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The Impact of Gender on the Acceptance of Surveillance Technology

Jody Messick

Introduction

A classic dilemma facing governments and citizens alike is the trade-off between privacy and security. This concept is found in the Constitution's Fourth Amendment, which implies that citizens have a right to be protected against "unreasonable searches and seizures by the government" (FindLaw 2019). The technological revolution, and its implications for privacy, has complicated the nature of this right. Different types of data require different approaches to the privacy versus security tradeoff. A 2003 panel by Wright et. al asks how "sensor data," data that is collected through technology that tracks a user's online or real-world movements, should be approached, and characterize its existence as a "real and growing privacy threat" (Wright et. al 2003). Surveillance technology falls into this category.

Certain demographics value privacy more than others. In the context of Privacy Enhancing Technologies (systems that can protect the identity of application users), people of color and women appear to value privacy more than Whites in the context of online forums and in personal data collection (Joshghani, Ekstrand et. al 2018). Therefore, it is reasonable to believe that this difference in preference of privacy over security, or visa-versa, may exist along gendered lines—specifically women. In a small sample survey, van Heek, Arning, and Ziefle found that in the face of higher levels of threat, participants were more likely to prefer security over privacy, with more women tending to value security over privacy in comparison to men. These theoretical differences beg the question if there are real-world implications for the differences in how men and women feel about security measures in their daily lives. This gives significance to my research question: How does gender affect the acceptance of surveillance technology?

It is generally accepted that men and women navigate the world differently. Many (if not most) women plan their days to avoid a walk home alone at night, avoid spending too long in a public space by themselves, and generally will go out of their way to decrease the perceived danger that they feel (Farah and Farah n.d.). Even if the actual risk of being harassed, robbed, or otherwise victimized is small, this fear often alters the use of public spaces such as streets, parks, and public transportation for women in comparison to men.

Public surveillance technology seems like an obvious solution. New York City has installed approximately 15,280 surveillance cameras that are connected to facial recognition technology (Amnesty International 2021). But programs like these have received significant pushback. Amnesty International has joined the “Ban the Scan” campaign against New York City’s surveillance technology network, fearing the use of this technology has enabled the local government to violate certain human rights, particularly for participants in the Black Lives Matter protests (Amnesty International 2021).

At the same time, there has been a push to make public spaces more gender equal in accessibility. Local authorities in Mexico City, Mexico, have created a “Pink Transportation” system, a system designed for the exclusive use of females in the city (Dunckel-Graglia 2013). The rape and murder of Sarah Everard by a London police officer as she walked home in March of 2021 was an event that drew international outrage and became a call for action to prevent violent acts against women in public spaces. Millions of women shared personal stories of their experiences of victimization and their daily fear of victimization (Legrand 2021). The global outrage and media attention that followed Everard’s murder morphed into demands that public spaces should be made safe and accessible for women (Legrand 2021).

Given the apparent high demand for public safety and to equalize the use of public spaces, it is essential to understand how controversial high-tech solutions, such as security cameras and facial recognition, differentiate in their popularity along gendered lines. Thus, I investigate the link between gender and the acceptance of surveillance technology in public spaces.

To do this, I utilize survey data that asks respondents how they feel about the use of surveillance technology in public places. I hypothesize that there are significant differences in the likelihood of accepting surveillance technology between men and women. I also hypothesize that female responses will be positively correlated with state-level crime statistics because female acceptance of surveillance technology varies with threat perception, and threat perception reflects actual rates of crime. Therefore, as crime rates increase, female acceptance of surveillance technology also increases. I also hypothesize that because crime victimization is more related to gender than terrorism victimization, the gendered difference in surveillance technology acceptance will be greater in the context of crime than when framed as a method to prevent terrorism.

I find that women are indeed more likely to accept surveillance technology in comparison to men, and that female acceptance is positively correlated with state-level crime statistics. However, the gendered difference in surveillance technology acceptance is found to be significantly greater in the context of terrorism than in the context of

crime. This is contrary to my stated hypothesis that there will be a greater gendered difference in surveillance technology acceptance in the context of crime than in the context of terrorism.

Literature Review

In the choice between privacy versus security, America has come to favor privacy. Gumpert and Drucker argue in their 2009 paper that Americans have come to value their privacy more as individuals' public information has become more accessible to other private individuals. They posit that privacy has become a greater area of concern for Americans more broadly, citing trends from 1970–1992 Harris-Westin polling data (Westin 1991). This is especially true of surveillance conducted by the United States' National Security Agency (NSA). The NSA has been strongly opposed by many Americans since the Edward Snowden data leaks, which exposed the NSA's program of mass civilian surveillance in the name of terrorism prevention (Reddick, Chatfield, and Jaramillo 2015). Some opponents of surveillance technology in public spaces urge the courts to stifle its use, citing the potential abuse of power by the state enabled by mass surveillance (Slobogin 2002). Other opponents make the argument that such technology will warp the dynamics of life in public spaces and subsequently decrease the quality of life in these spaces (Patton 2000).

The literature surrounding the actual effectiveness of surveillance technology in deterring crime is controversial. In a randomized field experiment conducted in New Jersey by Caplan, Kennedy, and Petrossian, the implementation of security cameras in businesses had mostly no significant impact on crime levels in the area (the cameras were installed so the viewing field included public spaces). Analyzing the results across three outcome measures showed that only auto thefts were significantly impacted by the treatment (Caplan, Kennedy, and Petrossian 2011). Giovanni and McGarrell conducted similar research in 2020 on the implementation of “Project Green Light,” a program that required businesses to install cameras and signs to prevent crimes in Detroit, Michigan. Its results were also mixed; Project Green Light had a significant negative impact on disorder and property related crimes, but no statistically significant impact on violent crime rates.

