Religiosity and Fertility Intentions in the Netherlands: Exploring Gender Norms and Attitudes

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Abstract

While extensive research has explored the effect of different religious denominations on fertility rates, recent studies have shifted towards understanding how individual religiosity and personal religious values impact fertility behaviour. Specific attentions has been given to traditional gender norms and attitudes prescribed by religious doctrines. Many religious doctrines advocate pronatalist views and traditional family roles, encouraging religious individuals to have greater fertility intentions. Therefore, it could be argued that traditional gender norms and attitudes function as a mediating factor between religiosity and fertility intentions. This thesis explores this relationship in the context of the Netherlands, a highly secularised and relative gender-equal country which has been dealing with low fertility rates. Dutch data from the Gender and Generations Survey (GGS) was utilized to perform multiple logistic and OLS regressions to provide the foundation of this mediation effect. This mediation effect was then decomposed using the KHB-method. Analyses were ran in models for men and women, and childless individuals and parents separately. Results show highly religious childless women are more likely to have positive fertility intentions, and 10.1% of this effect can be explained through their more traditional gender norms and attitudes. For men, however, no significant effects of religiosity or gender norms and attitudes, nor any mediation, were found. Limitations regarding the data and conceptualization of concepts are discussed, and future research ideas are proposed to better understand the dynamic relationship between religion, gender norms and attitudes, and fertility, and what other factors could mediate the relationship between religion and fertility.

Keywords: Fertility intentions, religiosity, gender norms and attitudes, mediation analysis, GGS

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Abbreviation	Definition
AI	Artificial Intelligence
CAWI	Computer Assisted Web Interviewing
CBS	Centraal Bureau voor de Statistiek (Statistics Netherlands)
GDPR	General Data Protection Regulation
GGP	Gender and Generations Programme
GGS	Gender and Generations Survey
H	Hypothesis
ISCED	International Standard Classification of Education
KHB	Karlson, Holm, and Breen
OLS	Ordinary Least Squares
OR	Odds Ratios
TFR	Total Fertility Rate
TPB	Theory of Planned Behaviour

1. Introduction

1.1 Background

The effect of religiosity on fertility intentions is a widely researched topic in various academic disciplines such as demography, sociology, and religious studies. In the past, research on this topic mainly focused on differentials in fertility between different denominations. Extensive research has been performed on the differences in fertility behaviour between Catholics and Protestants in Western Europe and the United States in particular, see for example Gráda and Walsh (1995), Van Poppel (1985), and Westoff and Jones (1979). To explain the differences in fertility, research was primarily concerned with the differences in underlying dogma. High fertility rates among Catholics were credited to Catholic pronatalist attitudes such as a disapproving view on the use of contraception (Westoff and Jones, 1979). As convergence between Catholic and Protestant birth rates took place, the focus shifted towards other religions with pronatalist standpoints such as Mormonism (Marcum, 1988).

The interest in religiosity and its effect on fertility in Europe decreased when secularisation started to have a noticeable effect on traditional family compositions (Philipov and Berghammer, 2007). The rise in single-person households, non-marital births, and non-traditional family structures suggested that the influence of religion on demographic behaviour may have diminished. The second demographic transition has resulted from these ideological transformations, which have extended people's perspectives on options surrounding fertility behaviour and intentions. Two notable elements of these shifts are secularisation and individualisation (Lesthaeghe and Surkyn, 1988). These ideological shifts have further impacted how people experience and practice religion. The second half of the twentieth century saw an increase of people who still held religious beliefs, but did not practice these in an institutionalized context, therefore separating themselves from traditional religious practices and beliefs and giving a personal meaning to religion which can be different for each individual (Tromp et al., 2020). This process and concept of ‘believing without belonging’, therefore carries significant implications for how religion is practiced and perceived in a modern Western European context.

However, despite the decrease in the number of religious people in Western Europe, this is no reason to disregard the effect of religiosity on fertility. If secularization were to continue this would still imply a change in the demographic composition, as the sizes of religious groups are changing, and thus also possibly explain future fertility trends. Also, Kaufman et al. (2011) conclude in their research that we should be careful to that the rate of secularisation that we have witnessed in the past decades will continue at the same pace in the future. North-western European countries have reached a point where secularisation rates have ‘matured’ as the secularisation rate has slowed down significantly. In the future, it could even be possible that we will witness a process of de-secularization. The immigration of non-Europeans, especially from Muslim countries where people have a higher religious retention rate, could lead to an increase in diversity in religiosity. Moreover, religion as a determinant of overall demographic

behaviour should not be overlooked in demographic research. Religion often tends to get overshadowed by socioeconomic factors and treated as a residual grouped with other 'cultural values' that are left to account for the variance that other structural factors are unable to explain (Goldscheider, 2006). As demographic and socioeconomic factors themselves also function as explanatory factors of religiosity and demographic behaviour (Jeppsen, 2015; Smith et al., 2023), it remains important to uncover what factors influence fertility trends. Additionally, it is crucial to understand how and which aspects of religion are involved.

Despite the convergence in fertility between different religious groups and secularisation taking hold all throughout Western Europe (Sahgal, 2018), differences in fertility between different denominations and between religious and non-religious people still remain (Buber-Ennser and Berghammer, 2021; Mogi et al., 2022; Philipov and Berghammer, 2007). This caused a resurgence of the interest in religiosity and its effect on fertility. This renewed interest provided a novel perspective on how differences in religiosity could cause differences in fertility. Where previous research focused mainly on differences in fertility between people belonging to different denominations, research now turned more towards a discussion of a general "religion effect"' (Hayford and Morgan, 2008). Individuals' religiosity and how they personally give value to religious norms became more important than considering differences between religious doctrines.

According to Goldscheider (2006), research on the relationship between religiosity and fertility should focus on values, specifically those relating to the family and gender norms. Since many religious doctrines hold pronatalist views, emphasize family values and prescribe distinct roles for men as providers and women as mothers (McQuillan, 2004), there is a need to specify what exact values and norms that are held by different belief systems influence fertility. Such religious teachings are more likely to be supported by those who adhere strongly to religious beliefs, which means that having positive fertility intentions and having a larger number of children could be linked to religiosity and adherence to traditional gender roles. However, research shows that when gender equality increases, this positively correlates with fertility intentions (Goldscheider et al., 2015; Okun and Raz-Yurovich, 2019), and the effect may be different for men and women (Schmidt, 2024). Therefore, disentangling these effects is important in order to enhance our understanding on how religiosity in conundrum with gender norms and attitudes affect fertility intentions.

1.2 Research objective and research questions

This thesis will aim to build on Goldscheider's suggestion that research on religiosity and fertility intentions should focus on norms and values that are related to gender and family norms. These two concepts are strongly related as religion can function as a strong predictor of fertility behaviour and family ideals (Guetto et al., 2015). Gender norms potentially function as a mediating factor in the established relationship between religiosity and fertility intentions. Therefore, this thesis seeks to

investigate the mediating influence of gender norms on the relationship between religiosity and fertility intentions. Currently there are only a few studies that explicitly focus on the relationship between religiosity, gender norms and fertility decisions (Bein et al., 2017; Guetto et al., 2015; Jeppsen, 2015), and findings lack consistency with one another, partly due to different contexts and methodological approaches. The Netherlands will serve as the particular national context for this research. The context of the Netherlands provides a unique opportunity to investigate how gender norms mediate the relationship between religiosity and fertility intentions within a context of high secularization, religious diversity, and relative high gender equality. Focusing solely on the Netherlands allows for a comprehensive exploration of this intricate relationship within a single, complex context.

To achieve this research objective, the following main research question has been formulated: '*How do more traditional gender norms and attitudes among religious people affect the relationship between religiosity and fertility intentions in the Netherlands?'* In support of this main question, several sub-questions are formulated. Firstly, the question '*How does individual religiosity influence fertility intentions?'* needs to be considered to understand the direct relationship between religious beliefs and fertility behaviour. Following, '*How do gender norms and attitudes influence fertility intentions?'* will be explored to understand how the mediating factor in this thesis, gender norms and attitudes, affects fertility intentions independently. To further understand and contextualize the role of gender norms and attitudes, the question '*What is the link between traditional gender roles and attitudes and religion?'* will be answered. And finally, the question '*How does parity affect the relationship between religiosity and fertility intentions?'* will be examined to see if the process is similar for childless individuals and individuals who already have children.

1.3 Structure

This thesis is structured in the following way. Chapter 2 will elaborate on the literature related to fertility intentions, religiosity, and gender norms and attitudes in the theoretical framework. Using this literature, hypotheses are formed and a conceptual model was constructed which illustrates the main relationships this thesis will focus on. Thereafter, the data and methods discussed in Chapter 3 will elaborate on the data that was used and the analytical approach which was taken to gather the results presented in Chapter 4. Finally, Chapter 5 will discuss these results in light of the theory to answer the research questions, and discuss any limitations and implications of the research.

2. Theoretical Framework

2.1 Fertility intentions

Fertility intentions are typically placed in the middle of the fertility decision-making process in between fertility ideals and fertility behaviour (Miller, 1994). Fertility intentions capture specific plans which are shaped by ideals and are a good predictor of future fertility behaviour (Ajzen and Klobas, 2013). The Theory of Planned Behaviour (TPB) (Ajzen, 1991) is a well-established framework that can be used to understand what influences the formation of fertility intentions and their realisation in the light of the effect of religiosity and gender norms and attitudes. The TPB proposes three types of considerations that people take into account to determine whether they intend to engage in a specific type of behaviour: attitudes, subjective norms, and behavioural control (Ajzen and Klobas, 2013). Attitudes refer to either a positive or negative evaluation of the anticipated outcomes relating to the behaviour. Subjective norms involve the perception of social pressure to adhere to a certain behaviour and whether others, peers or society in general, will approve or disapprove of this behaviour. Behaviour control refers to if an individual believes they have the means and is confident in their ability to achieve the preferred outcome of the particular behaviour (Ajzen, 1991).

In the light of fertility intentions, this means the following: people are more likely to have positive fertility intentions if they have a positive attitude towards having a child, if they believe having a child is a social norm, and if they perceive themselves (physically) able to have a child. Because of the focus on norms and attitudes, the TPB is a suitable framework to consider the formation of fertility intentions when considering both individual and societal factors (Klobas, 2011). Religiosity is considered a significant ideational background factor which influences these considerations since attitudes and norms in most religions are in favour of having children and perceive this as a social norm (Billari et al., 2009). Furthermore, those who are religious typically perceive having children to come with higher benefits and lower costs (Bein et al., 2021). Such norms and values are reinforced even more when social interaction takes place among like-minded people. This is relevant in a religious context because religious institutions offer frequent and structural social interactions. Social interaction encourages conformity through peer pressure, reinforces shared beliefs and practices, and encourages the acceptance of group norms, all of which have an impact on fertility behaviour and intentions (Bongaarts and Watkins, 1996). Religion also enhances individuals' perceived behaviour control. According to Philipov (2012), religious individuals are more likely to form fertility intentions because they hold a belief in a higher authority. This authority will help them in the event of need or will prevent adversity if they continue to adhere to traditions and values prescribed by their religion.

When employing the TPB it is relevant to consider how individuals at different parities form their fertility intentions. As fertility intentions are subject to change through evolving life experiences, already having a child can affect individuals' their attitudes, subjective norms, and behavioural control towards

having any more children (Ajzen and Klobas, 2013; Billari et al., 2009). Studies show that while early intentions predict behaviours well, life events such as having experienced childbirth or learning from parenting can alter these intentions (Preis et al., 2020).

2.2 Religiosity and fertility

The work of Goldscheider (1971) on how religion can affect fertility includes some of the first theoretical considerations on this topic within demographic research. He names three hypotheses that may explain the differences in fertility rates between different religious groups (Goldscheider, 1971 in Murakaev and Maksim, 2022).

The *Characteristics Hypothesis* states that the effect of religiosity on fertility is misleading, and the differences in fertility between different religions can be explained by socioeconomic characteristics such as income and educational level, making it a compositional effect. According to this hypothesis, once research controls for socioeconomic and demographic characteristics, there should not be any differences in fertility (Zhang, 2008). The *Characteristics Hypothesis* draws from extensive demographic research that examines how fertility levels fluctuate based on various socio-demographic traits among individuals. Research shows for example that in developed countries, those with a high socioeconomic status typically have fewer children (Dribe et al., 2014). Recent research indicates a growing complexity in the interplay between socio-demographic characteristics and fertility dynamics. For instance, findings indicate that lower educated women in the Netherlands tend to exhibit lower fertility rates (Van Duin and Feijten, 2023). However, in many cases considering religion, this hypothesis fails to explain fertility differences. For example, birth rates from Muslims in Israel were considerably higher than Christians in Israel, even when accounting for social characteristics such as female educational attainment (Goldscheider, 2006). Furthermore, the effect of religion on fertility does not seem to be uniform across socioeconomic statuses. For example, interactions between socioeconomic characteristics and religion in research by Alagarajan (2003) did not remain constant when considering Muslim, Hindu and Christian fertility in India, leading to the conclusion that the characteristics hypothesis alone is too simplistic to explain fertility differences between religious groups.

When controlling for socioeconomic and demographic characteristics does not fully explain differences in fertility for religious individuals, it becomes relevant to look at the norms and values held by those religions. The *Norms Hypothesis* also referred to as the *Particularized Theology Hypothesis,* ascribes differences in fertility to the norms and values that are held by different doctrines, akin to the principles explained by the Theory of Planned Behaviour. This hypothesis has often been used to explain differences in fertility between for example Catholics and Protestants based on the negative attitude of the Catholic Church toward the use of contraceptives (Westoff and Jones, 1979). Values and norms in religious doctrines can either have a direct effect, e.g., through regulating the use of birth control, or an indirect effect, e.g., by imposing norms regarding sexuality. (Herzer, 2019).

