

# Do Privacy Notices Matter? Comparing the Impact of Violating Formal Privacy Notices and Informal Privacy Norms on Consumer Trust Online

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## ABSTRACT

While privacy online is governed through formal privacy notices, little is known about the impact of privacy notices on trust online. I use a factorial vignette study to examine how the introduction of formal privacy governance (privacy notices) impacts consumer trust and compare the importance of respecting informal privacy norms versus formal privacy notices on consumer trust. The results show that invoking formal privacy notices decreases trust in a website. Further, violating informal privacy norms negatively impacts trust in the website even when the information exchange conforms to or is not mentioned in the privacy notice. The results suggest that respecting privacy norms is key to trust online and challenge the reliance on privacy notices to maintain consumer trust. The consumer, who is the exchange partner most vulnerable to information asymmetries and uncertainty, is not a party to the development of the formal privacy contract and instead relies on informal privacy norms.

## 1. INTRODUCTION

When Facebook was denounced for an emotion manipulation study on Facebook users, the official response explained that Facebook did not violate its privacy notice and user agreement (Booth 2014). When OKCupid quickly followed with examples of its experiments on users, the experiments were justified using the associated OKCupid user agree-

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ment (Hill 2014). Tracking of Iowa caucus voters in 2016 by Dstillery was explained using a list of the notices and agreements along the information supply chain giving permission for users' data to be collected, sold, shared, and aggregated so that Dstillery could then identify who was caucusing . . . and where. Whether or not an act comports with a firm's privacy notice forms the basis of investigatory reporting, Federal Trade Commission complaints, and private action (Stuart 2007).

While a popular defense for consumers' claims of privacy violations, how important is conforming to a privacy notice on consumer trust? The relationship between formal contracts and trust is not clear and is a matter of ongoing debate (Mellewigt, Madhok, and Weibel 2007). Formal governance structures—such as privacy notices as a form of contract (Marotta-Wurgler 2015; Stuart 2007)—are but one option to govern information exchanges online. Exchanges are regularly governed by both formal (contracts, laws, and authority) and informal (norms, expectations, and routines) structures (Zenger, Lazzarini, and Poppo 2002). This range of governance structures exist to guide such online transactions (Coase 1960; Williamson 1987) and can be assessed on the basis of their relative effect on subsequent consumer trust (Malhotra and Lumineau 2011).

Respecting informal contracts has a clear positive relationship with trust, yet the use of formal contracts to govern information exchanges online may be problematic to fostering trust. Empirical work generally shows that relational governance is associated with trust (Poppo and Zenger 2002). And some scholars argue that formal contracts complement informal agreements by facilitating their self-enforcement, thereby contributing to trust (Lazzarini, Miller, and Zenger 2004). Others argue that formal contracts merely substitute for social norms that effectively support information dealings and undercut trust (Zenger, Lazzarini, and Poppo 2002). In fact, the user's situation online, with large information asymmetries, moral hazard risks, and a complicated and dynamic system of tracking, may further undercut the utility of formal contracts for users' trust (Martin 2013).

Yet the current approach to governing online information exchanges remains through formal contracts such as the ubiquitous privacy notice and user consent (Federal Trade Commission 2000, 2012, 2015; White House 2012). Notice and choice, as an explicit contract between the primary website and the Internet user, work in certain circumstances similar

to other formal contracts: where the relevant information is understood by all parties, when the contract is enforceable in that the harms are detectable and reparations are possible, and when the environment is stable with low levels of uncertainty to allow for transactions to continue with low costs (Coase 1937). Understanding the impact of informal and formal contracting over privacy on consumer trust is important for business, law, and public policy to ensure that consumers continue to transact online, yet little is known about the impact of formal contracts on consumer trust online.

The goal of this paper is to empirically examine the impact of formal privacy notice and informal privacy norms on trust online. I conducted a series of studies from January to April 2015 using factorial vignette methodology to answer two questions: Is the use of formal contracts to contract over privacy effective in increasing consumer trust? Which governance structure—respecting informal privacy norms or formal privacy contracts—is more important in developing consumer trust? Approximately 1,600 respondents rated 6,400 vignettes describing information exchange online with both formal and information privacy contracts being both respected and violated. The respondents rated the degree to which they trusted the website in the scenarios. The results suggest that the mere introduction of formal privacy contracts decreases trust. In addition, respondents distrusted websites for violating informal privacy norms even when the scenario was said to conform to or was not mentioned in the formal privacy notice.

