



# DEMOGRAPHIC RESEARCH

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*Research Article*

### **Religion and union dissolution: Effects of couple and municipal religiosity on divorce and separation**

**Willem R.J. Vermeulen**

**Mioara Zoutewelle-Terovan**

**Niels Kooiman**

**Aart C. Liefbroer**

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## **Religion and union dissolution: Effects of couple and municipal religiosity on divorce and separation**

**Willem R.J. Vermeulen<sup>1</sup>**

**Mioara Zoutewelle-Terovan<sup>2</sup>**

**Niels Kooiman<sup>3</sup>**

**Aart C. Liefbroer<sup>4</sup>**

### **Abstract**

#### **BACKGROUND**

Several theoretical models argue that divorce risks depend on an individual's level of religiosity and the level of religiosity in this individual's spatial context. However, it remains unclear whether the same relationship holds for couples and whether the strength of the effect of couple-level religiosity depends on the level of religiosity in the context (a so-called cross-level interaction effect). Moreover, we lack considerable knowledge about whether such effects also apply to the dissolution of unmarried cohabitations.

#### **OBJECTIVE**

We aim to understand the extent to which levels of couple and municipal religiosity, as well as their interplay, affect the union dissolution risk of married and cohabiting couples.

#### **METHODS**

This study focuses on the Netherlands and links survey information from the Dutch Labor Force Surveys (2011–2015) and register data from Statistics Netherlands ( $n_{couples} = 145,461$ ). We used multilevel modeling to test hypotheses.

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<sup>1</sup> Netherlands Interdisciplinary Demographic Institute (NIDI-KNAW), The Hague and Department of Epidemiology, University Medical Centre Groningen (UMCG), University of Groningen (RUG), Groningen, the Netherlands. Email: [vermeulen@nidi.nl](mailto:vermeulen@nidi.nl).

<sup>2</sup> Netherlands Interdisciplinary Demographic Institute (NIDI-KNAW), The Hague and University of Groningen (RUG), Groningen, the Netherlands, the Netherlands.

<sup>3</sup> Statistics Netherlands (CBS), The Hague, the Netherlands.

<sup>4</sup> Netherlands Interdisciplinary Demographic Institute (NIDI-KNAW), The Hague, Department of Epidemiology, University Medical Centre Groningen (UMCG), University of Groningen (RUG), Groningen and Department of Sociology, Vrije Universiteit (VU), Amsterdam, the Netherlands.

## **RESULTS**

Highly religious couples are less likely to dissolve their marriage than less religious couples, but both are equally likely to dissolve a cohabitation. The less religious a municipality, the smaller the differences in the union dissolution risks of highly religious and less religious couples.

## **CONCLUSIONS**

The effect of couple religiosity on union dissolution risks depends on the religious context in which a couple lives and the relationship type of the couple. Union dissolution risks are higher for religious couples who live in less religious contexts or choose to cohabit instead of marry.

## **CONTRIBUTION**

This study provides a new and integrated understanding of the effect of religiosity on union dissolution from a micro-level (couple), macro-level (municipality), and cross-level perspective. It is one of the first studies of a nationally representative sample revealing the different roles of religion in marriage and cohabitation.

## **1. Introduction**

Divorce rates show remarkable regional variation in many countries (Kulu 2012; Robert-Nicoud 2014; De Graaf and Kalmijn 1999; González-Val and Marcén 2018). The Netherlands, the country in which this study was conducted, is no exception. While the average yearly divorce rate was 8.5 divorces per 1,000 marriages in 2019, divorce rates in some municipalities were over 50% higher. In other municipalities, divorce rates were almost zero (Statistics Netherlands 2021). Several authors have suggested that one of the key contributors to this variation in divorce rates is regional differences in religious practices (De Graaf and Kalmijn 1999; Liefbroer and Rijken 2019; Vermeulen et al. 2023; Adamczyk 2013).

Religion can influence municipal divorce rates in multiple ways. First, the composition of the population in terms of religiosity matters. Individuals and couples who are religiously involved have a lower divorce risk than those who are not (Thornton 1989; Li, Kubzansky, and VanderWeele 2018). Thus, municipalities with a higher percentage of religious couples will have lower divorce rates. This compositional effect can be enhanced by a contextual effect. Previous research has shown that couples who live in contexts with more religious inhabitants are less likely to divorce, irrespective of their own religious involvement (Trent and South 1989; Vaaler, Ellison, and Powers 2009). In these contexts, marriage norms might be more traditional, increasing the external pressure to remain within the current relationship.

More recently, it has been suggested that this contextual effect of religion may not be the same for all couples. In a study comparing regions within Europe, there were much larger differences in the marriage attitudes of the religious and nonreligious population in religious than in nonreligious contexts (Liefbroer and Rijken 2019). This finding suggests that the decrease in divorce risk associated with living in a more religious context may depend on a couple's own religious involvement: In more religious contexts, more religious couples may try harder to fit in with traditional religious norms than less religious couples. As yet, this interaction or cross-level effect between couple and contextual religiosity remains underexplored.

Many earlier studies on the role of religious involvement in union dissolution focused solely on the dissolution of marriage (Call and Heaton 1997; Kulu 2012; Kalmijn, De Graaf, and Janssen 2005; Li, Kubzansky, and VanderWeele 2018). This is unfortunate as it means that little is known about the role of religious involvement in the dissolution of cohabitation, which has become increasingly popular in recent decades in many parts of the world (Sobotka and Toulemon 2008; Esteve, Lesthaeghe, and López-Gay. 2012; Manning 2013; Yu and Xie 2015).

The Netherlands is no exception to this general pattern (Sobotka and Berghammer 2021). In the last two decades, the popularity of cohabitation has increased across all age groups (Statistics Netherlands 2020a) and educational backgrounds (Van Gaalen, van Houdt, and Poortman 2019). For roughly half of the cohabiting partners, cohabitation is a full alternative to marriage (Hiekel 2014); this is especially the case among older couples who start cohabiting (De Jong 2000).

De Graaf and Loozen (2009) report that this increase in cohabitation has occurred in both religious and nonreligious populations and that the difference between cohabitation rates in both groups becomes smaller. Therefore, it is important to understand whether and to what extent religious involvement plays a role in the dissolution of cohabiting unions. If religious couples who cohabit have less traditional family norms than religious couples who marry, religion might be a less important predictor of the dissolution of cohabiting unions than of marriages.

In this study, we first study how couple-level and contextual-level religion affects the risk of union dissolution. We specifically focus on the following question: Does contextual-level religion moderate the relationship between couple-level religion and union dissolution? Finally, we examine whether the effect of religion on the risk of union dissolution is smaller for unmarried cohabitations than for marriages.

