HOW SOCIAL MEDIA USE AFFECTS OPINIONS TOWARDS PRIVACY

December 20, 2021

1 Introduction

In the digital age, people are now more connected than ever with the advent of social media networks. With the increasing prevalence and use of social media, malicious agents have tried to extract information about users to, for example, steal their identities, find their address, or blackmail them. However, in light of high-profile privacy scandals like the Cambridge Analytica scandal, more citizens have started to realize the detriment social media has on protecting one's sensitive information and question their social media use. U.S. policymakers, in response, are considering passing legislation to regulate how social media companies protect user data; however, little has been done to pass regulations on privacy protections. Given the threat, why has little to nothing been done nationally? This lack of regulation could be due to political paralysis or debates on the regulations themselves, but I theorize that the prominence of social media usage may be influencing public opinion.

This paper will study the relationship between social media usage and its effect on privacy concerns. Social media itself may cause people to not care so much about regulations, given how potentially addictive and beneficial it is. Thus, influenced by cognitive dissonance theory, my theory is that increased social media usage will decrease privacy concerns. In this paper, I test this theory using an Associated Press poll about privacy concerns and social media usage. By transforming various response questions into variables, I hypothesize that increased ownership of social media accounts *and* frequency of use will decrease the belief that the federal government should have a greater responsibility in protecting one's privacy.

The results, contrary to my hypothesis, show significant positive causation between social media ownership and opinions about the government's role in protecting privacy. When examining the latter half of the hypothesis, it seems like there is no

statistically significant relationship between the frequency of social media use and the aforementioned dependent variable, which led me to fail to reject the null hypothesis.

2 Theory and Previous Literature

Academia has yet to perform rigorous research on the relationship between social media usage and privacy concerns. However, there has been much research conducted on the presence of privacy concerns, its effect on social media users, and how consumers of an addictive product change their behavior in light of risks.

Research has shown the dangers of revealing personal information on social media and how social media users are quite aware of the associated risks. More specifically, not only does one reveal sensitive information on certain social media platforms—including your IP address, name, location, friends, workplace or other pieces of identifiable information—but users may also unknowingly reveal more information about their personal life through the use of algorithms (Nissenbaum 3). Michael Kearns and Aaron Roth, University of Pennsylvania professors, note in their book *Ethical Algorithm Design* how your shopping history on Amazon can potentially reveal “political beliefs, race, religious practices, and sexual preferences” (120). The mechanism through which algorithms can cluster sizable sizes of data from millions of users to find correlations between seemingly random aspects of users’ lives poses significant safety and privacy risks.

This increasing privacy loss has been widely recognized as a threat, changing social media usage. In a statistical analysis of 354 survey responses, Jozani Mohnsen et al. revealed that both institutional and social privacy concerns decreased social media engagement (10). In a similar study, survey data from 262 students from the Ghana Technology University College revealed that perceived risk had an 11.2 percentage point decrease in satisfaction and privacy concerns had a 22.2 percentage point decrease in satisfaction with statistical significance (Ofori, Kwame Simple, et al.). Research on this relationship has overall shown a negative, statistically significant causal relationship between privacy concerns and social media use/satisfaction.

The effect of privacy concerns could be mitigated by a lack of knowledge of privacy loss; however, survey data has shown the ubiquitousness of this concern. The Pew Research Center in 2014 showed that roughly “91% of Americans ‘agree’ or ‘strongly agree’” that users have little to no control over the collection and distribution of their personal information (Raine, 2018). And, in 2018, Pew conducted another survey on social media users and their opinions on privacy, where 64% agreed that current laws do not provide the necessary protection of users’ privacy (Raine, 2018). Importantly, social media users are aware of both their lack of privacy and lack of protection.

This cry for more privacy has yet to be answered, and psychological research on the theory of cognitive dissonance may help explain why. Social media, in particular, is designed to attract users to interact with their platform and continually use it for profit. A Turkish meta-study of six different studies on epidemiological data of Internet addiction shows how social media intensely triggers dopamine neurons; here, frequent social media use closely aligns with symptoms of alcohol and smoking addiction (Macit, Hüseyin Bilal, et al. 11-12). Researchers in the Journal of Behavioral Addictions corroborated this finding when they found how, in a study of 308 university students frequent social media users suffered a 28 percentage point increase in psychological distress, and yet, students continued to use social media (Chen, I-Hua, et al. 1). Ergo, despite even health risks, the addictive effects of social media spurred continued use.

