

# Predicting Gun Ownership in America: Birth Cohort, Political Views, and Attitudes Towards Gun Control Legislation

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PREDICTING GUN OWNERSHIP IN AMERICA:  
BIRTH COHORT, POLITICAL VIEWS, AND ATTITUDES  
TOWARDS GUN CONTROL LEGISLATION

by

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## **ABSTRACT**

With mass shootings occurring with frightening regularity, research into gun ownership behavior is becoming increasingly important for public policy creation and public safety. While extant research tells us that firearm ownership is woven deep into the historical fabric of American culture, scholarship has yet to fully explore predictors for gun ownership. Employing 2015 Pew Research Center political survey data, this study examines the predictive effects of birth cohort, political ideology, and attitudes towards gun control legislation on gun ownership, with and without controls, using hierarchical binary logistic regression models. The presented models examine three separate cohorts: The Millennials, Generation X, and the Baby Boomers. Findings reveal that Millennials, liberal political ideology, attitudes which stress the importance of controlling, as opposed to protecting, gun ownership are significantly less likely to own a firearm. Furthermore, gender, household income, population density, southern residency, and race were also found to significantly influence gun ownership. Implications, limitations, and recommendations for future research are also discussed. While this research cannot perfectly predict individual gun ownership, it does effectively highlight several important facts to consider. From the fog of media speculation, political grandstanding, and overly simplistic and unwarranted assumptions, the results of this study bring into full view the inherent complexity of American gun ownership.

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## CHAPTER ONE: INTRODUCTION

Divisive and politically polarized, few social issues permeate national socio-political discourse, command media attention, and spur legislative gridlock the way gun ownership has in the United States. The decision to purchase and keep a firearm within the home is a behavioral practice whose cause is entirely social in nature and woven deep into the historical fabric of American culture, values, and traditions (Kocsis, 2015). Such a position needs little support as owning a gun is hardly a universal practice and even the most obdurate biological determinist would struggle in vain to ground gun ownership as a purely biological human behavior.

As a socially determined behavior, gun ownership remains malleable to forces of socialization (Kocsis, 2015). Childhood socialization does not operate within a vacuum across an individual's educational and family institutions or peer groups, nor does it cease to operate as one enters adulthood (Ryder, 1965). Furthermore, while individual socialization experiences can vary from one person to another, socialization can also be experienced collectively across families, communities, and societies, creating patterns of beliefs and behaviors within and across different groups (Mannheim, 1952). Emerging from shared socialization experiences, scholars like Karl Mannheim (1952) began identifying, describing, and distinguishing these patterns into groups we've come to know as generational birth cohorts.

Nearly seven decades have passed since Mannheim brilliantly painted generational birth cohorts as social constructs often created as a given cohort enters adulthood while bearing witness to significant historical events, or period effects (1952). According to Mannheim, these effects often leave a durable and quite influential mark on the socialization experience and life course of older children and young adults within a given society (1952). In other words, whether

economic, political, or social in nature, when pivotal historical events occur they can produce lasting fundamental changes in the attitudes, beliefs and behaviors among individuals across the whole of society, young adults in particular. These changes differentiate one generation from another and ultimately create the opportunity to employ birth cohort comparisons as a way of studying societal change (Ryder, 1965). Gun ownership is not immune to these processes; thus, the shaping influence birth cohort has on social behaviors must be considered when exploring determinants for inherently social behaviors like gun ownership.

While an approach to the study of firearm ownership should at this point be clear, the need for such research should also be considered. With mass shootings occurring with frightening regularity, attention from the Obama presidency in the form of gun-related executive actions, and a Congress completely divided over the role of legislation in addressing gun violence, research into American gun culture is becoming increasingly important. Gun ownership has become a concern for public health as well, evidenced by the clear relationship between firearm ownership and increased rates of suicide and homicide (Kocsis, 2015; Stroebe, 2013; Siegel, Ross, & King, 2013).

While gun ownership rates in the United States remained quite stable between 1959 and 1995 with roughly 50 percent of households reporting owning at least one firearm (Wright, 1995), recent research (Turkewitz & Griggs, 2016) suggests a shift from the historical stability observed in Wright's 1995 publication. As reported by the NY Times, when it comes to the present status of American gun ownership, there are about 55 million American gun owners in possession of 265 million guns (Turkewitz & Griggs, 2016). According to the same article, as of 2015, the percentage of households with guns has declined to 22 percent. Recall from Wright's



1995 article that the percentage of gun-owning households in the U.S. hovered around 50 percent for nearly four decades. It appears the stability of American household firearm ownership has undergone a significant decline since Wright's 1995 inquiry into the subject.

When it comes to the total number of privately owned guns in the U.S. however, Turkewitz and Griggs' findings remain consistent with trends identified in Wright's 1995 work. According to Wright, the total number of privately owned guns increased substantially to 200 million in the years leading up to his 1995 publication. According to Turkewitz and Griggs, this number has increased to 265 million as of 2015, even though the total percentage of gun-owning households has decreased significantly since 1995.

Turkewitz and Griggs' article also reveals that roughly half of the 265 million private firearms in the U.S. are owned by only 3 percent of the population. According to the same article, when gun-owning respondents were asked why they owned a firearm, 63 percent cited personal protection against other human beings as the reason they owned a gun. While the figures offered by historical and contemporary research succeed in detailing the size of the private gun inventory in American society and, to a lesser extent, why gun owners choose to own a gun, important questions remain. As a result, this research asks: Who are American gun owners? What factors, or combination of factors, increase the likelihood of owning a firearm? By clarifying our understanding of factors which shape the landscape of American gun ownership, this research will be of interest to policy makers, public health officials, researchers, and concerned citizens alike.