The results suggest that understanding informal privacy norms is key to maintaining consumer trust and challenge the reliance on formal, explicit privacy contracts (notices) to maintain consumer trust. The consumer, who is the exchange partner most vulnerable to high transaction costs and has greater information asymmetries, uncertainty, and little enforcement power, is not a party to the development of the formal privacy contract and instead relies on informal privacy norms and expectations.

## **2. LITERATURE REVIEW: PRIVACY AND TRUST**

### **2.1. Trust and Governance Choice**

Despite the transaction-cost benefits of increased trust between exchange partners, transaction-cost economics has an ambiguous relationship with

the concept of trust.<sup>1</sup> Trust is an important outcome for governance as it is both instrumental to lower transactions costs and better governance in the future and an important and desirable intrinsic facet of the immediate exchange: “People may prefer to transact on the basis of trust and its sources: ethics, kinship, friendship, and empathy” (Nooteboom, Berger, and Noorderhaven 1997, p. 310).

Trust is particularly important in online exchanges. Trust, as the willingness to accept vulnerability to the actions of another, has been found to be particularly important in situations with greater uncertainty, interdependence, and fear of opportunism (Gefen 2002; Mayer, Davis, and Schoorman 1995). Information asymmetries and a lack of safeguards render online information exchanges fraught with greater uncertainty and a risk of opportunism (Martin 2013). With trust, stakeholders make commitments quickly, transactions require fewer safeguards, consumers are more likely to forgive transgressions, and government regulation is less necessary. Trust, in terms of governance and transaction costs, reduces specification and monitoring of contracts, reduces uncertainty, and renders transactions “cheaper, more agreeable, and more flexible” (Nooteboom, Berger, and Noorderhaven 1997, pp. 310–11; see also Gulati 1995; Poppo and Zenger 2002).<sup>2</sup>

Here I use consumer trust to compare the effectiveness of two options within a governance structure. The focus is on formal contracts in the form of privacy notices and the informal social contracts of privacy norms.

1. Williamson’s influential approach to trust and transaction costs is often portrayed as trust being not necessary for an economic analysis; Williamson’s concept of personal trust is reserved for friends, family, and other relationships (Nooteboom, Berger, and Noorderhaven 1997; Williamson 1993). However, Williamson indirectly has always accounted for trust in that untrustworthy exchange partners—those who are self-interested with guile (Williamson 1985)—are expensive in requiring additional safeguards. More recently, scholars allow for incentives and coercion as well as trust to work as governance mechanisms and incorporate the transaction-cost-reducing benefits of trust in their analysis (Nooteboom, Berger, and Noorderhaven 1997).

2. Trust is also a concern for law and public policy. In the absence of trust with exchange partners, private ordering begins to fail because of high transaction costs; legal remedies may be necessary when violations of trust are not met with market sanctions (Blair and Stout 2001; Hurwitz 2013). Although laws and regulations may promote exchanges that previously lacked trust, legal remedies do not produce the transaction-cost-reducing trust that is the goal of public policy (Ribstein 2001). In fact, legal remedies to promote trust may have the opposite effect: government interventions may further erode the trust and voluntary cooperative behavior necessary for efficient markets (Kollock 1994; Ribstein 2001).

## 2.2. Formal and Informal Privacy Contracts Online

**2.2.1. Formal Contracts: Privacy Notices.** A website's notice and the associated user consent constitute the explicit agreement that governs a handoff when an individual relinquishes his or her information and the website agrees to abide by the terms of the written privacy notice. Such adhesion contracts are common online (Bakos, Marotta-Wurgler, and Trossen 2014; Eigen 2012) and have been shown to be ineffective across many measures. Privacy notices are known to be difficult to read (Ur et al. 2012), misleading (Leon et al. 2010), and difficult to find (Leon et al. 2012). Notices are also time-consuming to read (McDonald and Cranor 2008) and not always targeted toward consumers (Cranor et al. 2014). Here, however, I am attempting to understand if a firm's conforming to or violating a notice impacts consumer trust in the firm.

With regard to trust, privacy seals and privacy statements are framed as trust-building tools (Tang, Hu, and Smith 2008; Belanger, Hiller, and Smith 2002). Research has focused on the role of privacy seals and notices as signals to influence the perceived trustworthiness of a firm (Xu et al. 2011; Tang, Hu, and Smith 2008; Xu, Wang, and Teo 2005; Lauer and Deng 2007), with mixed results. In addition, previous work on the importance of notices focuses on the notice as a signal. For example, statements and seals may lead to more disclosure of information (Hoffman, Novak, and Peralta 1999), and better (easy-to-understand) policies impact trust (Sultan and Rohm 2004).

