Texas Constitutional Carry

A Survey

By:
Glen Cooper
214-914-6756

Introduction

On June 16, 2021, Texas Governor Greg Abbott (Republican) signed Texas House Bill 1927, known as the Firearm Carry Act of 2021 (H.R. 1927, 2021). This law, effective September 1st, 2021, removes the requirement for Texas citizens to obtain a license to carry a handgun in most public areas. Texas' new right to carry a concealed firearm is called "Constitutional carry" (Sparber, 2021). One poll conducted by the University of Texas at Tyler - before the bill was passed - found that 64% of the registered voters disapproved, and 23% approved of the bill (University of Texas at Tyler, 2021). After the bill was passed, another poll by the University of Texas / Texas Tribune found that disapproval dropped to 57% of Texas voters while approval increased to 37% (Barragán, Ferman & Pollock, 2021). U.S. gun laws, particularly unlicensed concealed handgun carry, are highly controversial topics worthy of continued study. This study will investigate the attitudes towards this new law within a small Texas population and identify what demographic and social factors lead to the approval or disapproval of this law from within that population.

Research Statements

Statement of the Research Problem

Guns are an important part of U.S. culture. Gun control laws are part of that culture. Opinions on these laws change over time. Eight months ago, Texas changed its concealed handgun laws. There has been no recent survey on this topic in the local Dallas area, especially the Colony suburb.

Statement of the Research Purpose

This survey will be to update public opinion data on the change in the Texas concealed handgun law within a local Dallas area community and to uncover potential correlations between approval/disapproval of the change and underlying population demographics.
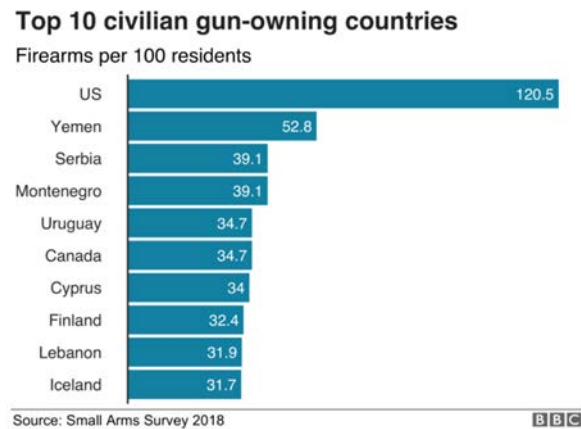
Statement of the Research Question

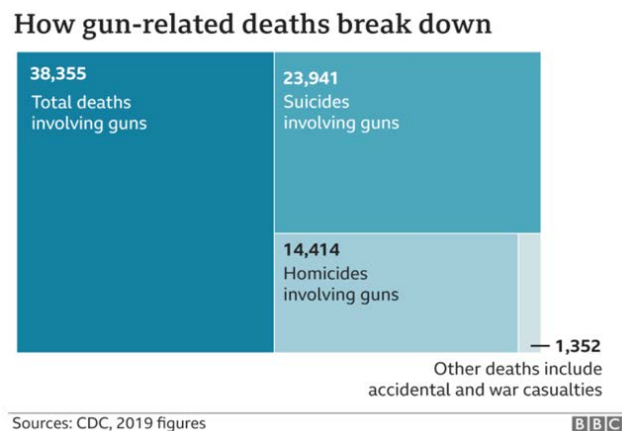The following basic research questions will be analyzed in this project:

1. What factors lead to an individual's approval or disapproval of the Texas unlicensed concealed handgun carry law? The response variable for this research question is a simple categorial approval/disapproval. Either a person approves or disapproves of Texas' unlicensed concealed handgun carry law. However, the predictor variables can be varied and complicated. For example, U.S. political party affiliation, gender, current gun ownership, current or past rural vs. city residence, education level, etc., are all potentially important determinates of a person's approval or disapproval. Determining the relative importance of these predictor variables will be a key result of this research.

2. What other gun laws are supported or opposed? While not the primary focus of this research, responses toward a person's attitude toward other gun laws, such as background checks, limitations on assault weapons or ammunition, etc., will also be sought.

Policy Relevance

As the below graphic demonstrates, the United States, as of 2018, has the highest level of

civilian gun ownership of all countries:

Top 10 civilian gun-owning countries
Firearms per 100 residents

Country	Firearms per 100 residents
US	120.5
Yemen	52.8
Serbia	39.1
Montenegro	39.1
Uruguay	34.7
Canada	34.7
Cyprus	34
Finland	32.4
Lebanon	31.9
Iceland	31.7

Source: Small Arms Survey 2018   BBC

In addition, guns are involved in many US deaths. As of 2019, here is how the Center for

Disease Control and Prevention (CDC) breaks down gun-related deaths:

How gun-related deaths break down

38,355
Total deaths
involving guns

23,941
Suicides
involving guns

14,414
Homicides
involving guns

— 1,352
Other deaths include
accidental and war casualties

Sources: CDC, 2019 figures   BBC

Clearly, understanding how the US public views gun laws is important for policymakers. These

policymakers might include either government or profit organizations. From a governmental

perspective, the results of this research might indicate whether a change in gun laws is desired or

not desired by the public. From a profit organization perspective, changes in strategic production

or marketing strategies might be considered based on the research findings.