Scholarship on the subject of gun control and gun ownership tells us that attitudes towards guns and gun policies are polarized and deeply embedded in political ideology (Pew

Research Center, 2016; Wright, 1981). In general, Liberals tend to support gun control policies, arguing the importance of restrictive legislation in combatting gun violence while Conservatives reject such an approach. Conservatives tend to argue that gun control legislation violates the inalienable right of Americans to bear arms, as guaranteed by the Second Amendment of the United States constitution (Bruce & Wilcox, 1998; Spitzer, 1995).

According to the latest national survey conducted by Pew Research Center (2016) on the subject of gun policy opinions and the 2016 presidential campaign, only 34 percent of those in support of conservative candidate Donald Trump were in favor of renewing the national ban on assault-style weapons compared to 74 percent from Democratic candidate Hillary Clinton supporters. The two parties were similarly divided in supporting a ban on high-capacity ammunition clips with Trump supporters at 34 percent in favor while supporters of Clinton came in at 75 percent (Pew Research Center, 2016). Whether discussing the creation of a federal database to track gun sales or simple background checks for private and gun show sales, political polarization around firearm legislation remains clear even to the most casual observer.

Going well beyond dinner table debate, the U.S. government has frequently weighed in on the issue. Congress appears to visit the issue the most with more than one hundred different legislative gun control proposals since 2011 (Shabad, 2016) while the U.S. Supreme Court visited the issue three times within the last decade (*Caetano v. Massachusetts*, 2016; *McDonald v. Chicago*, 2010; *District of Columbia v. Heller*, 2008). Former president Barrack Obama weighed in on the issue following the tragic 2012 Sandy Hook Elementary School shooting with the introduction of a plan which included twenty-three signed executive actions and twelve different gun control proposals for Congress (MacAskill & Pilkington, 2013).

In light of these realities, this research uses 2015 Pew Research Center political survey data to explore predictors for gun ownership in the United States. Specifically, this study examines (1) differences in gun ownership across birth cohorts, (2) the relative impact of birth cohort on gun ownership when political ideology and attitudes towards gun legislation are considered, and (3) variation in gun ownership resulting from the combined influence of political ideology, and gun legislation attitudes while controlling for variation across a number of relevant sociodemographic considerations.

The purpose of this research is to estimate the likelihood of individual gun ownership across birth cohort with and without controls using binary logistic regression models. Employing three birth cohorts in the analysis, (1) Millennials, (2) Generation X, and (3) Baby Boomers, this research first identifies whether or not significant cross-cohort differences exist with respect to gun ownership. Second, I regress gun ownership on birth cohort, political ideology, and attitudes towards gun control legislation. Finally, gun ownership is regressed on a number of relevant sociodemographic variables in addition to the aforementioned birth cohort, political ideology, and gun control attitude predictor variables. This analysis will allow us to enter an important discussion surrounding whether or not birth cohort increases the likelihood of firearm ownership.

## CHAPTER TWO: REVIEW OF LITERATURE

### Birth Cohorts

Individuals in society are born into unique locations within the ever-flowing river of history (Ryder, 1964). Furthermore, Ryder's 1964 work also tells us that individuals born into a similar time and place are connected via a durable link we've come to know as the birth cohort. The significance of generational birth cohorts in the study of social change was perhaps most notably established in 1952 by a Hungarian-born sociologist named Karl Mannheim. According to Mannheim, generations are social constructs formed in part by significant historical events, or period effects, which significantly shape the socialization experience of individuals within a given society (1952).

In other words, generations are often forged by pivotal historic events, often economic in nature, as in the case of the Great Depression. Similarly, events like the Vietnam War can combine with other factors to spark new and unique generations into existence. Pivotal events that are social in nature are also important, as in the case of the dramatic increase in child births between the years of 1946 and 1964. This social event defined and ultimately named the generation we've come to know as the Baby Boomers (Gay, Lynxwiler, & Smith, 2015).

Mannheim also suggested that such events can be particularly powerful in shaping the socialization experience of individuals who, when the event occurs, are between 17 and 25 years of age (1952). According to Mannheim, the amplified impact of current events on young adults occurs because they are still within a formative period when it comes to attitudes and behaviors (1952). In other words, the amplified effect of pivotal events can permanently alter the attitudes

and behaviors of young adults across an entire generation, changes which carry lasting implications for decision making throughout the life course (Ryder, 1965; Mannheim, 1952).

While keeping the above key notions in mind, it should be noted that significant historical events do not always result in the forging of new and distinct generations, nor are they guaranteed to create opportunity for social change to occur (Ryder, 1965). Similarly, while social change often follows the birth of a new generation, it is important to understand that new cohorts do not necessarily cause social change as much as they create the opportunity for change to occur (Ryder, 1965). If, however, distinct social changes with respect to attitudes and behaviors within young adults do occur, these changes differentiate one generation from another and ultimately create the opportunity of birth cohort comparisons as a way of studying change (Ryder, 1965).

Many decades have passed since Mannheim helped solidify the important role generational birth cohorts play as secondary agents of socialization. There are now a large number of scholarly publications which explore the effect of birth cohorts on a wide range of attitudes, beliefs, or behaviors (Aitken et al., 2016; Gay, Lynxwiler, & Smith, 2015; Bratter, 2007). Whether exploring changes in tolerance (Hill, 1997), political behaviors and beliefs (Alwin, 1998), attitudes regarding same sex marriage (Gay, Lynxwiler & Smith, 2015; Becker, 2012), attitudes towards gender roles (Brooks & Bolzendahl, 2004), behavior changes surrounding anti-Black prejudice (Firebaugh & Davis, 1998), or changes in religiosity and church attendance (Gay & Lynxwiler, 2013), birth cohort analysis has become a powerful tool for scientific inquiry into social change with respect to attitudes and behavior changes across individuals in society. Collectively, extant literature continues to highlight the importance of

examining generational differences when exploring social change with respect to attitudes, beliefs and behaviors.