This study is innovative in at least three aspects. First, we disentangle couple, contextual, and cross-level effects of religious involvement on couples' union dissolution risks. This enables us to better understand the complex interaction of religious effects within communities. Second, to our knowledge, we are the first to study religious effects across different types of unions (marriage and cohabitation). Finally, to conduct this

study, we constructed a unique dataset linking survey information on religious denominational affiliation and participation in religious gatherings from the Dutch Labor Force Survey (LFS) to data on union dissolutions and other characteristics from the population registers at Statistics Netherlands. This allowed us to analyze a large representative sample of Dutch couples showing large variation in terms of religious practices and union types.

## **2. Couple- and contextual-level effects of religion on union dissolution**

The relationship between religion and union dissolution can be explained in multiple ways. On the one hand, the religious characteristics of couples matter. The individual religious characteristics of both partners and their interaction can affect a couple's union dissolution risk. This is known as the couple-level effect. To further examine the findings that religious individuals are less likely to divorce than nonreligious individuals (Thornton 1985; Adamczyk 2013; Wilkins-LaFlamme 2016), studies often examine two dimensions of religiosity: denominations and religious involvement.

Previous research has shown that differences in the level of religious involvement are the main explanatory factor in the link between religiosity and union dissolution risk. While certain denominations may be linked to lower union dissolution risks than others, nearly all religions emphasize the traditional norm that marriage is an institution that cannot easily be dissolved (Yarhouse and Nowacki 2007). It seems that members of these denominations are simply more involved in religious practice (Call and Heaton 1997; Kulu 2012; Kalmijn, De Graaf, and Janssen 2005; Thornton 1989; Li, Kubzansky, and VanderWeele 2018). In the Netherlands, the highest levels of religious involvement can be found among members of the various orthodox Protestant denominations (Dekkers and Peters 1989) and Muslims. While Muslims mostly live in the larger Dutch cities (Statistics Netherlands 2015a), most orthodox Protestants live in the Dutch Bible Belt, a strip of municipalities stretching from the southwest to the northeast of the country (Schmeets 2016).

Various measures of religious involvement have been linked to lower divorce risks. Those who consider themselves more religious than others (Kulu 2012), married in church (Kalmijn, De Graaf, and Janssen 2005), or visit church more frequently (Thornton 1989; Li, Kubzansky, and VanderWeele 2018) are less likely to divorce. Denominations matter only when the partners are of different denominations: In these couples, union dissolution risks are higher. Differences in the values and ideas between partners in mixed religious couples may increase conflict within the couple (Lehrer and Chiswick 1993; Kalmijn 1998; Janssen 2002; Kalmijn, De Graaf, and Janssen 2005).

On the other hand, religious characteristics of the context in which a couple lives matter. We call this the contextual effect. Contextual effects occur as the result of social interactions between individuals within spatial contexts, such as neighborhoods or municipalities (Galster 2012). Social exchange theory specifies two mechanisms by which the regional level of religiosity could affect union dissolution risk. First, we can expect that couples who live in more religious contexts encounter more external pressure to remain in their relationship as they are likely to have more day-to-day interactions with religious individuals (the external pressure mechanism) (Lewis and Spanier 1979). Moreover, we can expect it to be much harder to find potential marital alternatives in more religious contexts (the relationship alternatives mechanism) (Thibaut and Kelley 1959; Udry 1981) as there is a smaller percentage of single people in more religious context (Statistics Netherlands 2020b), which is associated with a lower union dissolution risk (South and Lloyd 1995; South, Trent, and Shen 2001).

Whereas both couple-level and contextual effects have been studied separately, few studies have examined them simultaneously (Kulu 2012; Adamczyk 2013). As we believe it is important to disentangle these effects, we formulate the following pair of hypotheses:

H1: More religious couples are less likely to divorce than less religious couples.

H2: Couples living in a more religious context are less likely to divorce than couples living in a less religious context, irrespective of the religiosity of the couple.

It is important to consider that this analytical distinction between couple-level and contextual religious effects might not suffice to describe the full effect of religion on a couple's union dissolution risk. In a recent study, Liefbroer and Rijken (2019) show that the gap between the divorce attitudes of religious and nonreligious individuals is larger when the region in which they live is more religious. We may expect to find a similar cross-level effect in divorce risks: The strength of the couple-level religious effect may depend on the religious context in which the couple resides. Two main mechanisms can explain this interaction between religious couples and their religious contexts.

First, the level of interaction between the couple and the religious context may depend on the level of religiosity of the couple. As religious couples have more frequent interactions with other religious couples through places of worship and shared cultural experiences, religious couples who live in more religious contexts may encounter more external pressure to remain in their relationship than nonreligious couples (Afifi et al. 2013). Moreover, religious couples may value the opinions of other religious couples more than nonreligious couples do. Hence, living in a more religious context may create stronger barriers to divorce for more religious couples than for less religious couples.

Second, there may be a selection mechanism at play. Generally, couples try to maximize their sociocultural similarity to the community in which they live (Wang, de Graaff, and Nijkamp 2016). This means that couples who are more religious may be more inclined to move to contexts in which religion plays a larger role and that couples who are less religious may want to move to contexts with less religious presence. As such, we could expect that religious couples in less religious contexts are more likely to detach from traditional norms and values. Combined with the first mechanism, this leads us to our third hypothesis:

H3: More religious couples are less likely to divorce than less religious couples, but this difference is smaller in less religious contexts.

### **3. Marriage, cohabitation, and union dissolution**

Previous studies find that cohabiting unions are more likely to dissolve than marriages (Kiernan and Mensah 2010; Liefbroer and Dourleijn 2006). There are two main explanations for this difference. First, while cohabitation has established itself as an acceptable alternative to marriage (Cherlin 2020; Manning 2020), some couples see cohabitation as a testing ground for marriage (Hiekel, Liefbroer, and Poortman 2014), implying that the risk of union dissolution will be higher. Second, cohabiting couples may have a greater appreciation of autonomy and self-development, which is associated with a choice for less binding union types and an increase in union dissolution risk (Hiekel and Wagner 2020). This behavior is often interpreted within the context of the second demographic transition theory (Lesthaeghe 2010), in which people are thought to have started to part from traditional norms and values.

Whereas the studies cited earlier show that religious couples are considerably less likely to divorce than nonreligious couples, such differences may be smaller among couples who dissolve a cohabiting union (Berghammer 2012). By cohabiting, religious couples signal that they have already, to some extent, parted from traditional religious marital norms. This may indicate that religious cohabiters will also be less likely to adhere strictly to traditional religious norms in other parts of their family life. Therefore, we expect that the religiousness of couples will have a weaker effect on the dissolution of cohabiting unions than on the dissolution of marriages, leading us to formulate the following hypothesis:

H4: More religious couples are less likely to dissolve either a marriage or a cohabiting union than less religious couples, but this effect is smaller when couples are cohabiting.