I argue that social media users are addicted and conflicted: a majority recognizes the privacy concerns with social media and would thus need to cut back on usage to minimize risk, *or* users could justify their use of social media by telling themselves a different story. According to the psychological theory of dissonance reduction, the choice to continue engaging with social media despite risks would increase the attractiveness of the chosen object in a process (Festinger 94). In the case of chronic smokers, when confronted with information that emphasizes the risks smoking has on health, smokers will often reduce dissonance in their beliefs and practice by rationalizing and diminishing their risky behavior (Kassarjian, Harold H., and Joel B. Cohen 63).

Similar to smokers, there may be a mechanism in which social media users rationalize their use by downplaying their privacy concerns to align with their addictive behavior. Ergo, in line with cognitive dissonance theory and building on prior social media research, my theory is that an increase in social media use will decrease privacy concerns.

3 Data

I used an Associated Press-NORC Center for Public Affairs Research dataset on Roper poll that conducted a telephone and web-based survey of 1140 adults between April 11, 2018, and April 16, 2018. The poll asked participants about the direction of the country, foreign relations, opinion on public education, and, for the purposes of this study, social media usage and privacy concerns.

Since social media usage can be interpreted broadly, I used the two most common interpretations of usage as my independent variables. I analyzed answers to the question: “How often do you use the following social media platforms, if at all?” The listed social media platforms are some of the most popular platforms today: Facebook, Twitter, Instagram, Snapchat, WhatsApp, and Reddit. For the first independent variable, I constructed social media usage as the number of owned social media accounts. I coded whether a respondent had an account as a binary variable, where 0 represents that they do not have one, 1 represents that they do, and a missing value represents if they didn’t know or skipped the question. Excluding missing values, I then averaged a respondent’s social media usage by finding the mean of the binary responses of six social media platforms to generate average social media accounts. In a similar vein, for the control variable (the number of accounts), instead of averaging the number of accounts a respondent has, I simply added them together.

The other independent variable uses the same question; however, instead of calculating social media usage as the number of accounts, I used usage of a platform, given they own an account. In regards to an account’s usage, I coded 0 as “Never”; ⅕ as “Less Often”; ⅖ as “At Least Once a Week”; ⅗ as “Once a Day”; ⅘ as “Several Times a Day”; 1 as “Almost Constantly”; and missing values for skipped or don’t know. I

then excluded the few missing values and averaged all six social media platform usages to construct an average social media usage variable.

My key dependent variable approximates how a respondent values their privacy. I used the question: “Now, thinking about who should be responsible for protecting the privacy of social media users...How much responsibility should [the federal government] have for protecting the privacy of social media users?” Respondents who answered “None at all” were 0s; “Small” were ¼; “Moderate” were ½; “Large” were ¾; “Very Large” were 1s; and, skipped or don’t know were coded as missing values. For the cubic regression, I converted this variable into a matrix whose columns represent raw polynomials. Other questions asked about a respondent’s valuation of Internet privacy, but they didn’t directly address social media concerns. In addition, a political opinion on protecting privacy will likely represent how someone values privacy, considering that want for regulation oftentimes speaks to valuation for that good. I considered using social media companies as the agent for responsibility, but it wouldn’t speak to how strongly someone feels about privacy—those who value privacy should believe there needs to be some significant, legal check on these companies.

The mechanism of social media usage and privacy concern is expected to correlate heavily with other variables that affect both of them. The following controls are included: partisanship, age, education, knowledge of the Cambridge Analytica scandal, and number of accounts.

Partisanship influences both social media usage and opinions on the federal government. More specifically, Independents and Republicans may frequent Reddit and Facebook more than Democrats, considering how those platforms host more conservative material than the other platforms. Also, partisanship will affect people’s general opinion towards an expansion of government regulation because Republicans are often wary of big government.

