

# Church Bells are Not Ringing: Decrease in the Opposite-Sex and Same-Sex Couples Opting for Religious Marriage Ceremonies in England and Wales\*

Analysis and Comparative Study of Marriage Ceremony Type (Civil and Religious) for Opposite-Sex (1970 to 2020) and Same-Sex (2016 to 2020) Couples

Francesca Ye

April 24, 2024

This paper investigates the annual number of marriages conducted in England and Wales based on ceremony type recorded the by the Office of National Statistics. Based on the data set, these trends between 1970 to 2020 were analyzed for opposite-sex couples and between 2016 to 2020 for same-sex couples in tandem with a comparative study on couple type preferences. Analysis found that civil ceremonies have overtaken civil ceremonies as the predominant ceremony type for both couple types. The results of this paper indicate that religion is less of an integral facet of life in England and Wales as indicated by religion becoming less synonymous with marriage.

## Table of contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Data</b>	<b>3</b>
2.1	Data Description . . . . .	3
2.2	Data Cleaning . . . . .	4
2.3	Opposite-Sex Civil versus Religious Ceremonies . . . . .	5
2.4	Same-Sex Civil versus Religious Ceremonies . . . . .	6

---

\*Code and data are available at: [https://github.com/Francesca-Ye/marriage\\_ceremonies\\_religion](https://github.com/Francesca-Ye/marriage_ceremonies_religion)

<b>3</b>	<b>Results</b>	<b>7</b>
3.1	Opposite-Sex Religious Ceremony Type . . . . .	8
3.2	Same-Sex Couple Ceremony Totals . . . . .	11
<b>4</b>	<b>Discussion</b>	<b>12</b>
4.1	Implication: Religiosity has Decreased in England and Wales . . . . .	12
4.2	Implication: Fewer Citizens Identify as Christian . . . . .	12
4.3	Implication: Same-Sex Couples Overwhelmingly Prefer Civil Ceremonies . . . .	13
4.4	Limitations . . . . .	14
4.5	Future Research . . . . .	15
	<b>References</b>	<b>16</b>

# 1 Introduction

In the United Kingdom, there has been increasing research and attention towards the decline of the importance of religion in individual life. The Policy Institute at King’s College London has collected data which corroborates this trend. In 1981, 57% of Britons identified as religious while that number has decreased to 32% in 2022. Similarly, 75% of Britons believed in God when surveyed in 1981 and that number has significantly fallen to 49% in 2022 (Duffy et al. 2023). However, these trends are not unique to the United Kingdom, religiosity across most Western countries has declined over the past couple of decades. The number of people in the United States who identified as religious fell from 82% in 1982 to 58% in 2017 (Duffy et al. 2023).

Despite the overall decline in religiosity, there are also generational differences in religious belief; as noted in the United Kingdom where only 48% of Baby Boomers expressed a belief in God in comparison to Gen Z at 37% (Duffy et al. 2023). These generational differences and societal changes can be examined through data on marriage pertaining to the annual number of civil and religious ceremonies conducted. Although there is a degree of separation between civil and religious marriage, the practice has held heavy religious significance historically. Therefore, the types of marriage ceremonies people are opting for can serve as a representation of the overall religiosity of a country depending on the number of citizens that continue to ascribe religious significance to the legal act of marriage (Braginskaia 2020).

This paper takes data from the *Office for National Statistics in the United Kingdom* from the 2020 edition of the “Marriages in England and Wales” data set to examine if the presence of religion in legal marriage has declined over time in tandem with answering if the result is difference between same and opposite-sex couples. The estimand of interest is the presence of religion in consolidating a legal marriage. To examine whether or not religion in marriage has declined, graphical analysis was conducted to visualize the annual data on marriage ceremony type between 1970 to 2020 for opposite-sex couples and 2016 to 2020 for same-sex couples.

Summary statistics were also calculated to get a greater idea of the numerical significance of religion in this space.

This paper finds that religion in the context of marriage has declined over the years in addition to same-sex couples more strongly preferring civil ceremonies in comparison to opposite-sex couples. More specifically, religious ceremonies appear to be rapidly declining in popularity amongst opposite-sex couples over the past five decades whilst civil ceremonies appear to be comparatively more stable in annual totals. This could imply that religiosity has decreased in England and Wales as couples are choosing to not involve religion in a significant life event. Interestingly, same-sex couples have strongly preferred civil ceremonies since the legalization of same-sex marriage in 2014 which makes a difference between opposite-sex couples. The latter has seen an active decline whilst the former has maintained an aversion to religious marriage ceremonies. Although both result in fewer religious ceremonies, this indicates that the move away from religion could be motivated by different factors such as homophobia within religion for same-sex couples. The findings of this paper could be indicators of an overall decline in religiosity in England and Wales as marriage ceremonies could potentially be a direct reflection of individual religious beliefs.

Section 2 of this report aims to discuss the characteristics of the data set examined in addition to the methods of cleaning applied to get workable data for this report. This report’s Section 3 highlights trends discovered through graphical analysis in tandem with statistical analysis. Section 4 notes possible analytical limitations and measurement errors in the data sets in addition to overall insights of the report’s analysis. Specific discussion will surround the validity of using marriage as an indicator of religiosity in further detail. Section 4.5 aims to explore further research that could be conducted in this field based on the findings presented in this report.