Literature Review

Gun control laws have been an important topic in the U.S. Gallup has been tracking public

support for gun control since 1990, when a record 78% of American adults supported stricter gun

sale laws. In 2021, that percentage stood at 51%. Gallup also found that as of 2021, 35% of the

U.S. adult population believed that firearm sales should remain as they are, and 11% favored less

strict laws (Brenan, 2021). Guns are an important part of American society, part of the national

debate, and a topic on which Americans have varied opinions. A poll by SurveyUSA News

identified the important variables impacting gun attitudes, including current gun ownership, race,

age, parenthood, voting status, and education level (Surveyusa,.2021). A Morning Consult &

POLITICO's poll investigated public opinion regarding attitudes regarding specific gun

ownership policies, for example, policies around assault-style weapons, high-capacity

ammunition magazines, background checks, gun silencers, etc., and found wide-ranging support

and opposition to these types of policies depending upon respondents' demographic

characteristics (Morning Consult & POLITICO, 2021). The Pew Research Center found that

33% of adults say they own a gun. Ownership differs depending on political party affiliation,

gender, and geography. Republicans and men are more likely to own firearms, while rural areas

report higher gun ownership than those in the suburbs or cities. Pew found that around half of

Americans (48%) see gun violence as a very big problem today (Schaeffer, 2021).

The previously cited poll by the University of Texas / Texas Tribune, noted that most Texas voters did not support the passage of the unlicensed handgun carry law, and the poll also showed that Texas voters showed strong support for requiring criminal and mental health background checks for all gun purchases. The later issues were not subject that the Texas Legislature chose to address when passing the concealed carry law despite bipartisan support (Barragán, Ferman & Pollock, 2021).

The surveys identified in the above literature review were conducted before 2022 and at a national or state level. None of the above-addressed attitudes and opinions regarding Texas' concealed handgun law after it became effective. This research will not only update Texas residents' views after the concealed handgun law became effective but will address attitudes at a micro-level and perhaps serve as a model for conducting other micro-level surveys about gun laws and other public issues.

Research Design

Theory

Understanding most social phenomena are susceptible to both quantitative and qualitative analyses. Understanding human perceptions and decision-making are fertile ground for qualitative research. Quantitative methodologies are successful when sufficient data is available. As such, to address the research question defined above, this research project will incorporate both qualitative and quantitative methods.

"Despite the interdisciplinary recognition of the value of 'qualitative research,' qualitative research is not a unified field of theory and practice" (Guest, Namey, & Mitchell, 2012). There may be no one correct way to conduct qualitative research, but Guest, et al. suggest that when selecting a method, the researcher should first inquire how well the topic of interest is established. If it is not well established, they suggest generalized inquiries into available literature, secondary data, or discussions with experts/stakeholders. US gun laws and opinions are well established in the current case, so such approaches would likely yield little new information. Second, Guest, et al. suggest that if the topic is established but the boundaries of the subject are not well established, the researcher should engage in a literature review followed by participator observation. Again, in this current study, the topic boundaries are also well established. Finally, Guest et al. suggest that if the topic and boundaries are established, the researcher should employ focus groups, semi-structured interviews, or surveys. As this researcher has a limited financial budget and wishes to use more fixed-response categories, a survey methodology appears optimal.

The quantitative portion of this research will evaluate the qualitative survey results to assess statistically what demographic variables most closely predict the dichotomous variable of approval or disapproval of Texas' concealed carry law. The independent variables will include such factors as residential classification, trust in government and others, political ideology and party affiliation, religiosity, fear of crime and gun violence, firearm ownership and use, gender, race, education, and income level. Logistic regression has proven successful in such evaluations (see, Adwere-Boamah & Hufstedler, 2015, DeMaris, 1995, and Maselko & Kubzansky, 2006). To develop the most robust model, both backward and forward logistic regression will be applied to the available data (see James, Witten, Hastie, & Tibshirani, 2013).

Role of the Researcher

The role of the researcher is central to any qualitative study. In this study, the researcher will attempt to maintain an epistemologically neutral position and lessen the distance between the researcher and the researched to present an objective as possible analysis (Cooper, 2021).

Ethical Issues

Maintaining appropriate levels of confidentiality is likely the most significant ethical issue to be encountered in this survey. Fortunately, Qualtrics omits Response ID for privacy purposes. Omitting Response IDs limits the researcher's ability to link specific responses to individuals and names. That, in turn, reduces the possibility that privacy will be accidentally violated. In general, the topic area is non-sensitive. However, some questions about personal demographics (e.g., income) may be sensitive. In addition, appropriate record-keeping procedures will need to be designed to comply with ethical and legal requirements. None of this research involves any deception, so that should not be a concern (Cooper, 2021). Finally, the survey will be submitted to the University of Texas at Dallas' Institutional Review Board (IRB) for review and approval.

Study Population and Sample Frame

The targeted local level is The Colony, Texas, and surrounding areas. Depending on the initial response rate, additional distributions may be made through a larger Facebook network but should be mostly concentrated to the identified target geography. Below are the demographic characteristics of the targeted population:

Population Target - The Colony, Texas	
Total Population: 44,500	Race: White: 56.3% Hispanic: 20.7% Black: 11.4% Other: 11.6%
Percentage over 18 years: 78%	Housholds with internet: 98.5%
Gender Percentage: Male 50% / Female 50%	
Source: U.S. Census Bureau quickfacts (2021)	

"Surveys … are never interested in the characteristics of individual respondents per se. Instead, they are interested in statistics that combine those answers to summarize the characteristics of groups of persons. Sample surveys combine the answers of individual respondents in statistical computing steps … to construct statistics describing all persons in the sample." (Groves, Fowler, Couper, Lepkowski, Singer, & Tourangeau, 2009). This survey will seek to draw an inference as to the opinions of people in a local community. The base unit for this study will be the individual person. The sampling frame will be those persons that are members of an internet-based social media group known as the "The Colony, TX Chatter" group supported by the Facebook.com application. In addition, another internet-based social media group known as the Steward Peninsula (a community within The Colony, TX) group will be incorporated into the sampling frame through another internet-based social media platform known as the Nextdoor.com application. Below are the membership levels of each of the two groups:

Facebook.com The Colony Chatter Private Group – 15,600 members

Nextdoor.com Stewart Peninsula Group – 1,100 members

The members of these combined groups, or a subset thereof, form the base of the sampling frame of this study. Additionally, the survey will be limited to those 18 years or older. This strategy is open to the risk of under-coverage of the entire group of persons within the target population because the frame only includes those who subscribe to either of the services and are motivated to participate in the survey. These facts may result in non-observation error. It is also possible that there are foreign (i.e., ineligible) units within the frame. That is, persons who are not part of the The Colony, TX target population yet chose to participate in the groups. There is also the

risk of duplication. Duplication may occur because a person may be a member of both groups and respond to the survey twice, resulting in overrepresentation. Post-survey adjustment analysis will be considered. For example, decisions must be made about including a data record with less than complete information, also known as "item missing data." Finally, this survey is not random, and therefore statistical inferences will be limited.