## **4. Method**

### **4.1 Data and sample**

To test our hypotheses, we make use of two different data sources: the Dutch LFS (Statistics Netherlands 2015b) and Dutch register data in the system of social statistical datasets of Statistics Netherlands (Bakker, Van Rooijen, and Van Toor 2014). The LFS defines our sample: We use this source to identify couples and gather information about the religious characteristics of both partners. The social statistical datasets enrich our sample and are used to detect union dissolution.

The LFS is a rotating panel survey conducted yearly by Statistics Netherlands in which data on every member (aged 15 and older, both working and nonworking) of a selection of private households are collected. At first contact in the 2011–2015 waves of this survey (43% average response rate) (Statistics Netherlands 2015b), each household member was asked about their relationship to other household members, as well as their religious involvement and denominational affiliation. When household members could not respond themselves (in about half of the cases), other household members who had enough information to respond accurately – such as their partner – were asked to answer the survey questions for them.

Based on the information gathered in the LFS, we identified 145,461 adult couples, both in marriages and cohabiting unions, in which partners were registered at the same address (64.7% of 528,030 household members were reported to have a partner – every couple requires two household members). We excluded participants in homosexual relationships (1.2% of all relationships) as it would be difficult to account for the effects of gender similarities on union dissolution (Farr and Goldberg 2018) and religious rejection (Kuyper 2018) in this small group of couples.

Using register data, we followed each couple in this sample from the year they participated in the LFS until they stopped living within the same household (and continued to do so for at least the following 365 days). For each year, we also added register information on earlier relationships, homeownership, educational achievement, income, parenthood, civil status, migrant status, parental divorce, and place of residence. We censored couples in three instances: after the emigration of both partners, after the death of at least one of the partners, or when it was no longer possible to observe whether partners stopped living in the same household within the following year (after 31 December 2017).

Our final sample consisted of 825,164 couple-years, in which each partner in every couple was aged 18 or older. It is important to note that, as a consequence of postponement of union formation and of population ageing, our sample is relatively old (average age of couples is 50.6 years). In addition, we selected sample members based

on their participating in the Dutch LFS. We observed low union dissolution risks during the first year after they participated, which could be due to couples with relationship problems being less likely to participate in the Dutch LFS.

## **4.2 Variables**

### **4.2.1 Couple-level variables**

In our sample, three types of unions can be distinguished. Couples can cohabit (without any legal registration), have a registered partnership, or be legally married. Whereas a registered partnership is a recognized form of union in the Netherlands, the size of this group was too small to be treated separately in this study (2.0% of the couples were in a registered partnership at the survey, and this number changed little in the years thereafter). Given that these couples actively chose to adopt a nontraditional union type, we included couples in registered partnerships in the cohabiting group. As it can also be argued that registered partnerships are more similar in terms of registration and rights to marriage, we performed sensitivity analyses in which couples in registered partnerships were added to the group of married couples or deleted from the sample altogether. These analyses can be found in Supplementary Materials 3. In both analyses, our results did not change.

Cohabitation duration was measured using register data, specifically information on the residential history of both partners. For partners who started cohabiting after 1 January 1995, the date at which both partners started living in the same household was used as the starting point of the relationship. For partners who were already cohabiting on 1 January 1995, we used the marriage date or birth date of their first child (whichever happened first).

Couples were treated as having separated if they stopped living at the same address for more than 365 days. In doing so, we excluded several potential sources of biases in our analysis. Such sources of bias include situations in which couples could live temporarily at different addresses due to slow moves between two addresses, employment-related changes, or brief periods of estrangement. At the time of combining data for the study, information about the residential history of both partners was available up to 31 December 2018, allowing us to detect all separations until 31 December 2017. When a separation was detected, the date at which the couple stopped living together was treated as the time point of union dissolution (for both married and cohabiting couples). Thus, we were able to treat married and cohabiting couples in the same way.

To operationalize couple religiosity, we followed the existing literature suggesting that there are two religious aspects to take into account: religious denomination and the

degree of religious involvement (Kulu 2012; Kalmijn, De Graaf, and Janssen 2005; Thornton 1989; Li, Kubzansky, and VanderWeele 2018). Both variables were measured once, during respondents' first participation in the LFS.

Denominational affiliation was based on the question "Which religious denomination or worldview would you say you adhere to?" Each of the partners was categorized into one of five groups: nonreligious, Roman Catholics, Protestants, Muslims, and other denominations (Statistics Netherlands 2020c). Our data did not allow further distinctions between different Protestant groups to be made. Next, we distinguished between couples in which both partners reported the same denomination (both nonreligious, both Roman Catholic, both Protestant, both Muslim, or both of another denomination). Mixed religious couples were split into two groups – that is, couples where both partners are religious but have different denominations and couples with just one religious partner. When distinguishing between religious and nonreligious couples, we considered only couples in which both partners are religious to be religious.

It is important to note that for 4.1% of the respondents the denomination is categorized as "not applicable, refuses to respond, or doesn't know." Few of the respondents who gave information on their denomination refused to answer the question on religious participation: 1.6% of Roman Catholics, 1.2% of Protestants, 2.7% of Muslims, and 1.7% of members of other denominations. While these variables can indeed be considered sensitive, we think that the amount of uncertainty and number of refusals in our data remain very low.

We used the average number of yearly visits to religious gatherings of both partners as our measure of religious involvement at the couple level. This implies that we measured participation in the practices of organized religion and did not measure spirituality. Partners who reported having a denominational affiliation in the LFS were asked the question "In general, how often do you go to a church, a synagogue, a mosque, or a religious gathering?" and could answer with categorical response options ranging from "Rarely or never" to "Once a week or more frequently." We transformed the answers to a continuous variable ranging from 0 (never) to 52 (once a week or more) and divided it by 52. As a result, the variable ran from 0 (never) to 1 (at least once a week). As nonreligious respondents were not asked about their behavior, we assumed that nonreligious respondents never attend religious gatherings for religious purposes. At the couple level, we averaged the self-reported variables of both partners.