## 2 Data

### 2.1 Data Description

The data sets for same and opposite-sex couples were derived from the *Office for National Statistics in the United Kingdom* with the 2020 edition of the “Marriages in England and Wales” workbook as raw data. This data is collected at the time a marriage is registered as part of civil registration which is a legal requirement in completing a legally recognized marriage in England and Wales. Annual marriage statistics are available to the public approximately two years after the end of the reference year (Guy 2023). Notably, same-sex couples that are currently in a civil partnership can have it converted to a marriage but these numbers are not counted towards the marriage statistics of same-sex couples in the workbook. The data collected and used in this paper is used to measure the number of couples that opt for civil or religious marriage ceremonies on an annual basis (Guy 2023).

Measuring marriage ceremony trends, can help measure and provide insight into greater social attitudes towards religion. Based on the aforementioned literature about the perceived decline of religiosity in the United Kingdom, marriage ceremony data was chosen as a potential form of measuring this phenomenon due to the historical link between marriage and religion (Braginskaia 2020). Since marriage is a significant life event, the presence and absence of religion in ceremonies can corroborate the decline of religiosity in individual life. These marriage ceremony entries in the “Marriages in England and Wales” workbook are a reflection of each couple’s relationship with religion and whether or not it is strong enough to opt for a religious ceremony. Although the data set only reflects ceremony types, those entries were antedated by personal consideration of a couple’s proximity to religion.

The data of this paper focuses on the ceremony statistics for both same and opposite-sex couples. For same-sex couples, the data set focuses on 2014-2020. The variables in this data set are `all_marriages` which represents the total amount of same-sex marriages conducted in a specific year, `all_civil` which represents all civil ceremonies conducted, `approved_civil` which represents all civil ceremonies conducted at premises with pre-approval, and `all_religious` which represents all religious ceremonies conducted. For same-sex couples, the number of male and female couples that marry in a year is also recorded. For opposite-sex couples, the data set focuses on 1970-2020 since there was a larger set of data available for analysis in comparison to same-sex couple data. The variables in this data set are `all_marriages` which represents the total amount of same-sex marriages conducted in a specific year, `all_civil` which represents all civil ceremonies conducted, `approved_civil` which represents all civil ceremonies conducted at premises with pre-approval, and `all_religious` which represents all religious ceremonies conducted. Religious ceremonies are further separated with annual ceremonies conducted in the Church of England, Roman Catholic churches, other Christian religions, and all other religions also recorded.

## 2.2 Data Cleaning

The data set was imported into RStudio where the open-source statistical programming language, R (R Core Team 2023), was used for cleaning and analysis. Data was simulated with the functionalities of the `tibble` (Müller and Wickham 2023) package. The raw data set was extracted and saved with the functionalities of the `readr` (Wickham, Hester, and Bryan 2023), `tidyverse` (Wickham et al. 2019), and `readxl` (Wickham and Bryan 2023) packages. Data cleaning was aided by the use of the `tidyverse` (Wickham et al. 2019), `janitor` (Firke 2023), `arrow` (Richardson et al. 2024), and `naniar` (Tierney and Cook 2023) packages. To create tables and graphs for data visualization of the datasets, `ggplot2` (Wickham 2016), `tidyr` (Wickham, Vaughan, and Girlich 2023), and `knitr` (Xie 2014) packages were used in tandem with `tinytex` (Xie 2023) to create the paper format.

Generally, the data from the *National Office of Statistics* was taken without any modifications to most of the selected columns. The notable exception to this would be in the opposite-sex couple dataset where the `approved_civil` column had values of [z] and [x] in the

`other_religions` column when no data was available for a specific year. Since this paper aimed to broadly look at a summary of religion in marriage ceremonies, these values were converted to 0s to continue calculating summary statistics for individual years. All of the values in both data sets were also converted from the character class to the numeric class which is a divergence from the original workbook produced by the *National Office of Statistics*. This decision was made to aid in calculating and graphing the data as there were no values that could not be converted to numeric aside from the two cases mentioned above. Samples of the cleaned datasets produced are seen in Table 1 and Table 2.

Table 1: Sample of Cleaned Opposite-Sex Marriage Ceremony Data

Year	Total Marriages	All Civil	Approved Civil	All Religious	Church of England	Roman Catholic	Other Christian Denominations	Other Religions
2020	82959	70518	60176	12441	8158	1260	2119	904
2019	213122	173225	156114	39897	28912	4049	4793	2143
2018	227870	179752	162545	48118	35536	4958	5345	2279
2017	235910	181607	167415	54303	40051	5841	6103	2308
2016	242774	182766	165466	60008	44392	6513	6616	2487

Table 2: Cleaned Same-Sex Marriage Ceremony Data

Year	Total Marriages	Male	Female	All Civil	Approved Civil	All Religious
2020	2811	1202	1609	2794	2369	17
2019	6728	2866	3862	6680	5989	48
2018	6925	2966	3959	6862	6169	63
2017	6932	3048	3884	6889	6299	43
2016	7019	3109	3910	6958	6171	61