Age affects frequency and the type of social media usage and opinions on privacy. Age is expected to influence how many social media accounts someone has, considering that social media is a relatively new phenomenon. Age is also expected to influence how often someone uses social media; since all social media platforms are weighed equally, older respondents may use Facebook frequently, but not other

platforms, causing their average to roughly be the same as someone who uses all six platforms infrequently. Age additionally controls the opinion of the federal government protecting privacy because older people may support the establishment more, decreasing criticism of the government.

Education level is expected to affect social media usage because educated people are more likely to be involved in the information economy, and thus, their jobs would likely entail them to spend more time on social media. In regards to privacy regulations, educated people are expected to support privacy regulations because they would know more about privacy risks and the perceived positive impact regulations would have on safety.

The number of accounts is only used to control for the relationship between social media usage and privacy concerns because the number of accounts would be collinear with the average number of accounts. Additionally, I don't use social media usage as a control for the other regression because it would decrease the effect of those who have used social media in the past but use it less frequently now. Respondents may not fully respond truthfully about social media usage considering how addicting it is, so it may be useful to analyze less emotionally-charged information, such as number of accounts. As stated in the discussion about age, one may use social media less because they don't own many accounts. In addition, it is expected that owners of multiple accounts will value privacy less because of the aforementioned relationship with cognitive dissonance.

Since researchers conducted this study in April of 2018, many had recently heard about the Cambridge Analytica scandal. Knowledge of the Cambridge Analytica scandal is to control social media usage—according to this same poll, many respondents reported uninstalling or using social media less because of the scandal. In addition, knowledge of the Cambridge Analytica scandal may temporarily exaggerate an average, lay person's value of privacy, which may encourage them to push for greater privacy regulations.

Table of Descriptive Statistics (Associated Press-NORC Center)

Table of Descriptive Statistics

Statistic	N	Mean	St. Dev.	Min	Median	Max
Average of Number of Social Media Accounts	1,047	0.56	0.35	0.00	0.50	1.00
Average of Social Media Usage	967	0.41	0.26	0.00	0.40	1.00
Facebook Use	921	0.61	0.30	0.00	0.80	1.00
Twitter Use	596	0.22	0.29	0.00	0.10	1.00
Snapchat Use	526	0.27	0.34	0.00	0.20	1.00
WhatsApp Use	476	0.23	0.32	0.00	0.00	1.00
Instagram Use	623	0.36	0.35	0.00	0.20	1.00
Reddit Use	379	0.16	0.28	0.00	0.00	1.00
Democrat	1,140	0.36	0.48	0	0	1
Republican	1,140	0.25	0.43	0	0	1
Independent	1,140	0.23	0.42	0	0	1
Age 18-29	1,140	0.14	0.34	0	0	1
Age 30-39	1,140	0.24	0.43	0	0	1
Age 40-59	1,140	0.32	0.47	0	0	1
Age 60-64	1,140	0.09	0.28	0	0	1
Age 65 or More	1,140	0.21	0.41	0	0	1
Less than High School Education	1,140	0.05	0.22	0	0	1
High School Graduate or Equivalent	1,140	0.18	0.39	0	0	1
Some College Education	1,140	0.43	0.49	0	0	1
College Graduate	1,140	0.34	0.47	0	0	1
Number of Accounts	1,031	3.37	2.12	0.00	3.00	6.00
Knowledge of the Cambridge Analytica Scandal	1,140	0.65	0.32	0	0.7	1
Government Responsibility to Protect Privacy	1,124	0.60	0.33	0.00	0.50	1.00

4 Hypotheses and Empirical Tests

The null hypothesis in this study is the absence of a statistically significant relationship between both ownership of social media accounts and frequency of social media use and the opinion that the federal government should have a greater responsibility to protect user privacy.

I hypothesize that an increase in social media usage through ownership (1a) and frequency of use (1b) will decrease the belief that the federal government should have greater responsibility to protect privacy. To test this hypothesis, I created two OLS (ordinary least squares) bivariate linear regressions. The first regression examines the relationship between ownership of social media accounts and beliefs about federal responsibility, and the second regression examines the relationship between social media usage and the same dependent variable. To illustrate one of the Gauss-Markov Theorem assumptions of homoscedasticity, I also performed a robust standard error of both analyses.