Having established the importance of birth cohorts with respect to individual socialization during early adulthood, and, how some aspects of socialization can be shared across age groups, the need to consider birth cohort effects when exploring gun ownership behaviors should be quite clear. While the subject of American gun ownership has garnered significant scholarly attention, the predictive effect of birth cohort on firearm ownership has yet to be fully explored.

#### Millennial Generation

Having recently come of age, Millennials are now well represented in national probability samples. As of 2015, Millennials fall between the ages of 18 and 34 years old, an age range which suggests that many have only recently begun to fully explore social issues taking place around them (Arnett 2000). More importantly, Millennials have reached an age which permits the purchasing of firearms as well as concealed carry and hunting permits. In alignment with extant research, this research will operationalize the millennial generation as individuals born between 1981 and 1997 (Pew Research, 2014; Schwadel, 2014).

#### Generation X

Widespread use of the name Generation X appears to come from a novel by Douglas Coupland titled *Generation X: Tales for an Accelerated Culture*. The name stuck, and it is widely used. This cohort is generally characterized by lower birth rates (Mitchel 1995) and markedly disparate socialization experiences when compared to the previous “Boomer” generation. Combined, these differences appear to produce notable attitudinal differences from

previous generations across many socio-political attitudes, beliefs and perceptions (Giles 1994; Peterson 1993). Generation X is defined in agreement with previous research as those born between 1965 and 1980 (Pew Research, 2014; Schwadel, 2014; Gay, Lynxwiler, & Smith, 2015)

### Baby Boomers

The Baby Boomer generation is consistently defined as those born between 1946 and 1964. This cohort is labeled as such due to the large spike in child births during this time, and, because this generation was socialized in political, social, and economic climates unique from the preceding generation. Fortunately, there exists a plethora of literature which documents unique differences in socio-political attitudes and behaviors of Boomers. For this research, Boomers are defined by birthyears spanning 1946 through 1964 (Bass, 1999; Alwin, 1998; Williams et al., 1997; Hill, 1997; Miller, 1994).

### Political Views and Attitudes Toward Gun Control

Research addressing the relationship between political ideology and attitudes towards the role of gun control legislation suggests that conservatives tend to express negative views towards gun control policies while liberals generally support such policies (Pew Research Center, 2014 & 2016; Turkewitz & Griggs, 2016). Returning to 2016 data from Pew, 79 percent of respondents who supported Democratic candidate Hillary Clinton in the 2016 U.S. presidential election favored controlling gun ownership over protecting gun rights. In contrast, only 19 percent of those who supported the Republican nominee Donald Trump were in agreement with this notion. Upon re-wording the question, Pew observed a substantial increase in political polarization with 90 percent of Trump supporters agreeing that it is generally more important to protect gun rights

than control gun ownership compared to only 9 percent of those backing Hillary Clinton (Pew Research Center, 2016).

Whether or not someone owns a gun appears to be related to individual support of gun laws (Wolpert & Gimpel, 1998). Findings from the same study reveal that individual support for firearm control proposals had a strong negative correlation with gun ownership. A similar study conducted nearly a decade later reinforced these findings, reporting that opponents of gun-permit requirements were significantly more likely to own a gun (Celinska, 2007). We also know through extant research that gun owners are more likely to be Republican (Adams, 1996). This notion was reinforced in 2012 when exit poll results during the 2008 presidential election revealed only 25 percent of Democrats reported owning a firearm compared to nearly 60 percent of Republicans (Silver).

Academic discourse on the subject collectively suggest that an important relationship exists between political ideology and attitudes towards gun legislation with respect to ownership. However, the aforementioned research on the subject remains quite descriptive in nature in that none of them employ statistical regression techniques to capture the predictive effect of political ideology and attitudes towards gun legislation on gun ownership behavior.

### Birth Cohort and Political Views

Generally speaking, younger birth cohorts are more liberal than preceding generations, especially when it comes to attitudes surrounding a number of social issues (Schwadel & Garneau, 2014). Further reinforcing this notion, the 2012 presidential election revealed Millennials overwhelmingly (60 percent) supported Democratic candidate Barack Obama (Pew



Research, 2014). Interestingly, according to the same article, even though millennials trend towards a liberal orientation they appear to show little difference from previous generations in terms of their views on gun control. For millennials, a liberal lean apparently fails to translate into pro-control attitudes normally associated with said lean. Perhaps the present state of millennial views towards gun policy may have shifted in the wake of the deadliest mass shooting in U.S. history in 2016, and the San Bernardino shootings the year before.

So, what does actual millennial gun ownership look like when compared to other generations? Do they mirror older generations here as well? What if, in spite of having what could be considered a 'pro-gun' stance, millennials are not taking the final step by actually acquiring a household firearm? Ultimately, birth cohorts may differ in terms of factors related to gun ownership. Millennial gun ownership, for example, may have a stronger relationship with gun policy attitudes than with birth cohort alone. Questions like these remain unanswered across extant research on the subject due to what appears to be an over-reliance on methodologies which simply compare proportions and other descriptive statistics as opposed to exploring the direct predictive effect of birth cohort on gun ownership.

#### Cohort, Political Views, Attitudes Toward Gun Control, and Gun Ownership

Social science researchers have repeatedly observed a durable relationship between birth cohort, political ideology and attitudes towards a wide range of social issues including same-sex marriage, interracial marriage and marijuana legalization (Ryder, 1965; Firebaugh & Davis, 1988; Inglehart, 1990; Brooks & Bolzendahl, 2004; Gay, Lynxwiler, & Smith, 2015).