Apart from these key independent and dependent variables, we included a broad set of potential confounders – that is, variables that could be related to both religion and union dissolution risk. The following variables were included: average age of partners (time-varying; in years, subtracting 18 to reflect the number of years since adulthood), age difference between partners (time-constant; categorical; equal if less than 4 years, woman older or man older), average educational attainment of both partners based on the

International Standard Level of Education (ISLED) (Schröder and Ganzeboom 2014) (time-varying), difference in educational attainment (time-varying; categorical; equal if less than 10 ISLED difference, woman higher or man higher), income of the woman (time-varying; percentiles of all Dutch residents with a personal income), income of the man (time-varying; percentiles of all Dutch residents with a personal income), a dichotomous variable reflecting homeownership (time-varying; 1 = owns a home), a dichotomous variable showing whether either of the partners in the couple has children from earlier relationships (time-constant), a count variable for the number of children living at home (time-varying), a variable reflecting the age of the youngest child (time-varying; in years), two dichotomous variables showing whether either partner had divorced parents (time-varying), two dichotomous variables revealing whether either partner had experienced an earlier divorce (time-constant), and the migrant status of the couple (time-constant; categorical; both born in the Netherlands, one partner born abroad, or both partners born abroad). Table 1 lists information on the origin of each couple-level variable. In our sample, 64,478 couple-years (7.8%) did not have complete information regarding the homeownership or ISLED of both partners (even when considering the ISLED of the partner in the previous year). Missing information on education levels and homeownership was imputed with predicted values from linear regression models, including gender, age, income, and migrant status.

#### 4.2.2 Municipal-level variables

We used municipal-level information to define the context in which a couple resides. In 2019, the Netherlands consisted of 355 municipalities, often containing multiple towns and usually consisting of an area with a shared history and culture. Dutch municipalities generally have several tens of thousands of residents, with outliers in the low thousands on the Dutch Wadden Islands and hundreds of thousands in the big cities in the western part of the Netherlands (Statistics Netherlands 2020d).

Municipal-level religiousness was defined as the proportion of all LFS participants residing in a municipality that reported being religious. Thus, information about individuals who are not living in a household with a partner was also considered when we determined the level of religiosity of a municipality. For all 528,030 respondents participating in the 2011–2015 waves of the LFS, we gathered addresses on 1 January of each year. Each address was then linked to the municipal boundaries present in 2019. The median number of respondents residing in a municipality was 942, and only five municipalities had fewer than 100 respondents.

The level of urbanization (time-varying) was measured by five categories (Statistics Netherlands 2019): countryside (less than 500 addresses per km<sup>2</sup>), slightly urbanized (500

to 1,000 addresses per km<sup>2</sup>), moderately urbanized (1,000 to 1,500 addresses per km<sup>2</sup>), urbanized (1,500 to 2,500 addresses per km<sup>2</sup>), and highly urbanized (more than 2,500 addresses per km<sup>2</sup>, reference category). In more rural areas, increased social cohesion and social control can create higher barriers to divorce. As more rural areas are also often found to be more religious, we included the municipal level of urbanization in our models to prevent spurious correlations between municipal religiosity and union dissolution risks.

**Table 1: Information on the sources of all variables used in this study**

Variable	Source	Based on
Identification of couple	LFS	Survey participation (2011–2015)
Identification of separation	Register data (yearly)	Cohabitation file (continuous since 1995)
<i>Couple-level variables</i>		
Religious affiliation	LFS	Survey participation (2011–2015)
Visits to religious gatherings	LFS	Survey participation (2011–2015)
Denomination of the couple	LFS	Survey participation (2011–2015)
Union type	Register data (yearly)	Civil status file (continuous)
Age	Register data (yearly)	Residents file (continuous)
Duration of union	Register data (yearly)	Civil status file (continuous) Cohabitation file (continuous since 1995) Children file (continuous; for couples cohabiting pre-1995)
Level of education	LFS Register data (yearly)	Survey participation (2011–2015) College and university diplomas (continuous since 1982) Non-private-education diplomas (continuous since 2006)
Income	Register data (yearly)	Socioeconomic category files (continuous since 2011)
Homeownership	Register data (yearly)	Person-to-residence file (continuous since 2011) Residence-to-ownership file (continuous since 2011)
Children from earlier relationships	Register data	Survey participation (2011–2015) Children file (continuous)
Number of children at home	Register data (yearly)	Household file (continuous since 2011)
Age of youngest child	Register data (yearly)	Household file (continuous since 2011)
Divorced parents	Register data (yearly)	Civil status file (continuous)
Earlier divorce	Register data	Civil status file (continuous)
Migrant status	LFS	Survey participation (2011–2015) Residents file (continuous)
<i>Municipal-level variables</i>		
% religious citizens	LFS	Aggregated survey data (2011–2015) Address file (continuous since 2011)
Level of urbanization	Register data (yearly)	Aggregated address data per year (continuous since 2011) Address file (continuous since 2011)

### 4.3 Modeling strategy

Considering the dichotomous nature of our dependent variable, we tested our hypotheses using logistic regression. Given that couple information is nested within municipalities, we opted for multilevel mixed effects logistic regression. The inclusion of random slopes for religious involvement and denomination at the municipality level allowed us to

account for unexplained municipal-level variation in their link to union dissolution risks (Heisig and Schaeffer 2019).

While we observed most couples for several years, we did not correct for the dependence between these observations as we examined a maximum of one union dissolution per couple (Allison 2014, chapter 2). Only the models testing the fourth hypothesis used the full sample. To test our first three hypotheses, we focused on only married couples.

All analyses were conducted using the `mlogit` command in Stata/MP 16.1.

## 5. Results

Table 2 provides descriptive information on the couple-level and municipal-level variables used in this study. In this table, we distinguish between three groups of couples: all couples, married couples only, and cohabiting couples only.

During the observation period, 3.9% of all couples separated, which translates into a yearly union dissolution rate of 0.7%. Almost half of all couples (42%) considered themselves to have no denomination. The percentages of all couples in which both partners belonged to the same religious group were smaller: 21% Roman Catholic, 13% Protestant, 3% Muslim, and 4% “other” denomination. These results align with earlier reported sizes of religious groups by Statistics Netherlands (Statistics Netherlands 2020c). In 14% of the couples, only one partner was recorded as religious, and in 4% of the couples, both partners belonged to different religious denominations. On average, couples visited religious gatherings every two months. Taking into consideration the percentage of couples without a denomination, this means that in our full sample, religious couples visited religious gatherings on average every month. Regarding the control variables, couples had an average age of 50 years and had lived together for 22 years. Given that in 43% of the couples the youngest child is older than 18 and in only 14% of the couples the youngest child is younger than five, this indicated that the sample contained more older than younger couples.

In 82% of the observed couple-years, couples were married. A comparison of married and nonmarried couples showed that married couples in our sample are less likely to separate (2.8% vs. 7.6%), were more religious (50.0% vs. 22.4%), older (average age of 52 years vs. 42 years), and had been living together for a longer period (25 years vs. 10 years) than cohabiting couples. Moreover, in married couples, men are more often more highly educated than women compared to nonmarried couples, and partners are less likely to have experienced a parental divorce or a divorce themselves, making them also less likely to have children from earlier relationships.