However, this hypothesis has been criticised and revisited because of its inadequacy to explain when precisely these norms and values will have an impact on fertility because their mere existence does not have to inevitably lead to a specific fertility behaviour (McQuillan, 2004). To fully comprehend how norms and values influence fertility behaviour, research also needs to consider the social organisation of religious groups and norms on gender relationships and family control (Goldscheider, 1991 in McQuillan, 2004). So, this would constitute a move away from focusing on norms solely related to fertility and birth control. Religious doctrines that establish rigid gender asymmetries and limit the social role of women to that of a mother and a housewife are more likely to lead to higher fertility rates. McQuillan (2004) extends the *Norms Hypothesis* by arguing that social interactions in religious institutions is what translates these norms into fertility behaviour. He provides two conditions for when religious norms and values have the strongest influence on fertility behaviour. This is the case when religious institutions have a prominent role in the socio-political structure of the population and communities, and when religion is an important part of the population's identity. Religious institutions provide a source of social interaction, which causes exposure to social norms held within the religious community. Some name this as a separate and fourth hypothesis, the interaction hypothesis, on how religiosity affects fertility rates (Alagarajan, 2003; Zhang, 2008).

Finally, the *Minority Status Hypothesis* claims that religious denominations that make up the minority in a country or region show similar patterns of fertility as ethnic minorities. This occurs as cultural, historical, and socioeconomic factors impact fertility behaviour in such a way that it leads to a difference from the rest of the population. This can either lead to an increase or a decrease in fertility, which depends on whether the minority holds a strong pronatalist ideology or not (Herzer, 2019). When the minority lacks a strong pronatalist ideology, lowering their fertility can be a mechanism by which they can increase social and economic mobility to overcome obstacles that prevent them from assimilating into society. If the group does hold a strong pronatalist ideology, increased fertility can function as a way to guarantee group preservation when the group does not wish to assimilate with the dominant culture (Heaton, 2010).

In summary, the hypotheses discussed have been thoroughly investigated and detailed in numerous academic studies, and despite some disagreements on the precise mechanisms by which religiosity influences fertility, there is a broad consensus that higher levels of religiosity are associated with increased fertility rates. This applies to all stages of the fertility decision making process (Philipov and Berghammer, 2007). Fertility desires or ideal number of children have been found to have been positively affected by religiosity (Yancey and Emerson, 2018), as well as fertility intentions (Hayford and Morgan, 2008), and the realisation of fertility intentions (Buber-Ennser and Berghammer, 2021) and outcomes (Götmark and Andersson, 2020). Furthermore, Philipov and Berghammer (2007) argue that the relationship between fertility and religion can be different depending on parity. According to the TPB, fertility intentions, which are influenced by attitudes, subjective norms, and perceived

behaviour control, are closer to actual fertility behaviour than fertility ideals, which are shaped by values like the desired number of children (Ajzen and Klobas, 2013). Religion impacts ideals more strongly than intentions because ideals are less affected by practical constraints. For childless women, religiosity is expected to influence broader intentions more than specific behaviours (Philipov and Berghammer, 2007). Furthermore, as having children aligns with religious norms and values, and these norms and values are potentially reinforced when one already meet those norms, by already having children, which would make the effect of religiosity on fertility stronger for parents than for childless individuals (Frejka and Westoff).

2.3 Gender norms and attitudes

Gender plays a central role in most religions, as most world religions hold strong patriarchal views. In order to narrow down the different world religions, this part will consider gender norms most relevant to the Abrahamic religions (Christianity, Islam, and Judaism), with a major focus on Christianity, as these are the dominant beliefs in Western Europe and share similar origins. The sexual and reproductive standards that religious leaders and practices promote are among the most prominent ways that religiosity and gender are related (Bjork-James, 2019). Though many variables might affect an individual's opinions regarding gender roles, religious organisations have a big impact on how people view families and raising children. Conservative religious ideas on gender and family centre around the importance of heterosexual marriage and a gendered division of labour. More specifically, traditional families are supported by conservative religious societies, which emphasise homemaking over paid work, especially for married women (McMorris and Glass, 2018). Such views on a gendered division of paid labour and housework generally are of significant importance when discussing how gender norms are related to fertility.

Lappegård et al., (2021) propose three dimensions through which gender norms are related to fertility intentions. These are the public sphere, the mother's roles in the family, and the father's role in the family. The last two are clearly defined in the traditional gender-role attitudes held by many religions where men are responsible for performing paid labour and women for housework and childrearing (Rogers and Franzen, 2014). Lappegård et al. (2021) theorise that the more egalitarian the division of labour is, the less likely it is for a couple to have positive fertility intentions. The public sphere relates to attitudes on gender roles and expectations put on men and women in public settings such as education, politics, and the labour market. It is assumed that women with more traditional attitudes towards gender roles will centre their life around motherhood, and less around aspects of the public sphere, which will lead to higher fertility intentions. Traditional patriarchal religious views on "separate spheres" for men and women (Ross, 2006) could further strengthen this relationship. This would suggest higher fertility intentions for religious individuals, as they seem more likely to adhere to traditional gender norms and have stronger family-related values.

However, more recent research shows that the association between gender norms and fertility intentions shows a U-shaped pattern. According to the *Gender Revolution Framework*, as gender norms and attitudes become more equal, this potentially increases fertility intentions (Goldscheider et al., 2015). This trend would be applicable to countries in the second phase of the gender revolution. Of particular significance is the emerging evidence indicating that as men become more involved in homemaking and childcare this increases fertility (Okun and Raz-Yurovich, 2019), especially for second or higher parity births among women (Goldscheider et al., 2013; Han, et al., 2023). The same U-shaped pattern was observed for men in Finland; traditional men and egalitarian men were found to have higher fertility intentions than men with intermediate gender norms and attitudes (Miettinen et al. 2011). The way in which changing gender norms shape fertility intentions for men and women differs significantly. Women deal with the societal expectation to desire motherhood, whereas men deal with the societal expectation to provide financially. Schmidt (2024) found that for women their gendered expectations of becoming a parent conflict with current neoliberal ideals of economic independence. This cause them to be presented with greater dilemmas on how to balance personal fulfilment with the desire to have children compared to men, whose gendered familial expectations have greater alignment with neoliberal ideals.

2.4 The context of the Netherlands

Taking into consideration the sociocultural and religious context of countries is important when studying the effect of religiosity on fertility intentions, as countries with similar fertility rates can show a different relationship between religiosity and fertility (Peri-Rotem, 2016). The Netherlands has seen low birth rates over the previous few decades, much like the majority of other West European countries. The Total Fertility Rate (TFR) has been below the replacement level of 2,1 since the early 1970s (CBS, 2023a). In tandem with the decrease in the average number of children per woman, there has been a significant postponement in the age at which women give birth to their first child, transitioning from 24.3 years in 1970 to 30.3 years in 2022. Recent trends in TFR show a decline that has set in since 2010 and has reached an all-time low in 2022 with a TFR of 1,49 children per woman (Stoeldraijer et al., 2022). Providing a comprehensive explanation for the decrease in TFR is challenging. Recent studies look at the effect of economic uncertainty and how this inhibits fertility, especially for young women with low education (Van Duin and Feijten, 2023).

Historically, the Netherlands has been predominantly Christian, with the majority of the population being affiliated with various Christian denominations. The modern history of religion in the Netherlands is characterized by the pillarization in the late nineteenth century and the early twentieth century (Sengers, 2010). Society was organised according to religious or quasi-religious organisations and these pillars encompassed various aspects of society, including education, media, labour unions, and social welfare organizations. In this pillarized society, strong social cohesion among members exerted pressure to conform to norms and values promoted by the group. After the pillarized system fell apart, so did the

strength and importance of religion in the Netherlands. Secularisation has already been a noticeable phenomenon since the early twentieth century (Knippenberg, 2021). Nowadays, the Netherlands is one of the most secularised countries in Europe, with 55 per cent of the population noting that they do not adhere to any religion and only 24% of people saying they have a firm belief in a God (CBS, 2021). Of those people who are religious, Christianity is still the predominant religion. With 20% of the population, Catholics make up the largest group, followed by Protestants (15%) and Muslims (5%). In addition to these groups, there are also smaller religious communities in the Netherlands, including Judaism, Hinduism, Buddhism, and Sikhism, largely due to immigration patterns in recent decades.

So, while there is still a significant group of religious individuals in the Netherlands, their ways of engaging with religion might not always align with traditional practices. An increasing amount of people experience 'believing without belonging', meaning that they maintain individual religious belief, but do no practice these in an institutionalized context, e.g., attending services in a church (Tromp et al., 2020). The same counts for 'belonging without believing', which entails that some individuals who do not consider themselves religious are still a member of a religious organization and/or attend religious services (Dekker, 2009). Consequently, this creates a diverse religious landscape where the significance of believing or belonging to a certain religion varies among individuals, influencing how religion plays a role in shaping their behaviour and norms and values.

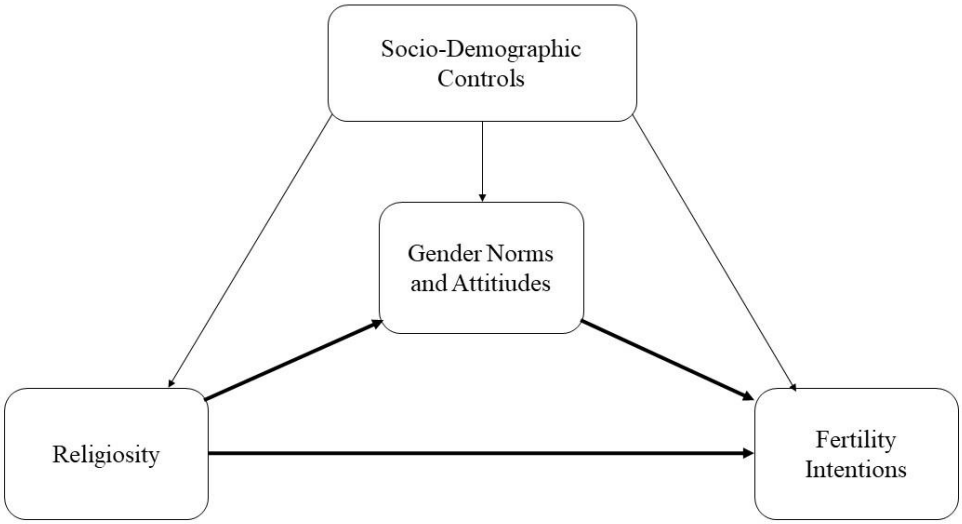
In terms of gender norms and gender equality, the Netherlands is considered a relatively gender equal country depending on what index is considered. Currently it ranks number 2 on the EU Gender Equality Index (European Institute for Gender Equality, 2023), number 28 on the Global Gender Gap Index by the World Economic Forum (Pal et al., 2024), and is the country well on its way in the second phase of the gender revolution (Frejka et al., 2018). The Netherlands has a low institutional barrier to gender-equitable household task distribution, with the legal right to adjust working hours. Therefore, it is presumable that it would be more acceptable for men to swap paid labour for unpaid labour if their partner has superior earnings. Yet research shows that Dutch women face a child penalty of 47 per cent on their earnings, compared to an almost non-existent penalty for men (Artmann et al., 2022). This is potentially explained by the share of women who work part-time. Of all working people, 70 per cent of Dutch women work part-time, compared to 28 per cent of Dutch men (CBS, 2022). Working part-time is used by many women in Western Europe as a strategy to balance paid labour with unpaid labour, and often upholds traditional gender norms on household and childcare responsibilities (Lyonette, 2015).

2.5 Conceptual model

The theoretical framework is visually represented and simplified in the conceptual model in Figure 1 and shows the relationship between the main concepts for this research. The thickness of the arrows demonstrates the importance of the relationship. The model illustrates the positive association that prior research has demonstrated between religiosity and fertility intentions, which is underpinned by religious

norms and values that are pronatalist and prioritise family. The Theory of Planned Behaviour has highlighted how norms, values, and attitudes are crucial factors in the development of fertility intentions (Ajzen, 1991; Ajzen and Klobas, 2013). The relationship between religiosity and gender norms and attitudes portrays how religion reinforces separate gender roles for men and women and other traditional family dynamics. These conservative gender norms emphasise the woman's role as a homemaker and caretaker, and the man's role as the breadwinner. Research has demonstrated that individuals who conform to non-egalitarian gender roles are more likely to have positive fertility intentions (Lappegård et al., 2021). However, other recent literature concludes that the relationship between gender norms and fertility intentions shows a U-shaped pattern, where more equality between men and women will eventually lead to an increase in fertility intentions (Goldscheider et al., 2015). Therefore, the conceptual model depicted in Figure 1 shows how the effect of religiosity on fertility intentions is mediated through gender norms and attitudes, while controlling for various sociodemographic factors.

Figure 1: Conceptual model



2.6 Hypotheses

Based on the previously composed research questions and the theoretical framework and conceptual model the following hypotheses are formulated.

Main Hypothesis:

H1: The effect of religiosity on fertility intentions can be explained by the more traditional gender norms and attitudes that are held by individuals with higher religiosity compared to those who are less religious.

For the relevant sub-questions, the hypotheses are:

H2: Higher individual religiosity will be positively associated with fertility intentions.

H3: More traditional gender norms and attitudes will be positively associated with fertility intentions.

H4: Higher individual religiosity will be positively associated with more traditional gender norms and attitudes.

H5: The positive association between religiosity and fertility intentions is stronger for individuals who already have children compared to those who do not.

3. Data and methods

3.1 Gender and Generations Survey

This research consists of a quantitative analysis of secondary data from the Netherlands from round II of the Gender and Generations Survey (GGS), conducted by the Gender and Generations Programme (GGP). The GGP is an extensive social science research infrastructure designed to provide high-quality life course trajectories and family data. It offers cross-nationally comparative surveys and contextual data on individuals over the adult life course, enabling researchers and policymakers to address contemporary societal challenges related to family dynamics, gender relations, and demographic changes (GGP, 2024a). The infrastructure is managed by a cooperation of research institutes, universities, and governmental agencies whose expertise lies in policy and academic research relating to population and family dynamics (Fadel et al., 2020).

The suitability of the GGS data for this study lies in their comprehensive inclusion of individual-level data encompassing various socioeconomic indicators, including, income, and education level, alongside detailed information on fertility, gender norms and attitudes, and background characteristics. The GGP aims to increase the understanding of fertility intentions through the Theory of Planned Behaviour by Ajzen (1991). This framework was taken into consideration when designing the GGS, and this is reflected in the operationalisation and conceptualisation of the contents (Liefbroer, 2011), making it a suitable data set that aligns with the theoretical framework for this research.

