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Timothy Perkins April 8, 2018

Trans*forming Politics: An Analysis of State Adoption of Transgender-Related Policies

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Abstract

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The transgender community in the United States has been catapulted into the national spotlight in the past few years, with increased representation in media from stars like Caitlyn Jenner, as well as increased public debate on the legal rights of trans* and gender non-conforming citizens. This article discusses the relationship between state-level transgender hate crime, birth certificate, and employment nondiscrimination policies and two key terms: policy salience and policy novelty. The former refers to the amount of attention paid to the issue in the public sphere, and is measured as “low salience” in years leading up to 2014. The latter relates to Taylor et al.’s theories of policy complexity, and equates complexity to the presence (or lack thereof) of similar policies that have already been adopted. The research is framed as a survival analysis that utilizes a Cox Non-Proportional Hazards model in order to assess the relative likelihood (or “risk”) of policy adoption associated with multiple competing theories. Results of this analysis refute previous literature and find that differences in neither salience nor policy novelty (a measure of complexity) influence a difference in the theoretical models associated with adoption of transgender policy.

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Research Question

In March of 1974, Minneapolis, Minnesota passed a nondiscrimination ordinance that provided protections against discrimination on the basis of sexual orientation (Margolin, 2016). This, in itself, was not extraordinary. Minneapolis was not the first city to pass such protections, though the ordinance was passed by a 10-0 vote from the city council, nor were the protections significantly different from those that other cities had already passed (Margolin, 2016). Minneapolis did make history, however, when it added an amendment to this ordinance during a council meeting a year later in 1975: an amendment that provided protections on the basis of gender identity (Margolin, 2016). With the added clause focusing on "having or projecting a self-image not associated with one's biological maleness or one's biological femaleness", Minneapolis became the first city in the nation to identify the need for protections of trans individuals and to formally institute such protections (Margolin, 2016).

This amendment is historically significant as it is the first time that transgender individuals are explicitly and lawfully protected from discrimination (Margolin, 2016). Before explaining why such protections are important to this population, it is necessary to form a working definition of what a transgender person is. According to the Human Rights Campaign, the term transgender (or "trans" for short) is used to describe someone whose gender identity does not align with the sex they were assigned at birth ("Transgender", 2017). Trans is used as an umbrella term here, as it holds underneath it a wide variety of individuals, some of whom may have been assigned male at birth and identify as a woman (often termed MTF people for "male to female") or vice versa (termed FTM; "Female to Male"), as well as those who identify somewhere between a man and woman or as neither a man nor a woman

(“Transgender”, 2017). It is not specific to those who undergo surgery relating to appearance, hormones, or genitalia, and it is used routinely as an adjective, such as trans man (for an FTM individual) or trans woman (for an MTF individual), rather than a noun (as “transgenders” or “trannies” are both words that are often seen as offensive and derogatory to trans individuals).

It is also important to note the difference between being transgender and being gay, lesbian, bisexual, etc., as the former refers to how one identifies their gender in relationship to their body, and the latter refers to one’s sexual orientation (“Transgender”, 2017). While these terms are not mutually exclusive, as an individual can both identify as transgender and be attracted to the individuals with the same gender identity as them (such as a gay trans man), this distinction is important as it provides the basis for the differences in needs required by communities of marginalized sexual identities and those of marginalized gender identities. We see that in the widely used LGBT+ acronym, standing for Lesbian, Gay, Bisexual, and Transgender, that the majority of these terms relate to one’s sexual identity, and this parallels the proportion of LGB vs T individuals in the U.S.A. today (“Understanding”, 2017).

According to a 2011 report from the University of California at Los Angeles’ Williams Institute, transgender individuals make up roughly 3.5% of the total LGBT+ population in the U.S.A., making them a relatively small minority within an already marginalized community of people (Gates, 2011). This proportion is surprising when viewed in relation to the statistics regarding violence in the LGBT+ community. Although they form such a small portion of the LGBT+ community, trans women constituted 55% of reported LGBT+ homicide victims, and were 1.5 times more likely to face general discrimination than their LGB counterparts (Grant, 2011;

“Understanding”, 2017). Data also show that, in comparison to American women as a whole, trans women are at least 4.3 times more likely to become homicide victims (“Understanding”, 2017). In addition, transgender people are twice as likely to be unemployed as cisgender (or non-transgender) people, as well as being more likely to live under the poverty line (Grant, 2011). These statistics demonstrate a high proportion of violence and discrimination within the transgender community, which is especially distinct when compared to LGB individuals and women. When we look at the rates of violence within the transgender community, as well, it becomes apparent that this violence is especially targeted at trans* women of color and low and working-class trans* women (PAN, “WHY”). Whereas trans* women overall have a 1 in 12 chance of death by murder, that number decreases quite drastically to 1 in 8 for transgender women of color, which demonstrates the ways in which many aspects of a person’s identity, like gender identity, race, and class, can all intersect to place individuals at the center of multiple axes of violent oppression (PAN, “WHY”).

Through reports like these, the need for state protections for transgender individuals becomes apparent. In this light, this lack of state protections regarding discrimination and hate crime laws is a clear and visible problem that faces the transgender community. In the U.S.A. today, only 20 states and the District of Columbia have legal protections for transgender individuals in the workplace. That number is reduced to 16 states and the District of Columbia when focusing on states that include gender identity, the indicator referring to transgender individuals, as a protected category under hate crime laws (“State Maps”, 2017). In each case, the number of states offering protections on the basis of sexual orientation is greater than the number offering the same protections in regards to gender identity (“State Maps”, 2017). Such statewide differences lead to the question of why some states

offer protections for trans people and others do not. If violence against transgender individuals follows the statistics and trends noted above, and is more intense for trans people (and trans* people of color/ low-income trans* people) than the rest of the LGB population, why do some states offer more legal protections for transgender individuals (in relation to discrimination, hate crimes, and ability to change legal name on birth certificates) than others?

Literature Review

While literature on transgender policy is scarce, previous literature on policy related to sexual orientation can potentially help to illuminate some of the trends we can expect from transgender policy. Previous literature on sexual orientation finds that a number of socioeconomic, political (and geopolitical), and institutional variables are all significant in determining whether or not a state will extend legal protections to sexual minorities. Few, competing theories organize and interpret variables within these broad categories in an effort to explain the adoption of same-sex marriage policy. Among the most influential of these theories is one known as "morality policy theory" (Haider-Markel and Meier, 2003; (Lewis, 2011). Morality policy theory, or "morality politics", is a term for policies that are best described by their moral origins and arguments and, as such, resonate with an individual's core belief system (Haider-Markel and Meier, 2003; (Lewis, 2011). Examples of morality policies include those regarding abortion and forms of religious freedoms or expressions. Previous research has found that morality policies are ones for which little information is needed to form an opinion, as the policies focus on constituents' core beliefs rather than knowledge of complexly related systems, like business regulation policies (Haider-Markel and Meier, 2003). As such, morality politics are

often highly polarized along partisan lines, where differences in core beliefs are strong, and would most likely appear in areas with high competition between political parties (Haider-Markel and Meier, 2003).

Under the morality politics theory, whether or not a bill or policy gets passed is dependent on the core belief systems of both those who vote on these policies, and those who represent them (Haider-Markel and Meier, 2003). As such, the entire voting population is often studied to see which core belief system is more prevalent. Additionally, the ways in which constituents, rather than their representatives, are able to influence policy change is also studied. This is done to determine the relative ease with which these policies can be added or changed in a given state government (Haider-Markel and Meier, 2003; Lewis, 2011). In terms of institutional variables, which focus on the overall ways in which policies are able to be changed, previous research finds that the presence of direct democracy is important (Lewis, 2011). In a direct democracy, citizens can vote directly on policies by petitioning to add them to voting ballots, rather than allowing their representatives to propose and debate the issues (Lewis, 2011). Direct democracy thus aligns with morality policy theory as it requires the direct participation of the state's voters and their morality-based political mobilization (Lewis, 2011). Previous research performed by Daniel Lewis of the University of New Orleans concluded that states that allowed for direct democracy were much more likely than their indirect counterparts to adopt same-sex marriage bans (2011). This research demonstrates the importance that both the organization of a state's government and the beliefs of its voters play in the likelihood of adopting morality policies regarding minority rights.

To measure the beliefs of voters in a given state or voting area, researchers also focus on the area's many sociopolitical factors. This tests the morality policy

theory by determining the descriptive differences between state populations, all in an effort to describe what best influences and describes the core beliefs of the majority of the population. Is the area wealthy? Can the area be described as more traditionally conservative, or relatively socially liberal? Does the state's legislature, which implements new laws, primarily belong to a single political party? All of these questions focus on the types of evidence that researchers of morality politics find important in determining whether or not a population will enact a given morality policy. In relation to the many social, political, and economic factors relating to the passage of non-discrimination or same-sex marriage legislation researchers found that factors like the proportion of women in traditional gender roles, the percentage of liberal citizens, per capita income, the percentage of the legislature that is Democratic, and religiosity are all significantly related to a state's likelihood to adopt or reject LGB policies (Soule and Earl, 2001; McVeigh and Diaz, 2009; Soule, 2004; Van der Toom et. al, 2017).

Morality policy, then, seems to predict the adoption of nondiscrimination policies and same-sex marriage policy well, but is it the same for transgender policy? While previous research mainly focuses only on LGB policy at the state level, literature on transgender policies at the local level indicate that they do align with the morality policy theory (Lewis, 2011; Colvin 2008). Much of the existing research on transgender policies focuses on local and community policy levels, which finds socioeconomic variables such as number of same-sex households, percentage of the state that is college students, racial diversity, presence of a Democratic majority, and the primary employment sectors of a community to all be significantly related to the adoption of transgender nondiscrimination laws (Colvin 2008). The significance of these variables shows that, on the local level, adoption of transgender policy

aligns very well with existing literature regarding morality policy. This is because similar sociopolitical factors of the constituent population were found to be influential in the legislation process (Lewis and Taylor, 2014).