Furthermore, firearm ownership is strongly related to political ideology and individual support of gun laws (Silver, 2012; Celinska, 2007; Wilpert & Gimpel, 1998).

Ultimately, this review of literature reveals the following: (1) birth cohort is linked to political ideology; (2) political ideology is an important factor in the polarization of attitudes towards gun control; and (3) political views and attitudes towards gun control are strongly related to firearm ownership. The predictive effect of birth cohort remains unclear with respect to gun ownership as the millennial birth cohort's trend towards a "liberal-lean" doesn't appear to translate into a liberal stance on gun control policy as it has for many other politically polarized social issues.

The purpose of this research is to shed light on the relationship birth cohort, political ideology, and attitudes towards gun control legislation with respect to American gun ownership while controlling for relevant sociodemographic control variables. Towards this end, this research first examines differences in gun ownership between each of the birth cohorts included in the analysis. Next, the political ideology and attitude towards gun legislation predictor variables are included in the model to assess their predictive effect on the gun ownership outcome variable. Finally, sociodemographic control variables are introduced into the model in addition to the birth cohort, political view, and attitude towards gun legislation predictor variables.

### Control Variables

Variation in gun ownership may be related to other factors beyond political ideology, birth cohort, and attitudes towards gun control legislation. When examining differences in

American gun ownership, scholarly research identifies a number of sociodemographic variables to consider including gender, race, household income, educational attainment, residency location, religion, population density, and educational attainment.

When it comes to gender differences in gun ownership, extant research reveals that women, particularly within female-headed households, own guns at lower rates than men (Kalesan et al., 2016; Legault, 2008). Location of residence was also found to be an important factor to consider when it comes to differences in gun ownership with increased rates of ownership in the south and mid-west (Namkug et al., 2011; Miller et al., 2013; Kalesan et al., 2016). Interestingly, a 1986 study revealed that women raised in the South are more likely to own a firearm compared to other regions of the country (Young). Gender aside, the northeastern United States reports the lowest rates of firearm ownership while those residing in the southeast and intermountain west report the highest (Namkug et al., 2011; Kalesan et al., 2016). Indeed, regional variation in firearm ownership is widespread with prevalence ranging from a little as 10 percent in some regions to as high as 66 percent in others (Miller et al., 2013).

Similarly, a 1989 study found religious ideology, namely Protestantism, to be associated with increased rates of gun ownership (Young) while a 2001 study linked increases in educational attainment to decreasing firearm ownership rates (Ross, 2001). Other individual covariates found to be independently associated with gun ownership include: age, Race, exposure to gun culture, violence exposure, and income, as detailed in a 2016 by Kalesan and colleagues. Fortunately, the Pew data used for this research contains many of these considerations and thus creates an opportunity to control for these individual differences within the analysis.

While the relationship between many of the variables included in this study and gun ownership have garnered previous scholarly attention, a review of extant research reveals that few have ventured beyond a simple comparison of descriptive statistics in their methodology. More importantly, however, this review of literature collectively highlights the relevance and importance of each variable included in the analysis with respect to research on gun ownership behavior. Furthermore, by clearly defining the three birth cohorts of interest to this study, existing research has facilitated the operationalization of the birth cohort predictor variable.

## CHAPTER THREE: METHODS

### Sample and Data

For the analysis of this research, secondary data from the July 2015 Political Survey conducted by the Pew Research Center were used. Numerous quantitative inquires have leveraged nationally representative survey data to explore the predictive ability of birth cohort on a number of attitude, belief, and behavior related variables (Landes, Wilder, & Williams, 2017; Schwadel, 2014; Neal, Raj, & Ribas, 2011). The Pew Research Center is a nonpartisan research center that conducts public polling, demographic research, media content analysis, and other empirical social science research. Data for this study were drawn from a nationwide sample of two thousand English and Spanish speaking respondents eighteen years of age or older in July of 2015. For this particular set of data, surveys were constructed from landline (700) and cell phone (1,300) interviews across all fifty states in the United States. This particular Pew Research data set is appropriate for this research because it contains recent information regarding gun ownership as well as general demographic and attitudinal information of interest to this research.

### Analytic Strategy

The purpose of the analytic strategy used for this research is to examine the effects of birth cohort on the probability of individual firearm ownership with and without controls. To accomplish this, hierarchical binary logistic regression models are used to examine the effects of birth cohort, political ideology, attitudes towards gun control policy, and socio-demographic

variables on the gun ownership variable. This particular regression technique is appropriate because gun ownership, as a yes or no distinction, is a dichotomous response variable.

Three logistic regression models were constructed to estimate the likelihood of individual gun ownership across birth cohorts with and without controls. Employing three birth cohorts in the analysis, (1) Millennials, (2) Generation X, and (3) Baby Boomers, the first model examines the significance of cross-cohort differences in firearm ownership. A second model then incorporates the two remaining predictor variables of political ideology and attitude towards gun legislation into the analysis and regresses firearm ownership on all three predictor variables. Finally, gun ownership is regressed on all three predictor variables once again while also incorporating and controlling for a number of relevant sociodemographic control variables.

This particular analytic strategy will increase our understanding of how the probability of individual gun ownership in the United States is impacted by variables contained in this study. In other words, this analysis creates an opportunity to discuss, in terms of probability, whether or not a particular individual in the United States owns a firearm based on birth cohort while controlling for all other variables in the model. Having outlined the statistical approach employed by this research, the remaining sections detail the operationalization of each variable included in the analysis.