The second round of the GGS (GGS-II) started data collection in 2020 using an updated version of the questionnaire of the GGS-I. The updated survey contains a more centralized structure and data collection consisted of several methods, such as face-to-face interviews and web interviews (Gauthier et al., 2023). New questions were added to the questionnaire that reflect topics of increased interest for policymakers (Sturm, 2020). Relevant changes for this research relate to the fertility and attitudes sections of the questionnaire. The section on fertility was updated with new questions and more answer options for existing questions. These additions aim to create a more comprehensive view of the complex reality of people their fertility (intentions), by for example adding the category ‘unsure’ to the questions relating to fertility intentions. The section on attitudes has also been updated with more extensive questions relating to gender norms and attitudes relating for example to family forms and gendered division of labour.

Data quality is ensured by strict fieldwork requirements for each participating country in Technical Guidelines outlined by the GGP, which have to be adhered to, by the country team in charge of collecting the data (GGP, 2020). The target population is selected using probability sampling, ensuring unbiased selection. All participating countries are encouraged to reach a net sample size of at least 7,000 individuals for the age range 18-59 to ensure a representative sample and maintain a sufficient number

of participants for follow-up waves. To further aim for a representative sample, no more than 5% of the target population is allowed to be excluded due to reasons such as practical constraints.

Data for the Netherlands was gathered using Computer-Assisted Web Interviews (CAWI), which has been shown to be an appropriate method of data gathering for the GGS, as response rate and nonresponse bias were similar to those of in-person control groups (Gauthier et al., 2023). Furthermore, the quality of the data collected in several countries using CAWI has been confirmed by making comparisons between the GGS fertility data and population-based estimates (Leocádio et al., 2023). To further ensure high-quality data during the data collection procedure data quality checks are conducted, which involve cleaning and validating each variable in the dataset (GGP, 2020).

3.2 Study population

Data collection for the Dutch GGS data took place from October 2022 to November 2023. The sample for the GGS-II data for the Netherlands consists of a random probabilistic sample of the resident non-institutionalized population aged 18-59. The sample was restricted to those of childbearing ages, for women ages 18-45 and men ages 18-50. Also, respondents who are pregnant or whose partner is pregnant at the time of the interview were excluded. Cases where values of the key variables were missing were eliminated using listwise deletion. After selecting cases based on the age criterion, 2741 cases were dropped, and 132 cases were excluded because the respondents were expecting a child at the time of the interview. Additionally, 1872 more cases were dropped due to missing values for key variables. This left a sample of 3333 observations, of which 1943 are female and 1390 are male. The attitudes section of the survey which contains the questions regarding religion and gender attitudes and norms, had many missing responses. Since this includes the two main independent variables that were used in the analysis, it was decided to delete these observations completely. These missing responses can likely be attributed to survey dropout, as this is the last section of the survey. In order to keep the dataset large enough and to keep a representative sample of the population, partial responses were retained. This means that cases which completely filled out the life histories section were kept in the data regardless of whether they completely filled out the rest of the survey. Remarkable is that there were a significant larger number of women left than men after selection based on the criteria, even though the age range for men was wider by five years. Potentially, this is caused by women being more likely to participate in surveys than men (Becker, 2022).

3.3 Operationalisation

3.3.1 Key variables

Fertility intentions

Fertility intentions in the GGS are captured by sections FER14 and FER15. Respondents were asked whether they intend to have a/another child within the next three years (FER14, short-term intentions), and if not if they intend to have a/another child at all (FER15, long-term intentions). Respondents were

able to answer these questions with the options definitely not, probably not, unsure, probably yes, and definitely yes. Answers to both variables were combined into a single dichotomous variable indicating whether the respondent has the intention to have a(nother) child or not. The answers indicating a positive response to the intention to have children, probably yes and definitely yes, are categorized as yes and the rest of the answer options as no. Important to note is that short-term intentions and long-term intentions to have a(nother) child differ in the actual realization of childbearing intentions. Short-term intentions are able to more accurately predict actual fertility behaviour than long-term intentions (Dommermuth et al., 2015). However, due to a limited number of observations in the dataset it was decided to combine the two to capture the overall intentions of having a(nother) child.

Religiosity

Religiosity is indicated by the frequency of attendance to a religious service, included in section ATT09 of the questionnaire. For this question respondents were asked to indicate how often, if at all, they attend religious services apart from weddings, funerals, baptisms, and the like per week/month or year. This conceptualisation of religiosity by attendance frequency has been employed in a substantial number of academic studies on religiosity and fertility intentions, see for example: Bein et al. (2017); Berghammer (2012); Buber-Ennser and Berghammer (2021); Peri-Rotem (2016), and is a powerful predictor of fertility compared to other indicators of religiosity (Dilmaghani, 2018). Service attendance is considered a valuable indicator of religiosity because it not only reflects but also strengthens individuals' belief and commitment to traditional religious values. This is reinforced through repeated exposure to religious teachings and interactions with like-minded individuals within religious communities, particularly when there's a strong sense of attachment and when religious institutions have the capacity to communicate and enforce religious norms effectively (McQuillan, 2004). Likewise, Goldscheider (2006) poses that religious community cohesion, which is attained by frequent attendance of religious services, is what transforms norms and values held by various religious denominations, specifically those relating to gender role segregation, into observable fertility behaviour.

In order to distinguish between frequent, less frequent, and non-attendants, respondents were grouped based on high religiosity (attends once per month or more), medium religiosity (attends less than once per month), and low religiosity (never attends). Although using attendance frequency as an indicator of religiosity is a widely used and accepted measure, there is a chance that this might underestimate true religious engagement. According to data from Statistics Netherlands, approximately 38% of people who consider themselves affiliated with a religion, regularly attend a religious service through media such as radio, tv, or online (CBS, 2024). Although, there is a strong association between physical attendance and alternative attendance (Schmeets and Houben, 2023), it is important to highlight that this measure of religiosity possibly does not capture every individual’s true level of religiosity. However, measuring religiosity by attendance remained preferable over alternative measures such as self-assessed religiosity, which was also included in the baseline GGS questionnaire. Self-assessed religiosity is a subjective

measure, in contrast to religiosity by attendance which is an objective measure. When using subjective measures from survey data, one potentially runs the risk of introducing personal biases and inconsistencies due to each respondent's own interpretation and feelings regarding the question being asked (Fowler, 2014). So to ensure reliability and validity of the results, an objective measure for religiosity was preferred.

Gender attitudes and norms

Section ATT07 of the baseline questionnaire considers the respondents' opinions about the separate roles of men and women. For each of the statements the respondent could indicate whether a statement applied more to men or to women with the answer options: men definitely, men slightly, both sexes equally, women slightly, women definitely. The questionnaire contains multiple questions on a range of topics, however only the following two were used in the analysis:

- For whom is looking after the home and children more important, men or women?
- Who are better at caring for small children, men or women?

Answers to these two questions were combined in a single variable and recoded on a scale from 1 to 5 where a higher value indicates more traditional gender norms. This allows for the mediator to be treated as a continuous variable in the mediation analysis (Iacobucci, 2012).

Other items in the survey's section on respondent's opinion about separate roles of men and women focused on jobs, education and political leadership and for who these would be considered more important. These however showed less variability in the scores awarded to them. Taking the context of the Netherlands into consideration, as discussed before, it was likely that answers to the questions relating to these topics would be more gender-equal for the largest share of the population. The other two question are more related to fertility outcomes and caregiving, for which the results might show more variation based on religiosity, as is argued in the theoretical framework. Therefore, it was more suitable to focus on just these two questions as an indication of gender norms and attitudes.

The reliability for this latent variable is tested through a Cronbach's alpha coefficient. The two-item summary scale variable scores a 0.643 and 0.603 for men and women respectively. This made it the preferable option over other multi-item summary scales containing more gender norms and attitudes related variables, which were awarded lower scores. Using an index constructed of several questions relating to gender norms and attitudes is a method which is employed by several other studies (Aassve et al., 2015; Bein et al., 2017; Guetto et al., 2015).

3.3.2 Control variables

Age

The age of respondents was added as a continuous variable and as a quadratic term to account for the non-linear effects between age and fertility intentions. The variable age has been transformed and

recoded so that age 18 takes the value of zero to make interpretation easier and more intuitive, as this is the youngest age included analysis.

Education

Respondents' education was measured using DEM07 which asks respondents for the highest level of education they have completed. Several levels of education were combined into three distinct groups based on ISCED levels; low, medium, and high. A level of 'low' education contains all levels up to lower secondary education, 'medium' up to vocational tertiary education, and 'high' up to a doctoral degree.

Partnership status

For Partnership status, DEM21 was used to indicate whether the respondent has a partner. Answers to subsequent questions in the questionnaire following DEM21 were used to construct the following categories for partnership status: single, cohabiting, and married. As inclusion of partnership status would potentially run the risk of overcontrolling, separate analyses with and without this variable included were considered to see if the results remained robust. This was confirmed by the stability of the results, and therefore the decision was made to add partnership status as a control variable.

Current number of children

Whether a respondent has children or not, and if so how many, was computed using a Stata script by Jin et al. (2024). The script includes sections from the baseline questionnaire that inquire about respondents' number of biological, step, and adopted children with their current or past partner(s). The current number of children works as a strong predictor of further fertility intentions (Norling, 2021). Furthermore, it allows for distinction between childless individuals and those who already have children. Respondents were grouped based on whether they have no, one, or two or more child(ren).

Employment status

Employment status was measured using DEM06 which asks respondents for their current employment status at the time of the interview. Distinction was made between employment, unemployment, inactivity, and in education/training.

Religious affiliation

Section ATT08 of the baseline questionnaire asks respondents for their religious denomination, and if they adhere to any. Respondents were able to choose between a list of over 10 different denominations, including differentiation between Christian denominations such as Protestant, Catholic, and other Christian. Since data specific to the Netherlands were used, and given the religious setting of the Netherlands, there was a limitation on the number of different groups that could be constructed; Protestant, Catholic, other, and none. Controlling for religious affiliation might be valuable when religiosity is measured based on service attendance, as the significance and interpretation of attending

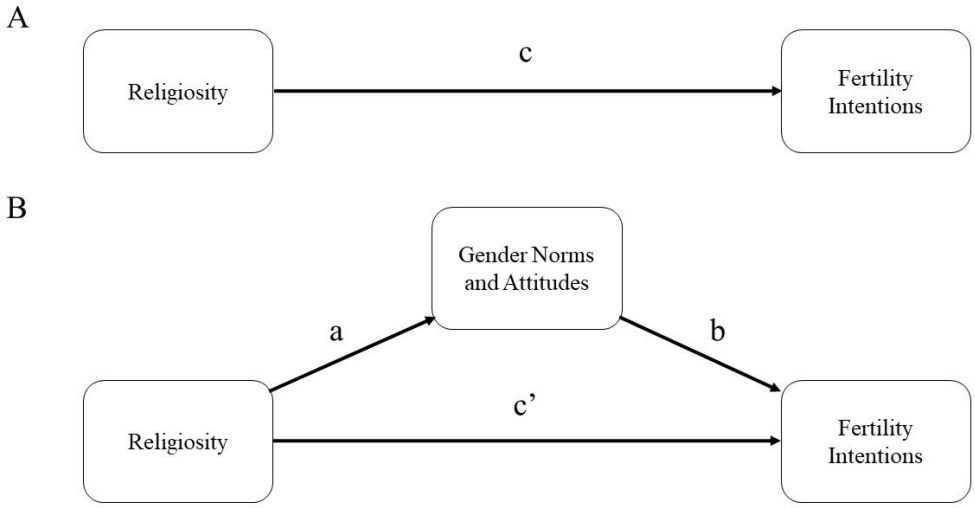
religious services may vary across different religious denominations. (Bein et al.,2017; Koenig et al., 2015).

3.4 Analytical approach

Men and women were considered separately in the analysis because gender norms and attitudes can have diverse effects on men's and women's fertility intentions, as highlighted in the theoretical framework. This also simplified the mediation analysis, which will be elaborated upon next. The power and form of a mediator potentially depend on moderators that are included in the analysis (MacKinnon et al., 2007). Gender, as it is argued here, potentially functions as a moderator influencing the mediated effect. Typically, such a moderated mediation effect can be accounted for using an interaction, however the analysis also considers an interaction between religiosity and parity. To prevent the inclusion of a three-way interaction, the moderated mediation will be prevented by running different models for men and women. Additionally, Zhang (2008) brought attention to the importance of focusing on both female and male fertility when studying the effect of religion, because women are often found to experience a stronger influence of religion. To determine whether individuals with high religiosity, and especially those with traditional gender norms and attitudes, have a greater wish for a big family size, fertility intentions will be considered by parity. The data allowed for only a distinction between parity 0, childless individuals, and parity 1 or more, individuals with one child or more.

Since the main research question in this analysis is one concerning mediation, a mediation analysis was required. A mediating variable, in this case, gender norms and attitudes, transmits the effect from the explanatory variable to a dependent variable (MacKinnon et al., 2007). This meant that the type of analysis that had to be performed needed to be based on a three-variable system. Figure 2 portrays the relationship between the variables similarly as they are presented in the conceptual model. The total effect of religiosity on fertility intentions, indicated by c has been well-portrayed in past and more recent literature. The aim of this thesis is to test whether this relationship is mediated through a mediating variable, gender norms and attitudes, to refine the existing understanding of the relationship. This then constructs pathway c', the direct effect of religiosity on fertility intentions while controlling for gender norms and attitudes. Pathways a and b show this mediation, the effect of religiosity on gender norms and attitudes, and the subsequent effect of gender norms and attitudes on fertility intentions. These pathways indicate the indirect effect of religiosity on fertility intentions. By adding the mediating variable of gender norms and attitudes in the analysis of the relationship between religiosity and fertility intentions, the direct and indirect effects are considered in tandem in the hopes of portraying a closer approximation of the true relationship.