To account for the controls that are expected to mediate the relationship between the independent and dependent variables, I conducted a multivariate regression using the same variables in the bivariate regression and also included the control variables: partisanship, age, education, number of accounts (excluding the regressions where the average of the number of accounts is included), and knowledge of the Cambridge Analytica scandal. To similarly ensure Gauss-Markov assumptions, I performed a robust standard error analysis.

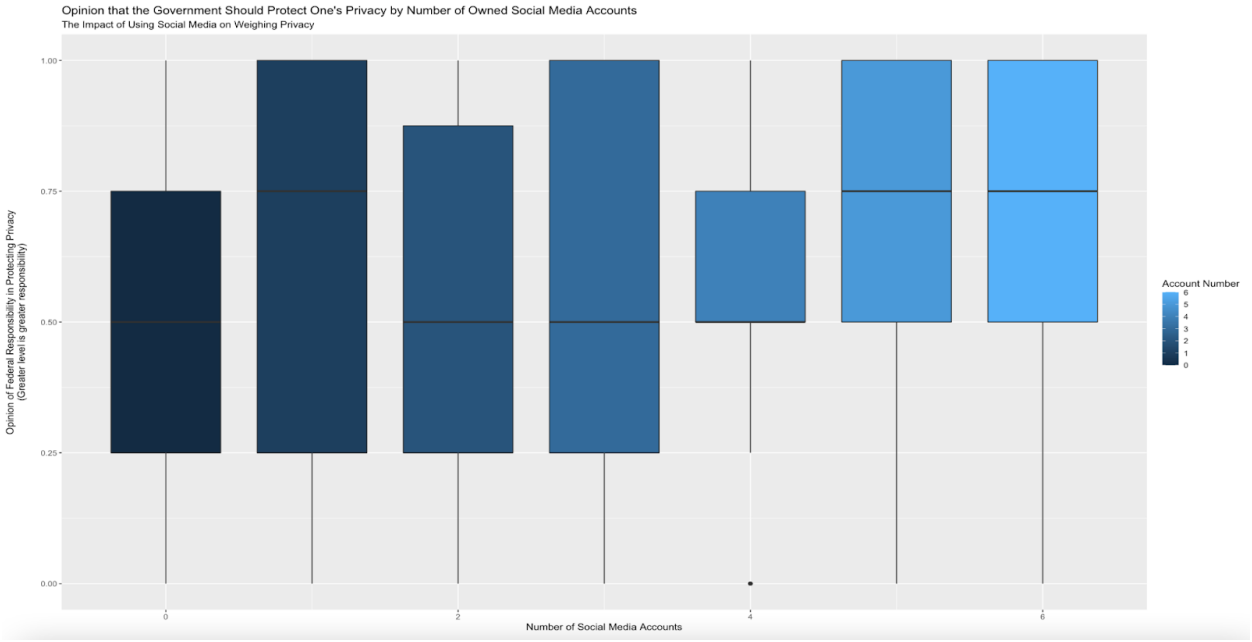
Additionally, the institutional design of social media platforms may cause wide variations in privacy opinions, which may decrease the linear relationship across all platforms (Jozani, Mohnsen, et al. 10). As a result, I conducted both a bivariate and multivariate polynomial, cubic regression with social media usage as the independent variable and belief about federal responsibility in privacy as the dependent variable. After including a coefficient test, I plan to investigate whether the usage of social media has a statistically significant relationship with the valuation of privacy.

To reject the null hypothesis, both relationships (1a and 1b) must have a p-value less than .05. While there's little difference between p-values of .499 and .501, restricting statistical significance to a p-value of .05 would entail a 5% chance that the OLS relationship is due to Type 1 error and ensure a 95% confidence interval. This essentially minimizes the likelihood of a false positive or rejecting the null hypothesis when the relationship was actually due to random assignment, for instance.

5 Results

Hypothesis 1a: Average Ownership of Social Media Decreases the Belief of the Federal Responsibility to Protect Privacy

Figure 1: Social Media Account Number and Federal Responsibility to Protect Privacy



As seen in Figure 1, an increase in the number of social media accounts roughly has a positive correlation with an increase in the belief that the federal government must have a greater responsibility in protecting social media users' privacy.

