

Impact of COVID-19 on Churches in the BFP Community

An Analysis of Online Presence and Demand for Online Services

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Abstract

This study investigates the impact of the COVID-19 pandemic on the demand for online services and the online presence of churches affiliated with the Bund Freikirchlicher Pfingstgemeinden (BFP) in Germany. It shows that the pandemic has been a catalyst for digital religion in Germany. The number of YouTube channels, uploaded videos, search queries for online services, as well as the view count sky-rocketed in the wake of 2020.

1 Introduction

In the 19th century the German philosopher Friedrich Nietzsche declared "God is Dead" (Norris and Inglehart, 2004, p. 240). The Social Sciences during the twentieth century have regarded the death of religion as their conventional wisdom and the master model of sociological inquiry. Social thinkers such as Auguste Comte, Herbert Spencer, Émile Durkheim, Max Weber, Karl Marx, and Sigmund Freud all predicted a fading importance of religion in industrial society. However, this thesis has encountered criticism during the last decade, in light of the continued churchgoing in the United States, the emergence of New Age spirituality, religious parties in the Muslim world, and evangelical revivals (Norris and Inglehart, 2004, p.3f).

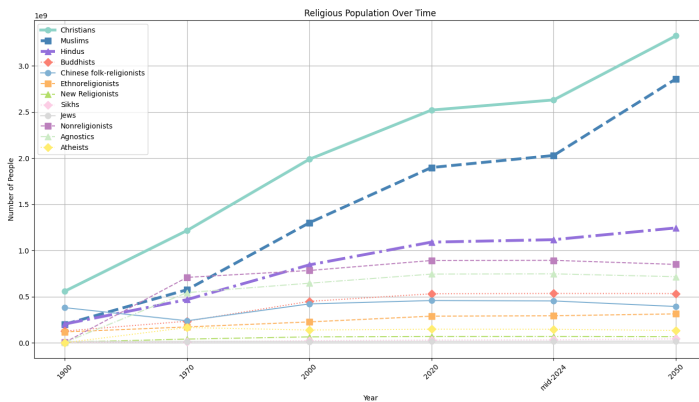


Figure 1: Global Religion (1900-2050) (Gordon-Conwell Theological Seminary)

For the first time, this year there are more than 2 million Muslims worldwide. Globally there are around 2.6 million Christians growing at a rate of 1.08%. In contrast, Islam is experiencing a faster growth rate of 1.68%. Hindus represent the third largest religious group, with a population of 1.1 million (Figure 1) (Johnson and Zurlo, 2024). It is evident that rising levels of existential security have led industrial societies toward more secular orientations (Norris and Inglehart, 2004, p.240f), however,

religion has not disappeared and is not likely to do so. Norris and Inglehart's Theory of Existential Security and Secularization will be the theoretical background of this paper, in order to analyze the pandemic as a security threat and its impact on religious demand and supply.

2 Research Question and Motivation

2.1 Secularization Theory

Norris and Inglehart’s theory of existential security and secularization emphasizes that the absence of human security is critical for religiosity (Norris and Inglehart, 2004, p.14). Their first conclusion acknowledges that modernization has greatly influenced the significance of religious institutions in wealthy societies. Churches have lower rates of service attendance and less influence over matters such as birth control, divorce, sexual orientation, and marriage. However, the authors’ second conclusion is that due to demographic trends in poorer societies, the world as a whole now has more people with traditional religious views than ever before (Norris and Inglehart, 2004, p.25). While rich societies are becoming more secular, the world as a whole is becoming more religious (Norris and Inglehart, 2004, p.217). The extent to which a given society has experienced economic and physical security greatly influences the level of secularization (Norris and Inglehart, 2004, p.27). This concept is particularly relevant during periods of crisis, such as the COVID-19 pandemic, which affected all regions in the world and almost all dimensions of social, economic, and political life (Ganiel, 2021, p.1). Bentzen (2021) demonstrates that the intensity of prayer increased by 30% during the pandemic, as shown by daily and weekly Google search data. The author suggests that the rising prayer intensity is a result of religious coping (Bentzen, 2021, p.559). Similarly, a Twitter Analysis showed an increase in prayer-related tweets during the COVID-19 pandemic, as well as all online religious activities. Among the most representative words during COVID-19 for prayer-related tweets was the word YouTube (Aduragba et al., 2022, p.12). Kanol and Michalowski (2023) found that the pandemic heightened religiosity among those facing existential and economic threats. In Ireland, Christian clergy framed their adoption of online ministries during the pandemic as opportunities for the church to retain significance, even in secularizing societies Ganiel (2021).

