and 2008–2018 for the two groups considered in our study. Our work suggests that in the twenty years 1998–2018, Norway evolved from a stage of secularization close to Denmark's to another closer to Sweden's.

Although both disaffiliation and disbelief in God also progressed in Denmark, our results suggest that the erosion of belief in God was slightly less intense than in Norway and Sweden. Also, in Denmark, the type of living community is still a significant (albeit weak) predictor of belief in God. Both these results need to be confirmed in further studies.

### Reproducibility

The data used in this study are available from GESIS – Leibniz Institut für Socialwissenschaften, <https://www.gesis.org/home/>. This requires the creation of an account and downloading the data depending on the GESIS terms of use. We registered as academic users and had no special access privileges. Users interested in replicating our work are responsible for subscribing and obtaining the data from the GESIS repository, importing the data sets into R, selecting the respondents with no religion or

affiliated with the National Lutheran Churches, and creating separate data frames for the 1998, 2008, and 2018 rounds of the ISSP Religion survey. The scripts available at <https://github.com/ivanpugagonzalez/R-scripts-MS-Belief-in-God-Confidence-in-the-Church-and-Secularization-in-Scandinavia> will allow the replication of our analyses.

### Additional File

The additional file for this article can be found as follows:

- **Appendix.** Tables A1–A3. DOI: <https://doi.org/10.5334/snr.143.s1>

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### Competing Interests

The authors have no competing interests to declare.

### Authors Contributions

C.M.L. and I.P.G. conceived the ideas and designed the methodology; C.M.L. analyzed the data and led the writing of the manuscript. C.M.L. and I.P.G. created the figures and tables. I.P.G. contributed critically to the drafts and gave final approval for publication.

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