## 2.3 Opposite-Sex Civil versus Religious Ceremonies

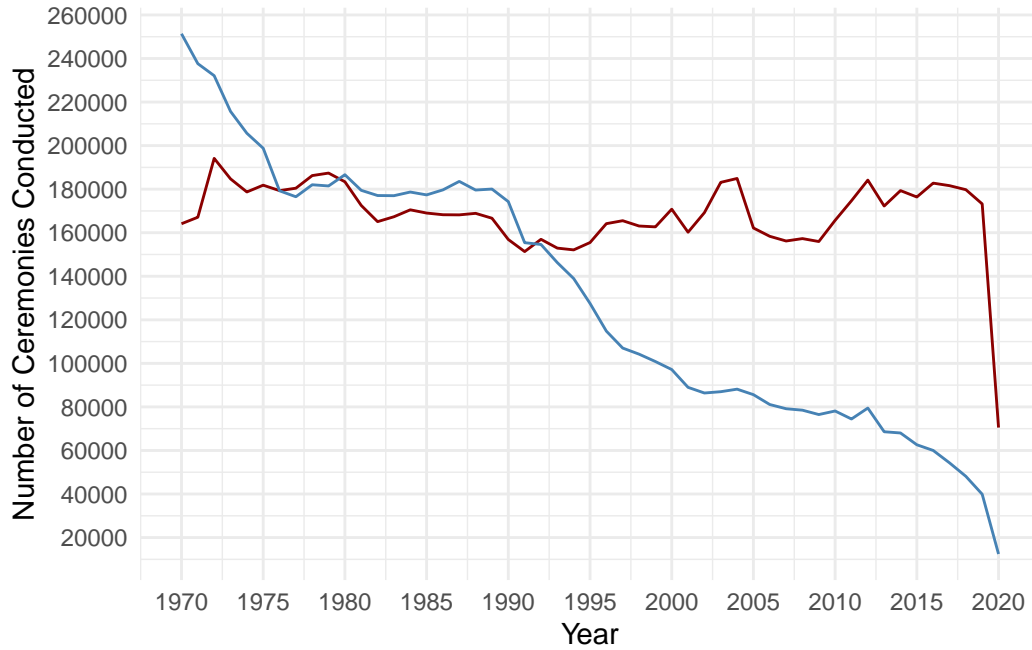


Figure 1: Annual Amount of Civil (Red) and Religious (Blue) Ceremonies Between 1970 to 2020 in England and Wales for Opposite-Sex Couples

As seen in Figure 1, the number of annual religious marriage ceremonies appears to have a clear downward trend from 1970 to 2020 which is contrasted by annual civil ceremonies that appear to have maintained somewhat more consistent levels throughout the 50 years. Interestingly, civil ceremonies were more popular than religious ceremonies between 1976 and 1980. However, from 1992, civil ceremonies were once again more popular and have consistently stayed ahead of religious ceremonies. After 1992, the gap between the amount of civil and religious ceremonies also appears to be exponentially widening as exemplified by 2015 where 17,6406 civil ceremonies were conducted in comparison to 6,2614 religious ceremonies. When solely viewing the annual total of religious and civil ceremonies conducted annually, it paints a clear picture of the decrease in religious marriage ceremonies. For both ceremony types, the decrease between 2019 and 2020 could be attributed to COVID-19-related lockdowns.

The average number of civil ceremonies conducted annually was 168,306.6 whilst the average for religious ceremonies was 130,945.3. Additionally, the medians were 168,897 and 127,522 respectively. The standard deviation for civil ceremonies was 17,601.7 and 59,287.21 for religious ceremonies. Since the standard deviation of religious ceremonies is significantly higher, this corroborates Figure 1 in supporting that the annual totals have had large variances whereas civil ceremonies have maintained a comparatively stable annual total.

## 2.4 Same-Sex Civil versus Religious Ceremonies

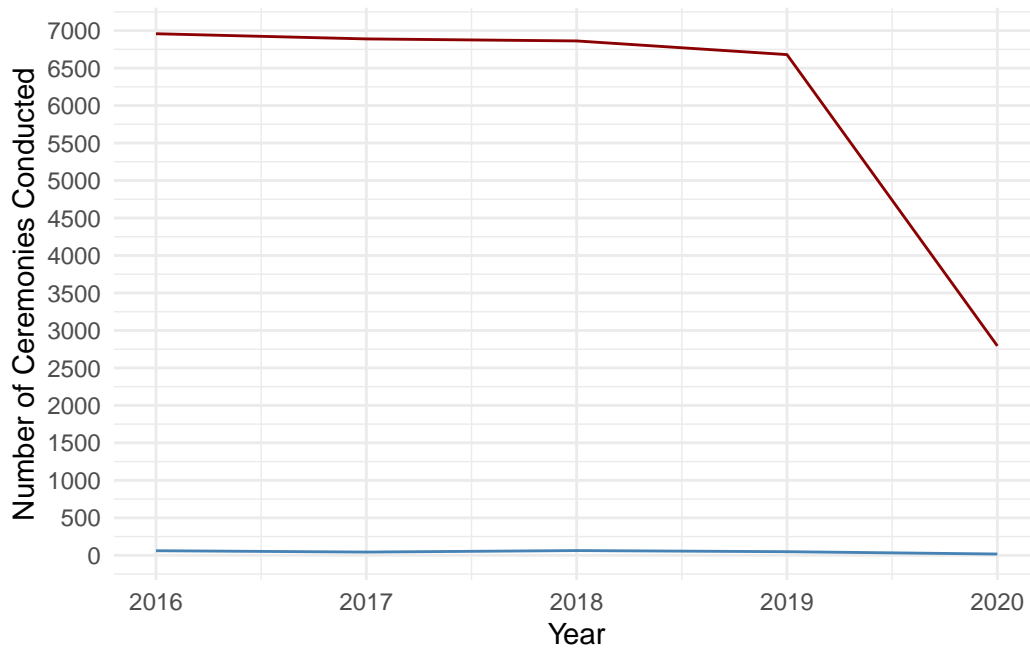


Figure 2: Annual Amount of Civil (Red) and Religious (Blue) Ceremonies Between 2014 and 2020 in England and Wales for Same-Sex Couples