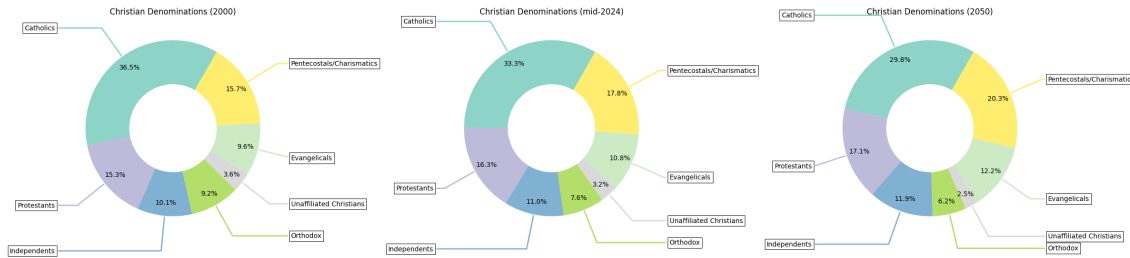


Figure 2: Comparison between Christian Denominations in 2020, 2024, and 2050 (Gordon-Conwell Theological Seminary)

Norris and Inglehart argue that a closer examination of differential patterns of development among Christian denominations within given countries could provide important insights (Norris and Inglehart, 2004, p.240). One Christian denomination that has been steadily growing over the last years and currently holds a share of 17.8% are Pentecostals and Charismatics (Figure 2)(Johnson and Zurlo, 2024). Therefore this paper focuses solely on the developments within this sub-community in Germany.

2.2 BFP Growth

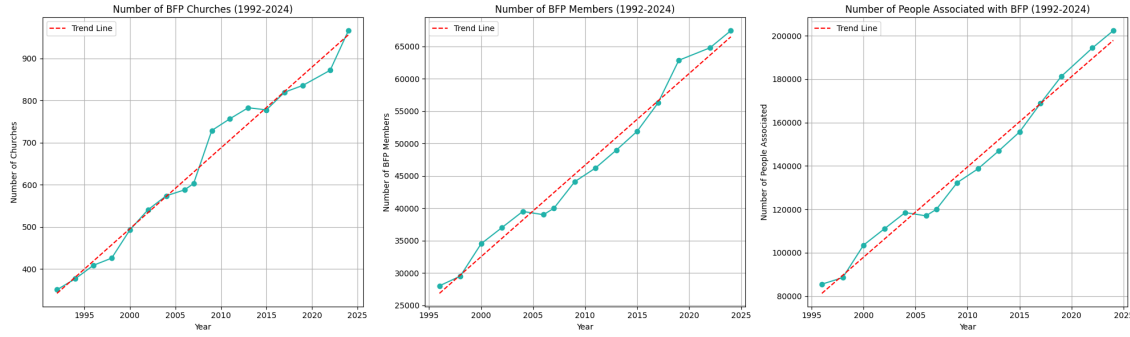


Figure 3: Growth of BFP Churches, Members, and associated people (1995-2025)

The "Bund Freikirchlicher Pfingstgemeinden (BFP)" (BFP, a) is a federation of more than 966 evangelical Pentecostal churches in Germany. They are part of the worldwide Pentecostal movement (BFP) and have displayed a rapid growth in the number of churches, members, and people associated with the community over the last 29 years (Figure 3) (BFP, b). The regression lines show strong, statistically significant ($p < 0.5$) trends over time in all three cases. The number of members and people associated with the BFP grow at an even steeper rate than the number of churches.

2.3 Research Question

The main research question is how the COVID-19 pandemic has impacted the online presence of BFP churches on YouTube and the demand for online services. More specific questions include:

- Which and how many BFP churches maintain a presence on YouTube?
- Did the number of videos uploaded to the churches' YouTube channels increase in the wake of the pandemic?
- Have Google search queries for terms related to online church services increased during the pandemic?
- How did the number of video views evolve?
- Which church has the highest social impact?

3 Data Retrieval

First of all, the name of the affiliated BFP churches was copied from the website into a JSON file utilizing Chrome Developer Tools. In Python, the YouTube channel ID was searched for all churches, and after that, the channel statistics were retrieved. BFP statistics were scraped from the homepage, and the statistics regarding the global levels of religion were taken manually from the Center of the Study of Global Christianity at Gordon-Conwell Theological Seminary.

Utilizing the Google Trends Platform, the number of searches for the queries "Online Gottesdienst," "YouTube Gottesdienst," and "Gottesdienst live" for the years 2017 to 2024 were gathered and imported as a CSV file.