Methodological Approach

As mentioned above, a survey methodology will be utilized for this research project. A review of currently reported gun law surveys was conducted to develop the survey questionnaire, and relevant questions and demographic data were extracted. The final survey questions and structure are included in Appendix 1. The actual survey was computer-based, and the website presented. With only two exceptions, close-end questioning was utilized.

The most cited advantages of computer-based surveys are that they provide "quick access to information, wide geographical scope, a larger sample size, reduced cost, no need for face-to-face interaction, and no paper wasted" (Fricker & Schonlau, 2002). On the other hand, the commonly cited disadvantages of computer-based surveys are the limited access to or high costs of some databases, the potential for collecting irrelevant data, and low motivation of the targeted respondents (Fricker & Schonlau, 2002). The limited access and high cost of databases can be overcome by obtaining data from several resources. Here two separate groups will be targeted. Finally, the collection of irrelevant data can be alleviated by carefully targeting respondents through data source selection.

The low motivation of the targeted respondents presents a unique challenge. Well-crafted communications that appeal to a communal spirit can help motivate respondents. For example, Almeda, 2009 suggests that the survey introduction should include identifying the persons or organization conducting the study, explaining the importance of the research and reason/s why it is being undertaken, and guaranteeing the confidentiality of responses. Additionally, Almeda, 2009 suggests that surveys begin with neutral questions to draw the respondent into the questionnaire and encourage completion. Almeda, 2009 also recommends that question length and type vary to keep respondents interested and that difficult questions be placed deeper within the questionnaire to avoid having the respondent quit early out of frustration. Groves, Fowler, Couper, Lepkowski, Singer, & Tourangeau, 2009 suggest that sensitive questions, which may be seen as intrusive or embarrassing by the respondent, be placed at the end of the survey (Cooper, 2021). Additionally, making multiple distributions to initial nonrespondents has been shown to be effective in reducing nonresponses (Heberlein and Baumgartner, 1978).

The need for precise question formulation mainly arises because the respondent has limited options for a response to closed-ended questioning. Therefore, if the correction option is not offered or the participant misinterprets the question, they will be unable to answer as the researcher intended (Cooper, 2021). In addition, the guidelines detailed below have also been shown to reduce this risk (Almeda, 2009):

- Questionnaire appearance should be simple and well-spaced.
- Type font and size should be readable.
- Questions should be ordered in such a manner as to provide a logical sequence.
- Question flow should be respondent friendly.
- Response categories should be mutually exclusive.

- Technical terms should be kept to a minimum and defined as required.

- Response categories should include the "Other" option with sufficient space for writing answers.

- Verbally rating scales used an even number of response categories so that no neutral answers were permitted. (Cooper, 2021)

Tourangeau, Rips, & Rasinski, 2000 recommend that all questions be carefully screened for grammatical ambiguity, excessive complexity, faulty presupposition, vague concepts, vague quantifiers, unfamiliar terms, or false inferences.

Using the above guidelines, this research project will request participation from two user groups (see Appendix 2) using a well-crafted solicitation (see Appendix 3). Respondent participation will be encouraged through a well-created survey introduction (see Appendix 1). The overall survey will begin with neutral demographic questions (see Appendix 1) before moving into more in-depth questions. Questions will vary in form (e.g., multiple-choice, fill in the blank, and Likert scale). Sensitive questions will be left at the survey's end (see Appendix 1). In addition to those guidelines, this research will keep survey instructions to a minimum and allow the questionnaire flow to do the navigational work. Appropriate definitions will be supplied during questioning (Cooper, 2021). The survey will be of minimal length (i.e., 5 to 10 minutes) to avoid respondent fatigue. Finally, two separate survey distribution dates will be selected to encourage more responses.

Prior to distribution, the survey will be reviewed and approved by the University of Texas at Dallas' (UTD) Institutional Review Board (IRB).

Method of Data Collection

Before the distribution, the survey detail was approved by the IRB. This approval was multifaceted. First, the researcher had to complete Human Subjects Protection Training and become certified. This was achieved on February 1st, 2022 (See certification in Appendix 4). After completing the certification and drafting of the survey, the researcher accessed UTD's cayuse Human Ethics system and entered the survey details and supporting documentation on March 30th. The cayuse system then provided for multiply reviews and approvals of the survey. The process was challenging as it involved a submission and certification process and a correction, resubmission, and recertification process. Finally, on April 30th, one month after initial submission (see approval in Appendix 5).

The distribution of the survey was conducted using the internet-based Qualtrics Labs, Inc.'s system (www.qualtrics.com). This system allows for the issuance of a survey questionnaire to participants as a web link. There is no interviewer involvement in the data collection process. All survey responses are collected and returned electronically by the Qualtrics system to the researcher. The Qualtrics system allows for response rate tracking over time and a download of responses at the end of the survey.