As shown in Figure 2, the number of civil ceremonies has consistently been the more popular choice for ceremony type amongst same-sex couples since the legalization of same-sex marriage. Despite the smaller number of same-sex marriages in general, civil ceremonies make up an overwhelming majority of all marriages conducted annually. Although civil ceremonies are consistently the most popular, there does appear to be some slight year-over-year decrease that might have some significance; however, the decrease between 2019 and 2020 could be attributed to COVID-19-related lockdowns. Looking over the religious ceremonies, they have appeared to remain somewhat consistent with the exception of 2014 where only 17 ceremonies were conducted. Despite this, Figure 2 highlights how civil ceremonies are the overwhelmingly popular choice for same-sex couples when selecting a marriage ceremony type.

For civil ceremonies, the average amount of annual ceremonies conducted was 6036.6 with a median of 6862. The average amount of annual religious ceremonies conducted was 46.4 with a median of 48. For standard deviations, civil ceremonies were 1815.576 and 18.48783 for religious ceremonies. In this instance, the larger variation in annual totals for civil ceremonies could be a result of the larger volume of ceremonies conducted. Since religious ceremonies conducted annually have consistently been in the double digits, the low standard deviation

makes sense when viewing Figure 2 as the line appears to be trending as an almost straight line.

### 3 Results

Looking at the graphed data and summary statistics, there appears to be a clear decline in the number of opposite-sex couples opting for a religious ceremony across a fifty-year time frame between 1970 and 2020. For same-sex couples, civil ceremonies have consistently and overwhelmingly been the most popular ceremony type since the legalization of same-sex marriage in 2014. Looking further into the data sets, it is apparent that preliminary conclusions from the summary data in Section 2 hold after further analysis.

#### 3.1 Opposite-Sex Religious Ceremony Type

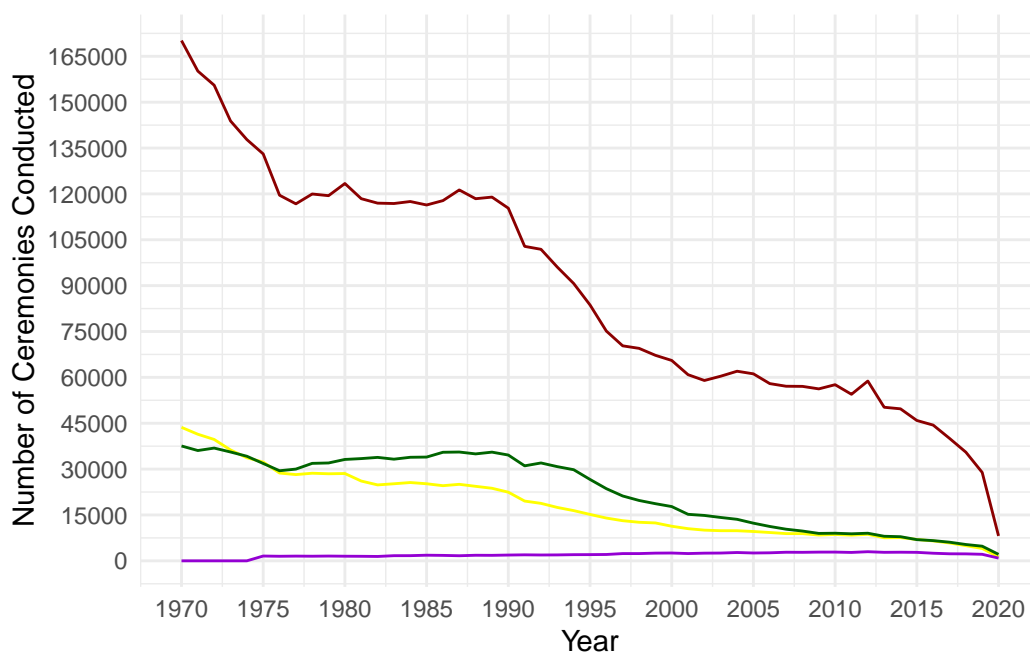


Figure 3: Annual Amount of Church of England (Red), Roman Catholic (Yellow), Other Christian Denominations (Green), and Other Religion Ceremonies (Purple) Conducted Between 1970 and 2020 in England and Wales for Opposite-Sex Couples

While Figure 1 shows that the annual total of religious ceremonies has decreased, the annual total of religious ceremonies sub-categorized by type reveal a similar story. Figure 3 highlights that all Christian denominations have seen a decrease in the annual total of ceremonies



conducted. While all other religions appear to be an outlier in this instance, the number of non-Christian religious ceremonies conducted has consistently been the least conducted type of ceremony amongst opposite-sex couples. Additionally, since the collection of data on non-Christian religious ceremonies, the standard deviation is relatively small at 810.76 which further highlights the minimal impact non-Christian ceremonies have on the larger data set combined with their unpopularity. As the only category with growth for religious ceremonies, this could mean that religiosity is not growing immensely outside of religiosity.