**Table 2: Couple-level descriptives (complete sample: N = 825,164 couple-years)**

	All couples (N = 145,461 couples; 825,164 couple-years)				Married couples (N = 119,815 couples; 674,100 couple-years)				Cohabiting couples (N = 31,341 couples; 151,064 couple-years)			
	%	Mean	SD	95%	%	Mean	SD	95%	%	Mean	SD	95%
Couples separated in sample	3.9				2.8				7.6			
Couple-years ending in separation	0.7				0.5				1.6			
<b>Couple-level characteristics</b>												
Religious affiliation (yes)	45.0	0.13	0.29	0.00	1.00	0.16	0.31	0.00	1.00	0.02	0.11	0.00
Visits to religious gatherings												
Denomination of the couple												
No denomination	41.4				37.4				59.7			
Roman Catholic	21.1				22.9				13.0			
Protestant	12.9				15.1				3.0			
Muslim	3.1				3.6				1.0			
Other	3.6				4.1				1.3			
Mixed (both religious)	4.4				4.4				4.2			
Mixed (one religious)	13.5				12.5				17.8			
Union type (married)	81.7				100.0				0.0			
Average age (years after 18)		32.6	12.0	12.5	51.0	34.5	11.2	15	51.5	23.9	11.2	8.5
Difference in age												
Same age	73.2				74.5				67.6			
Female partner > 4 years older	2.94				2.4				5.2			
Male partner > 4 years older	23.8				23.1				27.1			
Duration of union (years)		21.9	13.2	3	44	24.6	12.7	5	45	9.7	6.8	1
Average level of education (ISLED)		59.0	16.9	29.3	87.1	58.1	16.9	29.3	87.1	63.3	16.4	37.3
												87.1

**Table 2: (Continued)**

	All couples (N = 145,461 couples; 825,164 couple-years)			Married couples (N = 119,815 couples; 674,100 couple-years)			Cohabiting couples (N = 31,341 couples; 151,064 couple-years)		
	%	Mean	SD	%	Mean	SD	%	Mean	SD
<b>Difference in level of education</b>									
Same level of education	54.7			54.0			58.2		
Female partner has higher education	19.8			18.8			24.4		
Male partner has higher education	25.4			27.2			17.4		
Income male partner (percentile)	57.6	35.8	0	98	56.2	36.9	0	98	63.6
Income female partner (percentile)	34.1	29.9	0	88	31.6	29.6	0	86	45.4
Homeownership (yes)	80.5			81.4			76.2		
Children from earlier relationships (yes)	12.0			9.5			23.0		
Number of children at home	1.1	1.1	0	3	1.1	1.1	0	3	1.1
Age youngest child									
No children	14.7			9.9			36.5		
< 5	13.4			10.6			26.2		
5 to 18	28.5			28.9			26.6		
> 18	43.3			50.6			10.8		
Divorced parents (male partner)	6.6			5.2			13.2		
Divorced parents (female partner)	7.4			6.0			13.8		
Earlier divorce (male partner)	10.8			9.2			17.9		
Earlier divorce (female partner)	9.9			8.2			17.7		
Migrant									
No partner	87.3			87.1			87.8		
One partner	7.7			7.5			9.0		
Two partners	5.0			5.4			3.2		
<b>Municipal-level characteristics</b>									
% religiously affiliated citizens	52.2			52.7			50.0		
<b>Level of urbanization</b>									
Countryside	9.4			9.7			7.8		
Slightly urbanized	25.3			26.2			21.3		
Moderately urbanized	17.3			17.7			15.7		
Urbanized	30.5			30.3			31.4		
Highly urbanized	17.5			16.2			23.8		

Notes: 5,695 couples who cohabited during their participation in the survey married during the observation period. The couples contribute couple-years to both the group of married and the group of cohabiting couples.



The link between religion and union dissolution risk was examined in eight models. In each of these models, the effects of the control variables on couples' union dissolution risks were in line with expectations. When couples cohabit, rent, live in big cities, are younger, or are natives, and when they have shorter relationships, larger age differences, or larger educational differences, they are more likely to dissolve their union than their counterparts with the opposite characteristics. The same is true for couples with lower-earning male partners or higher-earning female partners, those who have divorced parents, and those who have experienced divorce in the past. Furthermore, couples who have children from earlier relationships, older children, or fewer children are more likely to dissolve their union than those with opposite characteristics. More detailed information on the estimated effects of the control variables is found in Parts 1 and 2 of the Supplementary Materials.

To test our hypotheses, we used a stepwise approach. In a first step, we investigated the effects of couple-level religious indicators on divorce (Table 3, Models 1, 2, and 3). This step aimed to test whether married couples who are more religious are less likely to divorce than married couples who are less religious (H1). In Model 1, we distinguished between married couples in which both partners are religiously affiliated and married couples with at least one religiously unaffiliated partner. The estimated model showed that each year, the odds of religiously affiliated couples divorcing are about 24% lower than those of religiously unaffiliated couples. In Model 2, we further differentiated among religiously affiliated couples by introducing their average yearly number of visits to religious gatherings. In this model, the yearly odds that religiously affiliated couples who never visit a religious gathering will divorce were 14% lower than those of religiously unaffiliated couples. For religiously affiliated couples in which both partners attend religious gatherings every week, these yearly odds were 49% lower ( $100 \times (1 - 0.864 \times 0.591)$ , as our measure for visiting religious gatherings is continuous and 1 corresponds to weekly visits). A likelihood-ratio test suggests that Model 2 has a much better fit than Model 1 ( $\chi^2(1) = 44.90, p = <0.001$ ), but both models support H1: More religious couples are less likely to divorce than less religious ones.

While introducing couple religious affiliation to the model did not lower the unexplained variance at the municipal level, introducing the average yearly number of visits to religious gatherings to the model lowered the unexplained variance by 16%. This suggests that municipal-level variation in divorce risks is not explained by the proportion of religiously affiliated residents in a municipality but rather by how religious these religiously affiliated residents are.

