



COVID-19 WORSHIP STUDY

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Hong Gi Kim
Chaeyoung Kwon
James Watt
Gloria Grace
John White

Background Information

- Study established from seeing widespread effects of COVID-19 on churches and other religious institutions.
- Looked into how congregations have enacted social/public health changes.
- Over 745 Churches have participated in the survey, with differences in the regions, denominations, and demographics.
- Main mission is for public health institutions – what policies/practices will be most beneficial for churches in the cases of future pandemics.

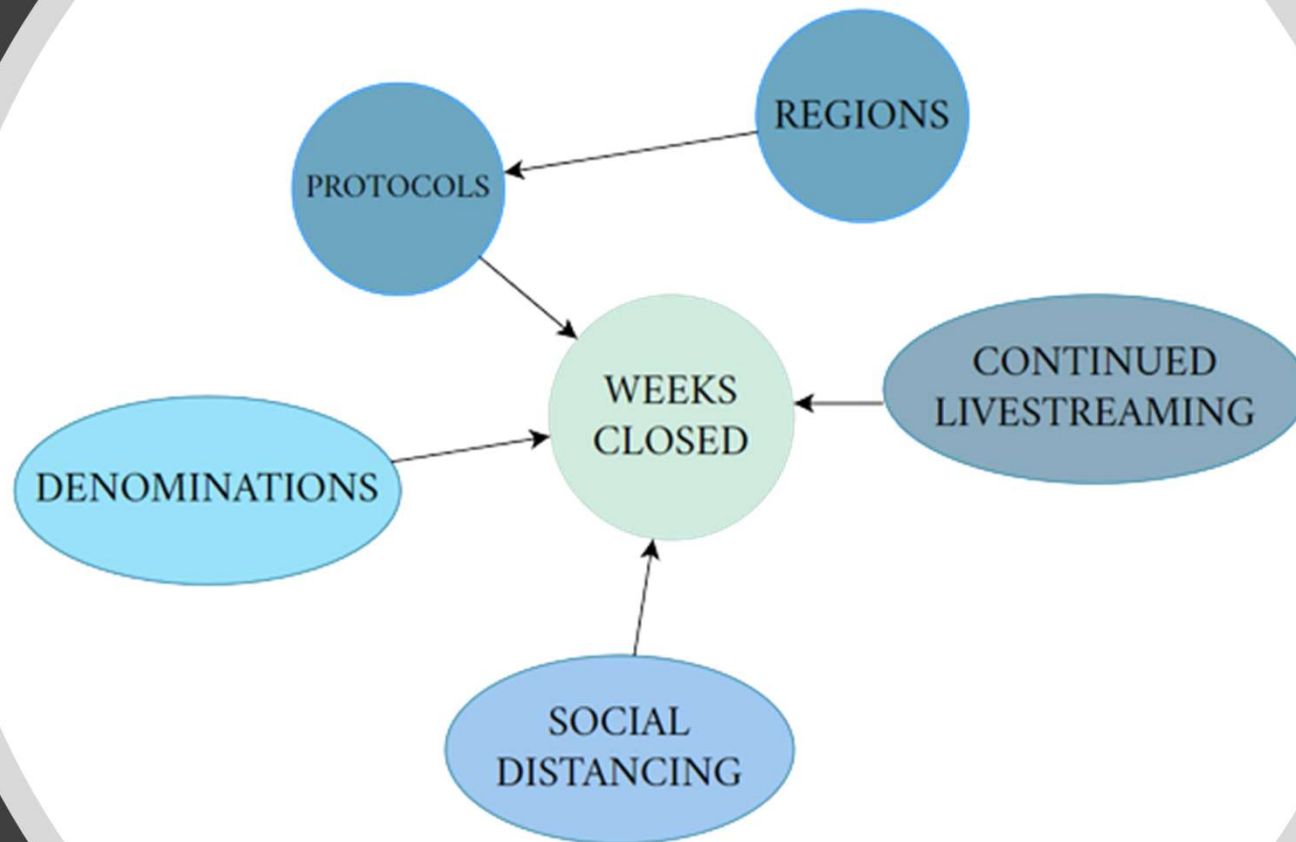
Data Wrangling

- Changed variable names
- Removed NA rows
- Convert nominal data to numerical data
- Removed the second row of questions