Figure 2: Mediation model



The different types of variables included in the mediation analysis and their role as either independent variable, mediator, or outcome variable determine what the mediation analysis looks like. The independent variable, religiosity, is a categorical variable consisting of three different categories. The mediator, gender norms and attitudes, was measured on a 5-point scale and is argued to be allowed to be interpreted as a continuous variable (Iacobucci, 2012). The outcome variable, fertility intentions is a binary variable indicating whether a person has intentions to have a(nother) child or not. This means that pathways b, c and c' contain a binary outcome, which calls for logistic regression. Pathway a contains a continuous outcome and can therefore be estimated using Ordinary Least Squares (OLS). The following regression equations are constructed to estimate the effects of the paths in Figure 2:

(1) $\text{Logit}\,(\Pr(Y=1|x)) = \beta_1 + cX + \varepsilon_1$

(2) $M = \beta_{2+} aX + \varepsilon_2$

(3) $\text{Logit}\,(\Pr(Y'=1|x,m)) = \beta_3 + c'X + bM + \varepsilon_3$

Y stands for fertility intentions, X for religiosity, and M for gender norms and attitudes. In all equations, βi represents the intercepts of the models. Control variables as described in the operationalisation section are not included in the equations. All control variables were added for the logistic regressions with fertility intentions as outcome, and all except current number of children were added in the OLS regression of the second equation. The coefficient of X, c, in equation 1 represents the total effect of religiosity on fertility intentions. Results of this regression were used to provide an answer to the first sub-question "*How does individual religiosity influence fertility intentions?*". The coefficient of X, a, in equation 2 is the effect of religiosity on gender norms and attitudes. This regression provided results to answer the second sub-question "*What is the link between traditional gender roles and attitudes and religion?'*. The coefficient c' in equation 3 represents the direct effect of religiosity on fertility intentions

when adjusting for gender norms and attitudes, and the coefficient b' represents the effect of gender norms and attitudes on fertility intentions when adjusting for religiosity. The coefficient b in equation 3 estimates the effect of gender norms and attitudes on fertility intentions. The outcomes from this regression analysis were employed to address the third sub-question *"How do gender norms and attitudes influence fertility intentions?".* Together, a and b constitute the indirect effect of religiosity on fertility intentions, mediated through gender norms and attitudes.

In a mediation analysis using OLS regressions, the coefficients in equations 1 and 3 could be used to calculate the indirect effect by subtracting the direct effect from the total effect. However, comparing effects from nonlinear models, such as a logistic model, is not straightforward due to the scale of coefficients changing based on the decrease in error variance caused by other variables included in the model (Karlson et al., 2012). Directly comparing the coefficients could lead to an underestimation of the role of a mediating variable. Karlson, Holm, and Breen (2012) developed a methodology (the KHB-method) which deals with this 'problem of rescaling'. It residualises the mediator M with respect to the independent variable X, which makes it uncorrelated with X (Breen et al., 2018). Following, results for the coefficient of X in equation 3 become comparable for a model with the residualised mediator and a model with the non-residualised mediator because they contain the same residual variance. The regression of equation 3 was then used to decompose the separate effects portrayed in Figure 2. The results then showed the total effect of religiosity on fertility intentions, the direct effect of religiosity on fertility intentions, while controlling for gender norms and attitudes, and the indirect or mediated effect of gender norms and attitudes on fertility intentions. The statistical significance of the mediated effect is derived using the delta method (Karlson et al., 2012).

Although mediation analysis is an established technique in many research fields, techniques are still evolving and current techniques have some limitations. A requirement for most mediation techniques is that there is a statistically significant relationship between the dependent and independent variables. However, this substantially limits the power to detect actual significant mediation effects, as indirect effects are overshadowed by direct effects, resulting in a type II error (MacKinnon et al., 2007). Therefore, it is advised to remain conservative when interpreting the results of a mediation analysis and to interpret them as rather descriptive than inferential.

The main logistic regression model was built in two consecutive steps for both parity 0 and 1 or more. The first model includes religiosity measured by frequency of attendance as the independent variable explaining fertility intentions alongside all the control variables. In the second step gender norms and attitudes were added to analyse how this variable affects the dependent variable. For the models regarding parity 0, the variable indicating the number of children a respondent has was omitted.

To test the moderating effect of parity on the relationship between religiosity and fertility intentions, a logistic regression with an interaction term between religiosity and the number of children was

performed. Results of this regression were used to provide an answer to the fourth sub-question '*How does parity affect the relationship between religiosity and fertility intentions?'*

All statistical analysis were performed using Stata version 18. Stata has been employed with a user-written command to perform a mediation analysis using the KHB-method. To ensure transparency, Appendix A includes the primary contents of the Stata do-file used in this study. This covers variable transformations, the generation of new variables, and details of the conducted statistical tests. Any additional calculations such as the conversion of results produced by the KHB-method in log odds to odds ratios, are made using Excel.

3.5 Model evaluation and assumptions

As previously discussed, the statistical analysis has employed several techniques. The main statistical test that was utilised is a binary logistic regression, which shows how the predictors affect the odds ratios of having positive fertility intentions compared to negative fertility intentions. Additionally, an OLS regression was used to test the effect of religiosity on the mediator, gender norms and attitudes.

Some specific assumptions have to be met to ensure reliable and valid results: linearity between the dependent and independent variables and no collinearity between variables. Correlation between variables has been examined using Spearman's rank correlation due to the considerable number of non-ratio variables. The results (Table B1, Appendix B) show how the majority of the correlations are weak and the stronger ones can only be considered moderately strong, so there were no reasons to suspect any significant issues regarding collinearity. The assumption of linearity is tested using the Box-Tidwell test. The null-hypothesis associated with this test is that there is a linear relationship between the dependent variable and the predictors in a logistic regression model. Especially regarding the gender norms and attitudes index, there is reason to believe this relationship might not be linear. There are some studies that show the relationship between gender norms and attitudes and fertility intentions might show a U-shaped pattern where fertility increases again when men and women share the burden of traditional homemaking tasks (Miettinen et al., 2011; Okun and Raz-Yurovich, 2019). However, results show p-values for all predictors above the critical 0.05 value, which indicates that the variables have a suitable relationship with the dependent variable in order to be used in a logistic regression model. As stated earlier, non-linearity between age and fertility intentions had already been controlled for by adding a squared variant of age.

Regarding assumptions for the mediation analysis, the KHB-method does not impose any unique requirements compared to standard mediation techniques. For standard mediation analyses there are a few assumptions that will have to be met. One of them being the significant associations between the independent variable, the mediator, and the dependent variable, which was tested in the statistical analysis. Furthermore, there are some theoretical assumptions such as no reverse causation in the

mediation model and temporal order to support causal inference, which are supported by the theoretical framework.

3.6 Ethical considerations

Since the GGS contains personal information strong ethical considerations have to be made. Ethical considerations in this research adhere to stringent guidelines set forth by the GGP and the General Data Protection Regulation (GDPR), (GGP, 2024b). The GGP ensures compliance with GDPR and the Netherlands Code of Conduct for Research Integrity. Data collection operations are governed by signed agreements, ensuring the protection of personal information. The questionnaire for the GGS has undergone ethical review by the GGP Ethics Board. Additionally, the GGP Ethics Board and the Dutch Royal Academy of Arts and Science Data Protection Officer have approved the fieldwork model and data management plan. Researchers accessing GGP data must adhere to the GGP Terms of Acceptable Usage, overseen by the Population Unit of the UNECE, further safeguarding data privacy and integrity.

3.7 Use of artificial intelligence

According to the University of Groningen's guidelines on using Artificial Intelligence (AI) in teaching, AI is permitted in academic work to support general functions, provided that its use is transparent and critically reflected upon (RUG, 2024). Throughout the writing process of this thesis an AI-powered tool, Grammarly, was used. Grammarly offers assistance with grammar, spelling, and will offer suggestion on sentence structure to enhance readability. Therefore it can be considered a generative AI, which creates a new output from fine-tuning the original input it was given. The free version of Grammarly (14.1186.0), which was used for this thesis, primarily corrects grammar and spelling and occasionally provides sentence structure suggestions, in contrast to the subscription-based versions which offer more advanced features.

4. Results

4.1 Descriptive results

Table 1: Descriptive statistics

		Women		Men	
		M	SD	M	SD
Age	Women (18-45) Men (18-50)	31.82	7.71	34.82	8.97
Gender Norms and Attitudes	Index (1-5) *	3.27	0.47	3.41	0.57
		N	%	N	%
Fertility intentions	Yes	753	38.75	447	32.16
	No	1190	61.25	943	67.84
Fertility intentions at parity 0	Yes	602	59.60	364	48.92
	No	408	40.40	380	51.08
Fertility intentions at parity 1 or more	Yes	151	16.18	83	12.85
	No	782	83.82	563	87.15
Religiosity by attendance frequency	Low	1409	72.52	1049	75.47
	Medium	304	15.65	189	13.60
	High	230	11.84	152	10.94
Number of children	0	1010	51.98	744	53.53
	1	232	11.94	132	9.50
	2 or more	701	36.08	514	36.98
Education	Low	105	5.40	125	8.99
	Medium	702	36.13	541	38.92
	High	1136	58.47	724	52.09
Partnership status	Single	752	38.70	522	37.55
	Cohabiting	533	27.43	380	27.34
	Married	658	33.87	448	35.11
Employment status	Unemployed	96	4.94	49	3.54
	Employed	1439	74.06	1126	81.01
	In school or training	350	18.01	186	13.38
	Inactive	58	2.99	35	2.09
Religious affiliation	None	1373	70.66	1012	72.81
	Protestant	210	10.81	138	9.93
	Roman Catholic	170	8.75	144	10.36
	Other	190	9.78	96	6.91
Total N		1943		1390	

* A higher score on the gender norms and attitudes index indicates more traditional gender norms and attitudes.

Table 1 shows the descriptive statistics for all the variables used in the subsequent statistical analysis for men and women separately. Overall, differences between men and women are relatively minor. Men in the sample are on average a bit older than the women, however the sample frame for men was also wider by five years.

For the main dependent variable in the analysis, fertility intentions, women report positive overall fertility intentions more often than men by quite a significant amount of about seven percentage points (38.75% for women compared to 32.16% for men). This pattern holds for both short-term and long-term fertility intentions (Table C1 , Appendix C). The descriptive statistics of fertility intentions among

individuals at parity 0 (childless individuals) continues to show this gender disparity. More than half of the childless women report positive fertility intentions compared to less than half of the men. When examining individuals at parity 1 or higher (those with one or more children), a significant decline in positive fertility intentions is observed across both genders. Despite this overall decrease, a gender difference persists: men with one or more children are less likely than women to express positive fertility intentions. This trend underscores a consistent pattern where women, regardless of their parity, tend to have a higher propensity towards positive fertility intentions compared to men.

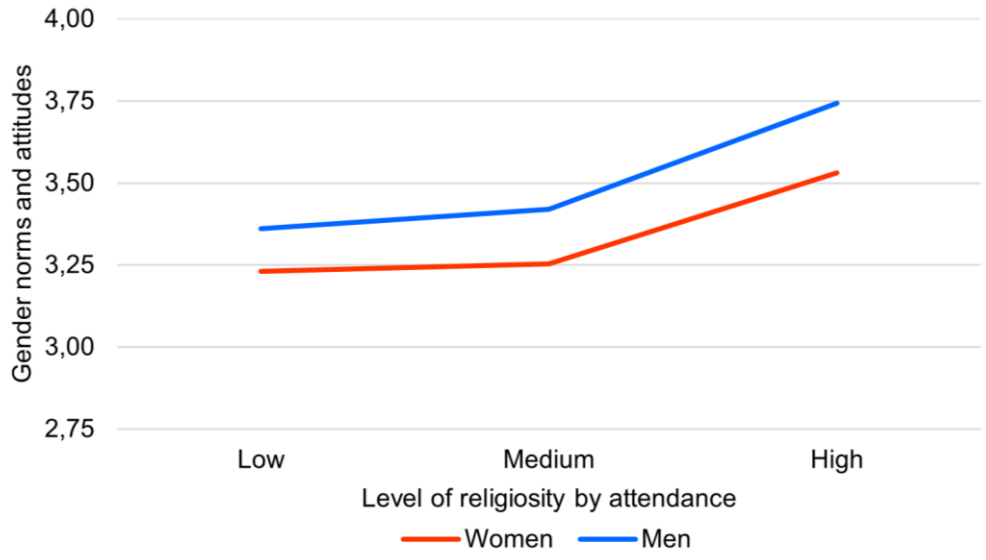
Regarding one of the main independent variables, religiosity, the sample also overall fits the patterns of what would be expected for the secularised Dutch context, with most respondents indicating low religiosity by attendance and no religious affiliation. However, these shares of people indicating low religiosity by attendance or no religious affiliation are somewhat higher than would be expected. According to CBS, around 55% of the Dutch population considers themselves not to be religious (CBS, 2021), whereas within the sample slightly over 70% of both men and women indicate they do not adhere to any religion. Potentially, this could be attributed to non-response bias among individuals with higher religiosity (Sherkat, 2007), or the exclusion of older individuals in the sample, as they tend to be more religious (CBS, 2020). The share of individuals affiliated with a religion for the age groups included in the sample aligns more closely with expected percentages (CBS, 2024). Also, women tend to exhibit levels of religiosity that are slightly higher than those for men, with fewer women indicating low religiosity (72.52% for women compared to 75.47% for men) and fewer women indicating to not adhere to any religious affiliation (70.66% for women compared to 72.81% for men, which is again reflective of the Dutch population (CBS, 2024). Interestingly, when combining the cases for men and women and cross-tabulating religiosity by attendance frequency and religious affiliation, it is observed that individuals can indicate that they affiliate themselves with a religion, but show low level of religiosity by attendance (Table C2, Appendix C). This can potentially be attributed to the increase in the amount of people indicating that they 'believe without belonging' (Tromp et al., 2020), which means that they consider themselves affiliated with a religion, but do not actively participate in an institutional context. Conversely, people can also report high levels of religiosity, and thus attendance, regardless of whether they affiliate themselves with a religion. This could be indicative of a group of individuals who 'belong without believing' (Dekker, 2009). In other words, high religiosity by attendance can occur with or without religious affiliation, and similarly, low religiosity by attendance can be found among both affiliated and unaffiliated individuals. Therefore, to accurately capture the effect of religiosity on fertility intentions, it is extra valuable to control for religious affiliation.