The actual effectiveness of surveillance technology is relevant to the implications of my research question. If surveillance technology can deter crime, then it can be a plausible solution to the gender inequality of public spaces. But it does not necessarily affect potential gender differences in the acceptance of surveillance technology in public spaces. Instead, the perception of the surveillance technology itself has more implications for this question. Koskela argues that women may be more hesitant to approve of surveillance technology precisely because of gender-related issues. The operators and monitors of surveillance equipment are more likely to be male, which for some women, merely extends perceived male dominance in the public spaces from the physical sphere to the digital sphere. Women may also fear subjectivation to the male gaze through the guise of surveillance, especially if cameras are hidden. In addition, verbal harassment

and other threats made toward women may not be readily apparent in videos. For this reason, cameras that are hidden may have a detrimental effect on female acceptance of surveillance technology. Koskela also finds that women are concerned with the politics behind public surveillance, which may impact their willingness to accept it as a policy (Koskela 2002).

However, there is literature to support a gendered difference in surveillance technology acceptance. In a survey of 99 participants in Germany, van Heek, Arning, and Zeifle find that women are more likely to prefer security to privacy than men and that this tradeoff varied with how public the area under question was. This demonstrates how perceived threat level could be a mechanism for this difference (Van Heek, Arning, and Zeifle 2014). While insightful, the scope of the survey data used in this study is extremely limited. It is also based on the responses of German citizens, and the value of privacy versus security may differ between German and US citizens. Therefore, a US-based national-level analysis is needed to strengthen the correlation between gender and a preference for privacy or security.

In discussing gender perception in public spaces, it is helpful to address how men interact with public spaces. Day, Stump, and Carreon provide qualitative insights into how males perceive public spaces. They find that safety for men can be viewed through the lens of how spaces confirm or confront their masculine identities. Spaces that challenge qualities that are traditionally associated with masculinity, such as control, may subsequently negatively impact their perception of safety in that space (Day, Stump, and Carreon 2003). The possibility that the perception of safety is gendered gives context to potential gendered differences in the acceptance of surveillance technology.

Existing literature implies that there may be a gendered difference in the acceptance of surveillance technology, but the direct relationship between gender and surveillance technology acceptance has yet to be explored. This research will shed light on this relationship and investigate why a gendered relationship does exist. The results have implications for how the security versus privacy dilemma is viewed, and how public safety should be discussed and approached in the United States.

Hypotheses

I hypothesize that women are more accepting of surveillance than men because they view threats differently. Women perceive a higher risk of becoming victim to crimes, a perception that is contributed to by a different combination of threats in comparison to men (May, Rader, and Goodrum 2010). More specifically, sexual crimes are correlated with heightened risk perception for women, but not for men (May, Rader, and Goodrum 2010). This seems to translate to a greater willingness to sacrifice privacy for security, a concept that is supported by the literature (Van Heek, Arning, and Zeifle 2014). To directly test the causal mechanism of a heightened perception of threat experienced by women, I will also analyze how state-level crime rates interact with the acceptance of public surveillance.

H1: In the context of crime, women will be more accepting of the implementation of surveillance technology in public spaces in comparison to men.

If it is true that the perceived threat of crime victimization drives higher acceptance of surveillance technology among women, then it should also be true that women in areas of high violent crime will be more willing to accept surveillance technology precisely because they perceive higher levels of threat than women in lower violent crime areas. This hinges on the assumption that women can accurately gauge the prevalence of crime in their community, an assumption that is supported by existing literature. A study that analyzed survey data across New Delhi, India found that respondents were generally able to accurately perceive the odds of sexual harassment experienced by women in public transportation (Madan and Nalla 2016). The same study found that men were more likely than women to underestimate the “seriousness of sexual harassment behaviors” given a specific scenario (Madan and Nalla 2016, 94). This suggests a difference in the perception of sexual harassment threats in public spaces between men and women. These findings support the assumption that women perceive a threat of victimization that reflects the crime rates of their environment and that women perceive an increased threat of victimization in comparison to men. This is the mechanism that contributes to higher acceptance of public surveillance technology among women. To test this mechanism, I look at the relationship between crime rates and women’s acceptance of surveillance technology in public spaces.

H2: Acceptance of surveillance technology by women will be positively correlated with the respondents’ state crime rates; as the violent crime rates increase, the acceptance of surveillance technology by women will also increase.

This second hypothesis builds on and supports the logic of the first. However, there may be other factors that impact the outcomes of these hypotheses. For example, there is evidence to suggest that men may mask or hide their fear of crime due to social desirability bias (Sutton and Farrall 2005). This poses a problem for my theory because it suggests that men may perceive similar threat levels as women. This may interfere with the logic that differences in threat perception is the driving force behind any gender differences in the acceptance of surveillance technology, and consequently the logic that crime rates should be similarly correlated with acceptance. This may be an explanation for insignificant or mixed results of the data.

Finally, I will also investigate the impact of framing the survey question in the context of terrorism on surveillance technology acceptance. Framing is a commonly observed phenomenon in survey research, and I expect that framing a survey question about the acceptance of surveillance technology will be impacted by whether it is framed as a question related to terrorism threats or to crime. Shortly after the September 11 attacks, a nationwide survey found that Americans are largely willing to give up civil liberties in the face of serious terrorism threats, but with a caveat impacting this phenomenon: trust in government (Davis and Silver 2003). After Edward Snowden revealed the massive extent of NSA surveillance on the American people, public opinion

on technological surveillance was mostly negative, as previously mentioned (Reddick, Chatfield, and Jaramillo 2015). The literature suggests that the precise wording of a survey question about terrorism has a significant impact on the perceived threat of terrorism. For example, “radical Islamic groups” triggers a higher level of threat perception than “homegrown terrorists,” whereas “terrorism” by its own right does not seem to impact threat perception (Woods 2011). This shows that the framing of a survey question, especially regarding terrorism, has substantial implications on survey outcomes. Therefore, I anticipate that a question on surveillance technology in the context of crime will be interpreted differently than a survey question in the context of the deterrence of terrorism.