Signage_of_protocols Implemented #4? (signage in/on building of protocols)	Social_Distancing Implemented #5? (social distancing?)
TRUE	TRUE
TRUE	TRUE
TRUE	TRUE
TRUE	TRUE
TRUE	TRUE
TRUE	TRUE
FALSE	TRUE
TRUE	TRUE

	StartDate Start Date	EndDate End Date	Specific_denom NA	Grouped Denom NA	Regions NA
1	2021-03-02 12:09	2021-03-02 12:17	CRC	EP	MW
2	2021-03-02 13:11	2021-03-02 13:29	CRC	EP	MW
3	2021-03-02 13:41	2021-03-02 13:52	DOC	MP	MW
4	2021-03-02 14:57	2021-03-02 15:07	CRC	EP	MW
5	2021-03-02 15:24	2021-03-02 15:34	ND	EP	MW
6	2021-03-02 17:18	2021-03-02 17:25	AG	EP	MW
7	2021-03-03 7:01	2021-03-03 7:12	C	C	MW
8	2021-03-03 7:09	2021-03-03 7:37	RCA	MP	MW
9	2021-03-03 7:26	2021-03-03 7:43	UMC	MP	MW
10	2021-03-03 7:41	2021-03-03 7:51	CRC	EP	W
11	2021-03-03 8:24	2021-03-03 8:52	CRC	EP	MW

CAUSAL



DIAGRAM



Response Variables

Weeks Closed:

- Number of weeks closed during the pandemic



Predictor Variables

Social Distancing:

- Whether or not social distancing was practiced

Specific Denomination:

- Denominational affiliation

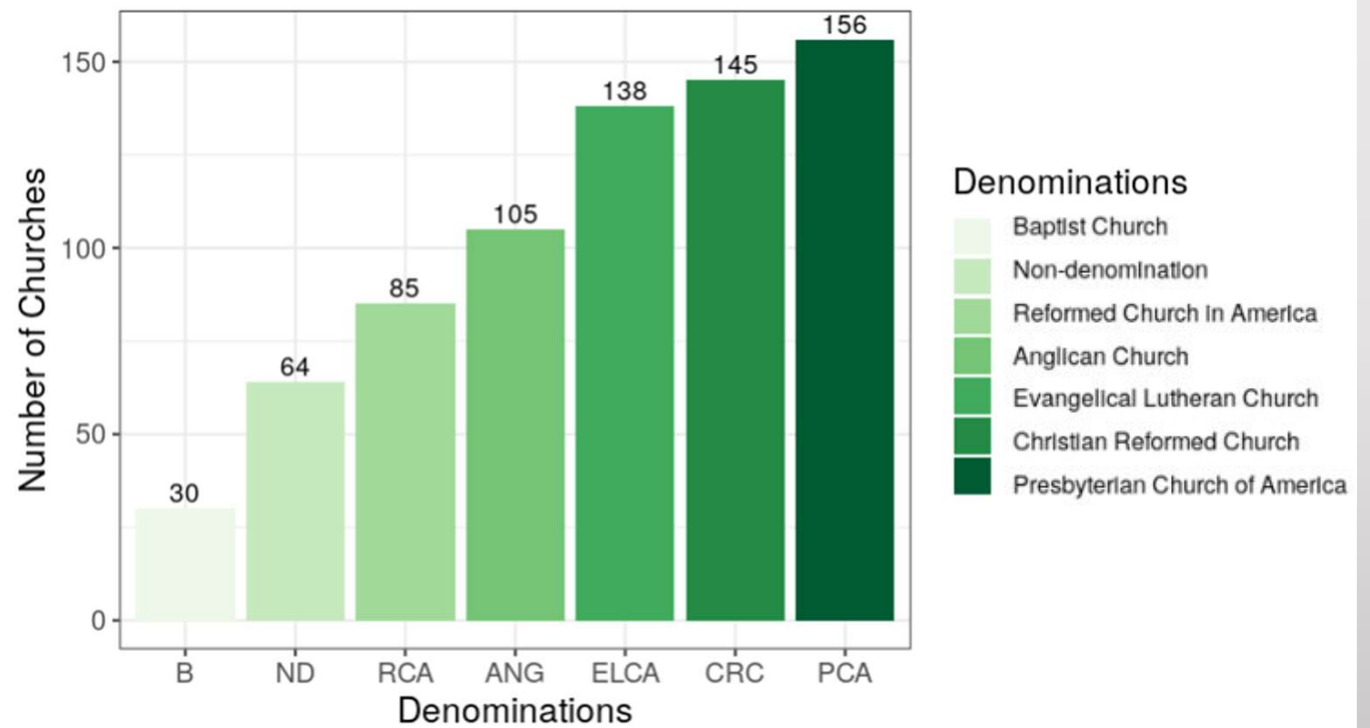
Livestreaming:

- If the congregation used live streaming

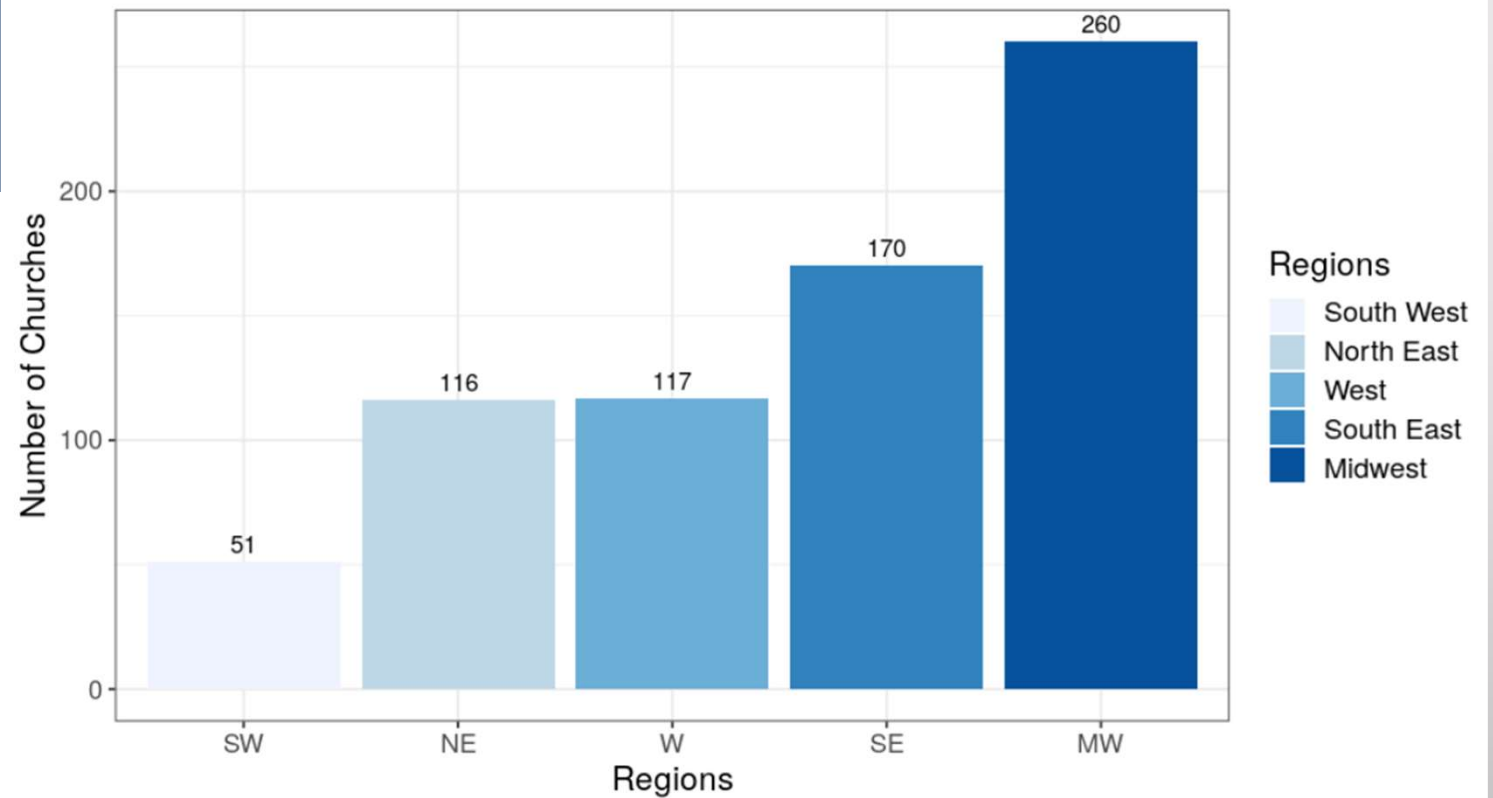
Regions * Signage of protocols:

- Region: The American region that the church belongs to.
- Signage of protocols: Whether there was signage representing covid protocols.
- Interaction: We found an interaction based on our casual diagram.

Numbers of Churches per Denominations



Numbers of Churches per Regions



MODEL FITTING

Model
Count Regression

Family
Logit

Weeks_Closed

15

26

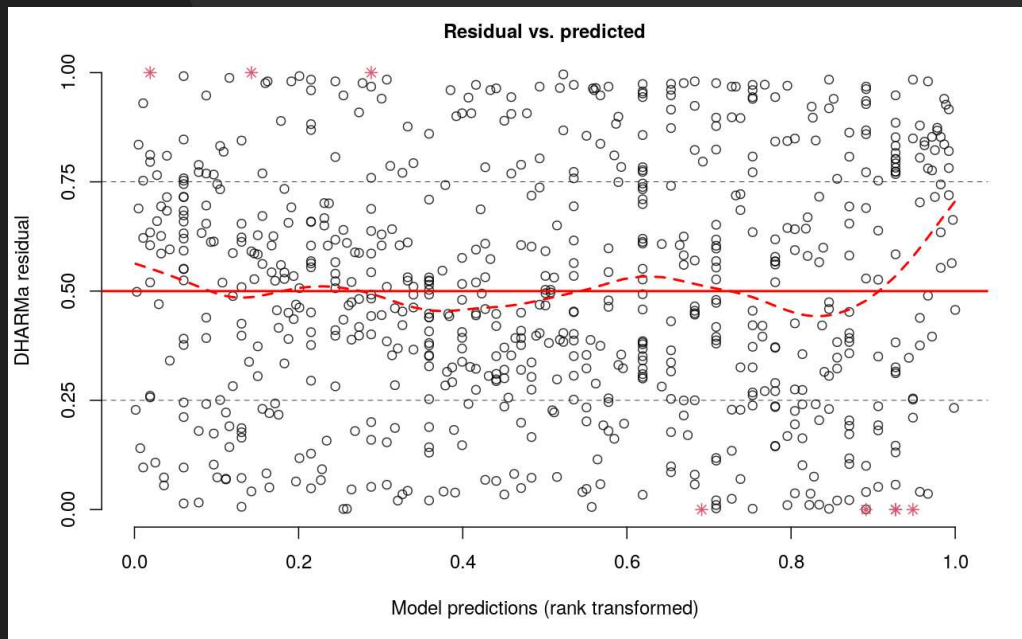
32

60

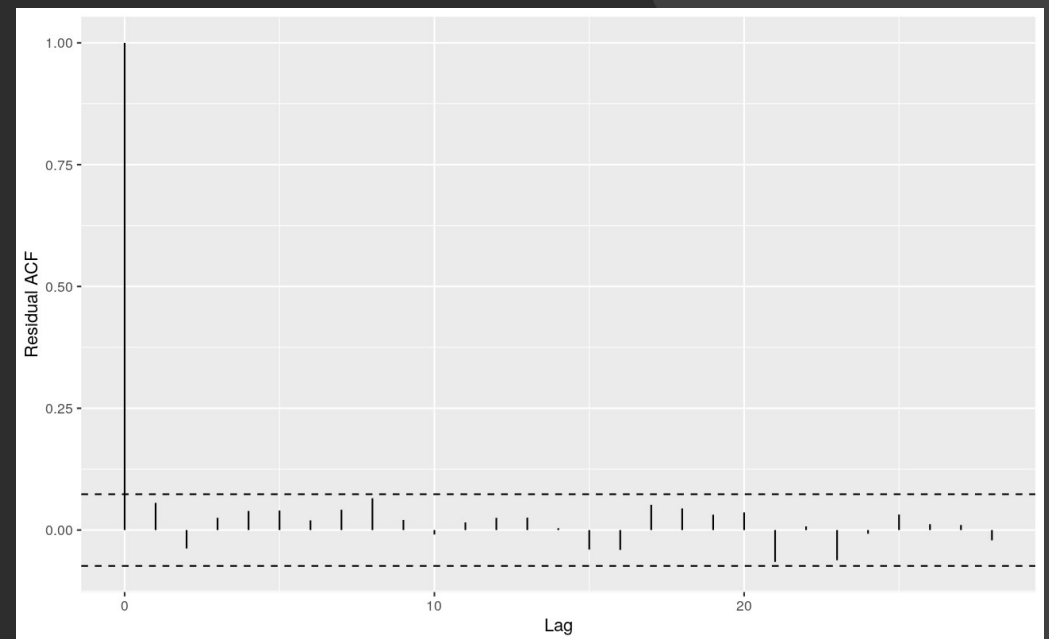
8

Model Assessment

Linearity/Scaled Residual



ACF – Independence Variable



Model Selection

Model selection table									
	cnd((Int))	dsp((Int))	cnd(Lvs)	cnd(Rgn)	cnd(Sgn_of_prt)	cnd(Scl_Dst)	cnd(Spc_dnm)	cnd(Rgn:Sgn_of_prt)	df logLik
7	2.872	+		+	+				8 -2800.324
15	2.962	+		+	+	+			9 -2799.295
8	2.869	+	+	+	+				9 -2800.314
5	2.752	+			+				3 -2822.029
16	2.958	+	+	+	+	+			10 -2799.278