### Dependent Variable

#### Gun Ownership

The dependent variable is operationalized through the following question: “do you, or does anyone in your household, own a gun, rifle or pistol?” Possible responses included (1) yes,

respondent; (2) yes, someone else; (3) yes, both/multiple; (4) no, nobody in household owns a gun; and (9) don't know/refused. For purposes of this study, living with someone who owns a gun is not considered gun ownership in the analyses. Pew's inquiry was recoded into a binary measure to produce a yes or no distinction with regards to whether or not the respondent owns a firearm. Response values of (1) and (3) were combined and coded with a value of (1) to identify gun owners while non-gun owner response values of (2), (4), and (9) were merged and assigned values of (0).

### Independent Variables

#### Birth Cohort

Birth cohorts are defined as follows for this research: Millennial cohort respondents are identified as respondents who were born between 1981 and 1997. Generation X consists of respondents born between 1965 and 1980 and Baby Boomers are identified as respondents who were born between 1946 and 1964. Dummy variables are created for the Millennial and Generation X cohorts with Boomers serving as the reference category in all analyses.

#### Political Views

Political ideology was measured by having respondents subjectively identify their own political orientation on a five-point scale. The original inquiry and proceeding coded response options were constructed by Pew as follows: In general, would you describe your political views as: (1) very conservative, (2) conservative, (3) moderate, (4) liberal, and (5) very liberal. For

analytic purposes this variable is treated as an ordinal scale and was re-coded so that larger values represent increasing conservative political orientation beginning with a value of (1) very liberal, (2) liberal, (3) moderate, (4) conservative and (5) very conservative.

### Attitudes Toward Gun Policy

Pew Research included a number of gun policy related questions in their 2015 political survey, however, only one employed by this research to construct and operationalize the attitude toward gun policy variable. For the selected question, respondents were asked the following: what do you think is more important – to protect the right of Americans to own guns, OR to control gun ownership? Possible responses included (1) protect the right of Americans to own guns and (2) control gun ownership. Response values of (1) were left unchanged and represent individuals concerned with protecting gun rights while response values of (2), those who favor controlling gun ownership over protecting gun rights, were recoded to (0). In other words, response values of (1) are indicative of a pro-gun stance while the recoded responses of (0) represent pro-gun control attitudes towards the desired purpose of gun legislation.

### Control Variables

#### Gender and Race

The Pew Research Center survey used for this research attempted to identify a respondent's sex by asking participants to self-identify their sex as either (1) male or (2) female. No other response categories were available to respondents. Because respondents were requested



to self-identify, the term ‘gender’ is used henceforth when referencing this particular control variable. The gender categories were re-coded so that a value of (1) represents female respondents while males were coded as (0). As the coding suggests, the response category of ‘male’ serves as the reference category in all analyses.

The Pew survey identified a respondent’s race using the following questions: The first question was “*Are you of Hispanic, Latino, or Spanish origin, such as Mexican, Puerto Rican or Cuban?*” Respondent choices are (1) “yes” and (2) “no.” The second question was “*Which of the following describes your race?*” Respondent choices are (1) white, (2) Black or African-American, (3) Asian or Asian American, (4) some other race and (5) Multi-racial. From these two questions, white respondents serve as the reference category in all analyses while dummy variables were created for non-white response categories.

#### Educational Attainment, Family Income, and Household Size

Pew measured educational attainment by the highest degree respondents received using an eight-point scale. Responses are coded (1) less than high school, (2) high school incomplete, (3) high school graduate, (4) some college, (5) two-year associate degree, (6) four-year college degree, (7) some postgraduate or professional training, (8) postgraduate or professional degree.

Total family income was measured using self-reported pre-tax income from all sources during 2014. Using a 9-point scale, income categories ranged from a value of (1) for respondent family incomes less than \$10,000 to (9) for incomes exceeding \$150,00 with the middle value of (5) for incomes of \$40,000 to under \$50,000. Pew measured household size by asking respondents how many people, including the respondent, live in your household? Numerical

responses were permitted by Pew to range from 1 to 7 with a final option of (8 or more). Only valid responses are used in the analysis. Descriptive statistics revealed that the scale was positively skewed (i.e., there were very few responses in categories 7 and 8 or more of the scale). As a result, codes 7 and 8 or more were combined into a value of (7) resulting in a seven-point scale with a skewness value of .867.

### Southern Residency, Population Density, and Attendance at Religious Services

Southern residency is determined using respondent zip-codes and follows United States census coding. A dummy variable is created for southern residence where (South=1, all others=0). Population density was measured by Pew with a five-point scale where (1) identifies respondents living in an area with the “lowest density” while a value of (5) was assigned to respondents living in areas with the “highest density”. The focus on southern residency as the comparison groups stems from findings from previous research which highlight the important influence southern residency has on firearm ownership (1986). In his 1986 paper, Robert Young revealed increased rates of firearm ownership among southern women compared to other women in the country (Young). The final variable included in the analysis, religious attendance, was measured with the following question: “Aside from weddings and funerals, how often do you attend religious services... (1) more than once a week, (2) once a week, (3) once or twice a month, (4) a few times a year, (5) seldom, or (6) never?” In order to facilitate the interpretation process, Pew’s response values were re-coded so that higher values correlate with increased attendance resulting in a value of (0) for never attend and value of (6) for attend more than once a week.



## CHAPTER FOUR: RESULTS

Table 1 presents the cross-tabulation percentages of firearm ownership and birth cohort. Proportions in Table 1 reflect the number of gun owning and non-gun owning respondents within each of three cohorts included in the analysis. Table 1 reveals a pattern of cross-cohort difference with firearm ownership steadily increasing from younger to older generations. With a chi-square value of 14.838, proportional cohort differences in gun ownership are revealed to be statistically significant. Of the sample, 23 percent of Millennials, 28 percent of Generation X, and 33 percent of Baby Boomers reported owning a firearm. From Table 1 we can conclude that, at the very least, there are significant surface-level proportional differences in gun ownership between the three cohorts included in the analysis, and, that gun ownership rates appear to increase with each preceding generation.