Based on the literature available, I hypothesize that among women, terrorism survey questions will have less impact on the acceptance of surveillance technology than crime survey questions. I propose that the gender-specific, more immediate threat women perceive related to crime will outweigh the more distant threat of terrorism for women. This will lead to a higher acceptance of technology surveillance for the “crime framing” in comparison to “terrorism framing” question stems among women. In addition, terrorism is not generally considered a gender specific threat; well-known terrorist attacks in the United States, such as 9/11, are plotted and claim victims irrespective of gender. Therefore, the gap in gendered acceptance of surveillance technology in the context of terrorism will be less than the acceptance of surveillance technology in the context of crime. This leads to my third hypothesis:

H3: “Terrorism” question stems will yield lower acceptance rates than “crime” question stems for the implementation of surveillance technology in public spaces among women.

Research Design

This is a quantitative study that will utilize two national-level surveys from the United States. The first survey is a July 2007 ABC/Washington Post poll conducted to measure surveillance technology acceptance in the context of crime. It asked respondents the following question:

“Some people support the use of surveillance cameras in public places to help solve crimes. Others say these cameras go too far as a government intrusion on personal privacy. What’s your opinion—do you support or oppose the increased use of surveillance cameras in public places?”

Participants had the option of selecting the following answers:

“Support,” “Oppose,” or “Depends.”

To analyze the degree of support of surveillance technology acceptance over its opposition, “Depends” answers are not included in the analysis but are included in the appendix.

I will analyze survey results to this question and compare the acceptance of surveillance technology of public spaces between women and men. I chose data from the year prior to the year the ABC/Washington Post survey was conducted to most accurately reflect the threat level respondents possibly perceived. I will also isolate female responses and compare it to crime rate statistics to answer H2. I will compare survey responses to 2006 state-level crime statistics provided by the United States Census Bureau to measure the potential impact of these factors on the acceptance rate. These crime rates are aggregated at the state level and only include violent crimes of robbery, rape, assault, and murder. These types of crime, as opposed to white-collar crime, are threats compatible with the reasoning I propose for why women are more accepting of surveillance technology in public spaces.

The second survey data in my analysis specifically gauges public opinion on the acceptance of surveillance technology that is aimed at deterring acts of terrorism. To avoid the impact of the general distrust felt by Americans towards the NSA (and subsequently surveillance) after the Edward Snowden data leaks, I use data collected prior to the leak. To limit the impact of time-variant unobservable effects on the data, I selected a survey that was conducted closest in time to the ABC/Washington Post survey. A July 2005 CBS News Poll asked American adults the following survey question on the acceptance of surveillance technology, framed in the context of terrorism:

“Some people think installing video surveillance cameras in public places is a good idea because they may help to reduce the threat of terrorism. Other people think this is a bad idea because surveillance cameras may infringe on people’s privacy rights. What do you think? Would you say that it is a good idea or a bad idea to install surveillance cameras in public places?”

Participants had the option of selecting the following answers:

“Good idea,” “Bad idea,” “Both,” or “Don’t know/No answer.”

To analyze real support of the employment of surveillance technology in public spaces in comparison to its opposition, answers “Both” or “Don’t know/No answer” are not included in the analysis but are included in the appendix.

The strength of using national-level survey data is that there is a natural divide of survey responses along state lines, which makes it convenient to compare responses to crime rates at the state level. The major drawback of this type of data is that the comparison of crime rates and responses would be more illuminating at the local or municipality level. This would be a more accurate reflection of an individual’s day-to-day interaction with their environment, and thus their perceived threat level in public spaces. However, there are limits to the specificity of locational indicators in the survey data on surveillance technology acceptance. Therefore, given this limitation, only state-level crime statistics could be used to find a correlation between crime and surveillance technology acceptance.

Methods

To analyze the effect of gender on the survey responses, I employ a logit regression. The logit regression is used to demonstrate the impact of “x” on binary $F(x)$ values. In this case, the dependent binary variable is the acceptance or rejection of surveillance technology (acceptance coded as 1 and rejection as 0). Gender is also a binary variable, where women are represented by 1 and men 0. Therefore, positive gender coefficients indicate a positive correlation between women and acceptance of surveillance technology. A negative coefficient indicates that if the respondent is a woman, this characteristic negatively impacts surveillance technology acceptance. The logit regression is represented mathematically in the following equation (Sinnott, Duan, and Sun 2016):

$$F(x) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 x)}}$$

To analyze the effect of crime statistics on survey responses, I employ the use of a multilevel mixed-effects logistic regression. Multilevel regressions are helpful when using factors that are clustered on or measured at a different level than the outcome level. I analyze how gender, state-level crimes, and the acceptance of surveillance cameras interact. Because gender and the outcome variable, acceptance of surveillance, are characteristics of the individual whereas the state-level crime rate is a measurement of a group (the whole state), multilevel modeling is necessary (Robson and Pevalin 2016, 6). In a simpler model, such as a logit regression model, all data points are fitted onto one intercept. Applying this simple regression to state-level statistics would be ineffective as each state would be averaged into that one intercept. A multilevel mixed-effects regression, however, means each state can “have its own intercept” and be accounted for individually (Robson and Pevalin 2016). Using this model will help distinguish characteristics that impact the outcome due to an individual’s characteristics versus characteristics that impact the outcome because of state-level variation (Sommet and Morselli 2017). This mixed-effects model is represented mathematically in the following equation, where i is the individual and j is the state-level of analysis (West n.d.): *logit* [$P(y_{ij}=1)$]= $\beta_0 + \beta_1 x_{1ij} + u_{0j} + u_{1j} x_{1ij}$

Results

Table 1 provides a side-by-side comparison of the results of four models that all look at the effect of gender on surveillance technology acceptance. I included control variables that may influence privacy versus security tradeoff preferences, such as partisanship, race, and ethnicity, as well as other factors that may impact threat perception such as age, education, and income.