4 Data Processing

Before searching for the corresponding channel IDs, duplicate church names were dropped, and only the first occurrence was kept. As for some church names, no ID could be found, so the YouTube channel names were looked up manually. The retrieved channel IDs were again verified manually, and those churches where no channel could be found were dropped. In the end, the duplicate channel IDs were dropped, again keeping only the first occurrence. For some channel IDs, the YouTube channel could not be found using the ID, so to verify the ID, the description and channel statistics were retrieved. Later, channels with no uploaded videos were dropped as no further analysis could be done.

When analyzing the relationship between the number of subscribers and the social impact score, both variables were log-transformed. To prevent issues with taking the logarithm of zero, a small value (1e-6) was added to ensure that all data points are transformed smoothly.

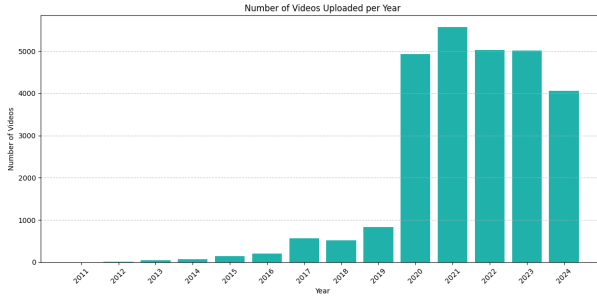
In order to analyze the distribution of search queries around online services, the monthly number of all three retrieved queries was summed up and compared across time. The dates of important events during pandemic times were added to a pandas dataframe manually in order to analyze their implications later on.

5 Analysis

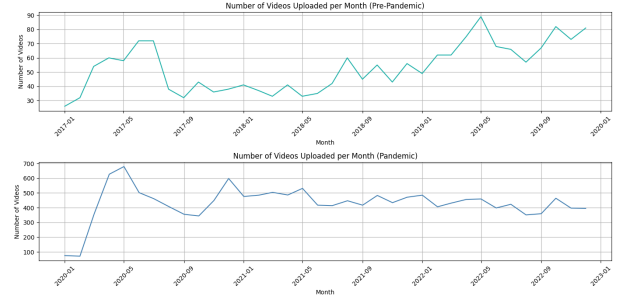
5.1 Online Presence of BFP Churches on YouTube

From the homepage of the BFP, I could extract 971 church names, from which 308 (32%) have a YouTube channel. This relatively low number can be explained since some churches have different campuses that share one channel. By looking up the churches' homepages manually, it became apparent that some use different tools to share their sermons online, such as Spotify or MP3. 297 churches have a YouTube channel and videos uploaded to it. Two churches remarkably stand out in regards to the number of followers. The "Move Church" (22.500) and "Missions-Christengemeinde Arche" (14.200) have more than 10,000 followers and are among the top five channels with the highest calculated social impact. Additionally, the "Internationale Missionsgemeinde HH e.V.", "Jesus Haus Füssen" and the "All Nations Church Frankfurt" share a high score. However, the distribution of the number of followers as well as the social impact score are left-skewed, suggesting that most YouTube channels have a smaller subscriber base and lower impact scores, while only a few channels have amassed a significantly larger following and influence.

When looking at the association between the number of followers and the social impact, the positive coefficient suggests that there is a positive relationship between the number of subscribers and the social impact (Intercept: 3.931; Coefficient: 0.256). As the coefficient is less than 1, it indicates sub-linear growth, which aligns with Social Impact Theory. This means that while social impact increases with a growing audience, the rate of increase diminishes as the audience size expands. The variance of the Residuals (0.978) is smaller than the variance of the social impact variable (1.308). The proportion of the variance explained (R-squared) is 0.252. However, the histogram of the residuals suggests that the data is left-skewed.



(a) Distribution of the number of channels uploading their first video per year (n=150)



(b) Comparison between the pre-pandemic and pandemic monthly distribution of uploaded videos (n=150)

Out of 150 channels, a total of 73 channels uploaded their first video in 2020, so in the wake of the COVID-19 pandemic. The earliest uploaded video in general was published in 2011 by "Christ Gospel City" in Karlsruhe. The total number of uploaded videos strongly increased in 2020 and reached its all-time high in 2021. In each 2022 and 2023, the 150 channels uploaded around 5.000 videos a year.

When comparing pre-pandemic times (2017-2019) to pandemic times (2020-2022), the aggregated number of monthly uploaded videos increased tremendously. During times before COVID-19, the range was between 26 to 89 videos, while it was after 2020 between 71 to 679. The maximum number was reached in May 2020 (679), so just when the first lockdown ended. Another peak was reached in December 2020 with 598 uploaded videos. Ever since the mid of 2021, the number has decreased slightly, but is now stable at around 400 to 500 videos monthly.