According to the OLS regression in Table 1, the bivariate regression holds that an increase in average social media ownership is associated with a 6.3 percentage point increase in the dependent variable. The p-value of this relationship is less than .05, which suggests a 95% confidence interval, and the effect size that is calculated by dividing the coefficient by the standard deviation is lower than .25 but still lies at a considerable .18 (.063/.325).

To adequately show causality, the multivariate regression, when holding five explanatory variables constant, shows an 8.1 percentage point increase in the dependent variable with a corresponding 99% confidence interval. The effect size is .249 (081/0.325), which is nearly the .25 standard for a substantive change in the

dependent variable. This means that a unit change in average social media ownership correlates with a .249 standard deviation increase in a greater responsibility of the government to protect social media users' privacy.

When accounting for the controls on age, education, social media use, and partisanship, the most significant control seems to be knowledge of the Cambridge Analytica scandal. Since this binary variable is coded as 0 when someone has never heard of it and 1 if they have heard a lot about it, a unit change in this variable represents a significant change in Cambridge Analytica knowledge. When assessing the relationship between this control and the dependent variable, a unit change is correlated with a 9.2 percentage point increase in believing the federal government should play a larger role in protecting users' privacy. With a 95% confidence interval and an effect size of .28(.092/.325), this control variable seems to have a significant and substantive causal relationship with the dependent variable, which aids in reducing omitted variable bias.

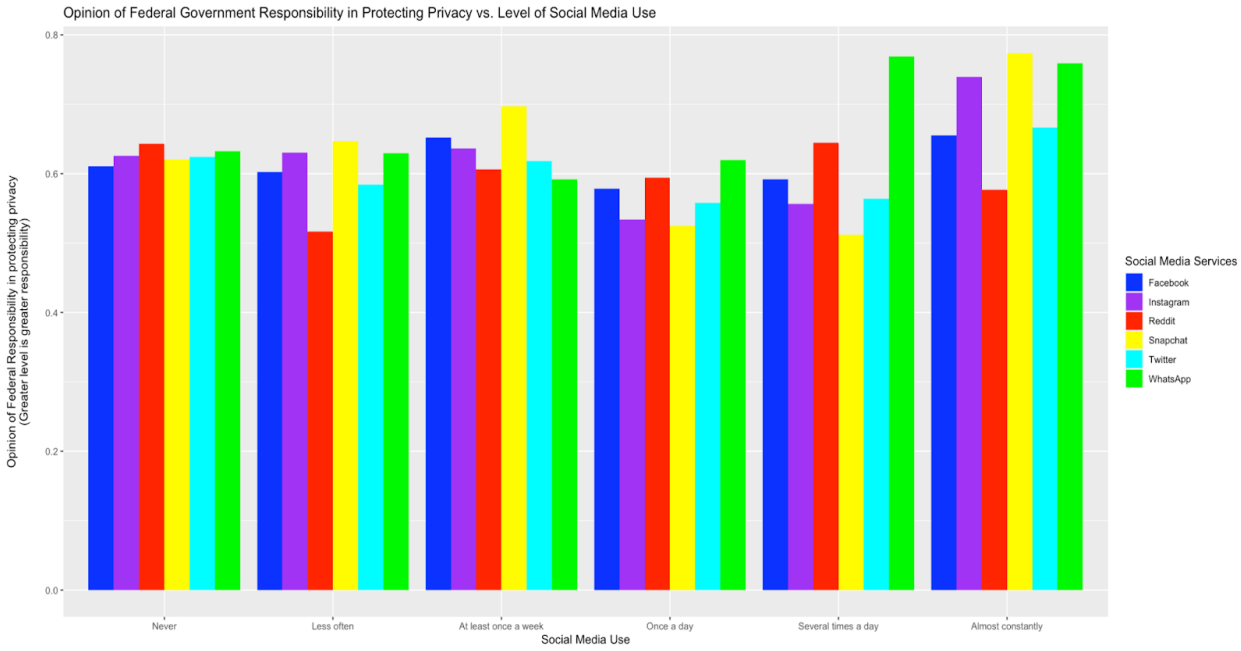
When holding for social media use, age, education, and knowledge of the Cambridge Analytica scandal, partisanship seems to be only substantively and significantly causally related for one party. More specifically, with a p-value of less than .001, or a 99.9% confidence interval, identifying as a Democrat rather than an Independent causes a 10.1 percentage point increase in the dependent variable. On the other hand, identifying as a Republican has a confidence interval much less than 95%, and even if the results were statistically significant, the finding is not that substantively significant with the correlation between the two variables close to zero.