Models 1–3 are based on survey responses about surveillance technology acceptance in the context of crime. Model 1 uses a basic logit regression that looks at the effect of gender on the outcome variable, acceptance of surveillance technology in the context of crime, with controls included. Model 2 uses a multilevel mixed-effects logistic regression that analyzes how gender and crime rates change the acceptance of surveillance technology. Model 3 analyzes the effect of crime on the acceptance of surveillance

technology among female respondents (male responses are dropped). Model 4 is similar to Model 1 in that it looks at the effect of gender on surveillance technology acceptance using a logit regression. However, it is based on survey responses on acceptance of surveillance technology in the context of terrorism prevention.

Table 1

VARIABLES	(1) Acceptance	(2) Acceptance in Context of Crime	(3) Acceptance in Context of Crime, Women Only	(4) Acceptance in Context of Terrorism
Gender	0.430** (0.200)	0.435* (0.229)		0.739*** (0.252)
Age	0.0164*** (0.00545)	0.0164*** (0.00502)	0.0119* (0.00688)	0.494*** (0.163)
Education	0.179* (0.0960)	0.189* (0.110)	0.459*** (0.166)	-0.132 (0.118)
Income	0.0322 (0.0577)	0.0134 (0.0658)	0.00644 (0.0849)	0.215** (0.103)
Republican	0.501** (0.230)	0.510* (0.272)	1.126*** (0.386)	
Democrat				-0.541 (0.338)
Independent	1.534*** (0.529)	1.591*** (0.583)	1.441** (0.693)	-0.572* (0.339)
Other Party/Don't Know/No Answer	-1.110* (0.579)	-1.110** (0.505)	0.131 (1.185)	-0.0755 (0.591)
Black	-0.230 (0.261)	-0.794*** (0.278)	-0.282 (0.499)	0.0561 (0.449)
White Hispanic	0.426 (0.551)	0.363 (0.458)	0.914 (1.002)	
Black Hispanic				
Hispanic (no race given)	0.268 (0.827)	0.161 (1.382)	0.0729 (1.216)	
Not Hispanic				-0.129 (0.534)
Asian	0.469 (1.053)	0.435 (0.631)		-0.317 (0.818)
Other Race	-0.477 (0.352)	-0.536 (0.331)	0.0377 (0.644)	0.0605 (0.578)
DK/No Opinion/Refused to Answer Race	-0.940 (1.105)	-1.099** (0.485)		-1.170 (1.465)
Crime Stats (ln)		0.394 (0.291)	0.888** (0.365)	
Crime Stats Constant		0.0587 (0.105)	0.106 (0.161)	
Constant	-1.308** (0.602)	-3.648* (1.863)	-6.778*** (2.334)	-0.963 (0.899)
Observations	991	885	481	586
Number of groups		49	48	

Robust standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Model 1 is a logit regression that looks at the effect of gender on the outcome variable and the acceptance of surveillance technology with controls included. The gender coefficient indicates that gender has a statistically significant impact on the outcome variable (at the 95% confidence level), with females being more likely to accept public surveillance. To interpret the gender coefficient as an odds ratio (Choueiry n.d.):

$$e^{\beta} = e^{0.430} = 1.537$$

This indicates that women have a 53.7% ($1.537 - 1 = 0.537$) increase in the odds of accepting surveillance technology in comparison to men (Choueiry n.d.). This supports H1, as the coefficient shows that women are significantly more likely to accept the implementation of surveillance technology in public places in the context of crime in comparison to men.

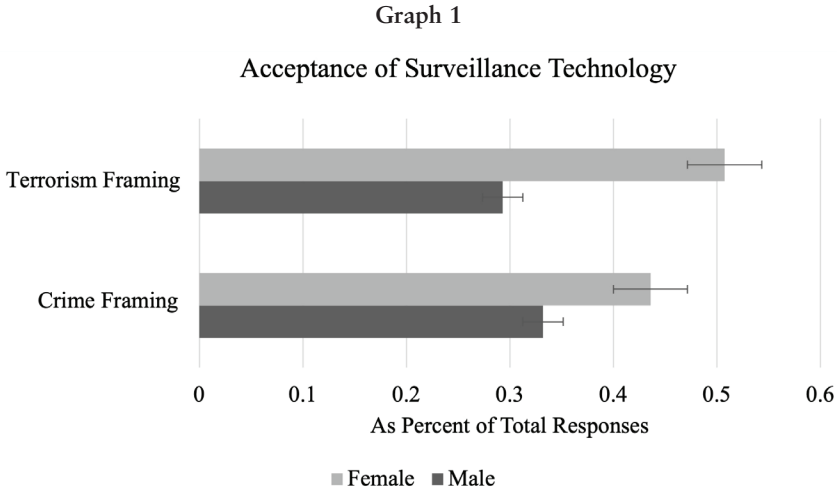
Models 2 and 3 employ a multilevel mixed-effects logistic regression model to account for individual and state-level variations. Model 2 looks at the impact of gender on the outcome variable, acceptance of surveillance technology in the context of crime, with logged state-level crime rates and controls included. With the “crime stats” variable included, the gender coefficient remains a statistically significant predictor of surveillance technology acceptance (at the 90% confidence level). This indicates that even when controlling for state-level crime statistics, women have a 54.5% ($1.545 - 1 = 0.545$) increase in the odds of accepting surveillance technology in comparison to men. However, the crime statistics coefficient is not statistically significant, indicating that crime rate does not predict overall acceptance of surveillance technology (Choueiry n.d.).