It is also apparent that Christianity has decreased in popularity for marriage ceremonies. Comparatively, Roman Catholic and other Christian denominations have seen decreases over a fifty-year period to a significant extent. The standard deviation for Roman Catholic is 10,788.53 and 11,781.59 for other Christian denominations which are considerably varied and highlight the significant drop in marriage ceremonies of these sects as seen in graphical analysis. However, the most notable drop would be Church of England ceremonies which had a standard deviation of 38,034.88, the largest, and when factoring in the downward graphical trend, it is clear that the Church of England has experienced major decreases in popularity for marriage ceremonies. Resultantly, Christian religious ceremonies have experienced somewhat extreme decreases in popularity that could imply changing individual and social attitudes toward religion.

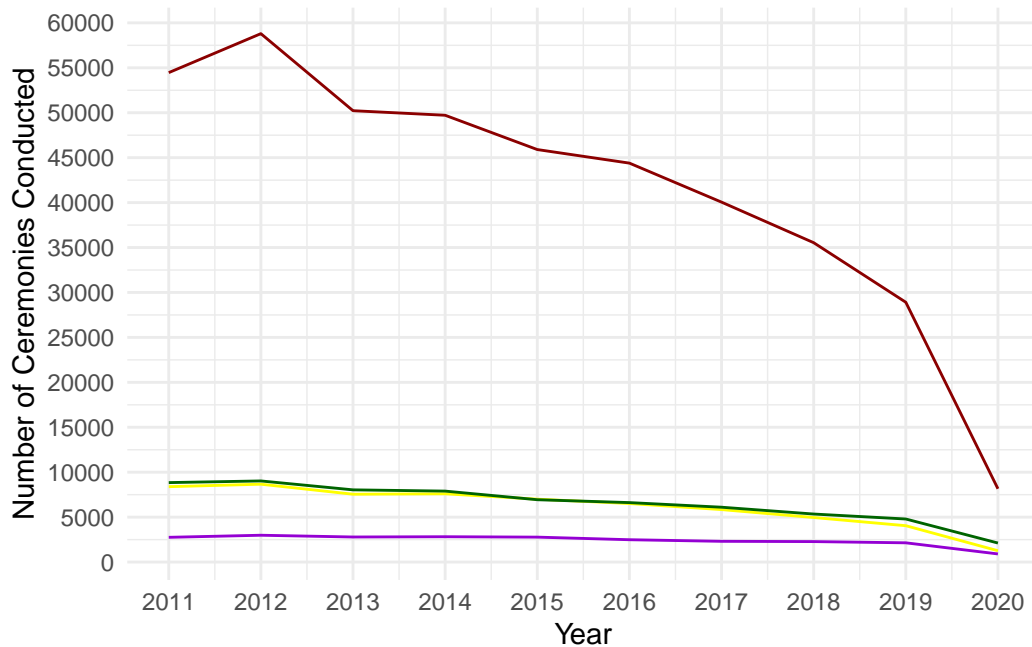


Figure 4: Annual Amount of Church of England (Red), Roman Catholic (Yellow), Other Christian Denominations (Green), and Other Religion Ceremonies (Purple) Conducted Between 2011 and 2020 in England and Wales for Opposite-Sex Couples

By looking at the most recent decade, the decline in religious ceremonies still appears to be rapid. In Figure 4, the peak of the decade for Church of England ceremonies is 2012 with 79,473; however, the lowest year excluding 2020 is 2019 with 39,897 ceremonies. There is almost a 40,000 ceremony drop between these two years which further indicates the decline of religious ceremonies and rapid pacing just over a ten-year period. As the most popular religion for marriage ceremonies by a considerable margin, the Church of England still appears to be experiencing significant drops in popularity.

Table 3: Total Amount of Marriage Ceremony Types Conducted by Decade (1971-2020)

Ceremony Type	1971-1980	1981-1990	1991-2000	2001-2010	2011-2020
Civil	1823284	1673329	1595058	1653128	1674720
Religious	1995792	1786743	1246830	829544	567934

Table 3 shows the total number of religious and civil ceremonies across five decades between 1971 and 2020. In the 1970s, religious ceremonies were more popular with just under 200,000 more ceremonies conducted. While both ceremony types saw a decrease in the 1980s, the gap between the two is only about 100,000 with religious ceremonies still leading. Interestingly, civil ceremonies appear to minimally fluctuate by 100,000 ceremonies over the next three decades whilst religious ceremonies actively decrease in their decade summary. Religious ceremonies conducted in the 1970s were 1,995,792 in comparison to 567,934 in the 2010s. This is contrasted by civil ceremonies which saw 1,823,284 and 1,674,720 in the same decades. Considering the decade summaries, it is clear that civil ceremonies have not necessarily increased by taking away from couples that might have opted for religious ceremonies due to their relative stability in numbers over time. It can also be ascertained that religious ceremonies have experienced a severe decrease over the past five decades as the annual total of ceremonies being conducted presently is just over a quarter of the number of ceremonies in the 1970s.