Table 2 presents cross-cohort differences in political views using a one-way analysis of variance (ANOVA). A least significant difference (LSD) post hoc test was performed on all mean differences. All differences were statistically significant with the exception of the mean difference between the Generation X and Baby Boomer respondents. With a mean value of 2.84, Millennial respondents are significantly less conservative than either Generation X or Baby Boomer respondents. While Generation X also appeared to be less conservative than Baby Boomers, the mean difference was not significant. This finding is interesting because it contradicts extant research which consistently reveals younger generations to be less conservative than older generations.

Table 3 displays the sample size, means, standard deviations, and proportions for gun ownership, birth cohorts, political views, pro-gun rights, and control variables. Proportions in the

table reflect the number of respondents represented by each dummy variable. Table 3 reveals that roughly 29 percent of individuals in the sample reported owning a firearm. The table also shows that individuals were distributed somewhat evenly into the Millennial and Generation X cohorts at roughly 27 and 28 percent respectively, with a slight over-representation of Baby Boomers who represent nearly 45 percent of the sample.

With a mean score of 3.10, Table 3 reveals a conservative lean for the sample. Recall that political ideology was measured on a 5-point scale where higher scores reflect increasing conservative views. If we consider the results from Table 2 and previous research on the subject of birth cohort effects on political ideology, younger generations included in this research are generally less conservative than preceding generations (Schwadel & Garneau, 2014; Pew Research, 2014). In light of this trend, the political lean of this sample may be explained, at least in part, by the slight over-representation of Baby Boomers.

For the pro-gun rights variable, the same table shows that roughly 48 percent of the sample felt protecting the right of Americans to own guns was more important than controlling gun ownership. The table also reports that 47 percent of the sample identified as female. Table 3 shows a mean respondent family income value of 5.27 which indicates that respondents' total family income from all sources is between \$40,000 to under \$50,000 and \$50,000 to under \$75,000.

For educational attainment, Table 3 shows a sample mean of 4.94 indicating that respondents' education falls between some college and a 2-year associates degree. For the population density variable, Table 3 indicates a sample mean of 2.88 which sits roughly half way between the lowest density of score of (1) and highest density score of (5). Continuing down the

same table, 38 percent of the sample were identified as southern residents. The sample mean for frequency of attendance at religious services is 3.5 which falls between values representing once or twice a month (3) and a few times per year (4). For the Race variables, Table 3 reveals the sample to be 69 percent white, 11 percent African American, 3 percent Asian, 12 percent Hispanic, 3 percent multiracial, and 1 percent “other race”.

Table 4 displays the bivariate (Model 1) and multivariate (Models 2 and 3) results of the logistic regression for gun ownership as the dichotomous dependent variable. The table presents the logistic regression coefficient ( $\beta$ )/odds ratio (OR) and the standard error in parentheses. All three binary logistic regression models are statistically significant. Model 1 in Table 4 displays the binary results of gun ownership regressed on the birth cohort dummy variables. Millennials are significantly less likely to own a firearm compared to the Baby Boomer reference group (OR = .646,  $p < .01$ ) while no significant difference in gun ownership was observed between Generation X and the Baby Boomer generation.

Model 2 in Table 4 brings in the political views and pro-gun rights variables into the analysis. Controlling for all other variables in the model, Model 2 shows that political views (OR = 1.261,  $p < .001$ ) and attitude towards gun legislation (OR = 4.670,  $p < .001$ ) are both significant predictors for gun ownership. Increasingly conservative political ideologies and a pro-gun rights stance towards gun legislation appear to be associated with an increase in firearm ownership likelihood. In other words, individuals who hold a conservative political ideology or believe that gun legislation should focus on the protecting gun ownership rights are more likely to own a firearm than liberal-leaning respondents or those who identify with the importance of using gun legislation to control gun ownership over protecting rights to said ownership. With the

addition of the political views and pro-gun rights variables, Model 2 also shows that Millennials remained significantly less likely to own a firearm compared to the Baby Boomer reference group (OR = .667,  $p < .05$ ) while differences between Generation X and the reference group remained insignificant.

The third model in Table 4 introduces selected control variables into the model and reveals that gender, household income, population density, southern residency, and race each appear to significantly influence individual gun ownership likelihood. On the other hand, the effects of educational attainment and religious attendance were not statistically significant.

Table 4 reveals that, of the sample, women are less likely to own a gun than men (OR = .293,  $p < .001$ ), and, gun ownership likelihood significantly increases with income (OR = 1.104,  $p < .01$ ). Model 3 also shows that gun ownership odds significantly decrease as population density increases (OR = .763,  $p < .001$ ). Finally, when factoring in Race, Model 3 reveals that Asians (OR = .117,  $p < .01$ ), Hispanics (OR = .347,  $p < .001$ ), and African Americans (OR = .566,  $p < .05$ ) are significantly less likely to own a gun compared whites. Interestingly, multiracial and other-race respondents are not significantly different than whites when it comes to owning a firearm. While controlling for all other variables in the model, Millennials, conservative political ideologies, and pro-gun rights attitudes towards gun legislation held their significance in terms of their predictive effect on gun ownership.

## CHAPTER FIVE: CONCLUSION

While this study offers important contributions to gun ownership research, there are important limitations to consider. Having employed a cross-sectional design, this study is limited in that the analysis focuses on responses to questions asked at a specific point in time. This inherent design limitation restricts the ability of this research to compare each cohort when they were the same age (e.g., Millennials and Baby boomers when they were both in their twenties). Furthermore, this research design is unable to follow a given cohort over time. Yearly surveys spanning several decades, or, future surveys repeated for the same cohort over time would be required to address these limitations.