Model 3 is a multilevel mixed-effects logistic regression aimed at measuring the impact of state-level crime rates on the outcome variable among female respondents alone. Model 3 shows that state-level crime rates are a statistically significant predictor of surveillance technology acceptance in female responses (at the 99% confidence level). This means if crime rates increase by 1%, the probability of accepting surveillance technology increases by 0.88%. This finding supports H2, as the coefficient shows that female acceptance of surveillance technology is positively correlated with state-level crime rates. As crime rates increase, the acceptance of surveillance technology by women also increases.

Model 4 is a logit regression to assess the effect of gender on the acceptance of surveillance technology in the context of terrorism. Model 4 shows that gender is a statistically significant predictor of the acceptance of surveillance technology (at the 99% level confidence rate). This indicates that women have 109.4% ($2.094 - 1 = 109.4$) increase in the odds of accepting surveillance technology in comparison to men in the context of terrorism. This finding is aimed at investigating H3; the difference in gendered acceptance of surveillance technology is higher in the context of crime than in the context of terrorism. However, this finding suggests H3 may be incorrect because this coefficient and odd are higher than that of Model 2.

Graph 1 compares the gender differences of accepting surveillance technology in the context of terrorism and in the context of crime. In contrast with H3, this indicates

that the difference between female and male acceptance of public surveillance is higher in the context of terrorism than of crime. This gendered difference in the context of crime versus terrorism is significantly different, with an F statistic of 0.338 at the 99 percent confidence level.



To further analyze the differences in the gendered acceptance of surveillance technology in the context of crime and terrorism as shown in Graph 1, I compare gender coefficients found in Model 1 and Model 4 in Table 2 to find the F-statistic (MedCalc Software n.d.).

Table 2

Sample	Coefficients	Sample Size
Terrorism Context	0.739***	632
Crime Context	0.430 **	1125
Test Statistic F	0.338***	

*** p<0.01, ** p<0.05, * p<0.1

The F statistic indicates that there is a statistically significant difference between the coefficients from the two samples. Contrary to H3, the results indicate that the difference in gendered acceptance of surveillance technology in the context of terrorism is greater than the difference in gendered acceptance of surveillance technology in the context of crime as shown in Graph 1. This is directly contrary to H3, where I posit that the difference in the acceptance of surveillance technology between men and women will be significantly greater in the context of crime.

Limitations

This analysis is limited in its external validity, as the technological advancements of surveillance technology have changed substantially since the collection of the survey data in 2005 and 2007. A similarly worded survey question today may imply the use of artificial intelligence and big data analysis that would further reduce privacy in public spaces, which may potentially impact my results. However, the key implication of the findings suggests that women generally value security over privacy in public. If this is true, it is possible that the advancements in technology will have an inconsequential impact on the impact of gender on surveillance technology acceptance.

The sample size of respondents to the survey question on terrorism was relatively small. Some control variables, such as Black Hispanics, were forced to be dropped from the logistic regression analysis because it is perfectly correlated with the outcome. While this has some negative implications for the internal validity of my analysis, the benefits of controlling for time-variant unobservable effects in selecting this survey outweigh these implications. However, a larger and more representative sample would be preferred in any future analysis of the impact of gender on surveillance technology acceptance.

As previously mentioned, my analysis includes state-level crime rates. To more accurately reflect the perceived threat level experienced by survey respondents, a comparison of survey responses to crime rates data on the municipal level crime rates would increase the internal validity of my findings.

Conclusion and Implications

An analysis of national-level survey data shows that women are more accepting of the implementation of surveillance technology in public places than men in the contexts of both terrorism and crime. Survey data shows that women perceive a higher level of threat of crime victimization in public spaces in comparison to men (Farah and Farah n.d.), despite the fact that women are less likely to be a victim of violent crime (Bureau of Justice Statistics 2009). This indicates that perception, and not necessarily real risk, is the primary reason why women are more likely to accept surveillance technology in the context of crime in comparison to men. This is supported by the finding of a correlation between crime rates and the acceptance of surveillance technology by women.

I also hypothesized that there will be a greater difference in the gendered acceptance of surveillance technology in the context of crime than in the context of terrorism. However, upon analysis of the data, the opposite appears to be true; the difference in the acceptance of surveillance technology between men and women is greater in the context of terrorism than in the context of crime. Further research will be needed to explain this phenomenon. This finding does not contradict the hypothesis that threat perception is the link between gender and technology surveillance acceptance. While the literature documents that women perceive higher levels of threat in comparison to men in the context of crime, the gendered threat perception of terrorism has yet to be explored. It is possible that women tend to perceive terrorism as a larger threat than men, which

would be consistent with my findings on the gendered difference in surveillance technology acceptance and threat perception. It is also possible that another factor that is unique to terrorism drives this larger gap, or that the state-level crime statistics used in the data was not specific enough to actually predict the perceived threat experienced by women.

In addition, crime does not seem to predict survey responses for both men and women; crime rates are not significantly correlated with the overall acceptance of surveillance technology, but it was significantly correlated when looking only at women. This suggests that male acceptance of surveillance technology is not as affected by the level of perceived threat reflected by real life crime statistics, supporting conclusions drawn in previous literature that men are less willing to exchange privacy for security (Van Heek, Arning, and Zeifile 2014) and that men may downplay the seriousness of some forms of harassment (Madan and Nalla 2016).