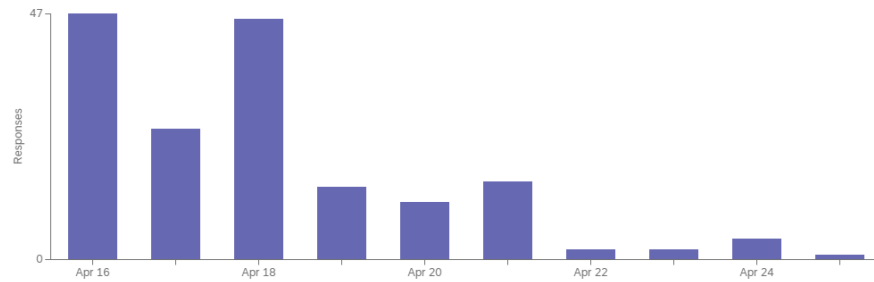Independent parties reviewed survey wording, but no pilot was conducted. However, after launch, a few typographical errors were noted by the respondents in the survey's comment proportion, and those errors were corrected within Qualtrics.

As noted above, the survey was distributed using the following social media platforms:

Facebook.com The Colony Chatter Private Group

Nextdoor.com Stewart Peninsula Group

The first distribution notification was sent on April 16, 2022, and a second distribution notification was sent on April 18, 2022. Here is the level of responses received after each notification:

The final survey data download occurred on April 25, 2022, at 3:30 pm CST. At that time, a total of 159 responses had occurred, divided as follows:

Total Respondents	
Completed	147
Incomplete	11
Declined	1
Total	159

Data Preparation

To clean up the data from further processing, the following procedures were applied:

1. Removed all responses that were incomplete or declined to participate.
2. Removed Question 1, consent, as unnecessary for analysis.
3. Removed other columns not required for analysis (e.g., duration, begin date, end date, etc.).
4. Filled in any "blank" response with "na."
5. Question 13 allowed a text response for religious affiliation. The following corrections were required:

From	To
Bahaâ€™i	Bahai
Episcopean, Episcoplian	Episcopalian
Christian	Removed space charaters
Baptist	Removed space charaters
wiccan	Wiccan

6.

7. Moved all religious affiliations entered as text into the Question 13 field.

8. Deleted Question 13 text field

All data was saved in an Excel file for later processing using R.

Findings

Respondent Demographics

Most respondents currently reside in the Southern US and consider themselves suburban or urban dwellers, as would be expected from the target group. Additionally, many are immigrants to their current location. See responses below:

Geographic Category	Current	Upbringing
Southern United States	90%	55%
Western United States	5%	9%
Midwestern United States	3%	18%
Other	1%	12%
Outside the United States	0%	5%
	100%	100%

Residence Category	Current	Upbringing
Suburban	74%	52%
Urban	21%	29%
Rural	4%	18%
Other	1%	1%
missing	0%	1%
	100%	100%

Respondents are of equally mixed gender. 88% are over the age of 31 years. 75% identify as Caucasian. 73% are college graduates, and 65% have income above $100,000 per year. Thus, most respondents are white, well-educated, and affluent. See responses below:

Gender

Female	53%
Male	46%
Prefer not to say	1%
missing	1%
Total	100%

Age

45 years or older	68%
31 - 45 years old	20%
22 - 30 years old	8%
Prefer not to say	2%
Less than 21 years old	1%
missing	1%
	100%

Race

Caucasian	75%
Two or More	6%
Asian	5%
Latino or Hispanic	5%
Prefer not to say	3%
Black	3%
Native American	1%
missing	1%
	100%

Education

Bachelor's Degree	41%
Master's Degree	27%
Some college	20%
Doctorial Degree	5%
Trade School	3%
High School	1%
Prefer not to say	1%
missing	1%
	100%

Income

$100,000 - $200,000	41%
More than $200,000	24%
$50,000 - $100,000	20%
Prefer not to say	10%
$25,000 - $50,000	3%
Less than $25,000	2%
missing	1%
	100%

Religiosity is generally high, with 80% reporting some religious belief. See below:

Degree of Religiosity

Very religious	5%
Religious	31%
Somewhat religious	24%
A little religious	19%
Religious	80%
Not religious at all	20%
	100%

Of the religious affiliations, some type of Christian faith is in the majority, or 71%. Only 16%

report no religious affiliation. See below:

Religious Affliliation

Protestant	43%
None	16%
Roman Catholic	13%
Christian	8%
Hindu	3%
Buddhist	3%
Baptist	3%
Episcopalian	2%
Jewish	2%
Methodist	1%
No response	1%
Bahai	1%
Existential nihilism	1%
Muslim	1%
Non denominational Christian	1%
Wiccan	1%
Wiccan/ shamanism	1%
	100%

Political ideology is split between conservative and moderate/liberal. Political party affiliation is

divided between Republican and Democrat/Independent. See below:

Political Ideology			Party Affiliation	
Very conservative	10%		Republican	38%
Conservative	24%		Democrat	24%
Somewhat conservative	15%		Independent	23%
Conservatives	50%		No party affiliation	15%
				100%
Moderate	18%			
Very liberal	5%			
Liberal	13%			
Somewhat liberal	13%			
Liberals	31%			
missing	1%			
	100%			

Respondents appear to have limited trust. 87% have only moderately to low confidence in the government. 55% felt that the police might or likely would not protect them from crime.

Finally, only 17% felt that most people could be trusted. See below:

Trust in Government		Federal	State	Average
A moderate amount		43%	44%	43%
A little		25%	27%	26%
None at all		17%	18%	18%
A lot		14%	12%	13%
A great deal		1%	0%	1%
		100%	100%	100%

Ability of Police to Protect Against Crime		Trust in Most People	
Probably yes	35%	Some people can be trusted	66%
Might or might not	26%	Most people can be trusted	17%
Probably not	17%	A few people can be trusted	9%
Definitely not	12%	Very few people can be trusted	6%
Definitely yes	10%	No one can be trusted	1%
	100%	missing	1%
			100%

Most respondents have a fear of crime and gun violence. While only 28% report being a victim of crime, 70% fear that a crime will be committed against them or someone close to them. 23% said that they have experience with gun violence, and 61% said they fear gun violence will be committed against them. Finally, 60% of the respondents reported owning a gun, and 86% reported having fired a weapon.