For the other main independent variable, gender norms and attitudes, the sample shows a relative gender equal perspective on gender norms and attitudes. Overall, men show slightly more traditional gender norms than women, thus prescribing caregiving and homemaking roles more often to women. The

distribution of this variable (Table C3 & C4, Appendix C), shows that most of the variation in scores can be ascribed to differences between gender-equal and traditional norms and values, and that a very small proportion of the sample reports non-traditional gender norms and attitudes, where men are considered to better suited for caregiving and homemaking. Descriptive statistics on the number of children are comparable between genders. More than half of both men and women in the sample are childless, and the next greatest category in number of children is two or more at about 36%. Regarding education, women are slightly better educated, with 58.47% of them being highly educated compared to 52.09% of men. Partnership status is comparable for men and women with about 38% of the cases being single, while the rest is partnered with the majority being married. Men are more frequently employed than women (81.01% compared to 74.06%), and women are more represented in the other categories of unemployed, in education or training, and inactive.

Figure 3 shows the relationship between the level of religiosity and the mean score on the gender norms and attitudes index for men and women separately. As previously stated in the analysis of the descriptive statistics, men have on average a higher score on the gender norms and attitudes index than women, and this holds for all levels of religiosity. This entails that they have slightly more traditional gender norms and attitudes. Figure 3 also portrays how the difference in mean score for gender norms and attitudes between men and women with the same level of religiosity slightly increases as they become more religious. A more in-depth statistical analysis of this relationship can be found in section 4.5.

Figure 3: Graph religiosity and gender norms and attitudes index



4.2 Fertility intentions at parity 0

Table 2 shows the results of the first two models measuring the effect of religiosity and subsequently gender norms and attitudes on fertility intentions for childless men and women separately in odds ratios. The models are used to test H2, stating that higher individual religiosity is positively associated with

fertility intentions and H3, stating that more traditional gender norms and attitudes are positively associated with fertility intentions. The table is accompanied by Figures 4 and 5, showing the predicted probabilities of fertility intentions based on religiosity and score on the gender norms and attitudes index, while also controlling for all control variables and holding these at their mean and/or reference level.

Table 2: Logistic regression results at parity 0

		Women (N=1010)				Men (N=744)			
		1		2		1		2	
		OR	P	OR	P	OR	P	OR	P
Religiosity by attendance frequency	Low (ref.)								
	Medium	1.240	0.294	1.261	0.260	1.445	0.140	1.436	0.147
	High	2.090	0.028	1.936	0.053	1.959	0.121	1.903	0.139
Gender norms and attitudes	Index (1-5)			1.996	0.001			1.134	0.424
Age		1.151	0.012	1.162	0.007	1.060	0.295	1.061	0.294
Age^2		0.987	0.000	0.987	0.000	0.993	0.000	0.993	0.000
Partnership status	Single (ref.)								
	Cohabiting	1.327	0.123	1.361	0.095	2.637	0.000	2.632	0.000
	Married	3.127	0.000	3.329	0.000	3.177	0.000	3.188	0.000
Education	Low (ref.)								
	Medium	1.049	0.874	1.050	0.873	1.167	0.622	1.156	0.643
	High	0.903	0.755	0.933	0.832	1.838	0.062	1.850	0.050
Employment status	Employed (ref.)								
	Unemployed	0.957	0.912	0.966	0.933	1.372	0.434	0.372	0.434
	In school or training	1.114	0.604	1.098	0.657	1.732	0.039	1.717	0.042
	Inactive	0.371	0.037	0.306	0.019	0.351	0.190	0.344	0.184
Religious affiliation	None (ref.)								
	Protestant	1.158	0.644	1.078	0.815	0.822	0.643	0.809	0.617
	Roman Catholic	2.306	0.014	2.167	0.024	1.699	0.110	1.659	0.129
	Other	1.183	0.548	1.045	0.879	0.760	0.526	0.755	0.516
Intercept		1.301	0.460	0.140	0.009	0.620	0.253	0.407	0.181
χ^2		176.96		215.11		177.60		227.27	

The results show how for women at parity 0 who have a high religiosity, the odds of having positive fertility intentions are twice as high as compared to women with low religiosity (OR = 2.090; P < 0.05). This indicates that support has been found for H2. Interestingly, when considering the different religious affiliations added to the models as a control for religiosity, women who identify as Roman Catholic have higher and significant odds of having positive fertility intentions compared to those with no religious affiliation. In contrast, other denominations report much weaker and insignificant results. For childless women, model 2 shows that a 1-point increase on the gender norms and attitudes index, which means a shift towards more traditional gender values, increases the odds of having positive fertility intentions almost two-fold (OR = 1.996; P < 0.05), providing support to H3.

Adding gender norms and attitudes to the model changed the outcome for the religiosity variable. Specifically for high religiosity, the significance level has shifted from below 0.05 to slightly above, and

there was a small decrease in the odds ratio. The proper statistical analysis to test whether this is a mediation effect can be found in section 4.6. Regarding control variables, age and being married compared to being single wield significant results. The odds ratios for age show that initially the odds of having fertility intentions increase with age, and these later decreases and turns negative, as is the expected effect for age. The odds ratio for married shows that the odds of having positive fertility intentions are more than three times higher for married childless women than for single childless women.

For childless men, religiosity appears to have a substantial effect on the odds of having positive fertility intentions. However, these effects are statistically insignificant, and thus no support was found for H2. This aligns with other research which showed that the effect of religiosity on fertility intentions is not as strong for men (Zhang, 2008). Furthermore, for model 2, where gender norms and attitudes were added to the model, found no significant effect of this variable on fertility intentions, and so no support was lent to H3. Regarding control variables, The squared age term has a negative and significant effect, and being married or cohabiting compared to being single wield significant and positive results.

Both the plots of the predicted probabilities in Figure 4 for women and Figure 5 for men show the same pattern. Both show a regression line with a positive gradient. For all categories of religiosity, as gender norms and attitudes become more traditional, the probability of having positive fertility intentions increases. However, as results from Table 2 showed, this is only significant for women with a high level of religiosity.

Figure 4: Predicted probabilities of fertility intentions at parity 0 for women

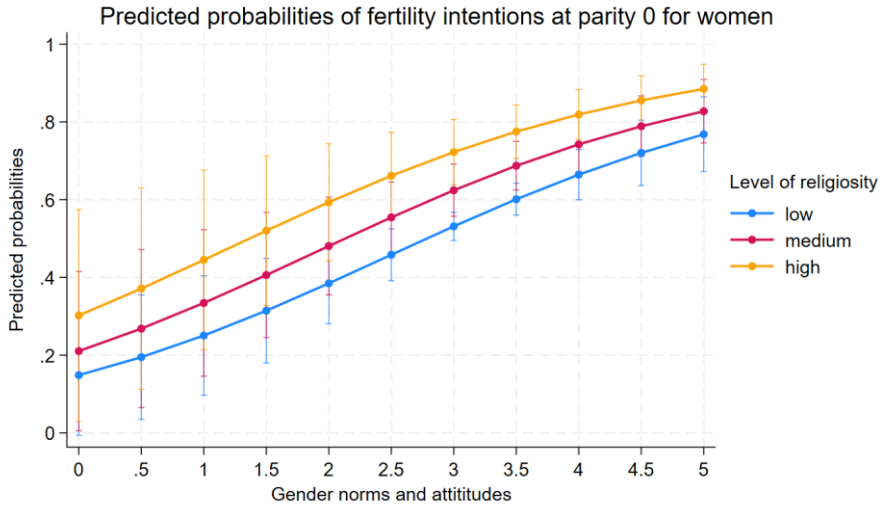
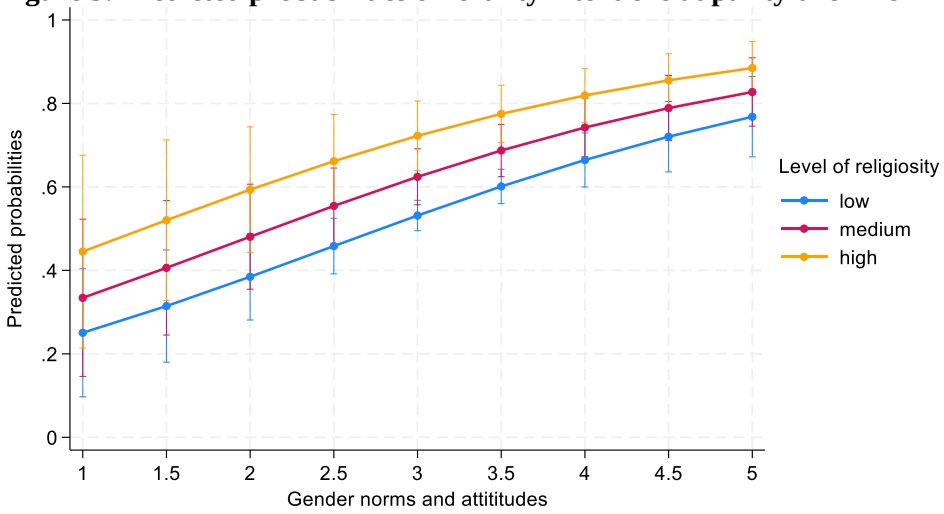


Figure 5: Predicted probabilities of fertility intentions at parity 0 for men



4.3 Fertility intentions at parity 1 and more

Table 3 shows the results of the first two models measuring the effect of religiosity and subsequently gender norms and attitudes on fertility intentions for men and women who already have 1 or more children, separately. The results are reported in odd ratios. The models are used to test H2, stating that higher individual religiosity is positively associated with fertility intentions and H3, stating that more traditional gender norms and attitudes are positively associated with fertility intentions. The table is accompanied by Figures 6 and 7, showing the predicted probabilities of fertility intentions based on religiosity and score on the gender norms and attitudes index, while also controlling for all control variables and holding these at the mean or reference level.

The results indicate a significant and positive effect of religiosity on fertility intentions for women. Specifically, women with medium religiosity have an odds ratio of approximately 2.2 ($P< 0.05$), while those with high religiosity exhibit a higher odds ratio of 3.8 ($P< 0.05$), both compared to women with low religiosity. This suggests that higher levels of religiosity are associated with substantially greater odds of positive fertility intentions for women who already have 1 or more children. In Model 2, after controlling for gender norms and attitudes, the effects of both levels of religiosity remain significant. These findings support H2 stating that higher individual religiosity is positively associate with fertility intentions. The gender norms and attitudes index in model 2 does not demonstrate a significant result, in contrast to the model at parity 0. This means that at parity 1 or more, no support was found for H3. Regarding the control variables, having attained a high level of education as opposed to low seems to have a significant and positive effect on fertility intentions, and having 2 or 3 or more children as compared to 1 significantly depresses the odds of having positive fertility intentions.

Table 3: Logistic regression results at parity 1 or more children

		Women (N=933)				Men (N=646)			
		1		2		1		2	
		OR	P	OR	P	OR	P	OR	P
Religiosity by attendance frequency	Low (ref.)								
	Medium	2.222	0.043	2.211	0.044	1.295	0.672	1.307	0.662
	High	3.752	0.013	3.615	0.017	1.750	0.450	1.836	0.420
Gender norms and attitudes	Index (1-5)			1.157	0.541			0.898	0.705
Age		0.943	0.741	0.953	0.541	0.938	0.794	0.931	0.773
Age^2		0.994	0.255	0.994	0.787	0.995	0.401	0.995	0.418
Partnership status	Single (ref.)								
	Cohabiting	1.807	0.251	1.759	0.274	0.237	0.059	0.251	0.076
	Married	2.137	0.120	2.122	0.122	0.396	0.206	0.415	0.263
Education	Low (ref.)								
	Medium	6.426	0.096	6.249	0.101	2.657	0.214	2.648	0.216
	High	11.489	0.028	11.265	0.029	2.480	0.245	2.431	0.258
Employment status	Employed (ref.)								
	Unemployed	0.983	0.974	0.981	0.972	0.249	0.268	0.255	0.278
	In school or training	1.361	0.718	1.347	0.724	*	*	*	*
	Inactive	0.177	0.145	0.181	0.148	0.318	0.337	0.317	0.336
Number of children	1 (ref.)								
	2	0.069	0.000	0.069	0.000	0.071	0.000	0.073	0.000
	3 or more	0.035	0.000	0.031	0.000	0.059	0.000	0.061	0.000
Religious affiliation	None (ref.)								
	Protestant	0.803	0.683	0.771	0.633	0.770	0.705	0.779	0.718
	Roman Catholic	0.716	0.469	0.709	0.457	1.800	0.347	1.834	0.332
	Other	0.668	0.403	0.650	0.374	0.416	0.257	0.403	0.246
Intercept		0.863	0.936	0.511	0.740	6.505	0.487	9.652	0.433
χ^2		227.36		375.72		227.50		376.09	

* Employment status in school or training was omitted by Stata due to perfect failure prediction for men, therefore these observations were added to the category 'inactive' for these regressions. The results remained robust after combining categories.

Similar to the models for parity 0, the effect of religiosity on fertility intentions seems inconclusive for men as results are insignificant. Compared to the models for parity 0 p-values have increased, making the relationship even less likely. Interestingly, as gender norms and attitudes were added to the model, the odds ratios for the religiosity groups increased. The results for the gender norms and attitudes index also did not provide any significant results. This entails that for men at parity 1 or more, no support could be found for either H2 or H3. With respect to the control variables, likewise as for the women, having 2 or 3 or more children has a depressing effect on fertility intentions. This could potentially be explained by the persistent two-child family ideal in the Netherlands (CBS, 2023b), which would supress the intention to have any additional children.

Figure 6 shows the predicted probabilities of fertility intentions at parity 1 or more for women. Overall, the plot shows a similar pattern to that in Figure 4 at parity 0. The gradient is positive, meaning that as

gender norms and attitudes become more traditional, the odds of having positive fertility intentions increase, and this effect increases with higher levels of religiosity. The plot does however show a weaker effect, as the curves are more flattened. The results for men were more inconclusive and this is likewise reflected in Figure 7. Due to the reducing effect of gender norms and attitudes on the odds of having positive fertility intentions, the graph shows a downward trend. However, as the results of the regression proved to be insignificant, no conclusions can be drawn from this.