Generally, this research contributes to the study of gender and its impact on the security versus privacy tradeoff. The conclusion that women are more likely to be more willing to be surveilled by cameras in public places suggests that women are more willing to choose security over privacy. This has implications for how policymakers and law enforcement institutions view public safety. The trade-off between privacy versus security is a gendered issue. It is an issue that women may feel that they have more of a stake in, and consequently have a different opinion about surveillance than men. Because this is a gendered issue, seeking out female opinions and female representation on the issue of surveillance technology in relevant institutions and policy-making processes is essential. Women deserve to use public spaces in the same way that men do.

The willingness to increase security at the cost of privacy may imply that women think the threat of victimization outweighs the risk of abuses of power by the state. Making public spaces safe for women could mean changing how half of the United States population moves daily through subway stations, bus stops, public parks, business centers, and sidewalks. The implication of change is massive on the personal and national level, not just for women, but for all citizens who choose to prioritize equal gender access to public spaces.

Appendix

To investigate the impact of responses “Both” or “Don’t know/No answer” or “Depends” to the survey questions posed above, I assigned differing values to responses and ran the same regressions described above.

Because this paper deals specifically with the strict acceptance of surveillance technology, “Both” or “Don’t know/No answer” or “Depends” can be considered as the unacceptance of surveillance technology. Therefore, I ran the same regressions but with these neutral/both answers included as a rejection of surveillance technology (coded as 0), and acceptance was coded as 1. This yielded the following results:

Table 3

VARIABLES	(1) Acceptance	(2) Acceptance in the Context of Crime	(4) Acceptance in the Context of Crime, Women Only	(6) Acceptance in the Context of Terrorism
Gender	0.437** (0.189)	0.444* (0.231)		0.599*** (0.222)
Age	0.0168*** (0.00511)	0.0165*** (0.00472)	0.00970 (0.00624)	0.300** (0.134)
Education	0.200** (0.0887)	0.205* (0.111)	0.416*** (0.147)	-0.127 (0.100)
Income	0.0507 (0.0547)	0.0336 (0.0637)	0.00589 (0.0817)	0.199** (0.0859)
Republican	0.577*** (0.217)	0.585** (0.253)	1.104*** (0.373)	
Democrat				-0.641** (0.295)
Neither/Independent	1.403*** (0.468)	1.439*** (0.482)	1.035* (0.533)	-0.472 (0.302)
Other Party/Don't Know/No Answer	-1.085** (0.534)	-1.142** (0.472)	0.0203 (1.016)	0.135 (0.545)
Black	-0.132 (0.248)	-0.696** (0.302)	-0.286 (0.501)	0.188 (0.415)
White Hispanic	0.389 (0.497)	0.324 (0.441)	0.669 (0.848)	
Black Hispanic	1.347 (2.122)	1.091 (2.052)	0.568 (2.202)	
Hispanic (No Race Given)	0.499 (0.841)	0.351 (1.454)	0.153 (1.204)	
Not Hispanic				-0.137 (0.488)
Asian	0.693 (1.055)	0.653 (0.614)		-0.655 (0.671)
Other Race	-0.393 (0.339)	-0.445 (0.319)	-0.0512 (0.593)	0.0216 (0.529)
Don't Know/No Opinion/Refused	-1.545 (1.131)	-1.725 (1.218)		-0.916 (1.443)
Crime Statistics (ln)		0.239 (0.289)	0.688* (0.356)	
Constant	-1.699*** (0.578)	-3.073* (1.851)	-5.465** (2.238)	-0.520 (0.787)
Observations	1,035	924	502	631
Number of groups		49	48	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

When neutral responses were included as the counterpart to surveillance acceptance, similar trends were found as in the original models.

Alternatively, one could view these neutral answers as entirely separate but still important to include as a middle ground between acceptance and rejection. For Table

4, “Yes” answers were assigned the number 1, “No” answers were assigned the number “-1” and all other answers (“Both,” “Don’t know/No answer,” or “Depends”) were assigned a 0. The results can be found below in Table 4:

Table 4

VARIABLES	(1) Acceptance	(2) Acceptance in Context of Crime	(4) Acceptance in Context of Crime, Women Only	(6) Acceptance in Context of Terrorism
Gender	0.458 (0.416)	0.477 (0.461)		0.0102 (0.364)
Age	0.0161 (0.0106)	0.0161* (0.00876)	-0.000699 (0.00989)	-0.309* (0.162)
Education	0.272 (0.175)	0.267 (0.202)	0.0979 (0.262)	-0.131 (0.151)
Income	0.171 (0.132)	0.162 (0.165)	0.0452 (0.250)	0.130 (0.125)
Republican	0.966* (0.505)	0.958** (0.380)	0.492 (0.669)	
Democrat				-0.946** (0.467)
Independent	0.828 (0.819)	0.603 (0.888)	-0.664 (0.974)	-0.129 (0.507)
Other Party/Don't Know/No Answer	-0.644 (1.053)	-1.042 (1.077)	-0.830 (1.639)	1.642 (1.111)
Black	0.611 (0.577)	0.594 (0.865)	-0.446 (1.093)	1.397* (0.849)
White Hispanic	0.207 (0.850)	0.264 (0.934)	-0.571 (1.393)	
Black Hispanic	-0.683 (2.385)	-1.087 (2.201)	-2.095 (2.012)	
Not Hispanic				-0.631 (1.154)
Asian				-1.786** (0.904)
Other Race	0.658 (0.734)	0.726 (0.765)	-0.274 (0.919)	-0.0432 (1.161)
DK/No Opinion/Refused to Answer Race	-2.278 (1.831)	-2.248 (2.408)		
Crime Statistics (ln)		-0.645 (0.506)	-0.463 (0.875)	
Constant	-0.419 (1.434)	3.754 (3.373)	5.889 (4.861)	4.492*** (1.204)
Observations	1,015	904	495	627
Number of groups		49	48	

Robust standard errors in parentheses

*** p<0.01. ** p<0.05. * p<0.1

Although the direction and substance of the coefficients remain similar, the difference in gendered response is no longer significant for any models. This indicates that the difference between men and women are not statistically significant when non-affirmative responses are included and could be due to chance.