A second limitation involves the application of this study's results within future research, or use in informing the creation of public policy. Because the analysis and results are limited to gun ownership differences by cohort, political views, and gun policy attitudes, this study cannot directly address cultural change. For example, this study reveals that millennials are the least likely cohort to own a firearm. It would be invalid to leverage this finding in support of an argument that future generations will continue to observe decreases in firearm ownership. Furthermore, the use of secondary data and statistical analysis prevents this research from determining, in any definitive way, specific explanations for the results of this study's findings. As a result, any explanations which attempt to make sense of this study's findings will be limited, in terms of context, to previously established scholarly literature.

Future research addressing these limitations will be afforded an opportunity to use an age/period/cohort design, and, increase scholarly understanding of life course events. Ultimately, a qualitative inquiry into gun ownership would provide deeper insight into the nature of gun



ownership behavior. The Pew Research Center data used in this study does, however, afford the opportunity to assess the relationship surrounding birth cohort, political views, and gun policy attitudes with respect to gun ownership. Issues surrounding guns, gun violence, and gun ownership are very important to contemporary American society and this research has examined determinants which impact the likelihood of individual firearm ownership within cohorts and compares these effects using nationally representative data.

While previous studies have focused on describing the characteristics and scope of American gun ownership (Turkewitz & Griggs, 2016; Pew Research Center, 2016), this study identifies specific determinants which impact the likelihood of individual firearm ownership. As expected, the results identify birth cohort to be a significant predictor for gun ownership in the United States, a finding which remained consistent across all three models in the analysis. As noted above, the results suggest that millennials are the cohort least likely to own a firearm, while baby boomers are the most likely to own a gun. Interestingly, the results also indicated that observed differences between the baby boomer and generation x cohorts were not statistically significant. However, both are significantly more likely to own a firearm than the millennial population. These results suggest that gun ownership, or lack thereof, may need to be added to birth cohort scholarship's growing list of factors which separate millennials from previous generations.

While the predictive effect of birth cohort remained significant throughout all phases of the analysis, other factors were found to be important as well. Political views were statistically significant across all three models in terms of exerting a predictive effect on the gun ownership outcome variable. As expected, increasingly conservative political ideologies were found to be a

significant predictor for increasing gun ownership rates. In other words, those who identify as conservative are more likely to own a firearm than their liberal counterparts. This finding is particularly interesting if we also consider the lack of difference between the boomer and generation X cohorts.

Previous research on contemporary birth cohorts suggests that younger cohorts report increasingly liberal political views compared to older cohorts (Schwadel & Garneau, 2014 Pew Research, 2014). From this, one might expect boomers to be significantly more likely to own firearms than younger, increasingly liberal cohorts. While this expectation was supported for millennials, the lack of difference between generation x and boomers is surprising considering established trends surrounding cross-cohort political ideology.

Individual attitudes towards gun control legislation also have a significant impact on gun ownership likelihood. Across all models in the analysis, those who feel that gun legislation should focus on protecting the right of Americans to own firearms are significantly more likely to own a firearm than those who stress the importance of legislative control over ownership. In addition to all three of the aforementioned predictor variables, a number of sociodemographic control variables were also revealed to be significant predictors for gun ownership.

Upon analyzing the impact of control variables in model 3, we can see that gender, income, population density, southern residency, and race all exert significant influence over firearm ownership likelihood. Interestingly, findings from the 2001 study by Catherine Ross which suggest that firearm ownership rates decrease with educational attainment were not supported by results from this study. Instead, according to the results of this study, firearm ownership actually appears to increase with educational attainment, however, the impact of

educational attainment on gun ownership behavior was not statistically significant while controlling for all other variables in the model.

Findings surrounding higher incomes and southern residency align with prior research on gun ownership (Namkug et al., 2011; Kalesan et al., 2016). Higher incomes and southern residency each appear to be associated with increased rates of firearm ownership in this study. Furthermore, the findings of this study align with firearm ownership research which links gender and region of socialization with firearm ownership (Young, 1986). In Young's paper, female gun ownership was found to be significantly higher for southern women compared to other women in the country. Similarly, the results of this study reveal lower rates of firearm ownership as population density increases. In other words, increases in the number of people living in a given area does not equate to increased rates of firearm ownership.

When it comes to gender, the results of this study revealed that respondents who identified as male were significantly more likely to own a firearm compared with those who self-identified as female. This finding aligns with previous scholarship on gender and gun ownership and further stresses the importance of gender in producing gun ownership behavior (Kalesan et al., 2016; Legault, 2008). The final control variable revealed by this research to significantly impact firearm ownership was respondent race. Respondents who self-identified as Hispanic, Asian, or African American were significantly less likely than White respondents to report owning a firearm. Similar to gender, this result also appears to align with existing literature on the subject (Kalesan et al., 2016).

From a holistic perspective, the patterns observed within the results of this study provide interesting insights into questions surrounding which individuals or groups are most likely, or

least likely to own a firearm in the United States. Concerning the former, the results indicate that white, southern, male, conservatives, from either the baby boomer or generation X birth cohorts, who live in rural or low-population density areas, and feel gun legislation should protect the right of Americans to own guns, have the greatest likelihood of owning a firearm. Alternatively, low-income, female, minorities, from the millennial generation, who live in densely populated areas outside of the south, and believe that gun legislation should control firearm ownership, are the least likely to own a firearm.

As with all social behaviors, it is important to keep in mind that broad generalizations like the two mentioned above are far from absolute. The Individual features and characteristics described above only shed light on the probability for individual gun ownership based on self-reported outcomes from sampled individuals. However, whether considered individually or collectively, these characteristics are shown through the results of this study to significantly impact gun ownership likelihood.