Alternate research on morality policy theory, however, qualifies its ability to be applied uniformly to LGB policies in every context (Haider-Markel and Meier, 2003). In a study performed by Haider-Markel and Meier, the salience of the issue, or its public visibility, threw a kink in the metaphorical gears of the morality policy theory (2003). Researchers here demonstrated that the salience of an LGB issue (such as same sex marriage or nondiscrimination policies) changes the ways in which these bills are adopted, such that the morality policy theory was only able to explain the passage of LGB issues when they were highly salient in the legislative district (Haider-Markel and Meier, 2003). In areas where the LGB policy debate was not as salient, an entirely new model was found to be significantly able to explain the policy outcomes (Haider-Markel and Meier, 2003; (Lewis, 2011). This model is known as the interest-group model, which specifies that highly specialized interest groups are the most important factor in predicting policy adoption (Haider-Markel and Meier, 2003). According to this model or theory, issues of lower salience are more applicable to the interest group theory, as legislators would be less influenced by the general population if this population were not actively focused on the issue at hand (Haider-Markel and Meier, 2003). As such, legislators would be more apt to listen to the political requests of LGBT- focused interest groups. Haider-Markel and Meier explain that interest groups, and the corresponding theory, work best when salience is low, when policy makers and political elites are sympathetic to the cause, and when policies can be described as small and “incremental”, such that the policies are

proposed in succession, rather than all at once, so as to slowly change the nature of transgender policies within the region (Haider-Markel and Meier, 2003).

This presents the confounding variable of the context in which the policy is being debated, as specific theoretical models are able to work only within certain parameters. The issue of salience, here, provides interesting insight on the potential theoretical models that would apply to transgender policy. Policies relating to this group may be less salient due to the smaller size of this community (Gates, 2011). In light of this, previous research has found that transgender policies on the state level are, in fact, reliant on different determinants than those in highly salient LGB issues (Lewis and Taylor, 2014). Previous research discovered that transgender nondiscrimination policies at the state level were not significantly predicted by the morality policy model, and that their implementation was significantly different from what the theories that predict LGB policies would suggest (Lewis and Taylor, 2014). Interestingly, the variables that had been found to be important in LGB non-discrimination policies in this study differed from those found to be important in Lewis' study of same-sex marriage bans (Lewis and Taylor, 2014; Lewis, 2011). In addition, the strength of LGBT+ interest groups in the state, measured by their resources, was found to be statistically significant in its effects on nondiscrimination policies of sexual orientation but not for transgender nondiscrimination policies, indicating that an interest-group model may not be applicable for prediction of transgender nondiscrimination policies, either (Lewis, 2011). The applicability of the interest group model, however, would require further research as it is not a theory that was specifically tested in this study (Lewis, 2011).

If the research suggests that transgender policies do not align well with morality policy theory, Haider-Markel and Meier would suggest that either these

issues are not salient enough, or the issue is not one that falls under the category of morality politics (2003). Recall that morality policy describes issues where little information is needed, as the policies focus on constituents' core beliefs rather than largely intricate or complex topics (Haider-Markel and Meier, 2003). As complexity of nondiscrimination policies did not deter sexual orientation nondiscrimination policies from aligning with the morality policy theory, it would seem that perhaps the salience of transgender nondiscrimination policies might be the key explanatory factor for these differences (Lewis and Taylor, 2014). In addition, previous research on the salience of similarly complex LGB nondiscrimination policies had found that they were not aligned with the morality policy theory when the issues were of lower salience in a particular region (Haider-Markel and Meier, 2003).

Previous research that focused on birth certificate amendment policies, or the ability for transgender people to change their assigned sex on legal documents, argued that the "obscure, technical" nature of these issues is why they require a different theory (Taylor et al, 2014). Instead of a morality politics model then, researchers tested a theory that the level of bureaucratic professionalization and vertical diffusion were the most important factors determining state adoption of birth certificate legislation (Taylor et al, 2014). This reflects what is known as "policy learning theory", as professionalized governments are thought to "learn" from federal institutions and other state governments (Taylor et al, 2014). This is argued to explain why some states adopt birth certificate policies instead of others, as the morality politics model was found to be inefficient in this case (Taylor et al, 2014). This theory provides that, when state legislatures and bureaucracies are more professionalized, or employ more full time staff positions than part time positions, they are more likely to be in contact with professionalized federal organizations

(Taylor et al, 2014). As such, these states are more likely to adhere to policy recommendations provided by federal organizations, such as the Centers for Disease Control and Prevention and the National Center for Health Statistics, which provide advice on these more complex birth certificate change policies (Taylor et al, 2014). In this research, both high levels of state administrative performance, which determines its level of professionalization, and high levels of liberal elites are both statistically significant indicators of the adoption of transgender birth certificate policies (Taylor et al, 2014).

Theory

From the literature, we find evidence to support the claim that state level transgender nondiscrimination policies differ both from state level policies regarding sexual orientation and from local level policies regarding gender identity, as they are found to be less influenced by the morality policy theory (Lewis and Taylor, 2014; Colvin, 2008). I theorize that the factors predicting the likelihood of a state will adopt a particular transgender policy (nondiscrimination, hate crime, or birth certificate amendment) are dependent on the particular policy's salience and complexity. Research on the state level policies regarding transgender birth certificate amendments indicates that these stray from the morality politics model and instead focus on bureaucratic, professional, and elite variables rather than sociopolitical ones (Taylor et. al, 2014). But why this difference? In regards to birth certificate amendment polices, researchers argue that this may be due to a theory of policy learning, where states analyze and adopt policies from other state governments, national organizations, and federal government (Taylor et. al, 2014). As previous research has argued that individuals are more likely to view birth certificate

amendment policies as “obscure, technical” issues, and that states are more likely to engage in policy learning when dealing with more complex policies, we see that transgender birth certificate policies can be explained via policy learning theory (Boushey 2010; Taylor et. al, 2014).

But is this applicable to transgender nondiscrimination policies, which were not regarded with the same “obscure, technical” description as birth certificate policies? Seeing as the complexity of these nondiscrimination policies is not regarded as an important factor in the literature, I argue that this will signal that different explanatory variables will be associated with nondiscrimination policy than with birth certificate policy. Additionally, birth certificate amendment policies are unique to transgender policy, and no other minority policy has focused on changing identity markers on government documents in the same way. In this way, policies that deal with gender changes of birth certificates, drivers’ licenses, and social security cards are all “novel”, as they are not found in the policy agendas of LGB groups. In addition, hate crime laws, which also have previous iterations in regards to items like sexual orientation and race, are not “novel” in the same way. As such, my first set of hypotheses state that the nondiscrimination policy and hate crime policy, then, would not be influenced by the policy learning model associated with birth certificate policies. This is because of the novelty associated only with birth certificate policies, as both nondiscrimination policy and hate crime policy both have previous formats for sexual orientation and other categories of difference.

H1: Increases in levels of state bureaucratic professionalization will have no significant influence on the adoption of transgender employment nondiscrimination policies.

H2: Increases in levels of state bureaucratic professionalization will have no significant influence on the adoption of transgender hate crime policies

H3: Increases in levels of state bureaucratic professionalization will positively influence the adoption of transgender birth certificate policies.

The previous research theorized that it was the professionalization of the bureaucracy that determined a state's likelihood of adopting transgender birth certificate policies (Taylor et al, 2014). Legislative professionalization was controlled for in this study, but I argue that such professionalization of the legislature may also prove to be an important determinant in the policy learning process (Taylor et al, 2014). As legislatures directly pass bills regarding these policies, it may be the case that more professionalized legislatures are more apt to learn from federal, and other states', policy implementations. If so, this would still depend on policy novelty. Previous research found that state policymakers look to other states when determining the adoption of a new policy or bill (Grossback et al, 540). When doing so, these states acknowledge the ideology of other states that had adopted this policy, and its success (Grossback et al, 540). This suggests that, on a broad level, state legislatures are more likely to adopt novel policies when they are more professionalized. As such, the following set of hypotheses address the relationship between the professionalization of the state's legislature and the novelty of each policy.

H4: Increased levels of state legislative professionalization will not influence the adoption of transgender nondiscrimination policies.

H5: Increased levels of state legislative professionalization will not influence the adoption of transgender hate crime policies.

H6: Increased levels of state legislative professionalization will influence the adoption of transgender birth certificate amendment policies.

Further, salience, or the prominence of these issues, may be importantly associated with the theoretical models associated with transgender nondiscrimination, hate crime, and birth certificate policies. In research performed by Haider-Markel and Meier, salience levels are directly relevant to whether or not a framework of morality politics will be applicable (Haider-Markel and Meier, 2003). Their analysis finds that in issues of high salience, a morality politics model is applicable, but issues of low salience call for explanations that stem from an interest group model of policy adoption (Haider-Markel and Meier, 2003). While past research has concluded that general LGBT+ interest groups do not have an effect on transgender policies, it also identifies the lack of emphasis that LGBT+ organizations place on transgender policies (Lewis and Taylor, 2014). In addition, previous literature has found that higher levels of liberal elites (similar to interest groups in that they are a much smaller group of people with very defined political ideologies), rather than general citizen ideology, has an influence on the adoption of birth certificate policies on the state level (Taylor et al, 2014).