Respondent Support for Gun Laws

The support for Texas's concealed carry law was surprisingly split, with 51% opposing the law

and 48% supporting the law. 1% had no opinion. See below:

Support Texas Concealed Carry Law	
No	51%
Yes	48%
No opinion	1%
	100%

Those who opposed the law generally felt that it will either make people more aggressive or

increase accidental injuries. See below:

Why NOT Support Texas Concealed Carry Law	
It will cause people to become emboldened and aggressive	60%
It will increase the rate of accidental injuries	25%
It will cause crimes to become more violent	11%
It will cause people to feel anxious and fearful while in public	4%
	100%

Those who supported the law believed that it will make people feel safer and reduce crime. See

below:

Why Support Texas Concealed Carry Law	
It will make people feel safer while in public	54%
It will reduce crime	34%
It will increase social civility	11%
missing	1%
	100%

However, most believe that the law has had little effect on their behavior or that of others. See

below:

Did Texas Concealed Carry Law Change Your Behavior	
No changes	71%
Few changes	13%
Some changes	10%
Significant changes	1%
missing	4%
	100%

Did You Notice Changes in Others Behavior	
No changes	50%
Some changes	18%
Few changes	14%
Significant changes	4%
missing	14%
	100%

Support for other gun laws is detailed below. Most respondents support prohibiting those with

known criminal or mental health issues from owning firearms, while they do not support a

limitation on all handguns or ammunition sales. See below:

Policy Proposal	Support	Oppose	No opinion
Prohibit persons that are subject to an active domestic violence protection order from possessing a gun	89%	5%	6%
Requiring all gun buyers first to pass a criminal background check	88%	11%	1%
Prohibit persons having shown mental health problems from possessing a gun	86%	7%	7%
Require individuals to obtain a safety license before owning any gun	77%	18%	5%
Restricting possession of handguns to persons that demonstrate a viable safety concern	67%	28%	5%
Creation of a mandatory waiting period (example, 15 to 30 days) on all gun purchases	66%	30%	4%
Require gun owners to register firearms in a government database	54%	41%	5%
Ban the sale of assault weapons	47%	45%	8%
Enact stricter regulations on ammunition sales	39%	55%	6%
Ban all handguns, except those used by the police and other authorized persons	18%	74%	8%

Causes of Supporting or Not Supporting Texas' Concealed Handgun Law

To determine the potential demographic causes, a backward and forward log regression was

performed on the available data (see R code in Appendix 6). The best (most predictive) model

suggested the following demographics: population center raised, trust in government and others,

political party, religiosity, fear of gun crime, gun ownership, gun usage, victim of a gun crime,

gender, and age. See below:

Modeling Variables			
Type	Best Model	Name	Description
Dependent		approv_tcc	Approve TX Concealed Carry Law Yes/No
Independent		reside_pop_curr	Currently live in Urban, Suburban, Rural, etc.
"	*	**reside_pop_raised**	**Raised in Urban, Suburban, Rural, etc.**
"		reside_region_curr	Currently live in South, West, etc.
"		reside_region_raised	Raised in South, West, etc.
"	*	**gov_trust_fed**	**Trust federal government**
"	*	**gov_trust_state**	**Trust state government**
"	*	**police_trust**	**Trust police**
"	*	**people_trust**	**Trust others**
"		politic_ideol	Conservative, moderate, liberal
"	*	**politic_party**	**Republican, Democrat, Independent**
"	*	**religiosity**	**Very religious, not religious, etc.**
"		relig_demon	Christian, Jewish, etc.
"		fear_crime_gen	General fear of crime
"	*	**fear_crime_gun**	**Fear of gun crime**
"	*	**gun_fire**	**Has fired a gun**
"	*	**gun_own**	**Has owned a gun**
"		crime_victim	Been a victim of crime
"	*	**crime_gun**	**Been a victim of gun crime**
"	*	**gender**	**Male, female, etc.**
"	*	**age**	**Age grouping**
"		race	White, black, etc.
"		educ	Education level
"		salary	Salary grouping

Future Analysis

This survey produced a rich set of data. A population to questionnaire response analysis might be conducted to verify the representativeness of the responses. A population to questionnaire responses could also allow for a weighting of the responses and potentially improve external extension.. Additional evaluation might be developed on the responses to the other gun laws in addition to the Texas concealed carry law. Other factor-based analyses might also be implicated (e.g., trust in government vs. other dependent variables, etc.).

Study Limitations

As noted above, the main limitation of this survey is that it was non-random, making it difficult to extend externally. Also, the survey was conducted with only two distribution notices and only held open for nine days, making it of limited duration. Additional time and distribution notices might produce a richer dataset.

Bibliography / Citations

Adwere-Boamah, J., & Hufstedler, S. (2015). Predicting Social Trust with Binary Logistic Regression. Research in Higher Education Journal, 27.

Almeda, Josefina V., (2009, August), Introduction to Questionnaire Design, University of the Philippines.

Barragán, J., Ferman, M., & Pollock, C. (2021, June 25). Texans oppose permitless carry, but support expanding Medicaid and restricting transgender student athletes, UT/TT Poll finds. The Texas Tribune. Retrieved February 8, 2022, from https://www.texastribune.org/2021/06/25/texas-permitless-carry-medicaid-transender-students-poll/?utm_source=liveblogshare&utm_medium=social#80a5588e-1699-48ad-8082-fa0a0a5c4817

Brenan, M. (2021, November 23). Stricter gun laws less popular in U.S. Gallup.com. Retrieved February 8, 2022, from https://news.gallup.com/poll/357317/stricter-gun-laws-less-popular.aspx

Cooper, G. (2021). (rep.). The Future of Data Centers.