When controlling for the other explanatory variables, age, similarly, only seemed to be substantive and significant for one specific age range. Since those 18-29 years of age were the excluded group, a unit change in the age 65 or more group meant a change in the dependent variable from being 18-29 years old to 65 years old. This unit change is an 11.0 percentage point increase in the dependent variable, with a 99.9% confidence interval and effect size of .34 (.11/.325). However, for the ages 30-39, 40-59, and 60-64, a unit change seems to increase the dependent variable, but the confidence intervals are less than 95% and none of the coefficients generate an effect size greater than .25.

Education level, after holding the other independent variables constant, has only one substantive and significant relationship. Since high school education was used as the excluded group (given that the less than a high school education category had very few respondents), the difference between high school education and a college degree or more seems to cause a -12.1 percentage point decrease in the dependent variable with a confidence interval of 99.9%. There also seems to be a substantive relationship with an effect size of .372(.121/0.325).

Hypothesis 1b: Social Media Use Decreases the Belief of the Federal Responsibility to Protect Privacy

Figure 2: Social Media Usage of Six Platforms and Fed Responsibility to Protect Privacy



According to the OLS regression in Table 2, the OLS bivariate regression model shows little to no substantive nor significant correlation with a p-value greater than .05 and an effect size close to zero. When including controls in the multivariate regression, it seems like social media usage, while not statistically significant, seems to correlate with a 5.2 percentage point increase in the dependent variable, which has a relatively small effect size of .16 (.052/0.325).

The other control variables, except the number of accounts, have the same analyses as compared to Table 1, except with slightly different coefficients. After

including the number of accounts as a control, each additional account is a 1.4 percentage point increase in the dependent variable with a 95% confidence interval. The effect size is a measly .04; however, a change from zero to six accounts would have an effect size of .34 (.014*8/0.325), signifying a substantive relationship.

Figure 2 shows how the level of usage and the belief that the federal government should intervene to protect privacy does not vary drastically across various social media platforms. Interestingly, there seems to be a cubic relationship where “Never” to “Once a Week” is concave and “Once a Day” to “Almost Constantly” is convex.

According to the OLS bivariate regression in Table 3, the once statistically insignificant social media usage variable is now statistically significant when modeled like a cubic function. The generated model is $.946x^3 - 1.263x^2 + .458x + .564$. While cubic coefficients translate less well into statistical analysis compared to linear regressions, one can interpret the p-value, which puts the relationship’s causation at a 95% confidence interval. And the effect size, using Cohen’s f2 effect size formula, is .005 ((0.00575)/(1-0.00575)), which is essentially negligible.

After including controls, statistical significance decreases with the main independent variable. More specifically, the confidence interval shrinks from 95% to about 90%, which is far from showing causality. However, the effect size increases to .08 (0.07823)/(1-0.07823), which is still lower than the .25 to constitute a substantive effect on the dependent variable. As a result, social media usage does not significantly nor substantively cause a change in beliefs about the federal government’s role in regulating privacy.

Interestingly, when controlling for social media usage, the education level of “Some Education” is correlated with a decrease in the dependent variable by 7 percentage points. With a confidence interval of 95% and an effect size of -.22(-0.070/.325), this can be considered a significant and substantive relationship.