Following this line of thinking, Haider-Markel and Meier's findings that low-salience issues would call for an interest group, rather than a morality politics model could explain why the morality politics model does not nicely explain the trends among transgender policy adoptions (Lewis and Taylor, 2014). Before the interest group model would be applicable, however, the issue of the salience of transgender issues in the United States would have to be addressed. Considering the small number of transgender individuals in the U.S.A., who only make up roughly 3.5% of the minority LGBT+ population, it would not be surprising that transgender people

and the many policies regarding them would not be highly salient (Gates, 2011). However, relatively recent events in the United States have brought transgender people, and their subsequent political needs, to the foreground of American discourse. Laverne Cox, transgender actress and activist, starred in the hit series “Orange is the New Black”, winning multiple awards for her performances. In the following years, Cox had become the first transgender woman to star on the cover of Time magazine and other stars like Caitlyn Jenner would make their debut onto the celebrity stage and into the American spotlight. This new inclusion of transgender Americans into such publically visible spaces was clearly evident in the news media. For the purposes of this study, a news search was utilized in order to pinpoint which years would be the best to distinguish between time periods of low and high salience for transgender people, and subsequently their issues. Through “ProQuest Newspapers”, an online news research database, I was able to find the number of times in which the key terms “transgender” or “transsexual” were utilized in the subject or indexes of the New York Times (to represent liberal news) and the Wall Street Journal (to represent conservative news). From 2014 to 2015, news reports in which these two key terms were stated in either the subject or indexes of these two journals increased from 80 reports in 2014 to a much larger 436 articles in 2015, representing an increase of 545%. What is important to note is that this perfectly corresponds to the entrance of Caitlyn Jenner on the celebrity stage. While other issues had arisen, it was not the appearance of Laverne Cox that catapulted the transgender community into the newsroom, and this implicates that the treatment of transgender people throughout the media is not universally applied to individuals of all racial/ethnic identities. As such, the years up until 2014 will be regarded as low-salient, as they were all similar to, or much smaller than, the 2014 year total. Years

extending from 2015 onward, however, will reflect times of relatively high salience of the transgender community and their legal problems, as each year after this showed an increase in discussion of transgender people.

This difference in salience of the same population, and the potential influence this has on these transgender-specific policies, forms the basis of the rest of my hypotheses. Seeing as the transgender community was potentially less salient in the time period before 2015, the transgender policies may then fit Haider-Markel's Interest Group theory, which best explains low-salience policy adoption. As such, they are thought to be best explained by interest group resources, the supportive values of political elites, and slow, incremental policy changes (Haider-Markel and Meier, 2003).

Unfortunately, as there are no previous iterations of identity document changes in respect to transgender birth certificate policies, the "slow and incremental policy change" portion of the interest group theory is moot in this respect. Instead, this will be measured in terms of the same previous adoptions in the other models of the two sexual orientation policies (employment nondiscrimination and hate crime). This will be done in order to gauge whether or not these policy changes need be slow and incremental and directly related, or if this influence is upheld by related, yet indirect, explanatory variables. Previous research on the nature of transgender policies within LGBT+ organizations' agendas would argue that, as transgender policy had been distanced from LGB policy in the agendas of powerful LGBT+ organizations, there would be no relationship between these unrelated sexual orientation policies and transgender birth certificate policies (Taylor et al, 2014). I push back against this argument, however, by proposing that the increased attention brought to LGBT+ policies by the state, along with the increased salience of transgender people, would

directly relate to an increased likelihood of adoption of transgender birth certificate policies.

H7: Higher resources of economically powerful LGBT-focused interest groups and supportive political elites, along with previous adoption of LGB policies of the same type, will be the only variables influencing the adoption rates of transgender employment nondiscrimination policies only in the years before 2015.

H8: Higher resources of economically powerful LGBT-focused interest groups and supportive political elites, along with previous adoption of LGB policies of the same type, will be the only variables influencing the adoption rates of transgender hate crime policies only in the years before 2015.

H9: Higher resources of economically powerful LGBT-focused interest groups and supportive political elites, along with previous adoption of LGB policies of the same type, will be the only variables influencing the adoption rates of transgender birth certificate policies only in the years before 2015.

Conversely, the morality politics model may better apply to some of these policies after 2014, when the transgender "phenomena" became more apparent in public discourse. Recall also that morality policy issues are those in which little information is required, such that they will be more applicable to relatively simpler policies than complex, novel ones (Haider-Markel and Meier, 2003). As such, it would be expected that hate-crime policies and nondiscrimination policies best follow the morality politics model during this time period, as they may be relatively less "novel", but not in the birth certificate policies. I operationalize the morality politics model through the following explanatory variables: state government ideology, political culture, state citizen ideology, presence of direct democracy, percent of Democrats

in the legislature, percent of college educated citizens, party competition, presence of a divided government, percent of same-sex households, and levels of politically-opposed religious groups (Lewis and Taylor, 2014; Soule and Earl, 2001; Soule, 2004; Van der Toom et. al, 2017). With these, I craft my last set of hypotheses:

H10: Morality policy theory, and the relationships to the factors above, will constitute the only significantly associated variables found in states that adopt transgender nondiscrimination policies after 2014.

H11: Morality policy theory, and the relationships to the factors above, will constitute the only significantly associated variables found in states that adopt transgender hate crime policies after 2014.

H12: Morality policy theory, and the relationships to the factors above, will NOT be significantly associated with the risk of adoption of transgender birth certificate policies after 2014.

Through these 12 hypotheses I hope to identify the theoretical models that will best predict the adoption of transgender nondiscrimination, hate crime, and birth certificate policies, given the conditions of salience and policy complexity that may produce significant differences.

Data and Methods

I theorize that the factors predicting the likelihood that a state will adopt a particular policy (nondiscrimination, hate crime, or birth certificate amendment) are dependent on the particular policy's salience and complexity (or "novelty" in this case). With the dependent variable for this project focusing on the binary-indicator of whether or not a state adopted one of these policies in a given year, I will utilize what

is known as a “survival analysis”, which is used to test the associated “risk” that each explanatory variable has on the likelihood of a certain event occurring (in this case, the likelihood of adoption of a given trans* policy). The unit of analysis in all of these models is the state-year, which means that I will include observations from each state (of all 50 states) in each year (1980-2018) that I record in this study, such as Alabama, 2014 or Louisiana, 1996. My first analysis will test hypotheses 1-6, regarding the fit of bureaucratic and legislative professionalization theory on policies other than birth certificate amendments. All three transgender policies will be tested in order to determine if governmental professionalization is related, and exclusively so, to the birth certificate amendment policies. The second survival analysis will focus on the issue of salience and its effects on the applicability of these theoretical models. This will be split into two portions, and the first will determine the relationships between all three theoretical models, and their covariates, with a focus on the state-years leading up to the large news media spike (before, and including, 2014). The second subset of this test will still hold the state-year as the unit of analysis, to determine the time significance of these variables over time, though will only include the years including and after 2015, in which higher salience is to be expected.

With this, I attempt to discern a relationship between the many factors I introduce via the three different theoretical models and the likelihood of each state adopting a particular policy. As I expect the effects of both legislative and bureaucratic professionalism to change over time, because of the timing of the introductions of certain federal policies (to be discussed later), I will use a Cox non-proportional hazards model in my analysis (Taylor et al, 2014). The reason for this type of regression is that it will allow me to determine the effects of each of my

explanatory variables on the likelihood of adoption of any one of these policies by a state in a given year. The Cox Non-Proportional Hazards Model also does not require the assumption that all of my explanatory variables will hold the same levels of influence over my dependent variables (called the proportional hazards assumption), and will instead analyze the average of the influence the variable has over my given time frames.

This will all be to determine the effects of each on the state's propensity for adoption of 3 different policies regarding gender identity: hate crime, nondiscrimination in employment, and birth certificate amendment policies. Hate crime policies are those which penalize further the crimes that are motivated by distinct prejudice against a person for their gender identity or expression. Nondiscrimination policies in employment focus on those policies that protect transgender members of the workforce. Lastly birth certificate amendment policies allow for a transgender person to change their sex-marker easily on their birth certificate, though other policies relate to the ability to change the gender-marker on other identity documents, such as drivers' licenses. My analysis of birth certificate policies, however, will only count states in which neither a court-order nor proof of sexual reassignment surgery (SRS) is required in order to change the birth certificate, as these both place undue strain on the trans* individual seeking the correction.

It is important to explain the limitations of this scope. While important and influential organizations, like the Human Rights Campaign, offer insights as to which states have adopted certain transgender policies, and which have not, it is important to note that these policies themselves are a limited method of protecting the transgender community in the United States. For example, while many transgender

individuals identify in categories that are not binary (male/female or boy/girl), only 2 states have adopted measures so that individuals can identify as non-binary on their drivers' licenses (though not on other important identity documents) (TLC). In addition, both hate crime and employment nondiscrimination policies have been critiqued by trans* activists, as they assume that these acts of hatred or discrimination are always able to be separated and isolated to one specific identity category. As was shown earlier, trans* women of color are much more likely to be the targets of violent crimes than trans* women as a whole (PAN, "WHY"). But, does this mean that the individual in question was murdered solely because they were transgender, and that the workings of racism, class bias, or sexism did not also play an important role in this terrible crime? These policies, then, are problematic, as they only protect a transgender person who is already assumed to be white, middle class, and male (or presenting as masculine) (Halberstam, 2016). Individuals who fall among other marginalized categories are unable to claim in court that it was in fact the influence of multiple forms of oppression, such as racism and transphobia, which influenced their attacks (Halberstam, 2016). Unfortunately, states have not adopted many policies that directly target the problems faced by trans* people who are also racial/ethnic minorities, low/working class, or fall within other marginalized identity categories, and many radical and queer activists often see the state as adding to, rather than ameliorating, the problems of transgender communities, so analysis of other policies was both unattainable and unhelpful.