**Table 3: Multilevel logistic regression estimates of divorce risks of married couples: effects of couple-level variables (N = 674,100 couple-years)**

	Model 1			Model 2		
<i>Fixed-effect parameters</i>	<i>exp(b)</i>	<i>se</i>	<i>p</i>	<i>exp(b)</i>	<i>se</i>	<i>p</i>
Constant	0.028	0.004	< .001	0.030	0.004	< .001
<b>Couple-level variables</b>						
Religiously affiliated	0.759	0.029	< .001	0.864	0.036	.001
Visits to religious gatherings				0.591	0.048	< .001
<i>Denomination</i>						
No denomination						
Roman Catholic						
Protestant						
Muslim						
Other						
Mixed (both religious)						
Mixed (one religious)						
<b>Municipal-level variables</b>						
% religiously affiliated citizens						
<b>Cross-level variables</b>						
% religious affiliated citizens x religious affiliation						
% religious affiliated citizens x visits to religious gatherings						
<b>Constant</b>						
sd(constant)	0.0153	0.008		0.0128	0.008	
sd(religious affiliation)						
sd(visits to religious gatherings)						
<b>Model fit indicator</b>						
Log-likelihood				-19,726.75		-19,704.30

	Model 3			Model 4		
<i>Fixed-effect parameters</i>	<i>exp(b)</i>	<i>se</i>	<i>p</i>	<i>exp(b)</i>	<i>se</i>	<i>p</i>
Constant	0.030	0.004	< .001	0.031	0.005	< .001
<b>Couple-level variables</b>						
Religiously affiliated				0.869	0.038	.001
Visits to religious gatherings	0.622	0.058	< .001	0.590	0.048	< .001
<i>Denomination</i>						
No denomination	<i>Ref</i>					
Roman Catholic	0.887	0.046	.021			
Protestant	0.837	0.065	.023			
Muslim	0.695	0.081	.002			
Other	0.822	0.095	.090			
Mixed (both religious)	0.950	0.083	.559			
Mixed (one religious)	1.037	0.054	.480			
<b>Municipal-level variables</b>						
% religiously affiliated citizens				0.929	0.144	.636
<b>Cross-level variables</b>						
% religious affiliated citizens x religious affiliation						
% religious affiliated citizens x visits to religious gatherings						
<b>Constant</b>						
sd(constant)	0.0126	0.008		0.0130	0.008	
sd(religious affiliation)						
sd(visits to religious gatherings)						
<b>Model fit indicator</b>						
Log-likelihood				-19,701.06		-19,704.18

**Table 3: (Continued)**

	Model 5			Model 6		
	<i>exp(b)</i>	<i>se</i>	<i>p</i>	<i>exp(b)</i>	<i>se</i>	<i>p</i>
<b>Fixed-effect parameters</b>						
Constant	0.026	0.004	< .001	0.029	0.005	< .001
<b>Couple-level variables</b>						
Religiously affiliated	1.275	0.197	.115	0.861	0.038	.001
Visits to religious gatherings	0.581	0.047	< .001	1.136	0.343	.673
<b>Denomination</b>						
No denomination						
Roman Catholic						
Protestant						
Muslim						
Other						
Mixed (both religious)						
Mixed (one religious)						
<b>Municipal-level variables</b>						
% religiously affiliated citizens	1.271	0.244	.213	1.058	0.173	.731
<b>Cross-level variables</b>						
% religious affiliated citizens × religious affiliation	0.484	0.132	.008			
% religious affiliated citizens × visits to religious gatherings				0.279	0.153	.020
<b>Constant</b>						
sd(constant)	0.0115	0.008		0.0122	0.008	
sd(religious affiliation)	0.0081	0.021				
sd(visits to religious gatherings)				0.0543	0.094	
<b>Model fit indicator</b>						
Log-likelihood				-19,700.50		-19,701.04

Notes: In a baseline model without any religious variables,  $sd(\text{constant}) = 0.0150$ . This table is cut and presents only the central predictors. The complete table (including other covariates) can be found in Part 1 of the Supplementary Materials.

In Model 3 we added another dimension of couple religiosity to the model by replacing the dichotomous religious affiliation variable with seven specific religious categories. Even though all couples in which both partners shared the same denomination had lower odds of divorce than religiously unaffiliated couples (Roman Catholics (11% lower odds,  $p = 0.021$ ), Protestants (16% lower odds,  $p = 0.023$ ), Muslims (30% lower odds,  $p = 0.002$ ), and members of other religions (18% lower odds,  $p = 0.090$ )), we found that the differences in odds between these groups of religious couples were small. The odds of divorce for religiously affiliated couples in which the partners did not share the same denomination were more similar to those of religiously unaffiliated couples.

The introduction of denominations to Model 3 improved the log-likelihood of the model slightly over Model 2. However, based on a likelihood-ratio test ( $\chi^2(5) = 6.48$ ,  $p = 0.262$ ), we found that this improvement in log-likelihood by adding five more variables to the model was negligible. Moreover, the link between the other religious variable of interest, the average yearly number of visits to religious gatherings, and divorce risk did not change considerably (0.591 vs. 0.622). Based on these findings, we decided against including denominations in subsequent models.

In a second step, we examined whether married couples who live in a more religious context are less likely to divorce than those who live in a less religious context (H2). In Model 4 (Table 3), the proportion of the municipal population that self-identified as religiously affiliated was added. The introduction of this variable did not have a sizable effect and did not lower the unexplained variance. Based on this model, we found no

evidence for H2. Married couples living in a more religious context are just as likely to divorce as couples living in a less religious context.

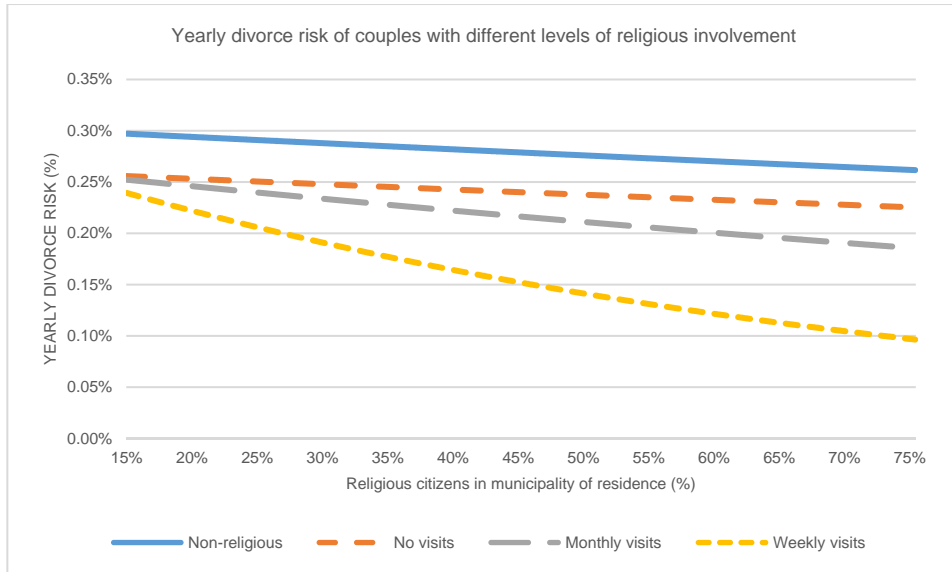
In a third step, we expanded Model 4 with interactions between our measures of couple-level and municipal-level religiosity. In doing so, we examined whether the effects of couple-level religiosity were moderated by the religiosity of the municipality in which a married couple lives (H3). We tested this cross-level interaction in two separate models (Table 3).