Table 1: Account Number and Federal Responsibility to Protect Privacy

	Dependent variable: Federal Responsibility to Protect Privacy			
	Bivariate Regression	Bivariate Regression	Multivariate Regression	Multivariate Regression
	OLS	*Robust Standard Error*	*OLS*	*Robust Standard Error*
	(1)	(2)	(3)	(4)
Average Number of Social Media Accounts	0.063*	0.063*	0.081**	0.081**
	(0.028)	(0.028)	(0.031)	(0.030)
Age 30-39			-0.007	-0.007
			(0.038)	(0.038)
Age 40-59			0.049	0.049
			(0.036)	(0.037)
Age 60-64			0.010	0.010
			(0.047)	(0.048)
Age 65 or More			0.110**	0.110**
			(0.040)	(0.041)
Democrat			0.101***	0.101***
			(0.026)	(0.026)
Republican			-0.003	-0.003
			(0.028)	(0.029)
Less than High School Graduate			-0.043	-0.043
			(0.061)	(0.067)
Some College			-0.061	-0.061
			(0.031)	(0.031)
College Graduate			-0.121***	-0.121***
			(0.032)	(0.031)
Knowledge of Cambridge Analytica Scandal			0.092*	0.092*
			(0.037)	(0.039)
Constant	0.567***	0.567***	0.478***	0.478***
	(0.019)	(0.019)	(0.051)	(0.052)
Observations	1,034		884	
R2	0.005		0.072	
Adjusted R2	0.004		0.061	
Residual Std. Error	0.322 (df = 1032)		0.313 (df = 872)	
F Statistic	4.934* (df = 1; 1032)		6.182*** (df = 11; 872)	

Note: *p<0.05; **p<0.01;** p<0.001

Table 2: Social Media Usage and Federal Responsibility to Protect Privacy

	Dependent variable: Federal Responsibility to Protect Privacy			
	Bivariate Regression	Bivariate Regression	Multivariate Regression	Multivariate Regression
	OLS	*Robust Standard Error*	*OLS*	*Robust Standard Error*
	(1)	(2)	(3)	(4)
Average Use of Social Media Accounts	*0.006*	*0.006*	*0.052*	*0.052*
	(0.040)	*(0.040)*	*(0.052)*	*(0.053)*
Age 30-39			*0.005*	*0.005*
			(0.038)	*(0.039)*
Age 40-59			*0.052*	*0.052*
			(0.038)	*(0.039)*
Age 60-64			*0.013*	*0.013*
			(0.051)	*(0.053)*
Age 65 or More			*0.133***	*0.133***
			(0.044)	*(0.044)*
Democrat			*0.106****	*0.106****
			(0.027)	*(0.027)*
Republican			*0.001*	*0.001*
			(0.029)	*(0.031)*
Less than High School Graduate			*-0.085*	*-0.085*
			(0.067)	*(0.074)*
Some College			*-0.076**	*-0.076**
			(0.033)	*(0.032)*
College Graduate			*-0.138****	*-0.138****
			(0.034)	*(0.032)*
Number Of Accounts			*0.014**	*0.014**
			(0.007)	*(0.007)*
Knowledge of Cambridge Analytica Scandal			*0.102***	*0.102**
			(0.039)	*(0.042)*
Constant	*0.605****	*0.605****	*0.452****	*0.452****
	(0.019)	*(0.019)*	*(0.068)*	*(0.070)*
Observations	*954*		*801*	
R2	*0.00003*		*0.080*	
Adjusted R2	*-0.001*		*0.066*	
Residual Std. Error	*0.322 (df = 952)*		*0.312 (df = 788)*	
F Statistic	*0.024 (df = 1; 952)*		*5.724**** *(df = 12; 788)*	

Note: *p<0.05; **p<0.01;** p<0.001*

Table 3: Cubic Model for Social Media Usage and Fed. Responsibility to Protect Privacy