I found information on these three (problematic) policies and their dates of implementation in the various states through the information provided by the Human Rights Campaign and the Transgender Law Center, which both collect data on statewide transgender protections drawn directly from sources like legislative bills,

state bureaucratic departments dealing with identity documents, and other pieces of evidence (TLC). All of these policies were coded as binary variables, such that states will have a 0 for all years in which a transgender policy was not adopted, and a 1 in all years that had an enacted transgender policy (including the year of adoption). This essentially made my analysis a determination of how much my selected variables influenced the likelihood that a state will turn from a 0 (no policy) to a 1 (policy) in any given year. Much of my data on independent variables was obtained from the Institute for Public Policy and Social Research, which collects data from a wide variety of sources and makes it publically available (Michigan, 2014). All missing data was filled with data from statistical "multiple imputations" models in R in order to ensure that state-year observations would not completely be disregarded from analysis.

Policy Learning Theory: Independent Variables

The independent variables in this analysis come from each of the three theoretical models introduced (Policy Learning, Interest Group, and Morality Policy). Within the scope of Policy Learning, I will test the variables that focus on the professionalization of both the bureaucracy and the legislature. The measurement of bureaucratic professionalization will replicate the measure used from previous research regarding birth certificate change policies (see Taylor et al, 2014) which utilized the Pew Center on the States' reviews of government performance. Unfortunately, this performance review is only available for years 1998, 2000, and 2008, but it was one of the few statistically significant variables in the study on just birth certificate policies, so its influence is verifiable (Taylor et al, 2014). This measure gives a letter-grade to states within 5 categories: financial management, capital management, human resources, management for results, and information

technology, as well as an overall letter-grade that is the average of these 5 measures (King et al, 2002). To measure the professionalization of the legislature, I utilize the Squire Index's measurements of state legislative professionalism from 1992, 2007, and 2015, which basically compares the professionalization of each state legislature to that of congress, as well as the second Bowen and Greene legislative professionalization scores that were made in response to the Squire Index, which measures the professionalization of the legislature with the main focus on legislative resources. The first Bowen and Greene measure was compared to the Squire Index in the piece that originally set up their structure, and it had affirmed the statistical prominence of the Squire Index as a measure of legislative professionalization.

In addition, I will assess the idea that policies vertically diffuse from the federal government. Of course, to do this, the federal government would need to create transgender related policies, and (thankfully) they have. This is all to identify whether or not state bureaucratic professionalization is important by itself, or if it is only a significant explanatory variable once a branch of federal government releases policy examples that professionalized bureaucracies can copy from. For birth certificate policies, I utilize the same policy recommendations utilized by Taylor et al, which focused on the release of policy recommendations from the National Center of Health Statistics via the Centers for Disease Control and Prevention (CDC) (Taylor et al, 2014). The CDC released 2 sets of "model vital records statutes" in 1977 and 1992 that states could use as guidelines when crafting their own policies regarding birth certificate amendment changes (Taylor et al, 2014). I will model this after the birth certificate amendment piece (see Taylor et al) regarding the professionalization of both the legislature and the bureaucracy by including multiplicative interactions

terms of these both, combined with a lagged measure of federal diffusion via the CDC guidelines (Taylor et al, 2014). As with the previous literature, I will use an indicator for the CDC recommendations which will be coded at 0 before the guidelines were issued, 1 from 1978-1992 after the first issues of the model vital records statutes, and 2 for 1993-present after the revised issuance of these statutes (Taylor et al, 2014).

In regards to employment nondiscrimination policy, I will utilize a similar pairing of both bureaucratic and legislative professionalization (separately) with a lagged measure of federal diffusion. In this instance, I will focus on the memo issued by the Office of Personnel Management to all federal agencies, regarding the support of transgender employees in the workplace ("Milestones", 2015). This was issued in May of 2011 to other federal agencies, and represents a clear affirmation of the federal government's positioning to prevent discrimination against transgender government employees in the workplace ("Milestones", 2015). I will use this event similarly to how the CDC's "vital records statutes" was used, and form an indicator of 0 for all years in the sample leading up to 2011, and an indicator of 1 for 2011 onward.

Lastly, the vertical diffusion of federal hate crime policy will be measured through a similar process which pairs the professionalization of both government sectors (bureaucratic and legislative) with the lagged-measure indicators for federal influence. In this case, the measure will surround the federal government's introduction of the Matthew Shepard and James Byrd Hate Crimes Prevention Act of 2009, which enumerated sexual orientation, gender identity, gender, and disability as protected categories under federal hate crime laws (Matthew Shephard, 2015). With this, I will code all years leading up to 2009 (excluding 2009) as 0, and 2009

(inclusive) onward as 1. Through these three pairings of policy and federal policy recommendations (or precedents), I hope to attain a more time-sensitive view of the vertical diffusion and policy-learning of states on transgender policies.

Interest Group Theory: Independent Variables

Recall that the most important factors in the interest group model were the sympathetic ideology of political elites, strength of LGBT+ (or other community) interest groups, and the incremental policy change strategy (rather than comprehensive protections in each aspect all at once) (Haider-Markel and Meier, 2003). This is because researchers theorize that these policy changes are made during times of low-salience of the issue, when powerful LGBT+ activist groups can lobby sympathetic political elites to vote on progressive LGBT+ issues (Haider-Markel and Meier, 2003). This is more efficiently done when policymakers do not have to "sign-on" to every aspect of the organization's agenda all at once (hence the incremental policy changes), as opposing policymakers would not see the bill as too politically influential and so would be less likely to deny it (Haider-Markel and Meier, 2003).

I will operationalize the first factor, sympathetic ideology of political elites, with two separate measurements. The first will measure the percentage of Democrats in the legislature, as these policymakers can be considered the "political elites" who decide on these issues, and Democrats are more likely to hold liberal views and thus vote for LGBT+ policies (Lewis and Taylor, 2014). These measurements come from the data of Carl Klarner, a social scientist from Harvard who has done research in this area, via the IPPSR database for state policy. This data was then supplemented for the unobserved years from 2013-2018 by the National Conference of State

Legislatures, which provides the political makeup of each state legislature (Nebraska was wholly left out of this variable because of its non-partisan legislature).

In order to operationalize the next factor, the strength of LGBT+ organizations, I will utilize information on the campaign contributions to candidates and committees that stemmed from LGBT+ organizations. This information is made publically available through the online resource “followthemoney.com”. This is an enhanced measure of the overall LGBT+ organizational strength within a state as it provides a direct measure of these organizations’ influence on state-level politics. The contributions are divided by the total amount of campaign contributions given in that same year by all organizations, in order to determine the relative strength of these LGBT+ groups. Unfortunately, this website demonstrated that no transgender-specific organizations had made contributions to campaigns, and so the strength of trans* specific organizations was not able to be determined.

Lastly, the factor describing incremental policy changes will be measured in by the implementation of previous sexual orientation policies. I will focus on the available measures of employment nondiscrimination policies and hate crime policies that discuss sexual orientation, given by the same data portrayed on the transgender law center website (TLC). State-years in which these policies are not in place will be coded as 0, all others (including adoption year) will be coded as 1. This is, as previously mentioned, an unavailable measure for transgender nondiscrimination policies, and so the influence of both of these sexual orientation policies will be used as a proxy in order to determine the relative influence of previously instituted, yet indirectly related policy changes.

Morality Policy Theory: Independent Variables

To measure the factors associated with morality policy theory, we must attain data on the ideological orientation of state officials and citizens, as well as the mechanisms through which the citizens are able to politically advocate on their ideological views. The first set of information that needs to be collected focuses on the ideological orientation of the state. This will be collected through Berry et al's ADA/COPE measure of state governmental ideology, which describes state governments as mainly liberal, conservative, or in-between (Lewis and Taylor, 2014, Berry, 2010). ADA/COPE provides two measures of state government ideology, an original and a revised version, though the original will be utilized in place of the revised (or "nominate" version) as it was further verified by later research (Berry, 2010). In addition, the general political culture of the state as measured in Daniel Elazar's model of cultures, such as traditionalistic (in favor of preserving "traditional values" and benefitting state elites), moralistic (culture that portrays collective action through politics as benefitting the common good), and individualistic (culture in which the individual's needs are centered above all else) (Morgan and Watson, 1991).This will be used to determine the general cultural orientation of the state (Morgan and Watson, 1991). As this is a categorical variable, all data will use the individualistic category as a reference, such that statistically significant observations will be noted as "significantly different from states with individualistic cultures". Though an older measure, the political culture of a state has been found to significantly influence the adoption of transgender birth certificate policy in previous literature, as it may hint at the reasoning behind the accepting or rejecting of these policies (Taylor et. al, 2014, Morgan and Watson, 1991).

In addition, the political competition between the two parties at the time might prove important, as both divided governments and governments with high levels of

political competition may be less likely to stand with strongly moral policies in fear of losing middle-area voters. Divided government information was collected through the IPPSR database from Carl Klarner's data, and are considered divided (and labeled 1 in all years with divided governments) when there is a governor of a different political party than the party with a majority in the legislature (Klarner, 2013). This is considered undivided when the party in the legislature is large enough to have "veto-proof majorities". Political competition will be measured through the "folded Ranney Index" which measures the levels of political competition of the parties in a given state via their performance in previous elections, numbers of registered voters, etc. This is done in 4-year moving averages of each composite score, and the same goes for the second measure of electoral competitiveness from the Holbrook Van Dunk model (which also utilizes 4-year moving averages) (Klarner, 2013, Holbrook Van Dunk, 1993).