21	2.872	+			+		+		22 -2760.868
29	2.984	+			+	+	+		23 -2759.434
6	2.737	+	+		+				4 -2821.749
13	2.782	+			+	+			4 -2821.911
22	2.834	+	+		+			+	23 -2760.548
39	2.773	+		+	+				+ 13 -2794.558
30	2.944	+	+		+	+	+		24 -2759.075
14	2.769	+	+		+	+			5 -2821.612
3	3.112	+		+					7 -2815.130
47	2.887	+		+	+	+			+ 14 -2792.662
17	3.158	+					+		21 -2770.683
40	2.772	+	+	+	+				+ 14 -2794.556
4	3.086	+	+	+					8 -2814.759
11	3.089	+		+		+			8 -2815.082
23	2.890	+		+	+		+		27 -2752.878
18	3.075	+	+				+		22 -2769.641
48	2.884	+	+	+	+	+			+ 15 -2792.654
31	3.024	+		+	+	+	+		28 -2750.789
25	3.193	+				+	+		22 -2770.592
12	3.067	+	+	+		+			9 -2814.726
24	2.849	+	+	+	+		+		28 -2752.533

*Region and Signage of Portage top predictor variables



MAJOR FINDINGS



CONSTANT VARIABLES

Region:

Midwest

Social Distancing:

TRUE

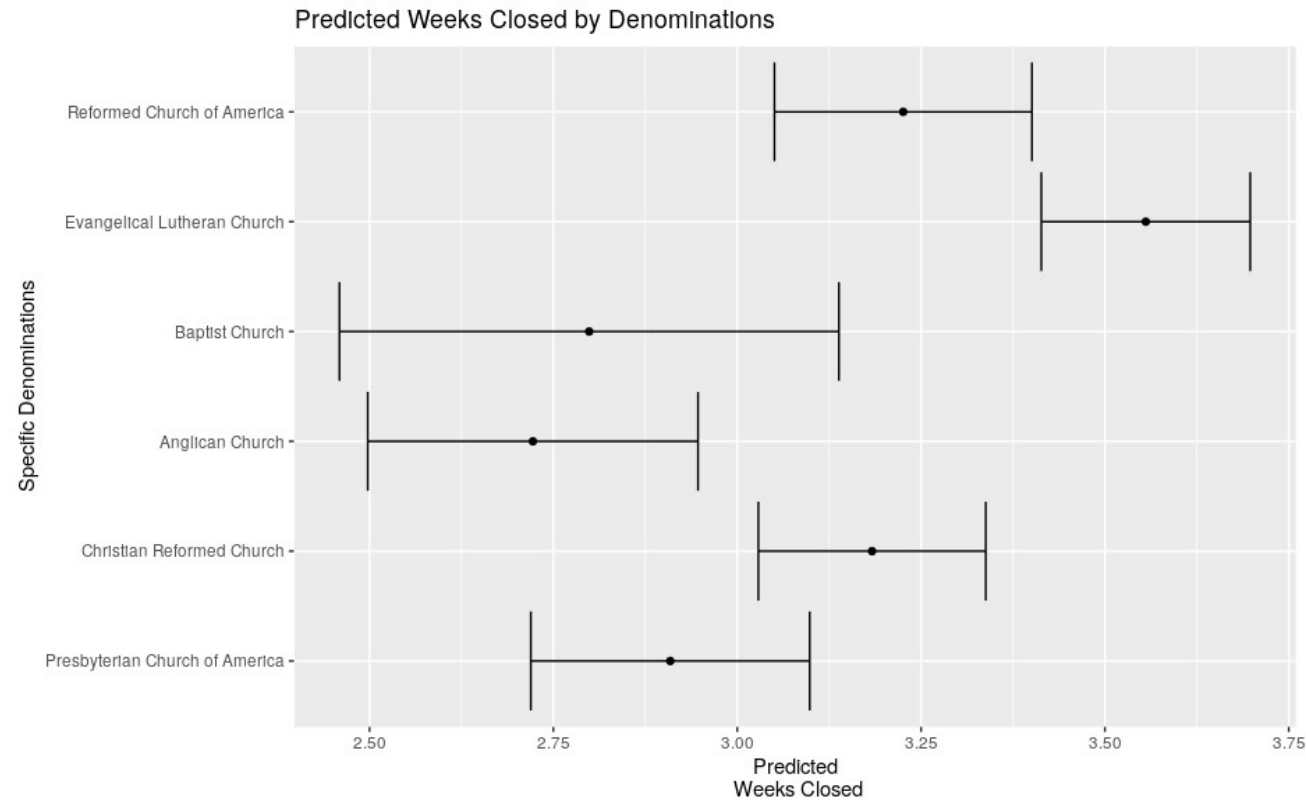
Protocols:

TRUE

Continued Livestreaming:

TRUE

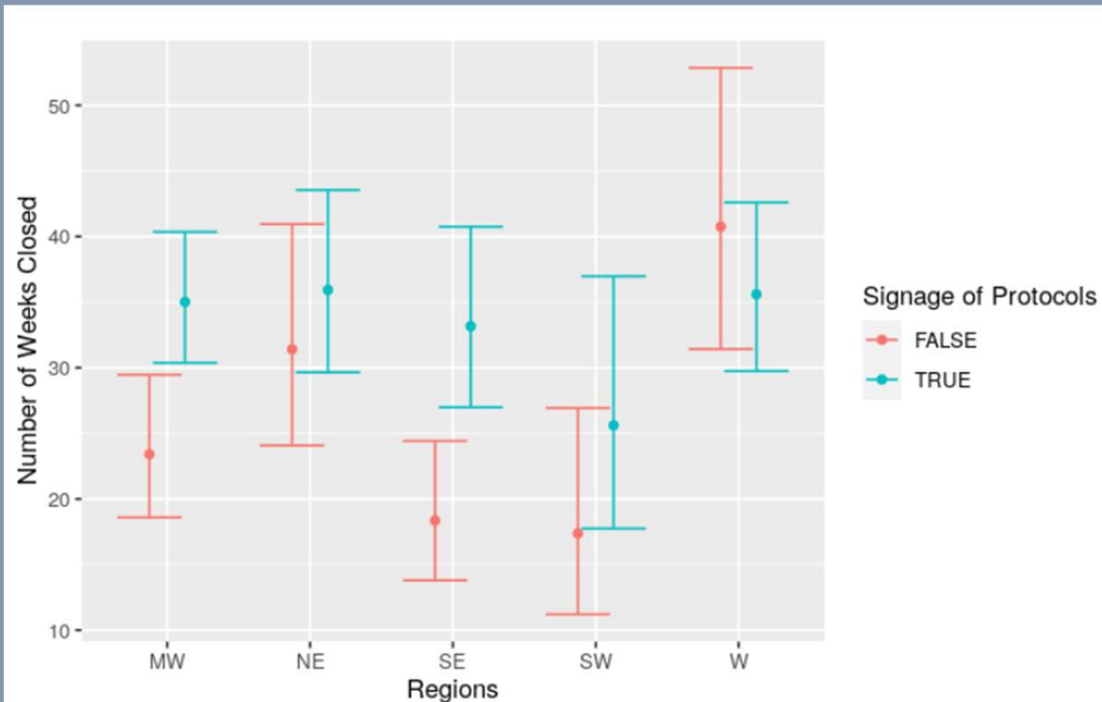
Specific Denomination



Findings that focuses on
**Evangelical Church of America
(ELCA)**
as a constant

Visible Sign of Protocols based on Regions has a Higher Number of Weeks Closed

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CONSTANT VARIABLES

Denominations:

ELCA

Social Distancing:

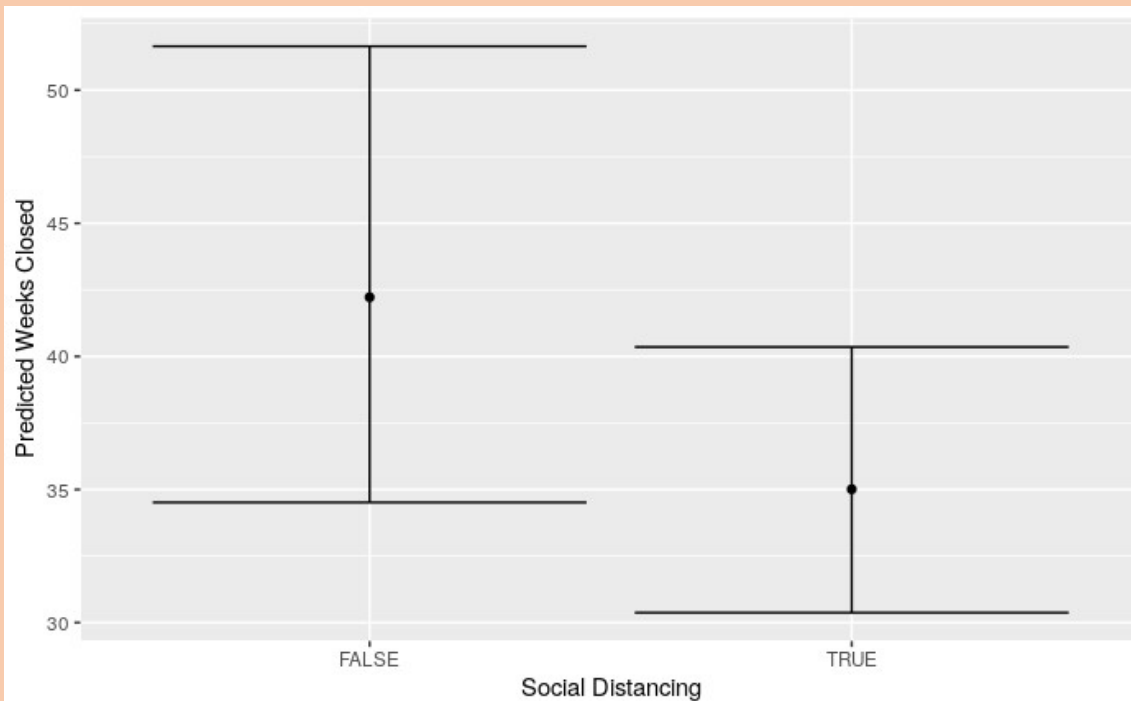
TRUE

Continued Livestreaming:

TRUE

With Social Distancing, ELCA Churches Tends to Have Lower Number of Weeks Closed.

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CONSTANT VARIABLES

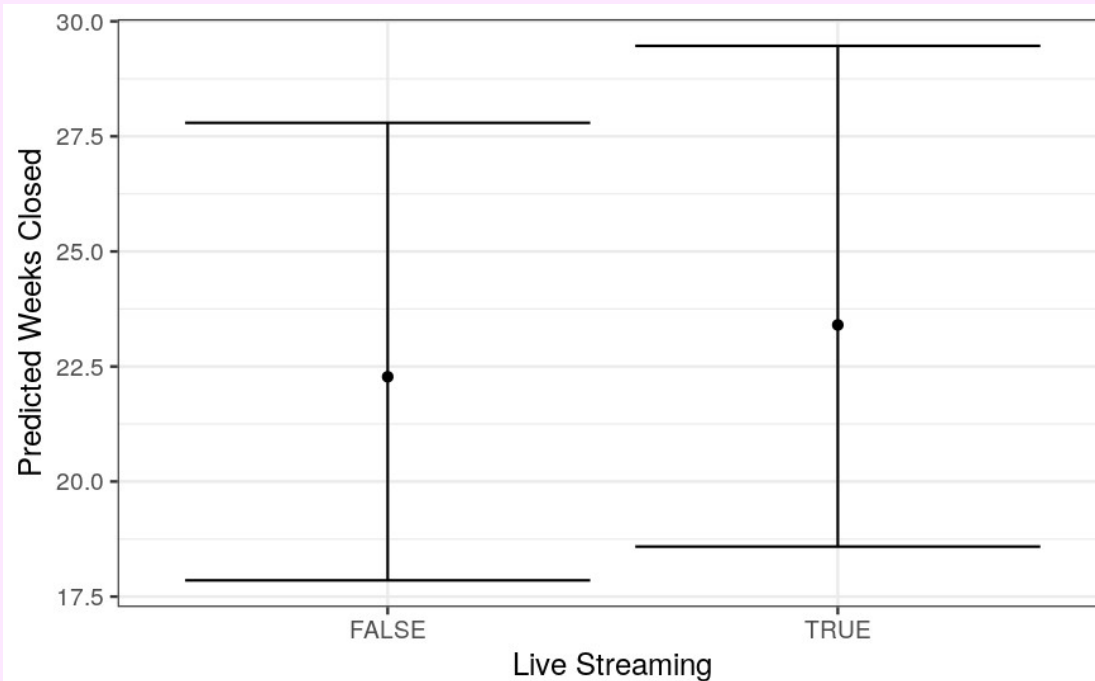
Region: Protocols:
Midwest TRUE

Denomination:
ELCA

Continued Livestreaming:
TRUE

ELCA Churches that Continued Livestreaming Tends to Have a Higher Number of Weeks Closed

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CONSTANT VARIABLES

Region:
Midwest

Denomination:
ELCA

Protocols:
TRUE

Social Distancing:
TRUE

Conclusion

- Church Region associated with differences in weeks closed when factoring in clarity of region's COVID protocols
- Specific denominations can also be associated with differences in weeks closed
- Livestreaming is not a significant predictor in differences for weeks closed
- Social Distancing is a significant predictor for decrease in weeks closed



QUESTIONS ?