While this research and considerations therein cannot perfectly predict individual gun ownership in the United States, it does effectively highlight the need to consider factors beyond political viewpoints when attempting to understand or predict gun ownership behavior. This notion is perhaps the most important implication of this research. From the fog of media speculation, political grandstanding, and overly simplistic unwarranted assumptions, I believe the results of this study bring into full view the inherent complexity of gun ownership behavior.

The act of owning a firearm cannot be reduced to any single causal factor, like political ideology. Instead, one must consider the combined effects of political ideology, generational birth cohort and attitude towards gun legislation as they intersect with gender, income, location

and population density of residency, and race to shape gun ownership behaviors in the United States. However, the above considerations are not by any means an exhaustive list, nor do they act independently in the production of firearm ownership behaviors. These factors are almost certain to interact with each other, and, with other considerations not included in this research.

In conclusion, the use of secondary data in research fundamentally restricts what can be considered when attempting to explain culturally produced behavior. In order to fully understand firearm ownership behavior, future research should consider departing from survey methodology entirely in favor of a qualitative approach. However, such an approach would need to go beyond simply asking individuals why they choose to own or forgo owning a firearm. An overly simplistic qualitative inquiry is sure to elicit equally simplistic responses, like those from the 2016 study by Turkewitz and Griggs, in which study participants cited personal protection as the primary reason they owned a firearm, or, moral objection or risk aversion to accidental discharge behind the decision to forgo firearm ownership.

The act of owning a firearm is a behavioral practice whose cause is complex and entirely social in nature, and, woven deep into the historical fabric of American culture, values, and traditions (Kocsis, 2015). Future research must make every effort to elicit the meaning individuals give to guns and gun ownership. After all, we are attempting to understand ownership of a physical object. Perhaps it is time for gun ownership research to invite the work of Michel Foucault into the methodological approach, as his 1966 text *The Order of Things* concerns itself almost entirely with the importance of objects, things, and the meanings we give them in the production of human social behavior.

## **APPENDIX: TABLES**

Table 1. Cross-Tabulation: Birth Cohort and Gun Ownership; N = 1680

Birth Cohort	Gun Owner (No)	Gun Owner (Yes)	Total
Millennials	345 (76.8)	104 (23.2)	449 (100.0)
Generation X	344 (72.1)	133 (27.9)	477 (100.0)
Boomers (Reference Group)	502 (66.6)	252 (33.4)	754 (100.0)
Total	1191 (70.9)	489 (29.1)	1680 (100.0)
Chi-Square	14.838**		

Cell entries are given as variable category totals with percentages in parentheses. \*\*p<.01

Table 2. One Way ANOVA: Cohort Political Views

Cohort	N	Mean	Standard Deviation
Millennials	429	2.84	1.081
Generation X	462	3.07	.946
Baby Boomer	728	3.18	1.080
Totals	1619	3.06	1.052

F=14.035, P<.000

Note: A least significant difference (LSD) post hoc test was performed on all mean differences. All differences were statistically significant at the .05 level except the mean difference between Generation X and Baby Boomer respondents.



Table 3. Descriptive Statistics: Means/Proportions, Standard Deviation, and Sample Size for Included Variables

Variable	Mean/Proportion	Standard deviation	N
Gun Owners (1 = yes, 0 = no)	.29	.454	2002
Millennials (born 1981-1997)	.27	-	1680
Gen X (born 1965-1980)	.28	-	1680
Boomers (born 1946-1964)	.45	-	1680
Political Views (5 point scale)	3.10	1.040	1934
Pro-Gun Rights	.48	-	1934
Female	.473	-	2002
Household Income (9 point scale)	5.27	2.458	1795
Education (8 point scale)	4.94	1.95	1990
Population Density (5 point scale)	2.88	1.44	2002
Southern Residency	.38	-	2002
Religious Attendance (6 point scale)	3.52	1.62	1988
White Respondents	.69	-	2002
African American Respondents	.11	-	2002
Asian Respondents	.03	-	2002
Hispanic Respondents	.12	-	2002
Multiracial Respondents	.03	-	2002
Other-Race Respondents	.01	-	2002
Valid N (listwise)			1450

Cell entries for Means/Proportions are given in %

Table 4. Binary Logistic Regression: The Impact of Birth Cohort, Political Views, Gun Policy Attitudes, and Sociodemographic Variables on Gun Ownership.

Independent Variable	<u>Gun Ownership</u>		
	Model 1	Model 2	Model 3
Millennials (born 1981-1997)	-.415/.660** (.146)	-.378/.685* (.158)	-.340/.712* (.172)
Gen X (born 1965-1980)	-.145/.865 (.137)	-.126/.882 (.882)	-.127/.881 (.159)
Political Views (5 point scale)		.230/1.258** (.066)	.141/1.152* (.076)
Pro-Gun Rights		1.524/4.592*** (.137)	1.168/3.215*** (.152)
Female			-1.215/.297*** (.142)
Household Income (9 point scale)			.098/1.103** (.032)
Education (8 point scale)			-.036/.965 (.041)
Population Density (5 point scale)			-.270/.763*** (.051)
Southern Residency			.267/1.306* (.139)
Religious Attendance (6 point scale)			.059/1.061 (.045)
African American Respondents			-.570/.566* (.262)
Asian Respondents			-2.170/.114** (.752)
Hispanic Respondents			-.911/.402** (.315)
Multiracial Respondents			.375/1.455 (.350)
Other Race Respondents			-.511/.600 (.391)
Constant	-.710	-2.329	-1.245
N	1450	1450	1450
Chi-Square	9.271*	212.837***	163.485***
Cox & Snell R Square	.006	.137	.229
Nagelkerke R Square	.009	.194	.325

Cell entries are given as logistic regression coefficients/odds ratios with the standard errors in parentheses. \*p<.05, \*\*p<.01, \*\*\*p<.001. VIFs lower than 1.83.

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