The next few variables focus on the ideology of the citizens in a given state. To measure this directly, I will use Berry et al's citizen ideology series, closely related to their government ideology series, which captures the widespread ideological orientation of the state's citizens via surveys (Lewis and Taylor, 2014). Next I will capture the religiosity of a given state, which will be measured from data collected on the percentage of citizens of a given state that are evangelical Christians, which represent one of the largest sects of anti-LGBT+ religious communities in the USA (Van der Toom et al, 2017). Another important piece of data in this section describes the number of same-sex households in the state per 1,000 households, which reflects the number of individuals who are closely related to (via the connection of LGB and T politics), and assumed supportive of, the transgender community. This data was collected from the United States Census, which started reporting the

number and proportion of “unmarried same-sex households” in 2000, and then again in every year since 2005. Also collected from the U.S. Census is the average level of educational attainment of individuals in a state, which is measured by the percentage of citizens over the age of 25 who hold bachelor’s degrees. Higher education is often correlated with more liberal citizens, and so states with higher levels of college-educated citizens should be more likely to enact more progressive policies (Lewis and Taylor, 2014). Lastly, the factor regarding the mechanisms through which citizens can express themselves politically will be measured through the direct democracy scale that is given by Lewis et al’s research in 2011. This will focus specifically on the use of ballot-initiatives, in which citizens can vote directly on policies by petitioning to add them to voting ballots (Lewis, 2011). This will be measured through data collected in Lewis’s piece on direct democracy and sexual orientation policies, which ranks direct democracy institutions based on how many restrictions they have in place (with relatively less-restricted having high scores and states without direct democracy having scores of 0) (Lewis, 2011).

Results and Analysis

As my first set of hypotheses focus on the relationship between state bureaucratic and legislative professionalization and the type of policy, I present the results of a Cox Non- Proportional Hazards Model in Table 1. This model is one of the many used in what is known as “survival” or “event history” analysis, and the results allow us to determine the relative “risk” that the explanatory variables provide for the specific policy in question, or the “hazard ratio”. The hazard ratio is the relative risk, or likelihood, of an event occurring while holding all other variables in the model constant in order to get the very specific level of risk introduced by the variable in question (Mills, 2011). In this analysis, it is the relative “risk” that a state

will adopt a transgender policy in any given year. This ratio is given by a variable's exponentiated coefficient (under the "exp(coef)" label in Table 1). As an example of interpretation of a binary variable (though not statistically significant), the hazard ratio of .606 in the Divided Government variable in Table 1 indicates that the risk of adoption of transgender policies in states that have a divided government (in which the legislature and the governor are of two different political parties) would be only .606, or 60%, of the risk for the adoption of this same policy by a state with an undivided government. For non-binary variables, the hazard ratio is interpreted as the percent change in hazard given a one unit increase in the variable (Mills, 2011).

In regards to the initial hypotheses relating the Policy Learning model and the adoption of these policies, my findings are not fully congruent. Recall that the original theory was that birth certificate amendment

Table 1.	Employment Non-Discrimination		Hate Crime		Birth Certificate	
(M.P. Model)	exp(coef)	se(coef)	exp(coef)	se(coef)	exp(coef)	se(coef)
Citizen Ideology	0.978	0.014	0.988	0.015	1.061 **	0.024
HVD Comp.	0.985	0.016	1.007	0.017	1.079 ***	0.026
Ranney Comp.	390.914 **	2.358	300.820 **	2.850	89.831	5.712
Direct Democracy	0.845 ***	0.050	0.921	0.055	0.999	0.077
Divided Government	0.606	0.318	1.284	0.397	0.534	0.766
% 25+ with B.A.	1.078 *	0.041	1.237 ***	0.037	0.959	0.069
Political Culture – M	0.843	0.230	0.525 ***	0.247	0.491	0.447
Political Culture - T	0.194 ***	0.396	0.446 **	0.406	7.153E-20 ***	4.090
State. Gov. Ideology	1.022 ***	0.005	1.026 ***	0.005	1.002	0.010
% Evangelical	1.057 ***	0.011	1.042 **	0.016	1.023	0.033
% Same-Sex Households	211.278 ***	0.696	963.787	0.659	44.559 ***	0.903
(I.G. Model)						
Empl. Non-D S.O.	7.454 ***	0.406	1.110	0.309	0.853	0.558
Hate Crime S.O.	2.930 ***	0.390	2 2.936 ***	0.802	3.121E+28 ***	3.304
% Dems in Legislature	0.997	0.009	1.015	0.011	1.049 **	0.020
Rel. Interest Groups	1.024	0.046	1.058	0.052	1.603 ***	0.084
LGBT I.G. Strength	1.061***	0.021	1.033	0.049	0.997	0.065
(B.P. Model)						
Bowen Legislative Prof.	1.734 ***	0.145	1.941 ***	0.153	0.918	0.173
Squire Legislative Prof.	0.231 *	0.869	0.118 *	1.178	9.827 **	1.048
Event*Bureau. Prof.	0.948	0.409	0.570	0.440	1.084	3.136
Bureaucratic Prof. Score	0.911	0.302	2.433 **	0.348	1.111	3.124

* - The variable is statistically significant at the .1 significance level. **- The variable is significant at the .05 significance level.
***- The variable is significant at the .01 significance level (most significant).
Exp(coef): the exponentiated coefficient of the variable, used to determine Hazard Ratio
Se(coef): The standard error of the coefficient.

policies would diverge from the other two because they had a different level of complexity to them, and were also more "novel" of a policy change given that they did not have a sexual orientation counterpart. Because of these two features, birth certificate policies were only expected to be implemented in states that had high enough levels of bureaucratic capacity to focus on such complex policies (Taylor et al, 2014). In addition, I had theorized that legislative capacity be included, as the legislatures themselves are tasked with dealing with the adoption of new policies. The results of the bureaucratic professionalization score, developed from the Pew Research Center's analysis of states, refute our findings, as the only statistically significant results connected to this score align with the hate crime policies, which

were expected to not be influenced by the level of professionalization of the bureaucracy and ultimately forces us to reject hypothesis 2. As such, we fail to reject hypothesis 1 indicating that there would be no relationship between employment nondiscrimination policy and bureaucratic professionalization, and we reject hypothesis 3, as bureaucratic professionalization was not found to significantly influence the risk, or likelihood, of adopting transgender birth certificate policies. We reject H2 with the results which indicate that each 0.1 increase in grade-points (on this GPA scale) of bureaucratic professionalization indicates a roughly 14% (exp(coef) – 1) increase in the likelihood of a state adopting a transgender hate crime policy.

The 4th and 5th hypotheses must also be rejected, as both employment nondiscrimination policies and hate crime policies both show statistically significant scores of legislative professionalization. The theory that I had extended held that a more professionalized legislature, like the state bureaucracy, would be important in discerning which legislation to focus on and pass and would thus be more effective. Thus, as the legislatures became more advanced and professionalized, they would be more likely to adopt more novel policies like transgender policies, though the professionalization would not influence the adoption of more “routine” nondiscrimination or hate crime policies.

The results of the Bowen score of legislative professionalization and the Squire Index of legislative professionalization, however, disprove this theory, as both are statistically significant in all policies, and not just the novel birth certificate policies. The coefficient scores for the Bowen index were positive (>1), and can be interpreted such that each 1 unit increase (on this scale from -4 to 4) incurs a 73.4% increase in the risk associated with the state adopting the employment

nondiscrimination policies and a 94.1% increase in the risk of the state adopting a gender identity related hate crime policy. The 6th hypothesis fails to be rejected, however, as the Squire Index was found to be positively and significantly associated with birth certificate policies in this way. The coefficient indicates that for every .01 unit increase on the Squire Index scale, the hazard ratio of adopting a birth certificate policy increases by 8.8%, demonstrating that professionalization of the legislature is significant and positively associated, in some form, for each of the policies in this study.

Interestingly, however, the statistically significant Squire Index coefficient was negative (exp(coef)<1) in both the employment nondiscrimination and the hate crime policies. This indicates that as the Squire Index increases by 0.1 units on its 0-1 scale, the relative risks of the states adopting an employment nondiscrimination or hate crime policy decreases by 7.69% and 8.82%, respectively. While these results do, at first glance, seem contradictory, they may actually allow us to illuminate the relationship between which pieces of legislative professionalization are important in determining the risk of policy adoption. As the Squire Index primarily incorporates aspects of legislative professionalization like average pay per members, average length of legislative sessions, and average staff per member, we can assume that these variables are taken out of the important factors of the Bowen score, or that they are “controlled” for (Squire, 1992; Squire, 2007). Instead, as the increases in the second model of the Bowen score indicate increases in professionalization associated with the expenditures on resources in each legislative body, we can see that this may be the variable that holds the most positively-associated influencing power on our hazard ratios (Bowen and Greene, 2014). More research into the specifics of this distinction, however, is certainly required.