5.2 Demand for Digital Services

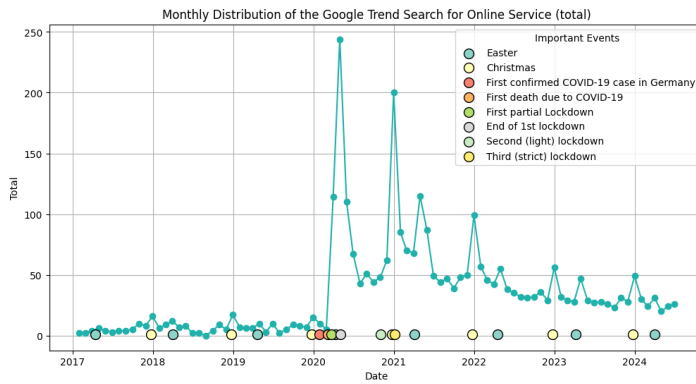


Figure 5: Monthly Distribution of Google Trend Search for Online Services (2017-2024) accounted for Covid Data and Christian Holidays

2021, there was a second spike in queries about online services. Also around Christmas in 2021, the numbers remained relatively high. While the numbers declined in 2022, they still surpass pre-pandemic levels up until now. The trend still shows alignment with Christian holidays.

As it is visible in the graph above (Figure 4), the search queries for online services sky-rocketed at the beginning of 2020. The overall trend corresponds very closely to Christmas and Easter Holidays, whereas Christmas generally corresponds to a higher spike than Easter. On the 27th of January 2020, the first case of COVID-19 in Germany was confirmed, and on the 8th of March, the first person died due to the pandemic. Around the announcement of the third strict lockdown in January

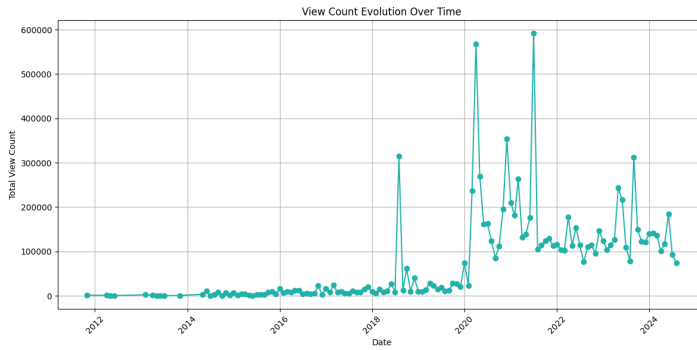


Figure 6: Evolution of the monthly aggregated view count over time (n=150)

mum number of views was reached with a view count of 591,561.

It is only natural that the total view count is growing over time, since as shown above, the number of channels has increased, as well as the number of uploaded videos. In August 2018, the number of views reached an unexpected high at a total of 314,841 views. The second spike was in April 2020 and ever since then, the view count has almost every month been above 100,000. In July 2021, the maxi-

6 Conclusion

The online presence of the BFP on YouTube, as well as the demand for digital services has been majorly impacted by the COVID-19 pandemic. Around 32% of German Pentecostal churches have an online presence on the platform YouTube. This number has been rising drastically due to the pandemic. In 2020 around 49% of the churches (n=150) uploaded their first video on YouTube. Up until 2020 the number of yearly uploaded videos was always below 1.000. As of 2020 there are now around 5.000 videos uploaded every year. However, the distribution of followers and social impact suggests that the majority of channels have a more limited reach and engagement. Generally, most channels have a subscriber count up to 5.000 and only two channels have more than 10.000. In May 2020, 679 videos were uploaded, which is up until now the highest total.

In regards to the demand, this study shows that the search queries for online services sky-rocketed in the wake of the pandemic. The trend furthermore corresponds to Christian holidays leading to the highest values on Easter and Christmas. Up until this year, the demand for digital services surpasses pre-pandemic levels. Additionally, the view count has been rising rapidly since 2020.

In conclusion, the demand for digital services of the BFP churches has been rising, as well as the online presence of churches. The pandemic has been a catalyst in this regard.

7 Critique

The YouTube API quota limit has been a major limitation of this study. Due to this, it was not possible to retrieve the video statistics for all 297 channels, but only for 150. This limitation may have introduced a selection bias, as the channels included in the analysis may not be fully representative of the entire sample. Another challenge was the manual verification required to find the correct YouTube channel ID for each church. This process was time-consuming and prone to human error, potentially leading to inaccuracies in the data set. Additionally, the reliance on manual verification may limit the scalability of the study. It is important to mention again that this study was conducted for only one christian denomination in Germany. As a result, the findings may not be generalizable to other denominations or geographic regions. To address this limitation, future research could expand the scope to include multiple denominations and regions, providing a more comprehensive understanding of digital engagement patterns in religious contexts. Furthermore it could be interesting to include different platforms (homepage, Spotify, ...) to future research.

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