### 3.2 Same-Sex Couple Ceremony Totals

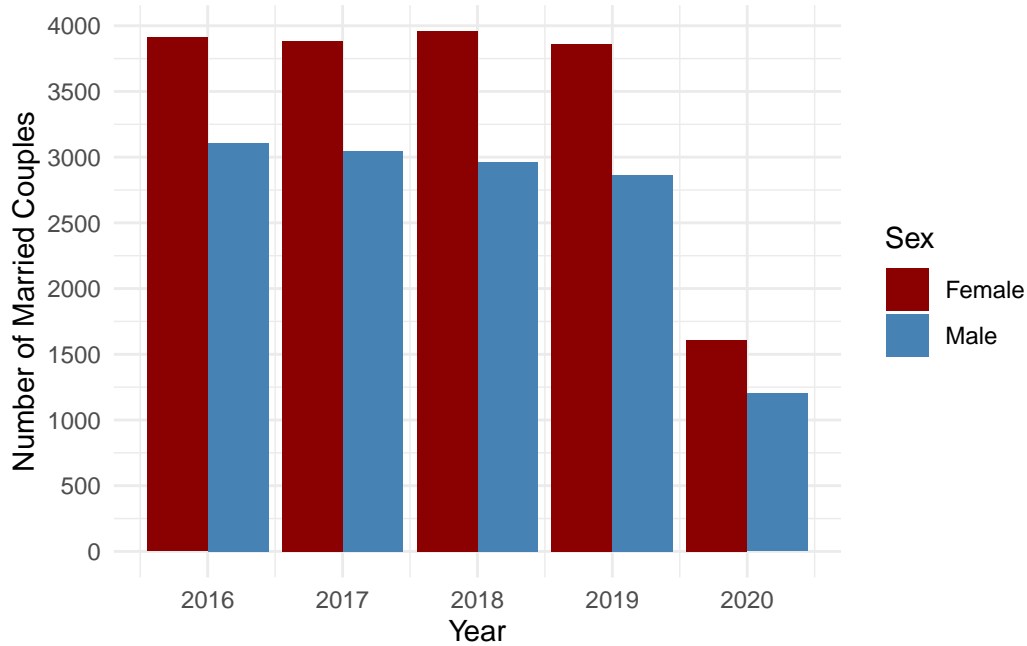


Figure 5: Annual Amount of Marriage Ceremonies Conducted Between 2014 and 2020 in England and Wales for Opposite-Sex Couples by Sex

As seen in Figure 2, civil ceremonies for same-sex couples have consistently been the premier ceremony choice for couples intending to marry. Figure 5 visualizes the annual number of couples that marry by sex. As shown in Figure 5, female couples have consistently married more than male couples in any given year. However, the gap between these totals is not large with 2019 representing the largest gap of 996 marriages. It can be derived that sex does not play a significant factor in the popularity of civil ceremonies as females do not make up a large majority of all same-sex married couples. Therefore, the unpopularity of religious ceremonies could be due to other factors which are touched upon in Section 4.

Table 4: Total Amount of Same-Sex Marriage Ceremonies Conducted Between 2014 to 2020

Ceremony Type	Total Number of Ceremonies Conducted
Civil	30183
Religious	232

As same-sex marriage was only recently legalized, the six years of data was summed up by civil and religious to provide a greater insight into the preferences of same-sex couples. Table 4

provides the total number of religious and civil ceremonies conducted for same-sex couples since 2014 and up to 2020. Civil ceremonies are clearly the more popular choice with just under 30,000 more ceremonies conducted. Of all same-sex marriage ceremonies conducted since the inception of legalization, religious ceremonies only make up about 0.76% whilst civil ceremonies make up the rest. This differs with opposite-sex marriages as they have experienced a decline in religious ceremonies whereas religious ceremonies for same-sex marriages have been extremely unpopular from the outset of legalization.

## 4 Discussion

### 4.1 Implication: Religiosity has Decreased in England and Wales

Based on the decline of religious ceremonies conducted in England and Wales, it appears that religiosity has decreased since fewer couples are opting to include religion in their marriage plans which could be an indication that marriage has become more synonymous with law or personal values rather than religion. More importantly, it appears that marriage ceremonies can be a reflection of a society's level of individual religiosity.

Political science professor at the University of Michigan, Ronald F. Inglehart, wrote in his book *Religion's Sudden Decline: What's Causing it, and What Comes Next?* on the decline of religiosity. Inglehart's main argument on the reason for the decline in religion across the world is due to the historical stance of most major religions advising women to have as many as children possible due to high infant mortality rates. He argues that the introduction of individual-choice norms such as the normalization of divorce, acceptance of abortion, gender equality, and acceptance of LGBTQIA+ identities has empowered individuals to make decisions outside of religious guidance (Inglehart 2021). Connecting this with the results gathered in this paper, it is apparent that the decline of religious marriages could be specifically due to changing social norms outside of religion. As the societal pressure to reproduce and have children solely after marriage decreases, it makes sense to assume religious marriage ceremonies would decrease. This follows Inglehart's argument that the change towards individual-choice norms has undermined specific directives and the overall power of religions against societies. Extrapolating further, the dilution of religion in individual life could also result in its removal from significant life events such as marriage which was seen in analysis of marriage ceremony data in England and Wales.

### 4.2 Implication: Fewer Citizens Identify as Christian

Interestingly, the marriage ceremony data analysed and discussed in this paper also indicate that Christianity is becoming less popular or prominent in the lives of English and Welsh citizens. As seen in **?@fig-oppositereligioustypes**, all sects of Christianity have experienced a decrease in the annual number of marriage ceremonies conducted. This implies that fewer

couples are religiously involved in Christianity to the extent of including it in their marriage plans.