DeMaris, A. (1995). A tutorial in logistic regression. Journal of Marriage and the Family, 956-968.

Fricker, R.D., & Schonlau, M. (2002). Advantages and Disadvantages of Internet Research Surveys: Evidence from the Literature. Field Methods, 14, 347 - 367.

Groves, Fowler, F. J., Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2009). Survey methodology (2nd ed). Wiley.

Guest, G., Namey, E. E., & Mitchell, M. L. (2012). Collecting Qualitative Data: A Field Manual for Applied Research. SAGE Publications.

Heberlein, T., and Baumgartner, R. (1978), "Factors Affecting Response Rates to Mailed Questionnaires: A Quantitative Analysis of the Published Literature," American Sociological Review, 43, pp. 447-462.

James, G., Witten, D., Hastie, T., & Tibshirani, R. (2013). An introduction to statistical learning (Vol. 112, p. 18). New York: springer.

Maselko, J., & Kubzansky, L. D. (2006). Gender differences in religious practices, spiritual experiences and health: Results from the US General Social Survey. Social science & medicine, 62(11), 2848-2860.

Morning Consult & POLITICO. (2021, April 12). National Tracking Poll #210449 April09-12,2021 ... Texas Gun Sense Org. Retrieved February 8, 2022, from https://www.txgunsense.org/p/2021%20April%20Politico%20Poll.pdf

Schaeffer, K. (2021, September 13). Key facts about Americans and guns. Pew Research Center. Retrieved February 8, 2022, from https://www.pewresearch.org/fact-tank/2021/09/13/key-facts-about-americans-and-guns/

Sparber, S. (2021, June 16). Texans can carry handguns without a license or training starting Sept. 1, after gov. Greg Abbott signs permitless carry bill into law. The Texas Tribune. Retrieved February 8, 2022, from https://www.texastribune.org/2021/06/16/texas-constitutional-carry-greg-abbott/

Surveyusa. (2021, April 19). Everytown for Gun Safety, SurveyUSA News Poll. Surveyusa News poll
     #25895. Retrieved February 8, 2022, from
     https://www.surveyusa.com/client/PollReport.aspx?g=8a963c67-c991-4c86-a39a-93f9ed068bf6

Tourangeau, R., Rips, L., and Rasinski, K. (2000), The Psychology of Survey Response, Cambridge:
     Cambridge University Press.

University of Texas at Tyler. (2021, March 2). Texas voter sample - University of Texas at Tyler.
     Retrieved February 8, 2022, from https://www.uttyler.edu/politicalscience/files/dmn-uttyler-march-
     2020rv.pdf

Appendix 1

Data Survey

Note: The logical format of the below is as follows: General sections are presented as underlined text, subheadings are in plain text title format, question or statement are presented as plain text, potential responses are noted as responses and presented in plain text, and question logic in defined in bracketed text.

<u>Consent Agreement</u>

Welcome to " Texas' Concealed Handgun Law Survey," a web-based experiment that examines peoples' attitude toward the Texas House Bill 1927, known as the Firearm Carry Act of 2021 (H.R. 1927, 2021), commonly called "Constitutional Carry." You do not need to know anything about this law or reside in Texas to answer this survey. This is a general survey about laws that allow citizens to carry a concealed handgun without first obtaining a license. Before taking part in this study, please read the consent form below and click on the "I Agree" button at the bottom of the page if you understand the statements and freely consent to participate in the study.

Consent Form

This study involves a web-based experiment designed to obtain and examine public opinion on Texas' concealed handgun law. The study is being conducted by Glen Cooper and Dr. Karl Ho of The University of Texas at Dallas, and it has been approved by The University of Texas at Dallas Institutional Review Board. No deception is involved and the study involves no more than minimal risk to participants (i.e., the level of risk encountered in daily life).

Participation in the study typically takes 5 to 10 minutes and is strictly confidential. Participants begin by clicking on the below agreement button then on the forward arrow to move from question to question. Participants can revise their responses by clicking the backward arrow. Participants may leave the survey at any time. Participants may also return to complete the survey so long as they return within one week's time.

All responses are treated as confidential, and in no case will responses from individual participants be identified. Rather, all data will be pooled and published in aggregate form only. Participants should be aware that while the experiment is being run from a "secure" https server of the kind typically used to handle credit card transactions, there is a small possibility that responses could be viewed by unauthorized third parties (e.g., computer hackers).

Many individuals find participation in this study enjoyable, and no adverse reactions have been reported thus far.

Participation is voluntary, refusal to take part in the study involves no penalty or loss of benefits to which participants are otherwise entitled, and participants may withdraw from the study at any time without penalty or loss of benefits to which they are otherwise entitled.

If participants have further questions about this study, they may contact the Principal Investigator, Glen Cooper at gxc162030@utdallas.edu or the Faculty Sponsor, Dr. Karl Ho, at kyho@utdallas.edu; Participants who want more information about their rights as a participant or who want to report a research related concern may contact The University of Texas at Dallas Institutional Review Board at (972) 883-4579.

By its very nature, the topic of this survey may be upsetting. If you find that to be true, we encourage you to discuss this with a trained professional.)

If you are 18 years of age or older, understand the statements above, and freely consent to participate in the study, click on the "I Agree" button then the forward arrow to begin the experiment.