First, we examined the interaction between couple religious affiliation and the proportion of religiously affiliated citizens (Model 5). The association of this interaction with the divorce risks of couples was substantial ( $p = 0.008$ ), and the introduction of this interaction was a serious improvement on Model 4 ( $\chi^2(1) = 7.36, p = 0.007$ ). Second, we examined the same model, but with an interaction between the average number of yearly visits to religious gatherings of couples and the proportion of religiously affiliated citizens instead (Model 6). Like Model 5, this interaction had a substantial association ( $p = 0.020$ ), and the introduction of this interaction was a serious improvement on Model 4 ( $\chi^2(1) = 6.28, p = 0.012$ ). When both cross-level interactions were estimated at the same time, neither was associated with couples' divorce risks, presumably because of a relatively high level of multicollinearity.

Both Models 5 and 6 point in the same direction and support H3: The religiosity of a married couple matters more in more religious contexts. Based on the parameters estimated in Model 6, Figure 1 provides an overview of the predicted yearly divorce risks of couples with different levels of religious involvement in municipalities with a range of proportions of religious citizens. In this figure, each couple has the mean age (53.3 years) and union duration (24.6 years) of all married couples in our sample.

Based on this figure, we see that couple-level religiosity has a small impact on yearly divorce risks in municipalities where only relatively few people are religiously affiliated. In municipalities with only 15% of religiously affiliated inhabitants, the yearly divorce risk is about 0.30% for the nonreligious and about 0.24% for those who visit religious gatherings weekly. When more people are religious, this difference is larger: In municipalities in which 75% of the inhabitants are religiously affiliated, the yearly divorce risk is 0.26% for the religiously unaffiliated but only 0.10% for those who visit religious gatherings weekly.

**Figure 1: Predicted yearly divorce risks of four different groups of married couples with an average age 53.3 years and union duration of 24.6 years by the percentage of religiously affiliated residents in their municipality of residence (based on Model 6 in Table 3)**



Note: All categorical control variables are set to the most common category in the married sample, and all other continuous control variables to the average value in the married sample.

In a fourth and final step, we examined whether cohabiting couples experience a smaller decrease than married couples in union dissolution risk when they visit religious gatherings more often (H4). We examined the direct effect of the couple's civil status, as well as the interactions between this civil status and our two key religious variables (being religiously affiliated and visiting religious gatherings). The resulting Models 7 and 8 are presented in Table 4 (including all couples in our sample instead of only married couples).

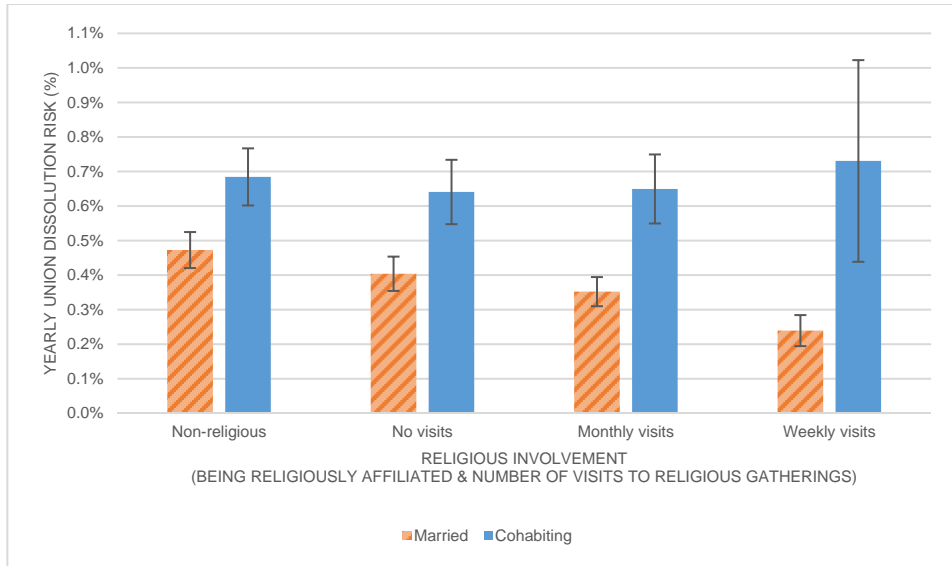
**Table 4: Multilevel logistic regression estimates of union dissolution risks of all couples: effects of couple-level variables, municipal-level variables, and interactions (N = 825,164 couple-years)**

<i>Fixed-effect parameters</i>	<b>Model 7</b>			<b>Model 8</b>		
	<i>exp(b)</i>	<i>se</i>	<i>p</i>	<i>exp(b)</i>	<i>se</i>	<i>p</i>
<b>Constant</b>	0.043	0.005	< .001	0.045	0.005	< .001
<i>Couple-level variables</i>						
Religiously affiliated	1.072	0.137	.585	0.854	0.037	< .001
Visits to religious gatherings	0.562	0.046	< .001	0.934	0.283	.822
Cohabiting	1.452	0.053	< .001	1.452	0.053	< .001
Cohabiting × religiously affiliated	1.099	0.075	.168	1.096	0.075	.179
Cohabiting × visits to religious gatherings	1.913	0.417	.003	1.933	0.425	.003
<i>Municipal-level variables</i>						
% religiously affiliated citizens	0.954	0.137	.746	0.883	0.111	.321
<i>Cross-level variables</i>						
% religiously affiliated citizens × religiously affiliated	0.652	0.144	.053			
% religious affiliated citizens × visits to religious gatherings				0.340	0.186	.049
<i>Constant</i>						
sd(constant)	0.0072	0.005		0.0073	0.005	
sd(religious)	0.005	0.124				
sd(visits to religious gatherings)				0.172	0.103	
<i>Model fit indicator</i>						
Log-likelihood			-31,413.70			-31,410.96

Notes: In a baseline model without any religious variables but controlling for effects of civil status, sd(constant) = 0.0103. An extended table that includes all control variables and models that have cohabiting couples as reference group can be found in Part 2 of the Supplementary Materials.