Figure 6: Predicted probabilities of fertility intentions at parity 1 or more for women

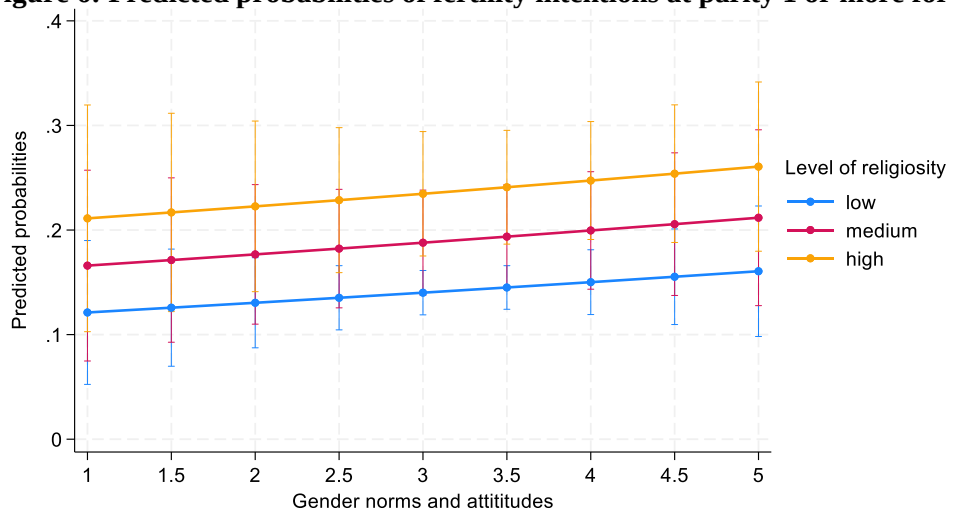
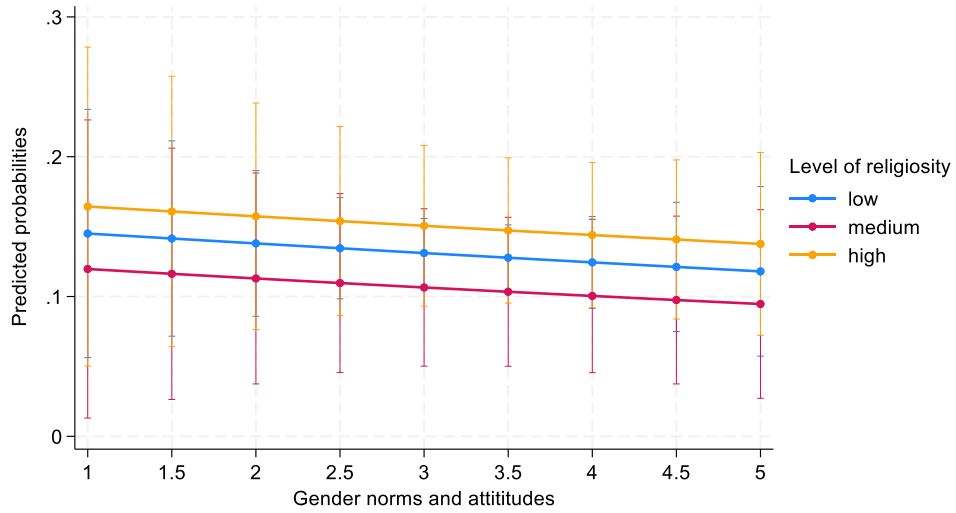


Figure 7: Predicted probabilities of fertility intentions at parity 1 or more for men.



4.4 OLS regression religiosity and gender norms and attitudes

Table 4 shows the results of the OLS regression which examines the effect of the independent variable, religiosity, on the mediator, gender norms and attitudes. This regression is used to test H4, stating that higher individual religiosity will be positively associated with gender norms and attitudes.

Table 4: OLS regression religiosity and gender norms and attitudes

		Women (N=1943)		Men (N=1390)	
		Coeff.	P	Coeff.	P
Religiosity by attendance frequency	Low (ref.)				
	Medium	-0.027	0.380	0.051	0.277
	High	0.148	0.001	0.308	0.000
Age		0.001	0.852	-0.005	0.559
Age^2		0.001	0.740	0.002	0.486
Partnership status	Single (ref.)				
	Cohabiting	0.006	0.826	0.051	0.228
	Married	0.009	0.746	0.082	0.057
Education	Low (ref.)				
	Medium	-0.039	0.422	-0.026	0.640
	High	-0.102	0.037	-0.144	0.009
Employment status	Employed (ref.)				
	Unemployed	0.092	0.060	-0.044	0.591
	In school or training	0.039	0.320	0.081	0.219
	Inactive	0.033	0.595	-0.069	0.552
Religious affiliation	None (ref.)				
	Protestant	0.179	0.000	0.109	0.099
	Roman Catholic	0.049	0.207	0.089	0.086
	Other	0.243	0.000	0.001	0.982
Intercept		3.228	0.000	3.415	0.000

The results reveal that individuals, whether male or female, demonstrate a statistically significant association between higher religiosity levels and increased scores on the gender norms and attitudes index. Consequently, they tend to show more traditional gender views compared to those with lower religiosity levels. For women, high religiosity is associated with a 0.148-point increase ($P < 0.05$) in gender norms and attitudes. Interestingly, for men the magnitude of this effect is even higher; high religiosity is associated with a 0.308-point increase ($P < 0.05$) in gender norms and attitudes. For medium religiosity, no such an effect could be found for either men or women. Referring back to Figure 3 in the descriptive analysis, this relationship was to be expected. The transition from low to medium religiosity was associated with a minor increase in the score for gender norms and attitudes, whereas the transition from medium to high religiosity was associated with a much more notable increase, providing evidence for H4. Considering the control variables used in this analysis, two of the religious denominations also were found to have a positive and significant effect on gender norms and attitudes for women: considering oneself Protestant or 'Other'. Interestingly, this relationship was not found for Roman Catholic. Previous logistic regressions (Table 2) found that for women, identifying as Roman Catholic was associated with having positive fertility intentions. This suggests that although Roman Catholicism might not have a direct impact on gender norms and attitudes, it may still affect women's fertility intentions through other factors.

4.5 Mediation analysis

Table 5 shows the summaries of the results of the mediation analysis using the KHB-method to decompose the direct and indirect effect of religiosity and gender norms and attitudes on fertility intentions. The total effect shows the influence of religiosity on fertility intentions without controlling for gender norms and attitudes. The direct effect shows the effect of religiosity on fertility intentions while controlling for gender norms and attitudes. The indirect effect shows the mediated effect of religiosity on fertility intentions through gender norms and attitudes.

Table 5: Mediation analysis: decomposition of mediating effect using the KHB-method

	Women				Men			
	Parity 0		Parity 1+		Parity 0		Parity 1+	
	OR	P	OR	P	OR	P	OR	P
Total effect	1.450	0.003	1.921	0.001	1.211	0.222	1.229	0.491
Direct effect	1.397	0.008	1.881	0.002	1.194	0.260	1.265	0.437
Indirect effect	1.038	0.035	1.021	0.456	1.014	0.397	0.971	0.511
Proportion mediated	10.1%		3.2%		7.4%		-14.1%	

Notes: All models control for the same other independent variables as Table 2 for parity 0, and Table 3 for parity 1 or more. Odds ratios and proportion mediated have been manually calculated using the logits presented by the KHB Stata package. P-values are derived from standard errors calculated using the delta method (Karlson et al. 2012).

The results show a significant mediation effect for women at parity 0. This provides support for the main hypothesis (H1) stating that part of the effect of religiosity on fertility intentions can be explained by the traditional gender norms and attitudes held by individuals with higher religiosity. The effect of religiosity on fertility intentions is for 10.1% mediated through gender norms and attitudes. Contrastingly, for women at parity 1 or more, the effect of religiosity on fertility intentions remains positive and significant with even higher odds compared to parity 0, however no statistical proof is given that this is mediated through gender norms and attitudes. For men, neither of the mediations are significant. This was to be suspected when considering the insignificant effects of gender norms and attitudes on fertility intentions, which was also found in previous models. Also, the mediated effect turned out to be negative for parity 1 or more, which can partly be explained by the increase in odds ratios for the religiosity groups in Table 3 when gender norms and attitudes were added to the model. Concluding, for women at parity 0, support for H1 could be found, unlike for women at parity 1 or more and for men at both parity 0 and parity 1 or more.

4.6 Interaction religiosity and parity

Table 4 shows the results of the binary logistic regression models comparing the effect of an interaction between religiosity and number of children. Model 1, the simpler model, includes the main effects of religiosity and number of children on fertility intentions and model 2, the more complex model, includes an interaction effect between the two main effects. This interaction was included to test the moderating effect of parity on the relationship between religiosity and fertility intentions, as it is hypothesised in H5 that the effect of this relationship is stronger for parents than it is for childless individuals.

Similarly to previous models, medium and high religiosity compared to low religiosity appear to positively affect the odds of having positive fertility intentions for women. It is important to note that these main effects in the model with the interaction are compared to the reference group for the amount of children, which is women with no children (parity 0).

Table 6: Interaction religiosity and parity

		Women (N=1943)				Men (N=1390)			
		1		2		1		2	
		OR	P	OR	P	OR	P	OR	P
Religiosity by attendance frequency	Low (ref.)								
	Medium	1.433	0.047	1.333	0.152	1.364	0.169	1.435	0.141
	High	2.427	0.001	2.449	0.004	1.749	0.124	1.876	0.119
Number of children	0 (ref)								
	1	1.432	0.093	1.328	0.219	1.746	0.039	1.975	0.019
	2 or more	0.085	0.000	0.087	0.000	0.123	0.000	0.118	0.000
Medium religiosity X 1 child				1.353	0.550			0.365	0.222
Medium religiosity X 2 children or more				1.375	0.552			1.224	0.762
High religiosity X 1 child				1.747	0.448			0.616	0.500
High religiosity X 2 children or more				0.787	0.639			0.870	0.840
Age		1.085	0.078	1.090	0.065	1.079	0.124	1.077	0.136
Age^2		0.990	0.000	0.990	0.000	0.992	0.000	0.992	0.000
Partnership status	Single (ref.)								
	Cohabiting	1.451	0.028	1.452	0.028	2.314	0.000	2.315	0.000
	Married	2.433	0.000	2.426	0.000	2.847	0.000	2.974	0.000
Education	Low (ref.)								
	Medium	1.333	0.289	1.324	0.300	1.355	0.286	1.371	0.269
	High	1.486	0.163	1.473	0.173	1.841	0.036	1.865	0.033
Employment status	Employed (ref.)								
	Unemployed	0.935	0.826	0.936	0.831	1.148	0.714	1.166	0.685
	In school or training	1.120	0.569	1.128	0.547	1.582	0.079	1.580	0.079
	Inactive	0.313	0.007	0.303	0.006	0.336	0.099	0.347	0.108
Religious affiliation	None (ref.)								
	Protestant	1.008	0.975	1.023	0.933	0.844	0.629	0.844	0.631
	Roman Catholic	1.430	0.150	1.407	0.167	1.684	0.070	1.663	0.079
	Other	1.007	0.978	0.985	0.949	0.722	0.376	0.761	0.462
Intercept		1.167	0.645	1.169	0.642	0.605	0.203	0.594	0.188
χ^2		970.30		972.00		608.52		610.53	

Also similarly to previous models, the effect of religiosity and gender norms and attitudes was not found for men in either of the two models. Having 2 or more children, as compared to not having children, significantly decreases the odds of having positive fertility intentions for both men and women in both models. This outcome for the models with interaction is measured relative to those with low religiosity. Having one child as compared to none increases the odds of having positive fertility intentions for men in both models. Regarding the interactions between religiosity and the number of children, no significant interaction effect between the two variables was noted for either men or women.

To determine whether the inclusion of the interaction effect between religiosity and number of children provides a better fit for predicting fertility intentions than the simpler model without an interaction, a likelihood ratio test was performed. For women, the likelihood ratio test which compared the simple and complex model resulted in a chi-square value of 1.70 with 4 degrees of freedom, resulting in an associated p-value of 0.791. for men, the likelihood ratio test resulted in a chi-square vale of 2.01 with 4 degrees of freedom, resulting in an associated p-value of 0.734. These p-values indicate that the inclusion of the interaction term between religiosity and number of children did not significantly improve the model. This, combined with the insignificant interaction effects, implies that the effect of religiosity on fertility intentions is not significantly dependent on the number of children a person has, and therefore no support for H5 was found.

4.7 Robustness checks

To ensure reliability and validity of the previously presented results, a series of robustness checks were performed. The inclusion of religious affiliation alongside religiosity measured by attendance could potentially lead to overcontrolling. As Table B1 in Appendix B showed, the correlation between the two variables can be considered quite high, raising concerns about the possibility of misleading interpretation of the results for religiosity. Therefore, the analyses were performed again, but this time without religious affiliation. Results showed that the effect of religiosity on fertility intentions remained consistent, with and without the inclusion of religious affiliation, implying robust results.

The gender norms and attitudes index used in the analysis has been constructed from two questions from the GGS which indicate respondent's their opinion on importance of caring for children and looking after the home for men and women. An alternative index was constructed, which also included their opinion on the importance of work, education, and political leadership for men and women. Scores of these survey items were reversed in order to ensure that like with the primary index, a higher score is associated with more traditional gender norms and attitudes. Analyses were rerun with this index to ensure the robustness of the results and justify operationalization of the index. The results of these analyses confirmed that the primary results are consistent regardless of operationalization of gender norms and attitudes.

5. Discussion and conclusion

This thesis explored the role of gender norms and attitudes in the relationship between religiosity and fertility intentions in the Netherlands. Initially, research on the effect of religion on fertility has predominantly focused on differences in fertility outcomes which were attributed to differences in religious teachings from different religious denominations. Prominent examples of this are studies on differences in fertility behaviour between Protestants and Catholics, which ascribe the discrepancy to more pronatalist teachings and disapproving views on the use of contraceptives by the Catholic Church (Westoff and Jones, 1979). As secularisation throughout Europe and decreasing fertility rates initially reduced the interest in the topic of religion and fertility, differences in fertility between religious and non-religious individuals remained noticeable. Several theories and hypotheses have been put forward to explain these differences. One approach to studying the relationship between religiosity and fertility intentions has shifted the focus to norms and attitudes, specifically those related to gender. (Goldscheider, 2006). Many religious doctrines advocate pronatalist views and traditional family roles, emphasising men as providers and women as mothers (McQuillan, 2004). These beliefs are particularly influential among highly religious individuals, correlating with greater fertility intentions and a preference for larger families. Therefore, one could argue that traditional gender norms and attitudes mediate the relationship between religiosity and fertility intentions.