Looking at “Religion, England and Wales: Census 2021” from the *Office for National Statistics* provides further insight into whether or not religious identification and marriage ceremony type are congruent in their data. In the 2021 census, 46.2% (27.5 million) identified as Christian in comparison to 59.3% (33.3 million) in 2011 (**census2021?**). Although Christianity remains the most popular religion in England and Wales, the decrease over a decade is still somewhat significant as less than half the population now identifies as Christian. This is reflected on a smaller level in the opposite-sex marriage ceremony data, as seen in **?@fig-oppositereligiousten**, since all Christian sects experienced a decline in annual marriage ceremonies with the Church of England seeing a reduction of just under 40,000 ceremonies in 2020 compared to 2011.

Another significant data point from the 2021 census is citizens identifying as having no religion being 37.2% (22.2 million) compared to 5.2% (14.1 million) in 2011 (**census2021?**). The decline of religious marriage ceremonies could be attributed to more individuals not identifying with any religion. In the same vein of Inglehart’s arguments, the normalization of cohabitation without marriage as a condition (Inglehart 2021) could be a reason why religious marriage ceremonies have declined whilst civil marriages have maintained relative stability over the past five decades. It is possible that couples that would have been pressured to marry in order to continue their relationship due to religious reasons no longer feel that due to shifting social attitudes. Considering external research and the data examined in this paper, the decline in religious marriage ceremonies could be a reflection of Christianity’s decline in England and Wales.

### 4.3 Implication: Same-Sex Couples Overwhelmingly Prefer Civil Ceremonies

As previously discussed, same-sex couples differ from opposite-sex couples in regards to their marriage ceremony decision-making behaviour. Based on the data examined in this paper, same-sex couples have consistently and overwhelmingly opted for civil ceremonies over religious ceremonies since the legalization of same-sex marriage in 2014. Comparing marriage ceremony types of same-sex couples in Figure 2 and opposite-sex couples in Figure 1, the trend lines are vastly different. For same-sex couples, civil ceremonies make up over 99% of all annual marriages conducted whereas opposite-sex couples have experienced periods where religious ceremonies were the predominant type and still have a significant presence in accounting for marriage ceremony types.

Looking at the graphed data and summary statistics, there appears to be a clear decline in the number of opposite-sex couples opting for a religious ceremony across a fifty-year time-frame between 1970 and 2020. For same-sex couples, civil ceremonies have consistently and overwhelmingly been the most popular ceremony type since the legalization of same-sex marriage in 2014. The latter phenomenon is likely best explained by the relationship between religion and homophobia. Barbara Finlay and Carol S. Walter’s work in *Review of Religious*

*Research* found that Protestants had the highest homophobia scores followed by Catholics, other Christian denominations, and other religions (Finlay and Walter 2003). As same-sex religious ceremonies are conducted and approved by each religious authority (Guy 2023), it could be possible that religious leaders do not approve of same-sex marriages. Another reason for the lack of same-sex religious ceremonies could also be non-heterosexual individuals moving away from religiosity due to conflicts between religious thought and their sexual identities.

#### 4.4 Limitations

Despite this paper’s effort to highlight how marriage ceremony data can be a reflection of the religious attitudes in England and Wales, some limitations must be addressed.

While the marriage ceremony data does seem to corroborate the overall decline of citizens identifying as religious, the marriage data might be slightly skewed in the population demographics that it collects from. As stated in research from King’s College London, 48% of Baby Boomers expressed a belief in God in comparison to Gen Z at 37% in the United Kingdom (Duffy et al. 2023). It is evident that there are differences in religiosity between generations, therefore it is possible that the marriage data could be skewed towards a decline of religiosity since those of ages more likely to marry belong to younger age generations such as Millennials and Gen Z’s.

There are also accuracy considerations when it comes to making conclusions based on this data. As noted by the *Office for National Statistics*, data is taken directly from marriage registries from across the two countries and the information is mainly supplied by the people getting married without any major statistical verification aside from edits for cleaning. Couples that get married abroad are also not recorded with the exceptions being consular and military marriages (Sharfman and Cobb 2023). Marriage ceremony by type could also be inherently misleading as religious marriages, such as Muslim or Sikh, can take place at unregistered premises (Sharfman and Cobb 2023). The legal formalization of these marriages often occur as civil ceremonies and are recorded as such without an ability to account for the religious aspect of their marriage plans. As a result, the annual number of civil marriages could be inflated with the inclusion of couples that have separate legal and religious marriage ceremonies.

There could also be ethical implications to using this data as a reflection of religiosity. Using the same-sex couple data as an example, due to the legalization of same-sex marriage only occurring in 2014 it can be argued that there is not enough data to make conclusions about ceremony preferences. It could also be problematic to assume same-sex couples opt for civil ceremonies due to homophobia in religion and therefore are not religious. It is possible that same-sex couples could be practicing religion outside of mainstream institutions and the preference for civil ceremonies is due to these institutions not approving ceremonies. Another possible limitation is the financial costs associated with a religious versus civil ceremony. The average cost, at minimum, for a wedding in the Church of England is £539 (“The Cost of Church Weddings,” n.d.) whilst the cheapest civil ceremony is £46 (“Marriages and Civil Partnerships

in England and Wales,” n.d.). Due to the price difference in religious ceremonies, couples might also opt for a civil ceremony to save on costs and therefore the motivation would not be an aversion to religion.