References

- Amnesty International. 2021. "Surveillance City: NYPD Can Use More Than 15,000 Cameras to Track People Using Facial Recognition in Manhattan, Bronx, and Brooklyn." News. June 3, 2021. Accessed August 16, 2022. <https://www.amnesty.org/en/latest/news/2021/06/scale-new-york-police-facial-recognition-revealed/>.
- Bureau of Justice Statistics. 2009. "Bureau of Justice Statistics Selected Findings." *Department of Justice-Office of Justice Programs*. Accessed April 17, 2022. <https://bjs.ojp.gov/content/pub/pdf/fvv.pdf>.
- Caplan, Joel M., Leslie W. Kennedy, and Gohar Petrossian. 2011. "Police-monitored CCTV Cameras in Newark, NJ: A Quasi-experimental Test of Crime Deterrence." *Journal of Experimental Criminology* 7 (March): 255–274. <https://doi.org/10.1007/s11292-011-9125-9>.
- CBS News, CBS News Poll. 2005. "Abortion/Iraq/Supreme Court/Terrorism/Stem Cell Research, CBS News." Cornell University, Ithaca, NY: Roper Center for Public Opinion Research, Dataset. <https://doi.roper.center/?doi=10.25940/ROPER-3109095>.
- Chandan, Joht Singh, Tom Thomas, Caroline Bradbury-Jones, Rebecca Russell, Siddhartha Bandyopadhyay, Krishnarajah Nirantharakumar, and Julie Taylor. 2020. "Female Survivors of Intimate Partner Violence and Risk of Depression, Anxiety and Serious Mental Illness." *The British Journal of Psychiatry* 217, no. 4: 562–567. doi:10.1192/bjp.2019.124.
- Choueiry, George. n.d. "Interpret Logistic Regression Coefficients [For Beginners]." *Quantifying Health*. Accessed March 25, 2022. <https://quantifyinghealth.com/interpret-logistic-regression-coefficients/>.
- Circo, Giovanni, and Edmund McGarrell. 2020. "Estimating the Impact of an Integrated CCTV Program on Crime." *Journal of Experimental Criminology* 17 (January): 129–150. <https://doi.org/10.1007/s11292-019-09404-y>.
- Davis, Darren W., and Brian D. Silver. 2004. "Civil Liberties vs. Security: Public Opinion in the Context of the Terrorist Attacks on America." *American Journal of Political Science* 48, no. 1 (January): 28–46. <https://doi.org/10.1111/j.0092-5853.2004.00054.x>.
- Day, Kristen, Cheryl Stump, Daisy Carreon. 2003. "Confrontation and Loss of Control: Masculinity and Men's Fear in Public Space." *Journal of Environmental Psychology* 23, no. 3 (September): 311–322. [https://doi.org/10.1016/S0272-4944\(03\)00024-0](https://doi.org/10.1016/S0272-4944(03)00024-0).
- Dunckel-Graglia, Amy. 2013. "'Pink Transportation' in Mexico City: Reclaiming Urban Space Through Collective Action Against Gender-Based Violence." *Gender & Development* 21, no. 2: 265–276. <https://doi.org/10.1080/13552074.2013.802131>.
- Farah, and Farah. 2022. "Sexes Sense of Safety." *Florida & Georgia Personal Injury Attorneys*. Accessed April 17, 2022. <https://farahandfarah.com/studies/sexes-sense-of-safety/>.
- FindLaw. "Is There a 'Right to Privacy' Amendment?" Emotional Distress, Privacy, and Dignitary Torts. Last modified October 18, 2022. Accessed September 30, 2022, <https://www.findlaw.com/injury/torts-and-personal-injuries/is-there-a-right-to-privacy-amendment.html#:~:text=Fourth%20Amendment%3A%20Protects%20the%20right,the%20protection%20of%20private%20information.>
- Garcia, Blake E., and Nehemia Geva. 2014. "Security Versus Liberty in the Context of Counterterrorism: An Experimental Approach." *Terrorism and Political Violence* 28, no. 1 (June): 30–48. <https://doi.org/10.1080/09546553.2013.878704>.
- Gumpert, Gary, and Susan J. Drucker. 2009. "Public Boundaries: Privacy and Surveillance in a Technological World." *Communication Quarterly* 49, no.2 (May): 115–129. <https://doi.org/10.1080/01463370109385620>.
- Westin, Alan F. 1991. "Harris-Equifax Consumer Privacy Survey." Equifax Atlanta, Georgia.