The Netherlands has served as the specific national context for this research. The context of the Netherlands has provided an interesting context to study this relationship, due to the high secularisation rates, religious diversity (CBS, 2020), and overall gender-equal norms and attitudes among its inhabitants (European Institute for Gender Equality, 2023). Considering these factors, this thesis has focused on this mediating role of gender norms and attitudes in the relationship between religiosity and fertility intentions, which led to the formulation of the main research question that has guided this thesis: 'How do more traditional gender norms and attitudes among religious people affect the relationship between religiosity and fertility intentions in the Netherlands?'. This research has produced several results, which will be discussed in more detail below.

Firstly, the main effect of religiosity on fertility intentions was considered. The hypothesis which was formulated based on the theoretical framework stated that higher individual religiosity would be positively associated with fertility intentions (H2). The results of the binary logistic regression indicated that childless women who frequently attend religious services are more likely to intend to have a child than those who do not attend. Additionally, women with children who frequently or occasionally attend religious services are more likely to intend to have another child compared to those who never attend. The finding that religiosity has a positive association with fertility for women is consistent with Hayford and Morgan (2008) who found that women who report a greater importance of religion in their lives have higher intended fertility than those who deem religion less important, and Berghammer (2012) who

found that church attendance strongly correlated with future fertility behaviour. For both childless men and men with children, conversely, no such an effect was found at any level of religiosity. The insignificant results found for men, which was a recurring phenomenon for most of the results, could be attributed to the limited sample size for men. Although the age range for men was wider by 5 years, the sample size was just over two-thirds the size of that of the women. As discussed in Chapter 3, due to a significant number of missing variables in the norms and attitudes section, a large number of cases had to be deleted. This in combination with an overall smaller share of male respondents, likely due to a gendered bias that women are more likely to participate in surveys than men (Becker, 2022), resulted in a limited sample size.

Secondly, the main effect of gender norms and attitudes on fertility intentions was examined. The accompanying hypothesis which was formulated stated that more traditional gender norms and attitudes are positively associated with fertility intentions (H3). Using the results of the binary logistic regression, support was found for this hypothesis for childless women. More traditional gender norms and attitudes were found to positively affect the odds of intending to have a child. Contrastingly, this effect was not significant for women with children, which is a similar finding as in the research by Lappegård et al. (2021). This difference could be attributed to how already having children can affect further fertility intentions. According to Ajzen and Klobas (2013), drawing on the Theory of Planned Behaviour, individuals reassess their future fertility plans following the birth of a child. This new life experience shapes their attitudes, including perspectives on gender norms, which in turn influences their future intentions. This understanding potentially explains why the effects were not significant for mothers, as their attitudes towards gender norms and future fertility may already be shaped by their experience of parenting.

The positive and significant effect of gender norms and attitudes for childless women contradicts some more recent findings on the effect of gender equality on fertility intentions. Depending on the measure of gender equality, more traditional gender norms and attitudes have often been associated with lower fertility in more recent work. Especially considering the division of labour among men and women in modern societies, more traditional couples where the woman performs the majority of the domestic labour while also being employed herself, are less likely to have positive fertility intentions than egalitarian couples (Goldscheider et al., 2015; Neyer et al., 2013). Furthermore, the significance of the effect of gender norms and attitudes on fertility intentions for different parities deviates from previous research. Neyer et al. (2013) found that satisfaction and actual division of labour did not significantly affect fertility intentions for childless women, but they did for mothers. A possible explanation for these two contradictory findings could be related to the measurement of gender norms and attitudes. In this thesis the gender norms and attitudes index which was constructed uses individuals' opinions on roles for men and women, which are norms and attitudes, whereas division of labour is an actual behaviour. According to the TPB framework, norms and attitudes are most suitable to predict behaviour, in this

case fertility intentions. Using a different type of measurement of gender norms and attitudes will then also imply the use of a different framework to predict fertility behaviour, such as the such as the Gender Revolution framework which makes use of real-life manifestations of the second phase of the gender revolution couples (Goldscheider et al., 2015). Consequently, different measurements of different aspects of gender equality could impact fertility intentions in diverse ways.

For men, both childless and with children, no significant effect of gender norms and attitudes was found and therefore no support for the hypothesis. An explanation for the difference in the effect of gender norms and attitudes for men and women can be found in how men and women their fertility intentions are affected by gender norms. In terms of becoming a parent, women are more often confronted with societal expectations which prioritize motherhood, which directly ties into fertility. Men, on the other hand, are expected to be providers. According to Schmidt (2004), this discrepancy causes women to struggle more than men in balancing their desire for parenthood with neoliberal ideals of economic independence, as men's familial expectations better align with these ideals. Similarly, Lappegård et al. (2021) found that attitudes towards the role of mothers impact men and women differently. Egalitarian childless women are less likely to intend to have a child, whereas egalitarian men are more likely to intend to have a child.

To establish a mediation effect, having higher individual religiosity was hypothesised to be positively associated with more traditional gender norms and attitudes (H4). The OLS regression showed that both men and women who frequently attend religious services scored higher on the gender norms and attitudes index, indicating more traditional gender norms and attitudes compared to those who do not attend religious services. This effect was not found for those who attend religious services less regularly, indicated by medium religiosity. More regular service attendance exposes individuals to religious teachings and brings them into contact with like-minded individuals more often, which further reinforces religious norms and attitudes (McQuillan, 2004). Therefore, this possibly explains why the effect was only found for individuals with high religiosity.

Another hypothesis considered the moderating effect of parity on the relationship between religiosity and fertility intentions. It was stated that this effect would be stronger for individuals who already have children compared to those who do not (H5). An interaction between religiosity and parity was performed in a logistic regression testing the effect on fertility intentions. No support for this hypothesis was found as none of the interaction terms provided a significant result. This means that according to the data, there is no difference in the effect of religiosity on fertility intentions between childless individuals and parents. Therefore, it cannot be said that religious norms and values that put emphasis on having children are reinforced when one already meets these norms as was expected (Frejka and Westoff, 2008; McQuillan, 2004). Additionally, it contradicts the suggestion put forth by Philipov and

Berghammer (2007) that the effect of religiosity on fertility is cumulative, becoming stronger when one has more children.

Lastly, a mediation analysis using the KHB-method was performed to decompose the effect of religiosity on fertility intentions into total, direct, and indirect effects mediated through gender norms and attitudes. This analysis tested the main hypothesis that part of the effect of religiosity on fertility intentions can be explained by the more traditional gender norms and attitudes held by individuals with higher religiosity compared to those with low religiosity (H1). The analysis showed that for childless women, approximately 10.1% of the effect of religiosity on fertility intentions could be explained by gender norms and attitudes, thus supporting the hypothesis. This suggests that childless women with higher religiosity are more likely to adhere to traditional gender norms and attitudes, which in turn makes them more likely to intend to have a child. This contradicts the findings by Bein et al. (2017) who found that religiosity and gender roles solely have an independent and additive effect on fertility intentions in European countries for men and women, regardless of their parity. However, it is important to note that this effect was not found through a formal mediation analysis, but rather examined interactions between religiosity and gender equality. They therefore reject the proposition by Goldscheider (2006) which states that religiosity exercises its influence on fertility intentions through gender norms and attitudes, which this thesis has shown to be partly true for childless women. This finding underscores the importance of considering parity as a moderating factor in understanding how religiosity shapes fertility intentions.

Summarising these main findings, both religiosity and gender norms and attitudes independently influence women's fertility intentions. For childless women, in particular, part of the relationship between religiosity and fertility intentions can be explained through religiosity's effect on gender norms and attitudes, which subsequently affects their fertility intentions. However, this result also entails that a significant part of the effect of religiosity on fertility intentions is not explained by gender norms and attitudes for childless women, about 90%, and other mechanisms may be at play for the other groups. The Norms Hypothesis, also referred to as the Particularized Theology Hypothesis, by Goldscheider (1971), which assumes that pronatalist teachings are the driving factor behind high fertility of religious individuals, may still play an independent role here. As McQuillan (2004) proposed in his expansion on the Norms Hypothesis, the strength of the effect of religious norms and values on fertility behaviour relies on social interactions within religious institutions. And these can only be of great influence when religious institutions are integral in shaping people's identities and when religious institutions hold a significant socio-political role, which depends on local context. Another possible explanation could be the conceptualisation of gender norms and attitudes. The index that was used solely focused on gender roles relating to childcare and homemaking. Lappegård et al. (2021) proposed that the relationship between gender role attitudes and fertility intentions varies between dimensions such as the public and private sphere. Similarly, Westoff and Higgins (2009) argue that different measurements of gender

equality could account for different findings in studies on gender roles and fertility. They also emphasise the importance of cultural differences between countries and gender systems, which adds a further layer of complexity to the ideal approach in which to study this relationship. By employing a narrow index for gender norms and attitudes, only focusing on gender ideology relating to the family, the findings in this thesis offer a detailed insight into one particular aspect of how gender norms and attitudes mediate the relationship between religiosity and fertility intentions in the specific Dutch context. Using a similar index in a different context, could lead to other restuls.

The lack of significance for some of the relationships examined in this thesis could also be explained by the context of the Netherlands. For most Dutch people, religion plays a minor role in their lives, exemplified by the high secularisation rates (CBS, 2021). Also, religion does not play a major role in Dutch society and politics. When religion is of profound impact on society and receives support from the government, this religion will have greater success of transmitting any norms and attitudes it holds to its followers (Adserà, 2006). This is also emphasised by McQuillan (2004), who states that religious institutions which hold a prominent role in society can exert greater influence on how religious identity is shaped, and thus how religion influences fertility. Arránz Becker and Lois (2017) found that in the somewhat similar secular context of Germany, religion was also found to not have a major direct effect on fertility decisions. Hence, the religious context of the Netherlands and the rather selective group of religious individuals could have inhibited statistically significant effects of religion, which might have shown up in countries with a less secular context.

Also relating to the context of the Netherlands, there is another approach which could have been taken regarding the effect of gender roles on fertility. As descriptive statistics of the data showed, most Dutch men and women have relatively gender-equal views relating to gender roles, which was to be expected considering the Netherlands's position as a relative gender-equal countries (European Institute for Gender Equality, 2023). As previously discussed, different measurements of gender equality or gender roles can lead to different outcomes regarding the relationship with fertility, and gender system context is important. One approach that could be taken is to focus on the division of paid and unpaid labour among men and women. For Dutch women, there is a big propensity to work part-time to combine paid labour with domestic or unpaid labour (CBS, 2023c). Most religions emphasise a division of labour among men and women (McMorris and Glass, 2018). Therefore, it could be worth considering how religion relates to this aspect of gender roles, and subsequent fertility intentions, specifically in the Netherlands. The persistence of part-time work among Dutch women suggests that traditional gender roles still influence economic and domestic spheres, and thus potentially affect gender equality and subsequent fertility intentions in a different manner (Westoff and Higgins, 2009).

Another interesting finding from the statistical analysis was that a significant and positive effect on fertility intentions was found for childless women who identify themselves with the Roman Catholic

faith. Conversely, no positive effect was found for Roman Catholic women in the OLS regression which analysed the effect of religiosity on gender norms and attitudes, while this effect was found for women who affiliated themselves with the Protestant or another religion. This may suggest that other factors than gender norms and attitudes impact the relationship between religion and fertility for Roman Catholic women. The Particularized Theology Hypothesis, by Goldscheider (1971), may again be a plausible explanation for this. Although the objective of this thesis was not to consider the differences in fertility between different religious denominations, religious denomination was included in the statistical analyses as a control variable. These findings could indicate that the mediating effect of gender norms and attitudes in the relationship between religiosity and fertility intentions may vary across different religious denominations. This is likely as some denominations prescribe more traditional gender norms than others, and differences can even exist within denominations per parish (Reilly and Scriver, 2013). Therefore, taking into consideration the specific religious context may be an avenue worth exploring.

As the effect of religious affiliation was not statistically significant and thus more inconclusive for mothers, this suggests fertility intentions for individuals at different parities are influenced in different ways by religious affiliation. As most religions emphasize the value of family and therefore encourage individuals to start a family early (McQuillan, 2004), it becomes apparent how fertility intentions of childless individuals are affected by religious affiliation. For later births, it becomes more relevant to consider what individuals their desired number of children is, leading to positive fertility intentions at higher parity. The desired number of children can vary greatly between different religious affiliation (Peri-Rotem, 2016), which could explain why the effect of religious affiliation is less clear for those with children.

There are several limitations regarding the considerations that had to be made relating to the conceptualisation of the fertility intentions variable that could lead to a loss of specificity. First and foremost, the fertility intentions variable used in this thesis was constructed by combining the answers on whether a respondent had the intentions to have a child within the next three years, which are short-term intentions, and whether they intend to have a child at all in the future, which are long-term intentions. This was necessitated due to a limited number of cases and the objective to study the effect of religiosity and gender norms and attitudes on 'overall' fertility intentions, not considering a specific timeframe. Short- and long-term fertility intentions differ in their levels of realisation of childbearing intentions. According to Dommermuth et al. (2015), short-term intentions can predict actual fertility behaviour more accurately than long-term intentions. Therefore, the findings should be interpreted with caution, as they reflect a generalised view of fertility intentions, of which it is less clear how this will lead to the realisation of these intentions. Another limitation regarding the conceptualisation of the fertility intentions variable relates to the category "unsure" in the original fertility intentions variables. The category "unsure" for fertility intentions was added to the category "no", to indicate that the

respondent did not have positive fertility intentions at the time of the survey. For both of the original fertility intentions variables, about 15% of respondents fell into this “unsure” category. Combining all these cases that indicated “unsure” fertility intentions with the “no” category is somewhat of an assumption, as these respondents are likely to clarify their intentions in the future, and it is quite an assumption to predict that all will lean towards negative intentions. For women, it was found that having uncertain fertility intentions is a transitional or temporary stage, and it is hard to predict which trajectory they will take, as generally speaking having positive or negative fertility intentions in the future was about as likely (Jones 2017). Additionally, in the context of the effect of religiosity on fertility intentions, it should be noted that individuals with low religiosity are more prone to have a downward trajectory of fertility intentions, whilst highly religious individuals’ fertility intentions are more likely to follow an upward trajectory and to remain stable (Bein et al., 2023). This variation adds another layer of complexity to the interpretation of the "unsure" category in fertility intentions.