Table 2.	Employment Non-Discrimination 1980-2014		Hate Crime 1980-2014		Birth Certificate 1980-2014	
(M.P. Model)	exp(coef)	se(coef)	exp(coef)	se(coef)	exp(coef)	se(coef)
Citizen Ideology	1.002	0.014	1.009	0.017	1.088***	0.021
H.V.D. Comp.	0.976	0.018	0.972	0.018	1.060*	0.035
Ranney Comp.	65 5.572**	2.651	5588.335**	3.391	6.304	7.081
Direct Democracy	0.977	0.063	0.989	0.066	1.202	0.136
Divided Government	0.822	0.354	2.142*	0.435	1.323	0.783
% 25+ with B.A.	1.102**	0.046	1.261***	0.039	1.040	0.080
Political Culture - M	0.817	0.290	0.842	0.305	0.427	0.713
Political Culture - T	0.375**	0.489	0.362*	0.535	1.876E-16***	9.279
% Evangelical	1.038	0.026	1.025	0.019	0.985	0.047
State Gov. Ideology	1.015***	0.005	1.018***	0.006	0.982	0.015
% Same-Sex Households	2 2.714***	0.710	17 4.370***	0.668	8.203***	0.778
(I.G. Model)						
Empl. Non-D S.O.	1 2.686***	0.772	1.146	0.328	3.634E+23***	7.724
Hate Crime S.O.	7.995E+55***	8.249	1 9.350***	0.829	2.137E+21***	5.108
Rel. Interest Groups	1.017	0.058	1.033	0.058	1.723***	0.101
LGBT I.G. Strength	1.039*	0.022	0.979	0.056	1.005	0.087
% Dems in Legislature	0.997	0.011	1.029**	0.013	1.079***	0.022
(B.P. Model)						
Bureaucratic Prof. Score	1.123	0.279	2.949***	0.346	9 0.005*	2.580
Event*Bureau. Prof.	1.856***	0.171	2.144***	0.150	1.199	0.219
Bowen Legislative Prof.	0.047**	1.251	0.068**	1.235	1.109	1.405
Squire Legislative Prof.	0.649	0.430	0.775	0.451	0.024	2.811

The next few hypotheses revolve around Haider-Markel's theories on the issue of salience and how it affects the models being studied (Haider-Markel and Meier, 2003). The theory suggested that when issues did not have high levels of salience, the interest group model would provide the most explanatory power as it would rely on the ideas of powerful, heavily-invested interest groups and a small number of sympathetic political elites, rather than those of the entire voting population, to slowly and continuously affect policy change. In the years 1980 to 2014, in which the news media demonstrates the relatively low salience of

transgender issues on both ends of the political spectrum, this theory would assume that interest group model variables are what influence policy adoption the most. In terms of hypotheses 7 through 9, we can safely say that this is not the case. Not only do each of the regression analyses show significance in areas other than the interest group explanatory variables, but Table 2 demonstrates that two of the main features (LGBT+ interest group strength and support of sympathetic elites) were never both significantly related in the same model. This indicates that this theory that portrayed these two variables as central and important, while plausible, was statistically insignificant. Interestingly, however, the birth certificate model held high levels of significance when it came to the adoption of prior, indirectly related sexual orientation policies. Thus, we see that hypotheses 7-9 are not supported by the evidence, as the interest group model holds some of the many influential and statistically significant explanatory variables in each subset of years. This shows us that the salience of the policy does not inherently call for a change in the theoretical model associated with policy adoption of transgender bills.

The last three hypotheses, 10 through 12, propose that, in the years following the spike in news coverage of transgender related topics, morality policy theory will present itself as the only important model in explaining the adoption of trans* policies. Table 3 provides evidence to show that we cannot accept this theory alone as an explanation for the adoption of transgender policies in contexts of high-salience. All three models hold influential explanatory variables, and so we cannot say that one theoretical model is more appropriate than others in times of high salience.

Table 3.	Employment Non-Discrimination 2015-2018		Hate Crime 2015 - 2018		Birth Certificate 2015 - 2018	
(M.P. Model)	exp(coef)	se(coef)	exp(coef)	se(coef)	exp(coef)	se(coef)
Citizen Ideology	0.938**	0.026	0.979	0.034	1.103	0.063
H.V.D. Comp.	1.009	0.023	1.067**	0.027	1.131***	0.046
Ranney Comp.	5 4.486	6.954	0.002	9.305	29730490*	1 0.188
Direct Democracy	0.803***	0.083	1.091	0.100	1.012	0.198
Divided Government	0.935	1.000	2.843	1.326	0.074*	1.554
% 25+ with B.A.	0.997	0.071	1.058	0.088	1.042	0.156
Political Culture - M	0.722	0.391	0.359*	0.544	0.243**	0.698
Political Culture - T	0.141***	0.626	1.486	0.717	2.817E-34***	5.358
% Evangelical	1.056**	0.023	1.004	0.042	1.089	0.057
State Gov. Ideology	1.036***	0.009	1.057***	0.013	1.009	0.024
% Same-Sex Households	10 7.267	2.270	10 8.078	2.852	43 9.486	5.281
(I.G. Model)						
Empl. Non-D S.O.	7.501***	0.629	0.723	0.542	0.377	0.795
Hate Crime S.O.	1.542	0.453	7.996E+65***	1.610	1.575E+38***	1 1.861
Rel. Interest Groups	0.871	0.116	1.245*	0.121	1.700*	0.318
LGBT I.G. Strength	1.155***	0.049	1.242	0.438	1.954	0.554
% Dems in Legislature	1.005	0.015	1.000	0.017	1.035	0.039
(B.P. Model)						
Bureaucratic Prof. Score	0	5.609E+14	0	6.064E+14	Inf	9.095E+14
Event*Bureau. Prof.	1.075	0.257	1.471	0.277	0.747	0.478
Bowen Legislative Prof.	2.868	1.400	0.061	1.918	12 0.499**	1.897
Squire Legislative Prof.	Inf	5.609E+14	Inf	6.064E+14	0	9.095E+14

Unfortunately, the difference in equations makes comparison among the tables, and between variables, statistically unsound. In this way, it cannot be firmly stated that morality policy variables grew in their importance to this regression, nor that they are the only important explanatory variables in years of high salience of transgender issues, and we thus reject hypotheses 10 through 12.

Conclusion

This analysis has forced us to rethink the ways in which these models are associated with the dependent variables of transgender policies. The assumptions reflected in hypotheses 1 through 3 need to be re-evaluated as hate crime policies distinguished themselves here from both employment nondiscrimination policies and

birth certificate policies. As they were the only policy to be significantly associated with bureaucratic professionalization, this either calls for a change to the piece of the Policy Learning theory that assumes that it only is effective with more complex policies, or a rethinking of which of these transgender policies are complex. These findings immediately cast doubt on the idea of policy "novelty" being an important reason for the "complexity" of transgender birth certificate amendment policies, as the more "novel" birth certificate policies were less associated with this theoretical model.

In addition, analyses of hypotheses 4 through 6 indicate that legislative professionalization, which I proposed as another important factor within the bureaucratic professionalization model, were also not exclusively linked to the birth certificate policies. This again hints at a re-formatting of the differences between transgender policies, as they do not reflect clear distinctions in their associations with the Policy Learning model. The Policy Learning model also did not show a great deal of promise in its applicability. Although the model was statistically significant and influential in determining the risk of adoption of transgender policies in many instances, the fact that it was associated with each policy, and not just birth certificate control policies that were assumed to be more "complex" or novel (as I had argued), offers up some doubts as to how soundly all pieces of this theory are connected. As each theoretical model had some statistically significant explanatory variable, we cannot say that differences in salience or policy novelty (complexity) held any bearing on which theoretical model would be applicable. Conversely, it can be said that all theoretical models should be examined in order to determine the likelihood of a state adopting a specific transgender policy.

These results should be interpreted with a grain of salt, however, due to the limitations of this study. Unfortunately, according to the nature of the Cox Non-Proportional Hazards Model, testing the significance of the variables within these models across the different regression models was not possible, thus limiting the scope of my analysis. In addition, information on transgender people in general is still growing and has not been thoroughly collected in the past, due to the small size and low salience of this community. As such, information like the strength of transgender-focused interest groups had to be estimated from the total number of LGBT+ groups and their campaign donations. In this way, while the data was the most accurate that it could be given the circumstances, this calls for more research to be done on this small and marginalized population within the U.S. Other scores like bureaucratic professionalization and the percentage of same-sex households, for example, were not collected in every year of the model and so had to be imputed. While this was not necessarily problematic, as imputing data consistently allows for good estimations to be made about hazard ratios and statistical significance, it is always preferable to have more thoroughly collected data. Lastly, the salience measure of the model, while important and evidence based, provided a cut off year that may have been too recent for the data to be properly analyzed. The subset that consisted of years only from 2015-2018 could have been problematic because of the fact that it is still 2018 (though some birth certificate policies had been adopted in the early months) and also represented a small number of observations in comparison to the other data sets. This may have been the reason behind the “inf” expressions listed in Table 3, which, although not statistically significant in the data, were not as accurate of estimations of the beta as I would have hoped.

In addition, the policy scope of this analysis also provided some theoretical limitations. While this analysis provided a solid understanding of the explanatory variables associated with adoption of three state-level policies, the policies themselves were limited. All three policies assumed that the individual for whom they were protecting fell into a binary category of sex or gender (male/female), and that the problems associated with these individuals and communities solely stemmed from transphobia, rather than the interaction between transphobia, race, class, and other categories of distinction. In this way, these policies represent a subset of transgender politics that are “normalizing”, meaning that they are implemented with the moral understanding that “trans* people are no different from other groups of people” and that all transgender people would require, and have access to, the protections provided by these policies equally. Unfortunately, previous research has shown that this is not the case, as transgender people who are white and middle to upper class are less likely to require these protections, as they face lower rates of violence, though are more likely to have access to them, as their violence does not also stem from the violent oppressions of racism or classism (PAN, “WHY”, Halberstam, 2016).

Although limited, this analysis of both salience and policy complexity within the issues of transgender birth certificate, hate crime and employment nondiscrimination policies does shed some light on the important factors associated with policy adoption in this area.

Though more research on the exact fit of these models is needed, as the testing was not designed to be able to directly compare the regression analyses of each transgender policy and its determinants. Hopefully this, and other research in the future, will be applicable to transgender activists and citizens who continue to fight

for their rights today, so that they may better address the institutional changes required to ensure their safety and claim the basic human rights that are not universally applied to them in this country.

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Appendix A: Codebook

Year: Year being measured

election_year: Election year of the given measurement, just measures year prior to the current year. Unused.

State: State being measured

H_Crime: Whether or not a Hate Crime Policy is in a given state, 0 meaning none, 1 indicating the presence of a "Gender Identity" Hate Crime Law

Empl_NonD: Whether or not am Employment Nondiscrimination Policy has been implemented. 0 meaning none, 1 indicating the presence of a policy in a given state.