	Dependent variable: Federal Responsibility to Protect Privacy:			
	Bivariate Regression	Bivariate Regression	Multivariate Regression	Multivariate Regression
	OLS	*Robust Standard Error*	*OLS*	*Robust Standard Error*
	(1)	(2)	(3)	(4)
Average Usage Linear Coefficient	*0.458***	*0.458***	*0.540**	*0.540**
	(0.228)	*(0.226)*	*(0.278)*	*(0.289)*
Average Usage Quadratic Coefficient	*-1.263***	*-1.263***	*-1.268**	*-1.268*
	(0.631)	*(0.629)*	*(0.746)*	*(0.777)*
Average Usage Cubic Coefficient	*0.946***	*0.946***	*0.863*	*0.863*
	(0.460)	*(0.464)*	*(0.532)*	*(0.563)*
Age 30-39			*-0.002*	*-0.002*
			(0.038)	*(0.038)*
Age 40-59			*0.061*	*0.061*
			(0.038)	*(0.039)*
Age 60-64			*0.025*	*0.025*
			(0.049)	*(0.051)*
Age 65 or More			*0.135****	*0.135****
			(0.043)	*(0.043)*
Democrat			*0.098*****	*0.098*****
			(0.026)	*(0.026)*
Republican			*-0.002*	*-0.002*
			(0.028)	*(0.030)*
Less than High School Graduate			*-0.049*	*-0.049*
			(0.063)	*(0.070)*
Some College			*-0.070***	*-0.070***
			(0.032)	*(0.032)*
College Graduate			*-0.123*****	*-0.123*****
			(0.032)	*(0.031)*
Number Of Accounts			*0.013***	*0.013***
			(0.006)	*(0.006)*
Knowledge of Cambridge Analytica Scandal			*0.089***	*0.089***
			(0.037)	*(0.040)*
Constant	*0.564*****	*0.564*****	*0.420*****	*0.420*****
	(0.020)	*(0.020)*	*(0.059)*	*(0.061)*
Observations	*1,124*		*871*	
R2	*0.006*		*0.078*	
Adjusted R2	*0.003*		*0.063*	
Residual Std. Error	*0.325 (df = 1120)*		*0.313 (df = 856)*	
F Statistic	*2.159* (df = 3; 1120)*		*5.189***** (df = 14; 856)*	
Note:				*p<0.1; **p<0.05;** p<0.01*

6 Discussion and Conclusion

This study aimed to analyze the effect that social media usage has on user privacy concerns. I hypothesized that an increase in both social media usage through account ownership and frequency of use would decrease support for greater federal responsibility over protecting privacy. Based on the graphical and regression analyses, the results suggest, after controlling for other explanatory variables, that ownership of social media accounts seems to substantially and significantly increase a respondent's belief in the greater federal role in privacy. This relationship goes against the theory that cognitive dissonance will greatly influence the way people perceive privacy concerns.

However, the linear relationship of average social media usage seemed to be neither statistically nor substantively significant. Once I transformed the independent variable to model a cubic relationship, statistical significance increased to a 90% confidence interval, but a 90% confidence interval is not small enough to confidently show causality. Thus, these findings allow us to reject the null hypothesis for hypothesis 1a but not for hypothesis 1b. As a result, I overall failed to reject the null hypothesis because of the lack of statistical significance of testing 1b.

One limitation of this study is the presence of omitted variable bias—excluding key explanatory variables that affect social media usage and privacy concerns. A variable that could be included to isolate this relationship would be occupation. I somewhat liken occupation to education level; however, specific occupations may be occupied by varying education levels. Membership to certain occupations would have a much greater effect on concerns about privacy among, for example, social workers or software developers. Occupation would also affect social media usage because different jobs use social media at various levels.

Another limitation is measurement error in the dependent variable, which attempts to translate opinions about the government's role in protecting privacy into valuations of privacy concern in my hypothesis. Although the utilized dependent variable is a fairly good indicator of privacy concern, another question that may get at the heart of privacy concerns is a general question about how worried a respondent is about their privacy on social media platforms, which would not be as politically charged. Asking a

more poignant question could have less noise in the data because it would reduce variance due to factors besides privacy valuation.

Considering previous research has not delved into this relationship, these findings do not corroborate or disprove previous findings. However, my results suggest that cognitive dissonance theory may not be the strongest framework for understanding the relationship between social media use and privacy concerns. Further research should measure levels of addiction on social media to the effects on privacy valuations since cognitive dissonance theory often acts strongest in presence of addiction. In addition, Figure 2 showed an interesting relationship where anonymous social media platforms like Twitter and Reddit had, on average, fewer users that valued privacy, compared to less anonymous platforms like Facebook, Instagram, Snapchat, and WhatsApp. The small sample size of WhatsApps users, in consideration of the many levels of use, does not allow this dataset to effectively illustrate said relationship, but more surveys and research can be done to show how privacy and anonymity in the institutional design of social media platforms affect privacy concerns.

Privacy concerns, as noted in the literature review, significantly affect usage. This study hopes to motivate more social science research—with narrower questions and a larger sample size—to delve into whether social media usage, across its millions of users, affects the very beliefs that allow for the lack of privacy regulations. Hopefully, using this research would inspire policy that protects citizens from disastrous attacks on their privacy.

7 Work Cited

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