Another limitation relates to the distinction by parity for the full mediation analysis. Ideally, the data would have allowed for a distinction between parity 0, 1 and 2 or more for the full mediation analysis. The two-child family ideal is still very prominent in the Netherlands and the majority of Dutch women have two children (CBS, 2023b). Therefore, it is not unreasonable to assume that many of the individuals who have 1 child will have positive fertility intentions to meet this ideal, regardless of their level of religiosity or gender norms and attitudes. If a distinction could have been made between positive and negative fertility intentions for individuals who already have two or more children, this would have been useful to determine whether highly religious individuals and those adhering to traditional gender norms are more likely to exceed this two-child family ideal.

Although there are several limitations that could be considered in future research that wishes to study the relationship between religiosity, gender norms and attitudes, and fertility intentions, the main results of this thesis do incentivise some avenues for future research. As mentioned, different country contexts could lead to different results due to other religious and gender system contexts. Also, considering different measurements of gender norms and religiosity could lead to a more comprehensive understanding of the relationship between religion, gender norms and attitudes, and fertility. Additionally, with the current study design solely focusing on overall fertility intentions at a given point in time, there is no way of knowing how other stages of the fertility decision-making process are affected. For example, there is no way to assert whether these fertility intentions remain stable and will eventually turn into actual fertility outcomes. Prior research demonstrated that religiosity is shown to have a positive effect on the stability of fertility intentions in a German context (Bein et al., 2023). However, in terms of the actual realisation of these fertility intentions, minor differences by level of religiosity are observed in Western European countries (Buber-Ennser and Berghammer, 2021). Moreover, religiosity has been shown to have a stronger impact on fertility ideals compared to fertility intentions (Philipov and Berghammer, 2007). Therefore, future research should explore how religiosity

and gender norms interact over time to influence both the stability and realisation of fertility intentions. As only about 10% of the relationship between religiosity and fertility intentions was explained through gender norms and attitudes, and this was only significant for childless women, this also warrants future research to analyse different mediating factors. This could entail using different measurements of gender norms and attitudes (Westoff and Higgins, 2009), revisiting hypotheses that have previously been put forward such as the Characteristics Hypothesis or The Particularized Theology Hypothesis (Goldscheider, 1971), and considering how varying religious, social, or gender contexts may explain why certain factors mediate the religiosity-fertility relationship differently across different settings.

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Appendix A: Stata do-file

```
// Generating variables

* Religiosity by attendance
gen relig_attend = .
replace relig_attend=1 if att09==.d
replace relig_attend=2 if att09u==3
replace relig_attend=3 if att09u==2 | att09u==1

* Gender norms and attitudes
gen gender_attit2 = (att07d+att07g)/2

* Age
gen age = intdatey-dem02y
replace age = age - (dem02m > intdatem)
generate agemin18 = age - 18

* Education
recode dem07isced (0/2=1) (3/5=2) (6/8=3), gen(education)

* Partnership status
gen partnership_stat = .
replace partnership_stat=1 if dem21==2
replace partnership_stat=3 if dem28a==1
replace partnership_stat=2 if dem28a==2 & dem30a==1
replace partnership_stat=1 if dem28a==2 & dem30a==2

* Employment status
recode dem06 (4=1) (5=1) (8=1) (12=1) (2=2) (3=2) (7=2) (9=2) (10=2)
(1=3) (6=4) (11=4) (12=4), gen(employ_stat)

* Religious denomination
gen relig_denom2 = 0
replace relig_denom2=1 if att08==11
replace relig_denom2=2 if att08==1
replace relig_denom2=3 if att08==2
replace relig_denom2=4 if att08==3 |att08==4 | att08==5 | att08==6 |
att08==7 | att08==8 | att08==9 | att08==10

* Current number of children, STATA script from Jin, Grunwald and
Rijken (2023)
*** Step 1: Generate variables
cap drop numbiol numadopt numstep
cap drop totalchildren
gen numbiol  = 0
gen numadopt = 0
gen numstep  = 0
*** Step 2: summarize number of children
// current partner
replace numbiol  = numbiol  + dem42 if dem41 == 1 & dem42 != .
replace numadopt = numadopt + dem44 if dem43 == 1 & dem44 != .
```

```
replace numstep  = numstep  + dem46 if dem45 == 1 & dem46 != .
// previous partner
forvalues i = 1/20 {
     replace numbiol  = numbiol  + lhi08_`i' if lhi07_`i' == 1 &
lhi08_`i' != .
     replace numadopt = numadopt + lhi10_`i' if lhi09_`i' == 1 &
lhi10_`i' != .
     replace numstep  = numstep  + lhi12_`i' if lhi11_`i' == 1 &
lhi12_`i' != .
}
// previous non-cohabiting partner
replace numbiol = numbiol + lhi19 if lhi18 == 1 & lhi19 != .
*** Step 3: incorpcorrect corrections of respondent
replace numbiol  = lhi21  if lhi20 == 2 & lhi21!=.
replace numadopt = lhi23  if lhi20 == 2 & lhi23!=.
replace numstep  = lhi22  if lhi20 == 2 & lhi22!=.
*** Step 4: adjust for missing values
// recode dont know and refuse into numerical values
recode dem41 dem42 dem43 dem44 dem45 dem46 lhi07_* lhi08_* lhi09_*
lhi10_* lhi11_* lhi12_* lhi19 lhi20 lhi21 lhi23 lhi22 (.a = 99) (.b
= 98)
// create flag variable to indicate that relevant variables have a
missing value
egen flag_numbiol  = anymatch(dem41 dem42 lhi07_* lhi08_* lhi18
lhi19  lhi21), v(99,98)
egen flag_numadopt = anymatch(dem43 dem44 lhi09_* lhi10_* lhi23),
v(99,98)
egen flag_numstep  = anymatch(dem45 dem46 lhi11_* lhi12_* lhi22),
v(99,98)
// replace variable with .m
replace numbiol  = .m if flag_numbiol  == 1
replace numadopt = .m if flag_numadopt == 1
replace numstep  = .m if flag_numstep  == 1
// define label
label define num .m "Missing/ unclear"
label values num* num
// recode dont know and refuse into point missings
recode dem41 dem42 dem43 dem44 dem45 dem46 lhi07_* lhi08_* lhi09_*
lhi10_* lhi11_* lhi12_* lhi20 lhi21 lhi23 lhi22 (99 = .a) (98 = .b)
drop flag_*
*Generate total number of children
gen numchild = numbiol+numadopt+numstep
recode numchild (0 = 0) (1/1 = 1) (2/max = 2), gen(numchild_cat)
*Number of children for parity 1 and up
recode numchild (0 = .) (1/1 = 1) (2/2 = 2) (3/max = 3),
gen(child_cat)
* Fertility intentions
recode fer14 (1=0) (2=0) (3=0) (4=1) (5=1), gen(short_intent)
recode fer15 (1=0) (2=0) (3=0) (4=1) (5=1), gen(long_intent)
generate combined_intent = (short_intent == 1 | long_intent == 1)
*intention only by 0 or 1 or more children
*0
```

```
egen intent_nochild = total(combined_intent) if numchild_cat ==0
replace intent_nochild = 1 if intent_nochild == 966 &
combined_intent == 1
replace intent_nochild = 0 if intent_nochild == 966 &
combined_intent == 0
tab intent_nochild
*1 or more
egen intent_child1_more = total(combined_intent) if numchild_cat==1
| numchild_cat==2
replace intent_child1_more = 1 if intent_child1_more == 231 &
combined_intent == 1
replace intent_child1_more = 0 if intent_child1_more == 231 &
combined_intent == 0
tab intent_child1_more

//Select Population

keep if (dem01 == 2 & age >= 18 & age <= 45) | (dem01 == 1 & age >=
18 & age <= 50)
drop if fer14==6
drop if missing( age, gender_attit2, numchild, relig_attend,
short_intent, long_intent, combined_intent, education,
partnership_stat, employ_stat, relig_denom2)

//Statistical Analysis

**parity 0
*model 1
logistic intent_nochild i.relig_attend c.agemin18##c.agemin18
i.partnership_stat i.education i.employ_stat i.relig_denom2 if
dem01==2
logistic intent_nochild i.relig_attend c.agemin18##c.agemin18
i.partnership_stat i.education i.employ_stat i.relig_denom2 if
dem01==1
*model 2
logistic intent_nochild i.relig_attend c.gender_attit2
c.agemin18##c.agemin18 i.partnership_stat i.education i.employ_stat
i.relig_denom2 if dem01==2
logistic intent_nochild i.relig_attend c.gender_attit2
c.agemin18##c.agemin18 i.partnership_stat i.education i.employ_stat
i.relig_denom2 if dem01==1

**parity 1 or more
*model 1
logistic intent_child1_more i.relig_attend c.agemin18##c.agemin18
i.partnership_stat i.education i.employ_stat i.child_cat
i.relig_denom2 if dem01==2
logistic intent_child1_more i.relig_attend c.agemin18##c.agemin18
i.partnership_stat i.education i.employ_stat i.child_cat
i.relig_denom2 if dem01==1
*employ_stat =3 for men has perfect prediction, so add them to
category inactive
```

```
replace employ_stat=4 if employ_stat==3 & dem01==1
&intent_child1_more==0
*model 2
logistic intent_child1_more i.relig_attend c.gender_attit2
c.agemin18##c.agemin18 i.partnership_stat i.education i.employ_stat
i.child_cat i.relig_denom2 if dem01==2
logistic intent_child1_more i.relig_attend c.gender_attit2
c.agemin18##c.agemin18 i.partnership_stat i.education i.employ_stat
i.child_cat i.relig_denom2 if dem01==1

*model effect religiosity on gender norms and attitudes
reg gender_attit2 i.relig_attend c.agemin18##c.agemin18
i.partnership_stat i.education i.employ_stat i.relig_denom2 if
dem01==2
reg gender_attit2 i.relig_attend c.agemin18##c.agemin18
i.partnership_stat i.education i.employ_stat i.relig_denom2 if
dem01==1

** Mediation analysis using KHB
*Parity0
*women
khb logistic intent_nochild relig_attend || gender_attit2 if
dem01==2, c(agemin18 agemin18_sqr partnership_stat education
employ_stat relig_denom2)
*men
khb logit intent_nochild relig_attend || gen_naa if dem01==1,
c(agemin18 agemin18_sqr partnership_stat education employ_stat
relig_denom2)
*Parity 1 or more
*women
khb logit intent_child1_more relig_attend || gender_attit2 if
dem01==2, c(agemin18 agemin18_sqr partnership_stat education
employ_stat child_cat relig_denom2)
*men
khb logit intent_child1_more relig_attend || gender_attit2 if
dem01==1, c(agemin18 agemin18_sqr partnership_stat education
employ_stat child_cat relig_denom2)

* Interaction religiosity and parity
*women simple
logistic combined_intent i.relig_attend i.numchild_cat
c.agemin18##c.agemin18 i.partnership_stat i.education i.employ_stat
i.relig_denom2 if dem01==2
estimates store simplef
*women interaction
logistic combined_intent i.relig_attend i.numchild_cat
i.relig_attend##i.numchild_cat c.agemin18##c.agemin18
i.partnership_stat i.education i.employ_stat i.relig_denom2 if
dem01==2
estimates store interf
*LR test
lrtest simplef interf
```

```
*men simple
logistic combined_intent i.relig_attend i.numchild_cat
c.agemin18##c.agemin18 i.partnership_stat i.education i.employ_stat
i.relig_denom2 if dem01==1
estimates store simplem
*men interaction
logistic combined_intent i.relig_attend i.numchild_cat
i.relig_attend##i.numchild_cat  c.agemin18##c.agemin18
i.partnership_stat i.education i.employ_stat i.relig_denom2 if
dem01==1
estimates store interm
*LR test
lrtest simplem interm
```

Appendix B: Methods

Table A1: Spearman correlation between variables

	Fer int.	Rel. Att	Gender att.	Age	No. children	Edu	Partner	Employ	Rel. aff.
Fer int.	-								
Rel. Att	0.080	-							
Gender att.	-0.003	0.142	-						
Age	-0.543	-0.038	0.035	-					
No. children	-0.470	0.023	0.099	0.648	-				
Edu	-0.012	0.004	-0.088	0.166	0.065	-			
Partner	-0.233	0.068	0.039	0.500	0.599	0.164	-		
Employ	0.120	0.020	0.014	-0.434	-.0320	-0.221	-0.346	-	
Rel. affiliation	-0.003	0.541	0.167	0.070	0.104	-0.029	0.120	-0.055	-

Appendix C: Results

Table C1: Short- and long-term fertility intentions for men and women

		Women		Men	
		N	%	N	%
Short-term fertility intention (have a child within 3 years)	Yes	375	19.30	204	14.68
	No	1568	80.70	1186	85.32
Long-term fertility intention (have a child at all)	Yes	619	31.68	360	25.90
	No	1324	68.14	1030	74.10

Table C2: Crosstabulation religiosity by attendance and religious affiliation

	Religious affiliation				
Religiosity by attendance frequency	Not religious	Protestant	Roman Catholic	Other	Total
Low	2120 86.25	58 2.36	167 6.79	113 4.60	2458 100.00
Medium	243 49.29	74 15.01	112 22.72	64 12.98	493 100.00
High	22 5.76	216 56.54	35 9.16	109 28.53	382 100.00
Total	2385 71.56	348 10.44	314 9.42	286 8.58	3333 100.00

Table C3: Frequency table gender norms and attitudes women

Index score	**Frequency**	**Percent**
1	1	0.05
1.5	0	0.00
2	2	0.10
2.5	2	0.10
3	1302	67.01
3.5	340	17.50
4	211	10.86
4.5	43	2.21
5	42	2.16
Total	1943	100.00

Table C4: frequency table gender norms and attitudes men

Index score	**Frequency**	**Percent**
1	2	0.14
1.5	1	0.07
2	0	0.00
2.5	9	0.65
3	733	52.73
3.5	327	23.53
4	169	12.16
4.5	96	6.91
5	53	3.81
Total	1390	100.00