Birth_Cert: Whether or not individuals are legally able to change their gender markers on Birth Certificates

All three dependent variables collected from: http://www.lgbtmap.org/equality-maps

Prop_Dem_Leg: The percentage (of 100%) of Democrats in the Legislature of a given state

Ranney, Austin. 1976. "Parties in State Politics." In *Politics in the American States, 3rd ed.*, edited by Herbert Jacob and Kenneth Vines. Boston, MA: Little, Brown & Co.

Klarner, Carl, 2013, "Other Scholars' Competitiveness Measures", http://hdl.handle.net/1902.1/22519, Harvard Dataverse, V1

Div_Gov: Codes for the party "truly" in control of state government. This uses the first definition of "truly in control of state government." This definition ignores the party of the governor when there are veto proof majorities in the state legislature. Party control of state government is coded on the basis of the party in control of the state legislature in those instances. Without veto proof overrides, both chambers and the governor must be controlled by the same party for non-zero scores.

Klarner, Carl, 2013, "State Partisan Balance Data, 1937 - 2011", http://hdl.handle.net/1902.1/20403, Harvard Dataverse, V1

Dir_Dem: Direct Democracy as measured by Bowler, Shaun, and Donovan's dynamic measure of direct democracy. Lower scores indicate more restrictions on direct democracy, with scores of 0 meaning the state does not have any direct-democracy institutions.

Bowler, S., & Donovan, T. (2000). *Demanding choices: Opinion, voting, and direct democracy*. University of Michigan Press.

Pol_Cult: The political culture as measured by Daniel Elazar, 0 = Traditionalistic, 1 = Individualistic, 2 = Moralistic

Elazar, D. J. (1972). *American federalism: A view from the states*. Crowell.

Perc_Bach: The percentage of citizens above the age of 25 who hold Bachelor's degrees.

Data collected from the U.S. Census Bureau.

Empl_NonD_SO: The presence of a nondiscrimination law that references sexual orientation, with 1 = present, 0= no bill

H_Crime_SO: The presence of a hate crime law that references sexual orientation, with 1 = present, 0= no bill

Data for introduction of Sexual Orientation policies collected from: http://www.lgbtmap.org/equality-maps

Mon_Streng_LGBT: The amount of campaign donations contributed by LGBT+ Organizations as a ration to the whole of the donations contributed to campaigns in that year. Designed to measure the relative strength of the LGBT organizations in that state.

Data Collected from: https://www.followthemoney.org/

Citi_Ideal: State citizen ideology measured from the ADA/COPE scale, with conservative (lower values) to liberal (higher values).

Cite: Berry, William D., Evan J. Ringquist, Richard C. Fording and Russell L. Hanson. 1998. "Measuring Citizen and Government Ideology in the American States, 1960-93." *American Journal of Political Science*, 42:327-48.

Comp_Ran: Ranney measures of political competitiveness with four-year moving averages. The scale is between .5 and 1 with higher values representing higher levels of competitiveness.

Cite: Ranney, Austin. 1976. "Parties in State Politics." In *Politics in the American States, 3rd ed.*, edited by Herbert Jacob and Kenneth Vines. Boston, MA: Little, Brown & Co.

Klarner, Carl, 2013, "Other Scholars' Competitiveness Measures", http://hdl.handle.net/1902.1/22519, Harvard Dataverse, V1

Comp_HVD: Measure of Electoral Competitiveness by Holbrook and Van Dunk that is 100 minus (-) the average percent of votes winning candidate received, winning margin, percent of uncontested seats, and percent of safe seats all measured over a 4 yr. moving average.

Cite: Holbrook, Thomas M., and Emily Van Dunk. 1993. "Electoral Competition in the American States." *The American Political Science Review*, 87(4): 955–62.

Leg_Squire: the Squire Index measurement of legislative professionalization, with higher scores (on the 0-1 scale) indicating higher levels of professionalization, mainly focusing on the legislature's average pay to members, average days in session, and average staff per legislator.

Cite: Squire, Peverill. 1992. "Legislative Professionalization and Membership Diversity in

State Legislatures." *Legislative Studies Quarterly*, 17:69-79.

Squire, Peverill. 2007. "Measuring Legislative Professionalism: The Squire Index Revisited." *State Politics and 'Policy Quarterly*, 7(21): 1-27.

Leg_Bow_1: Predicted Value of the first dimension multidimensional scaling legislative professionalism score, with lower scores (from -2 to 8) indicating lower professionalization. This measure places more emphasis on legislative expenditures.

Cite: Bowen, Daniel C. and Zachary Greene. 2014. "Should We Measure Professionalism with an Index? A Note on Theory and Practice in State Legislative Professionalism Research." State Politics & Policy Quarterly 14(3):277–296.

Leg_Bow_2: Predicted Value of the second dimension multidimensional scaling legislative professionalism score with lower scores (scale from -4 to 4) indicating lower levels of professionalization. This measure places more emphasis on legislative salaries.

Cite: (Bowen, Daniel C. and Zachary Greene. 2014. “Should We Measure Professionalism with an Index? A Note on Theory and Practice in State Legislative Professionalism Research.” State Politics & Policy Quarterly 14(3):277–296.)

IG_Relig: Number of state-wide political interest groups that can be categorized as religiously-based.

Gray, Virginia, and David Lowery. 1988. “Interest Group Politics and Economic Growth in the U.S. States.” *The American Political Science Review*, 82(1): 109–31.

Lowery, David, Virginia Gray, and John Cluverius. 2015. “Temporal Change in the Density of State Interest Communities 1980 to 2007.” *State Politics & Policy Quarterly*, 15(2): 263–86.

Perc_SS_H: Percentage of households within the state that consist of two same-sex unmarred partners.

Data collected from the U.S. Census.

Relig (replaced with Prop_Evang): Percentage of religious adherents (defined as all regular churchgoers, and not just members) in a state, in relation to the entire population of the state at the time.

Data collected from the Association for Religious Data Archives at Penn. State University

St_Gov_Ideo_1 : This was the authors’ original measure of state government ideology. Scale is 0 to 100, with higher scores indicating more liberal governments.

Cite: (Berry, William D., Evan J. Ringquist, Richard C. Fording and Russell L. Hanson. 1998. “Measuring Citizen and Government Ideology in the American States, 1960-93.” *American Journal of Political Science*, 42:327-48.)

St_Gov_Ideo_2 : This was the authors’ second measure of state government ideology. Instead of relying on ADA and COPE scores to construct a measure, the authors rely on “Common-Space” congressional ideology scores to construct their measure of state party ideology, with higher scores indicating more liberal government ideologies.

Cite: (Berry, William D., Richard C. Fording, Evan J. Ringquist, Russell L. Hanson and Carl Klarner. 2010. “Measuring Citizen and Government Ideology in the American States: A Re-appraisal.” *State Politics and Policy Quarterly* 10: 117-35.)

H8_Event: 0 for all years leading up to the adoption of the Federal Addition of Gender Identity into federal Hate Crime laws, 1 for all years (inclusive) after this addition (self-created)

Empl_NonD_Event: 0 for all years leading up to the adoption of the Federal Addition of Gender Identity into federal employment nondiscrimination laws, 1 for all years (inclusive) after this addition (self-created)

Birth_Cert_Event: 0 for all years leading up to first round of Vital Records Guidelines submitted by NIHS, 1 for all years until the second round of guidelines, 2 for all years after that. (self-created)

Bureau_Prof (made into “BP1”): Bureaucratic Professionalization measured by the Pew Research Center’s State Professionalism cite, coded onto a 4.0 GPA scale with higher scores indicating higher levels of professionalization

Data collected from the Pew Research Center’s “Government Performance Project”

Prop_Evang: Proportion of the state's population that is an adherent of an Evangelical-denomination charge.

Cite: Sellers, Mitchell D. "Gubernatorial Use of Executive Orders: Unilateral Action and Policy Adoption" *Journal of Public Policy: 1-25*