- Joshghani, Rezvan, Michael D. Ekstrand, Bart Knijnenburg, and Hoda Mehrpouyan. 2018. "Do Different Groups Have Comparable Privacy Tradeoffs?" *CHI 2018 Workshop on Moving Beyond a 'One-Size Fits All'* (January). Accessed March 25, 2022. <https://md.ekstrandom.net/pubs/joshghani-privacy-tradeoffs.pdf>.
- Kiss, Ligia, Lilia Blima Schraiber, Mazeda Hossain, Charlotte Watts, and Cathy Zimmerman. 2015. "The Link Between Community-Based Violence and Intimate Partner Violence: the Effect of Crime and Male Aggression on Intimate Partner Violence Against Women." *Prevention Science* 16: 881-889. <https://doi.org/10.1007/s11121-015-0567-6>.
- Koskela, Hille. 2002. "Video Surveillance, Gender, and the Safety of Public Urban Space: "Peeping Tome" Goes High Tech?" *Urban Geography* 23, no. 3: 257-278. <https://doi.org/10.2747/0272-3638.23.3.257>.
- Legrand, Gaëlle. 2021. "'Enough is Enough': The Murder of Sarah Everard and Confronting Male Violence Against Women in the UK." *Women's Media Center*, April 2, 2021. Accessed March 2, 2022. <https://womensmediacenter.com/women-under-siege/murder-of-sarah-everard-and-confronting-male-violence-against-women-in-uk>.
- Madan, Manish, and Mahesh K. Nalla. 2016. "Sexual Harassment in Public Spaces: Examining Gender Differences in Perceived Seriousness and Victimization." *International Criminal Justice Review* 26, no. 2 (March): 80-97. <https://doi.org/10.1177/1057567716639093>.
- May, David C., Nicole E. Rader, and Sarah Goodrum. 2010. "A Gendered Assessment of the "Threat of Victimization": Examining Gender Differences in Fear of Crime, Perceived Risk, Avoidance, and Defensive Behaviors." *Criminal Justice Review* 35, no. 2 (November): 159-182. <https://doi.org/10.1177/0734016809349166>.
- MedCalc. n.d. "Comparison of Coefficients of Variation Calculator." MedCalc, accessed March 26, 2022. https://www.medcalc.org/calc/comparison_of_coefficientsofvariation.php.
- Omayma, S. n.d. "Interpreting Odd Ratios in Logistic Regression." Rpubs by RStudio. <https://rpubs.com/OmaymaS/182726>.
- Patton, Jason W. 2000. "Protecting Privacy in Public? Surveillance Technologies and the Value of Public Places." *Ethics and Information Technology* 2 (September): 181-187. <https://doi.org/10.1023/A:1010057606781>.
- Reddick, Christopher G., Akemi Takeoka Chatfield, and Patricia A. Jaramillo. 2015. "Public Opinion on National Security Agency Surveillance Programs: A Multi-Method Approach." *Government Information Quarterly* 32, no. 2 (April): 129-141. <https://doi.org/10.1016/j.giq.2015.01.003>.
- Rehovsky, Alexandra Taylor, and Heather K. Terrell. 2019. "The Relationship between Trauma History, PTSD Symptomology, and Intimate Partner Abuse Threat Perception," Master's thesis, *The University of North Dakota*, ProQuest Dissertations Publishing. <https://commons.und.edu/theses/2583>.
- Robson, Karen, and David J. Pevalin. 2016. "Multilevel Modeling in Plain Language." *SAGE Publications*, LA, United States of America.
- Shackman, Alexander J., Melissa D. Stockbridge, Rachael M. Tillman, Claire M. Kaplan, Do P. M. Tromp, Andrew S. Fox, and Matthias Gamer. 2016. "The Neurobiology of Dispositional Negativity and Attentional Biases to Threat: Implications for Understanding Anxiety Disorders in Adults and Youth." *Journal of Experimental Psychopathology* 7, no. 3 (November): 311-342. <https://doi.org/10.5127/jep.054015>.
- Sinnott, R.O., H. Duan, Y. Sun. 2016. "A Case Study in Big Data Analytics: Exploring Twitter Sentiment Analysis and the Weather." In *Principles and Paradigms*: 357-388. <https://doi.org/10.1016/B978-0-12-805394-2.00015-5>.
- Slobogin, Christopher. 2002. "Public Privacy: Camera Surveillance of Public Places and the

-
- Right to Anonymity." *Mississippi Law Journal* 72, no.1 (Fall): 213–316. <http://dx.doi.org/10.2139/ssrn.364600>.
- Sommet, Nicolas, and Davide Morselli. 2017. "Keep Calm and Learn Multilevel Logistic Modeling: A Simplified Three-Step Procedure Using Stata, R, Mplus, and SPSS." *International Review of Social Psychology* 30, no.1 (September): 203–218. <http://doi.org/10.5334/irsp.90>.
- Sutton, Robbie M., and Stephen Farrall. 2005. "Gender, Socially Desirable Responding and the Fear of Crime: Are Women Really More Anxious about Crime?" *The British Journal of Criminology* 45, no.2 (March): 212–224. <https://doi.org/10.1093/bjc/azh084>.
- United States Census Bureau. 2010. "Violent Crimes and Crime Rates." *Crime*, October 01, 2010. Access March 25, 2022. <https://www.census.gov/library/publications/2010/compendia/databooks/crime.html>.
- Van Heek, Julia, Katrin Arning, Martina Ziefle. 2015. "Safety and Privacy Perceptions in Public Spaces: An Empirical Study on User Requirements for City Mobility." *Internet of Things, IoT Infrastructures* 151: 97–103. https://doi.org/10.1007/978-3-319-19743-2_15.
- West, Brady T. n.d. "Multilevel Logistic Regression Models." *Coursera, Multilevel Logistic Regression Models*. Access March 25, 2022. <https://www.coursera.org/lecture/fitting-statistical-models-data-python/multilevel-logistic-regression-models-02HBw>.
- Woods, Joshua. 2011. "Framing Terror: An Experimental Framing Effects Study of the Perceived Threat of Terrorism." *Critical Studies on Terrorism* 4, no. 2 (August): 199–217. <https://doi.org/10.1080/17539153.2011.586205>.
- Wright, Rebecca N., Jean L. Camp, Ian Goldberg, Ronald L. Rivest, and Graham Wood. 2003. "Privacy Tradeoffs: Myths or Reality?" *Panel Summary*. Access March 25, 2022. <https://people.csail.mit.edu/rivest/pubs/WCGRW02.pdf>.