Responses: I Agree, I Do Not Agree

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response Requirements = Force response / Skip Logic = End survey if "Do Not Agree" is selected]

Demographics/Political views

Location Demographics

Introduction: Here are a few questions about where you live and where you had your upbringing

What environment do you currently reside:

Response: Urban (city), Suburban (outside a city), Rural (sparsely populated/farming), Other, Don't know

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

What environment do you consider the place of your upbringing:

Response: Urban (city), Suburban (outside a city), Rural (sparsely populated/farming), Other, Don't know

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Where do you currently reside:

Response: Southern United States, Western United States, Midwestern United States, Outside the United States, Other, Don't Know

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Where do you consider the place of your upbringing:

Response: Southern United States, Western United States, Midwestern United States, Outside the United States, Other, Don't Know

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Trust in Authorities Demographics

Introduction: I am going to ask some questions about your feelings towards the government and others.

How much do you trust the federal government?

Response: 1 (None at all) to 5 (A great deal)

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

How much do you trust the state government?

Response: 1 (None at all) to 5 (A great deal)

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Do you believe that the police can adequately protect you against crime?

Response: 1 (Definitely not) to 5 (Definitely yes)

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Would you say most people can be trusted?

Response: 1 (Most people CAN NOT be trusted) 5 (No one can be trusted), Don't know

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Political Awareness

Introduction: I am going to ask some questions about your politics.

Do you describe yourself as:

Response: Very liberal, Liberal, Somewhat liberal, Moderate, Somewhat conservative, Conservative, Very conservative, Don't know

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Generally speaking, do you usually think of yourself as a

Response: Republican, a Democrat, an Independent, No party affiliation, Don't know

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Religious Demographics

Introduction: I am going to ask some questions about your religious involvement and affiliations.

How religious do you consider yourself to be?

Response: 1 (Not religious at all) to 5 (Very religious)

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Which, if any, religious group do you belong to?

Response: Protestant, Roman Catholic, Greek or Russian Orthodox, Mormon, Muslim, Hindu, Jewish, Buddhist, Other - Please specify (9) _____, None

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Emotional Demographics

Introduction: I am going to ask some questions regrading your concerns about crime and guns.

Do you fear that a crime may be committed against you or someone close to you?

Response: 1 (No fear) to 4 (Great fear), Don't know

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

How worried are you that you or someone close to you will become a victim of gun violence?

Response: 1 (No worry) to 5 (Very worried), Don't know

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Gun Contact

Introduction: I am going to ask some questions about your contact with guns.

Gun contact

Have you, personally, ever fired a gun?

Response: Yes, No, Prefer not to say

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Do you now or have you ever owned a gun?

Response: Yes, No, Prefer not to say, Don't know

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Gun violence / Crime

I am going to ask you some questions about your experience with crime.

Have you or someone close to you ever been the victim of (select all that apply)?

Response: Serious crimes against person, Serious crime against property, Other less serious crimes, Never been a victim of a crime, Prefer not to say

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Have you or someone close to you ever experienced gun violence (for example, being threatened with a gun or as the victim of a shooting)?

Response: Yes, No, Prefer not to say

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Opinion firearm laws

Introduction: Texas "Constitutional carry" law makes it LEGAL within the state for any person of 21 years or older to have a handgun that is concealed or holstered on their person in a public space so long as that person has not committed any of four specified crimes (namely, assault causing bodily injury, deadly conduct, terroristic threat, or disorderly conduct with a firearm) which disqualifies a person from carrying a handgun. I am going to ask you your opinion about this new law and about America's gun laws in general.

Do you currently support Texas' "Constitutional carry" law?

Response: Yes, No, No opinion, Don't know

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Why do you support the Texas "Constitutional carry" law (select the best reason)?

Response: It will reduce crime, It will increase social civility, It will make people feel safer

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = Only display if response with "Do you currently support Texas' "Constitutional carry" law?" is Yes]

Why do you oppose the Texas "Constitutional carry" law (select the best reason)?

Response: It will cause crimes to become more violent, It will increase the rate of accidental injuriesIt will cause people to become emboldened and aggressive, It will cause people to feel anxious and fearful while in public, Other _____

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = Only display if response with "Do you currently support Texas' "Constitutional carry" law?" is No]

Did Texas' "Constitutional carry" law cause you to change your behavior?

Response: Significant changes, Some change, Few changes, No changes, Don't Know

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Have you observed any changes from others that you attribute to the passage Texas "Constitutional carry?"

Response: Significant changes, Some change, Few changes, No changes, Don't Know

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Regarding your position on other firearm-related laws, indicate you support level

Creation of a mandatory waiting period (example, 15 to 30 days) on all gun purchases

Require gun owners to register firearms in a government database

Require individuals to obtain a safety license before owning any gun

Restricting possession of handguns to persons that demonstrate a viable safety concern

Requiring all gun buyers first to pass a criminal background check

Prohibit persons that are subject to an active domestic violence protection order from possessing a gun

Prohibit persons having shown mental health problems from possessing a gun

Ban all handguns, except those used by the police and other authorized persons

Ban the sale of assault weapons

Enact stricter regulations on ammunition sales

Responses: Support, Oppose, No opinion:

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Personal Demographic

Opening Message: Please answer the below questions as they relate to your most current status.

What gender do you identify as?

Response: Male Female Non-binary / third gender Prefer not to say.

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

What is your age?

Response: Less than 21 years old 22 - 30 years old 31 - 45 years old 45 years or older Prefer not to say

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Please specify your ethnicity.

Response: Caucasian Black Latino or Hispanic Asian Native American Native Hawaiian or Pacific Islander Two or More Other/Unknown Prefer not to say

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

What is the highest degree or level of education you have completed?

Response: Some High School High School Some college Trade School Bachelor's Degree Master's Degree Doctorial Degree Prefer not to say

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

What is your annual household income?