Appendix B: CODE:

```
#Data Subsets to calculate differences in salience. All split up before/after 2014
DataRS1<- subset(DataR, year<2015)
#Data Salience Test for years 1980-2014
library(survival)
install.packages("coxphw")
library("coxphw")
CoxModelS1<- coxphw(Surv(DataRS1$year, DataRS1$H_Crime)~
                    Citi_Ideal + Comp_HVD + Comp_Ran + Dir_Dem + Div_Gov +
                    Empl_NonD_SO +  H_Crime_SO + Perc_Bach + PolCul +
                    Prop_Evang + St_Gov_Ideo_1 + Perc_SS_H +
                    IG_Relig + Mon_Streng_LGBT + Prop_Dem_Leg +
                    BP1+ H8_Event + H8_Event*BP1 +
                    Leg_Bow_2 +  Leg_Squire,
                  data=DataRS1, template = "AHR", dfbeta.resid = TRUE)
summary(CoxModelS1)
#Data Set 2, years 2015-2018
DataRS2<- subset(DataR, year >= 2015)
library(survival)
CoxModelS2<- coxphw(Surv(DataRS2$year, DataRS2$H_Crime)~
                    Citi_Ideal + Comp_HVD + Comp_Ran + Dir_Dem + Div_Gov +
                    Empl_NonD_SO +  H_Crime_SO + Perc_Bach + PolCul +
                    Prop_Evang + St_Gov_Ideo_1 + Perc_SS_H +
                    IG_Relig + Mon_Streng_LGBT + Prop_Dem_Leg +
                    BP1+ H8_Event + H8_Event*BP1 +
                    Leg_Bow_2 +  Leg_Squire,
                  data=DataRS2, template = "AHR")
 summary(CoxModelS2)

#Employment Nondiscrimination Model 1
library(survival)
```

```
library(coxphw)
CoxModel1.2<- coxphw(formula = Surv(DataR$year, DataR$Empl_NonD)~
                      Comp_HVD+ Comp_Ran + Dir_Dem + Div_Gov + Citi_Ideal +
                     Empl_NonD_SO +  H_Crime_SO + Perc_Bach +  PolCul +
                     St_Gov_Ideo_1 + Prop_Evang + Perc_SS_H + Prop_Dem_Leg +
                     IG_Relig + Mon_Streng_LGBT +
                     Leg_Bow_2 +
                     Leg_Squire +
                      EmplNonD_Event +
                    (EmplNonD_Event*BP1) +
                     BP1,
                     data=DataR, template = "AHR")
summary(CoxModel1.2)
dfbeta.resid <- dfbeta.resid(CoxModel1.2, type = "dfbeta"")
summary(dfbeta)

#Proportional Hazards Testing for Model Adequacy
modprophaz1<-coxph(formula = Surv(DataR$year, DataR$Empl_NonD)~
                          Mon_Streng_LGBT + H_Crime_SO +
                         + Empl_NonD_SO + Dir_Dem +
                          Pol_Cult + Perc_Bach +
                          Citi_Ideal +  Comp_Ran + Comp_HVD+ Leg_Squire + Leg_Bow_2 +
                          IG_Relig + Perc_SS_H + EmplNonD_Event +
                          Relig + St_Gov_Ideo_1 + Div_Gov +
                          EmplNonD_Int +
                    BP1 + Prop_Evang +
                          Prop_Dem_Leg,
                         method="efron", data=DataR)
cox.zph(modprophaz1)

#Hate Crime Model 1
```

```
library(survival)
CoxModel1.4<- coxphw(Surv(DataR$year, DataR$H_Crime)~
                Mon_Streng_LGBT + H_Crime_SO + Dir_Dem + PolCul + Perc_Bach +
                Citi_Ideal + Comp_Ran + Comp_HVD+ Empl_NonD_SO +
                Leg_Squire + Leg_Bow_2 + IG_Relig +
                Perc_SS_H + St_Gov_Ideo_1+
                Div_Gov + H8_Event +
                H8_Event*BP1 +
               BP1 +
                Prop_Dem_Leg + Prop_Evang,
               data=DataR, template = "AHR", alpha = .1)
summary(CoxModel1.4)

#Testing for PH Assumption for Hate Crimes
#modprophaz2<-CoxModel1.4<- coxph(Surv(DataR$year, DataR$H_Crime)~
  #              Mon_Streng_LGBT + H_Crime_SO + Dir_Dem + Pol_Cult + Perc_Bach +
   #             Citi_Ideal + Comp_Ran + Comp_HVD+ Empl_NonD_SO +
    #            Leg_Squire + Leg_Bow_2 + IG_Relig +
     #           Perc_SS_H + St_Gov_Ideo_1+
      #          Div_Gov +
       #         #H8_Event +
        #        BP1 + BP1*H8_Event +
  #              Prop_Dem_Leg + Prop_Evang,
 #               method="efron", data=DataR)
#cox.zph(modprophaz2)

#Birth Cert Model 1
library(survival)
library(coxphw)
CoxModel1.6<- coxphw(Surv(DataR$year, DataR$Birth_Cert) ~
                Citi_Ideal + Comp_Ran + Comp_HVD+
```

```
                Div_Gov + Mon_Streng_LGBT + Empl_NonD_SO + H_Crime_SO +
                Dir_Dem + PolCul +
               Perc_Bach +
                Citi_Ideal + Comp_Ran + Comp_HVD+
               Leg_Squire +
                Leg_Bow_2 +
                IG_Relig +
               Perc_SS_H
               + St_Gov_Ideo_1+
               BP1 + BirthCert_Event*BP1 +
               Prop_Dem_Leg + Prop_Evang,
              data=DataR, template = "AHR", alpha = .1)

summary(CoxModel1.6)

# PH Test Birth Certs
#call(DataR)
#modprophaz3<- coxph(Surv(DataR$year, DataR$Birth_Cert)~
 #      Mon_Streng_LGBT + Dir_Dem +    Pol_Cult +
  #     Perc_Bach + Citi_Ideal + Comp_Ran + Comp_HVD+
   #    Leg_Squire + Leg_Bow_2 + IG_Relig +
    #   Perc_SS_H + Relig + St_Gov_Ideo_1+
     #  Div_Gov +
      # BirthCert_Event +
 #      BP1 + BirthCert_Event*BP1 +
  #     Prop_Dem_Leg + Prop_Evang,
   #   method="efron", data=DataR, singular.ok = TRUE)

cox.zph(modprophaz3)

summary(DataR)
```

```
table(DataR$BP1)
#seed missing values ( 10% )
DataNew.mis <- prodNA(iris, noNA = 0.1)
summary(DataNew.mis)

#imputing missing value with mi
mi_data <- mi(DataNew.mis, seed = 1)

#New Events
DataR$H8_Event<- NA
DataR$H8_Event[if(DataR$H8_Event = 0)]<-1
DataR$H8_Event[DataR$H8_Event>=1]<-2

#Making Politcal Culture Categorical (again)
DataR$PolCul<- NA
DataR$PolCul[DataR$Pol_Cult<=0]<- "T"
DataR$PolCul[DataR$Pol_Cult<=1 & DataR$Pol_Cult >0]<- "I"
DataR$PolCul[DataR$Pol_Cult<=2 & DataR$Pol_Cult>1]<- "M"

#Making BP1 variable stratified
DataR$BP1<- NA
DataR$BP1[DataR$Bureau_Prof>=3.85]<- 4.0
DataR$BP1[DataR$Bureau_Prof<3.85& DataR$Bureau_Prof>=3.5]<-3.7
DataR$BP1[DataR$Bureau_Prof<3.5& DataR$Bureau_Prof>=3.15]<- 3.3
DataR$BP1[DataR$Bureau_Prof<3.15& DataR$Bureau_Prof>=2.85]<- 3.0
DataR$BP1[DataR$Bureau_Prof<2.85& DataR$Bureau_Prof>=2.5]<- 2.7
DataR$BP1[DataR$Bureau_Prof<2.5& DataR$Bureau_Prof>=2.15]<- 2.3
DataR$BP1[DataR$Bureau_Prof<2.15& DataR$Bureau_Prof>=1.85]<- 2.0
DataR$BP1[DataR$Bureau_Prof<1.85 & DataR$Bureau_Prof>=0]<-1.5
      #& DataR$Bureau_Prof>1.5]<-1.5
#DataR$BP1[DataR$Bureau_Prof<1.5 & DataR$Bureau_Prof>1.15]<- 1.3
```

```
#DataR$BP1[DataR$Bureau_Prof<1.15]<- 1.0

#All helpful code used from the Statistics Help Desk

###03/16/2018

###Import the dataset

DataNew <- read.csv("~/Datav5 - Mult Imp.csv")

###Check the basic info on the dataset

summary(DataNew)

###if just wanna check a particular variable

###for continuous variable

summary(Datav2$Perc_Bach)

###For categorical variable

table(DataNew$Empl_NonD)

prop.table(table(Datav2$Empl_NonD))

###If I want to cgheck the continuous variable stratified by a categorical variable

tapply(Datav2$Perc_Bach,Datav2$Empl_NonD,mean,na.rm=TRUE)

###Generalized Linear model to check p-value

summary(glm(Datav2$Empl_NonD~Datav2$Perc_Bach,family=binomial,data=Datav2))


## Add more variables to the model

summary(glm(Datav2$Empl_NonD~Datav2$Perc_Bach+Datav2$year,family=binomial,data=Datav2))

exp(0.17052)

exp(0.22690)


##Add states

summary(glm(Datav2$Empl_NonD~Datav2$Perc_Bach+Datav2$year+Datav2$state,family=binomial,
data=Datav2))


###Generalized Linear Mixed Effect model

library(nlme)

library(lme4)

summary(glmer(Datav2$Empl_NonD~Datav2$Perc_Bach+Datav2$Prop_Dem_Leg+Datav2$year+(1|s
tate),family=binomial,data=Datav2))
```

```
###Survival Analysis

library(survival)

Surv()

y_empyear<-Surv(Datav2$year,Datav2$Empl_NonD, )

y_empyear


###This step is not essential

fit1_emp<-survfit(y_empyear~1)

summary(fit1_emp)

plot(fit1_emp,xlim=c(1980,2018))


###Fit COX Model

library(survival)

CoxModel1.1<-coxph(Surv(NewData2$year,NewData2$EmplNonD) ~ Mon_Streng_LGBT +
        Dir_Dem +       Pol_Cult + Perc_Bach + Empl_NonD_SO +       H_Crime_SO +  Citi_Ideal +
        Comp_Ran +    Comp_HVD +    Leg_Squire +    Leg_Bow_2 +    IG_Relig +       Perc_SS_H +
        Relig +  St_Gov_Ideo_1 +        Div_Gov +       EmplNonD_Event +      Bureau_Prof +
        Prop_Dem_Leg +        Prop_Evang, method = "efron", data = NewData2)

summary(CoxModel1.1)


###Correlation test

install.packages("Hmisc")

install.packages("ggplot2")

library(Hmisc)

library(ggplot2)


cor(CorrelationDataset, y = NULL, use = "everything", method = "pearson")


chisq.test(table(Datav2$Empl_NonD,Datav2$Pol_Cult))


summary(glm(Datav2$Empl_NonD~as.factor(Datav2$Pol_Cult),family=binomial,data=Datav2))
```

```
###Create Variable
NewData2$Birth_Cert_Event_Comb
Datav2$Birth_Cert_Event_Comb[NewData2$Birth_Cert_Event*NewData2$Birth_Cert]
table(NewData2$Birth_Cert_Event_Comb)

if (Datav5$Prop_Dem_Leg<1) then %*%100


###If you wanna export your final dataset
write.csv(Imputed.Data,"NewData2.csv")
```