Among married couples, a clear and, according to Model 8, substantial religious gradient is visible. In municipalities with an average proportion of religiously affiliated citizens (52.2%), the yearly odds that religious married couples who never visit religious gatherings will divorce are 15% lower than those of religiously unaffiliated couples. Religious married couples who attend religious gatherings every week have 51% lower odds. Among cohabiting couples, differences between the union dissolution risks of religiously unaffiliated and religiously affiliated couples who frequently visit religious gatherings are minimal; the cohabitation-specific effect and context-specific effect of visiting religious gatherings cancel each other out. These patterns are illustrated in Figure 2, in which we show the predicted union dissolution risks for couples with a mean age of 47 years and union duration of 17 years – values similar to the mean age and cohabitation duration of both married and cohabiting couples. We therefore conclude that religiosity does not influence the union dissolution rates among cohabiting couples.

**Figure 2: Predicted yearly union dissolution risks of married and cohabiting couples with an average age of 47 years and union duration of 17 years, distinguished by union type, religious affiliation, and visits to religious gatherings (based on Model 8 in Table 4)**



Note: Except for the age of the youngest child (we set this to 5 to 17 years, as this category was well represented in both married and cohabiting couples), all categorical control variables are set to the most common category in the full sample and all other continuous control variables to the average value in the full sample.

As our central independent variables may correlate, multicollinearity issues needed additional investigation. We concluded that multicollinearity does not pose power problems in our models as correlations between our independent variables were only moderate (for the full sample and married sample, respectively, being religiously affiliated and religious participation:  $\rho = 0.46$ ,  $\rho = 0.47$ ; being religiously affiliated and living in religious municipalities:  $\rho = 0.32$ ,  $\rho = 0.32$ ). Moreover, separate and combined estimation of the central coefficients did not reveal high sensitivity to small changes in the model for these coefficients.

## 6. Discussion

In this study, we investigated the effect of religion on the risk of union dissolution from three different perspectives. First, we examined whether couples who are more religious

are less likely to dissolve their union (couple-level effect). Second, we examined whether a contextual effect can be identified by testing whether couples who live in more religious municipalities are less likely to dissolve their union, even when couple-level effects are accounted for. Third, we examined whether couple-level effects change depending on the religious context in which they occur (cross-level effect). As both cohabiting unions and marriages are common relationship types in many countries (including the Netherlands), we examined whether these religious couple-level effects are different for cohabiting and married couples. A unique dataset combining information from the 2011–2015 waves of the Dutch LFS with Dutch register data was used to test hypotheses linking religious behavior and union dissolution.

For married couples, we found that, when all other couple characteristics are the same, religiously affiliated couples are less likely to divorce than religiously unaffiliated couples. Moreover, religiously affiliated couples who visit religious gatherings are less likely to divorce than those who visit religious gatherings less regularly. These findings support the traditionalist model: The more religious couples are, the more they adhere to traditional norms of the uniqueness of marriage. As we reasoned in H1, there is a couple-level effect: More religious couples are less likely to divorce than less religious couples.

We did not observe clear differences between the union dissolution risks of couples grouped by religious denomination. As shown before in recent studies in other countries (Kulu 2012; Li, Kubzansky, and VanderWeele 2018), a couple's union dissolution risk is more closely linked to their level of religiosity than their denomination. Examining the different groups of religiously affiliated couples showed us only that mixed religious couples had divorce risks similar to those of religiously unaffiliated couples. This finding is in line with previous research (Kalmijn, De Graaf, and Janssen 2005): Mixed couples are less likely to share norms on marriage and may lack the joint support of a religious community.

Despite the clear presence of a religious couple-level effect on divorce risks, we did not find an additional general contextual effect of municipal religiosity (contrary to H2). Instead, we discovered that this effect applied only to those who were religious (in line with H3). The effect is stronger for those couples who participate more frequently in their religious community. We can think of two main explanations for this finding. First, couples who are more integrated into a religious community may experience higher levels of social control (external pressure). Second, a self-selection effect may be present. To reduce the disparity between personal and communal norms, couples with more traditional marriage norms may want to live in more religious contexts, while those with less traditional marriage norms may be more likely to move away. Both processes can lead to higher levels of compliance with traditional norms among religiously involved couples in more religious contexts.



For cohabiting couples, we found that, when all other couple characteristics are the same, religiously affiliated couples are just as likely to separate as religiously unaffiliated couples. Even though this finding is in line with H4, this is a much smaller difference than we expected. A potential explanation for this finding could be that cohabiting couples who visit religious gatherings more frequently might experience cognitive dissonance as cohabitation and traditional marital norms do not align. This internal conflict could lead to persistent psychological stress, which could subsequently lead to an increase in conflict and thus union dissolution. Another explanation could be that religiously involved couples that cohabit are a selective group in that they may feel that ancient family-related religious teachings need to be adapted to modern societal conditions (Lambert 1999).

Overall, our analyses show that earlier findings on the link between couple-level religiosity and divorce risks still hold in the Dutch context, in which both religiosity and the popularity of marriage have declined. Including our couple-level variables in the models reduced the unexplained municipal-level variation in divorce risks by 15%. However, we have also shown that it is important to take other union types into account: There was no strong link between religiosity and union dissolution risks of cohabiting couples. In addition to these couple-level findings, our analyses reveal that it is important to take the religious context of each couple into account. When a cross-level interaction was introduced, the municipal-level variation in divorce risks decreased by another 5% (to 20%). In our models, including both married and cohabiting couples, the variance was reduced even further – namely, by 30%.

Although this study provides important new insights into the link between religion and union dissolution, it also has some limitations, and we provide some suggestions for future research accordingly. First, we assumed that the religiosity of participants in the LFS did not change much during our observation period, despite ongoing secularization. It would be interesting to use time-variant religiosity data to further verify the effects we have observed. Second, our data did not allow us to differentiate between more orthodox and more liberal Protestant denominations. Additional research using a more detailed distinction within the Protestant group could further confirm our findings. Third, in our analysis, we did not pay attention to the question of whether it matters for the role of individual religiosity that a specific denomination is dominant within a municipality as we did not have specific hypotheses about this issue. In future research, it might be interesting to see whether the type of denominations strongly represented in a municipality makes a difference. Fourth, we examined couples within the context of their municipalities of residence. While this context is already smaller than most contexts used in similar research, interesting insights into the impact of religious contexts may be generated by using even more tailored contexts, such as neighborhoods or social networks. Fifth, we believe that it may be interesting to further investigate the

mechanisms behind our findings. Sixth, as couples participating in the LFS had low union dissolution rates in the year following their participation, our sample shows lower union dissolution risks than the full population. Finally, it would be interesting to examine whether the results of this study generalize to other countries. In countries where unmarried cohabitation as a permanent type of relationship is uncommon, or where religious developments have led to other differences between denominations, effects might differ from our findings in the Dutch context.

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