Response: Less than $25,000 $25,000 - $50,000 $50,000 - $100,000 $100,000 - $200,000 More than $200,000 Prefer not to say

[Question Logics: Response requirements = Yes / Display Logic = None / Question Type = Multiple choice / Answer type = Allow one answer / Response = Requirements = Request response / Skip Logic = None]

Closing

Thank you for your time in completing this survey. Please use the space below to provide any additional comments about this questionnaire, or your thoughts on firearm legislation or crime in the United States. All comments remain strictly confidential. _____

Appendix 2

Sampling Frame

Below is a listing of groups targeted for participation in the research survey:

1. Nextdoor Stewart Peninsula Group – 1,100 members (source: https://nextdoor.com/)
2. Facebook The Colony Chatter Private Group – 15,600 members (source: https://www.facebook.com/groups/TheColonyTXChatter)

Appendix 3

Distribution Message

Hello,

As part of my University of Texas at Dallas program, I am surveying people's attitudes

toward U.S. gun laws and the new Texas concealed handgun carry law that generally

allows anyone over 21 years old to carry a firearm in public without a license. Here is an

opportunity to express your opinions. The survey takes 5 to 10 minutes.

Click on the below link (or cut and paste it into your browser) to begin the survey.

https://utdallas.qualtrics.com/jfe/form/SV_eA6Q6rbgTZJKrKm

Appendix 4

Human Subjects Protection Training

Certification of Completion

UT DALLAS
The University of Texas at Dallas

Human Subjects Protection Training

Certificate of Completion

Completed by: Glen Cooper (gxc162030)

Grade: 100%

Date printed: February 1, 2022

Appendix 5

Institutional Review Board (IRB)

Project Approval

Date: 4-30-2022

IRB #: IRB-22-494
Title: CL - Texas' Concealed Handgun Law Survey
Creation Date: 3-30-2022
End Date:
Status: Approved
Principal Investigator: Glen Cooper
Review Board: UTD Institutional Review Board
Sponsor:

Study History

Submission Type	Initial	Review Type	Exempt	Decision	Exempt

Key Study Contacts

Member	Karl Ho	Role	Co-Principal Investigator	Contact	kxh022100@utdallas.edu
Member	Glen Cooper	Role	Principal Investigator	Contact	gxc162030@utdallas.edu
Member	Glen Cooper	Role	Primary Contact	Contact	gxc162030@utdallas.edu

Appendix 6

R Script

```
###############################################################################
#Administration
#File Name: LogisticTXConstCarryModel.R
#Theme: Logistic Regression on TX Constitutional Carry Survey
#Date: 04/26/22
#Version: 001.000
#Author: Glen Cooper
###############################################################################
setwd("C:/Users/glenc/downloads")
rm(list = ls())   # Clear environment
oldpar <- par()   # save default graphical parameters
if (!is.null(dev.list()["RStudioGD"]))
  dev.off(dev.list()["RStudioGD"])   # Clear plot window
options(warn = 0) #Enable global warnings.  Note to disable use: options(warn = -1)
cat("\014")  # Clear the Console

# NAMING CONVENTIONS ##########################################################
#Dataframe & matrixes names: Begins with capital letter and separated by "_"  e.g., Data_name
#Models: Begins with capital letter and separated by "." e.g., Model.name
#Values & vectors: Begins with lowercase letter and separated by "_" e.g.,  variable_name
#Functions: Begins with lowercase letter and separated by "." e.g., function.name
###############################################################################


###############################################################################
#                              Packages                                     #
#                                and                                        #
#                              Libraries                                    #
###############################################################################

library(readxl) # Read in Excel files
library(dplyr)  # Review data
library(stats)  # Run regressions


###############################################################################
#                             Load Data                                     #
#                                and                                        #
#                           Review / Clean                                  #
###############################################################################
```

```
##Load data, view, and make available
Tx_const_carry_data <-
  read_excel(
    "C:/Users/glenc/Downloads/Tx_const_carry_data.xlsx",
    col_names = TRUE,
    na = "",
    trim_ws = TRUE
  )
View(Tx_const_carry_data)
str(Tx_const_carry_data) #Review classes
countna <-
  function(x) {
    sum(is.na(x))
  } #Define count the number of nas function
sapply(Tx_const_carry_data, countna) #Count number of nas within dataframe
glimpse(Tx_const_carry_data) #Review data by line; requires package dplyr
summary(Tx_const_carry_data) #Summarize dataframe components
attach(Tx_const_carry_data) #Make all variables in dataset available

##Drop one row containing "No Opinion" on TX conceal handgun Law for simplification
Tx_const_carry_data <- Tx_const_carry_data[-23,]
View(Tx_const_carry_data)

##Convert data to data frame and variables from character to factors
Tx_const_carry_df <-
  as.data.frame(Tx_const_carry_data) #Convert to dataframe
glimpse(Tx_const_carry_df) #Review new dataframe
Tx_const_carry_df <-
  subset(Tx_const_carry_data, select = -c(ID)) #Remove the ID variable not needed as factor
Tx_const_carry_df <-
  lapply(Tx_const_carry_df, factor) #Convert all remaining variables to factors
str(Tx_const_carry_df) #Review conversion all remaining variables to factors




###############################################################################
#                              Stepwise                                       #
#                              Logistic                                       #
#                              Regression                                     #
###############################################################################

## Create Base Model
Appr.tcc <-
  glm(
    approv_tcc ~ reside_pop_curr + reside_pop_raised + reside_region_curr +
reside_region_raised
```

```
    + gov_trust_fed + gov_trust_state + police_trust + people_trust + politic_ideol
    + politic_party + religiosity + relig_demon + fear_crime_gen + fear_crime_gun
    + gun_fire + gun_own + crime_victim + crime_gun + gender + age + race + educ + salary,
    data = Tx_const_carry_df,
    family = binomial
  ) #Basic model includes only , family = binomial used to define a logistic regression
summary(Appr.tcc)

## Stepwise Logistic Regression
Appr.tcc.step <-
  stats::step(Appr.tcc, direction = "both") #Direction = both indicates a forward and backward
stepwise regression review
#Display results
summary(Appr.tcc.step)
```