## **4.5 Future Research**

Beyond this paper, there is a lot of research that could be undertaken to further understand the presence of religion and how it influences different facets of life. Looking at marriage ceremonies specifically, more research could be done on the factors influencing why couples opt for a civil or religious ceremony. Better data collection methods could also be developed to better collect data on marriage solemnization outside of the legal form to gain insight into the prevalence of religious ceremonies that are conducted outside of legally approved premises. By collecting a greater depth of marriage ceremony data, future research will be able to better ascertain or disprove whether or not marriage ceremony data is a good reflection of religiosity in a country.

Other areas that could be examined as an indicator of a country or population’s religiosity such as enrollment in religious versus secular schools, support or use of abortion services, distribution of charitable donations, and observance of religious holidays on mandated holidays for that purpose. Delving further into research on charitable donations, examining the annual charitable donations of a country and analyzing the amounts that go to each type of charity would be a novel way to see how religiosity or lack thereof can impact donation decisions.

Since tracking religion falls under demography, it could also be worth further researching whether there are gender differences in religiosity. Considering the argument put forth by Inglehart about religion historically encouraging women to reproduce, it would be interesting to see if there are differences in attitudes towards religion between men and women.

## References

- Braginskaia, Katya. 2020. “Religious and Civil Marriages in Britain: Changing Trends and Challenges of Recognition.” <https://eurel.info/spip.php?article3728&lang=en>.
- Duffy, Bobby, George May, David Voas, James Wright, Rozi Harsanyi, Kirstie Hewlett, and Paul Stoneman. 2023. *Lost Faith? The UK’s Changing Attitudes to Religion*. <https://doi.org/10.18742/pub01-134>.
- Finlay, Barbara, and Carol S. Walter. 2003. “The Relation of Religious Affiliation, Service Attendance, and Other Factors to Homophobic Attitudes Among University Students.” *Review of Religious Research* 44 (4): 370–93. <https://doi.org/10.2307/3512216>.
- Firke, Sam. 2023. *Janitor: Simple Tools for Examining and Cleaning Dirty Data*. <https://CRAN.R-project.org/package=janitor>.
- Guy, Paula. 2023. “User Guide to Marriage Statistics.” <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/marriagecohabitationandcivilpartnerships/methodologies/userguidetomarriagestatistics>.
- Inglehart, Ronald F. 2021. *Religion’s Sudden Decline: What’s Causing It, and What Comes Next?* Oxford University Press. <https://doi.org/https://doi.org/10.1093/oso/9780197547045.001.0001>.
- “Marriages and Civil Partnerships in England and Wales.” n.d. <https://www.gov.uk/marriages-civil-partnerships/plan-your-ceremony>.
- Müller, Kirill, and Hadley Wickham. 2023. *Tibble: Simple Data Frames*. <https://CRAN.R-project.org/package=tibble>.
- R Core Team. 2023. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.
- Richardson, Neal, Ian Cook, Nic Crane, Dewey Dunnington, Romain François, Jonathan Keane, Dragoş Moldovan-Grünfeld, Jeroen Ooms, Jacob Wujciak-Jens, and Apache Arrow. 2024. *Arrow: Integration to ‘Apache’ ‘Arrow’*. <https://CRAN.R-project.org/package=arrow>.
- Sharfman, Amanda, and Pamela Cobb. 2023. “User Guide to Marriage Statistics.” <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/marriagecohabitationandcivilpartnerships/methodologies/marriagesinenglandandwalesqmi>.
- “The Cost of Church Weddings.” n.d. <https://www.churchofengland.org/life-events/your-church-wedding/just-engaged/cost-church-weddings>.
- Tierney, Nicholas, and Dianne Cook. 2023. “Expanding Tidy Data Principles to Facilitate Missing Data Exploration, Visualization and Assessment of Imputations.” *Journal of Statistical Software* 105 (7): 1–31. <https://doi.org/10.18637/jss.v105.i07>.
- Wickham, Hadley. 2016. *Ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag New York. <https://ggplot2.tidyverse.org>.
- Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D’Agostino McGowan, Romain François, Garrett Golemund, et al. 2019. “Welcome to the tidyverse.” *Journal of Open Source Software* 4 (43): 1686. <https://doi.org/10.21105/joss.01686>.
- Wickham, Hadley, and Jennifer Bryan. 2023. *Readxl: Read Excel Files*. <https://CRAN.R-project.org/package=readxl>.



[project.org/package=readxl](https://CRAN.R-project.org/package=readxl).

Wickham, Hadley, Jim Hester, and Jennifer Bryan. 2023. *Readr: Read Rectangular Text Data*. <https://CRAN.R-project.org/package=readr>.

Wickham, Hadley, Davis Vaughan, and Maximilian Girlich. 2023. *Tidyr: Tidy Messy Data*. <https://CRAN.R-project.org/package=tidyr>.

Xie, Yihui. 2014. “Knitr: A Comprehensive Tool for Reproducible Research in R.” In *Implementing Reproducible Computational Research*, edited by Victoria Stodden, Friedrich Leisch, and Roger D. Peng. Chapman; Hall/CRC.

———. 2023. *Tinytex: Helper Functions to Install and Maintain TeX Live, and Compile LaTeX Documents*. <https://github.com/rstudio/tinytex>.