**2.2.2. Informal Contracts: Privacy as a Social Contract.** Recent work on privacy suggests that privacy norms can be viewed as mutually beneficial and sustainable agreements within a community (Martin 2016) or as context-dependent norms (Nissenbaum 2010, 2011). Privacy as a social contract—a mutually beneficial agreement within a community that governs sharing and using information—suggests that respecting privacy entails understanding the implicit privacy norms about what, why, and to whom information is shared within specific relationships (Martin 2016). Individuals discriminately share information to socialize, create relationships, form groups, and trade. These social contracts are the unstated agreements that individuals and groups make in contexts, communities, and relationships. Individuals in a particular community, such as teams, young adults, or mobile app users, develop substantive privacy norms not easily recognized or understood by outsiders (Martin 2012; Martin and Shilton 2016; Turow et al. 2009). Online, these privacy norms and ex-

pectations form an informal contract governing privacy that can be either respected or violated.

### 2.3. Research Questions

**2.3.1. Impact of Formal Privacy Contracts on Trust.** As aptly summarized by Puranam and Vanneste (2009, p. 11), there is a “bewildering array of possible relationships between trust and governance.” Trust and formal contracts can be seen as complements in which the presence of formality evokes greater trust in the exchange partner. However, formal contracts can also be a substitute for trust; that is, the introduction of formal contracts would signal a lack of trust in the exchange partner. According to the substitution view, if trust exists, then formal contracts are not necessary and may undermine the formation of relational governance (Poppo and Zenger 2002): an explicit, formal contract can signal a strictly antagonistic venture rather than a cooperative exchange based on trust (Lazarini, Miller, and Zenger 2004). Such formal contracts can undermine trust and even encourage opportunistic behavior (Mellewigt, Madhok, and Weibel 2007; Poppo and Zenger 2002). This leads us to the first research question.

Research Question 1. Is the use of formal privacy notices to contract over privacy online effective in increasing consumer trust?

**2.3.2. Comparing the Impact of Informal and Formal Privacy Contracts on Trust.** Much of the analysis on governance structures assumes bilateral uncertainty and the threat of opportunism. Privacy online differs markedly in that only one party—the user—faces uncertainty, opportunism, and lack of enforcement. With users’ greater sense of vulnerability online, we would expect them to rely on the implicit agreements or norms around how information is gathered, stored, used, and shared. In other words, users have terms of use for information that is disclosed or gathered by a website regardless of what is written in the privacy notice. As noted by Beales and Muris (2008, p. 109), irrespective of notice and choice, individuals consider the consequences of the use and misuse of information for a particular information exchange to identify the appropriate set of privacy rules and expectations for that context. This leads me to the second research question.

Research Question 2. Which governance structure—respecting or vi-

olating informal privacy norms or using formal privacy notices—is more important in developing consumer trust?

#### 2.4. Research Design

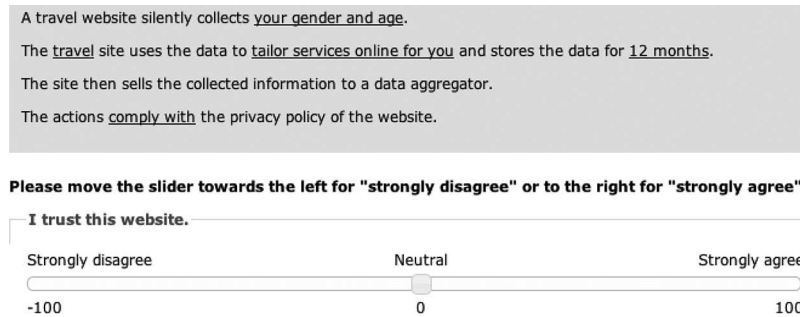
Normally, measuring the importance of meeting privacy norms and expectations assumes that the researcher can identify the contextual factors that meet, exceed, or violate users' privacy expectations. Sometimes defining privacy violations and expectations is accomplished by declaring a priori the expectations of users, for example, declaring location information to violate privacy expectations or deciding that sharing information is dispositive of meeting privacy expectations. Here I inductively identified the privacy expectations of users—including the factors and their relative importance to meeting privacy expectations—from an initial set of surveys. Once identified, I systematically varied these privacy factors in subsequent surveys to identify how the practices—known to meet or violate privacy expectations—impact respondents' trust in the website. To answer these research questions, I used the following series of surveys.

*Survey 0: Privacy Norms.* First, I used traditional survey methodology to examine contextual factors—such as the type of information, use of information, storage of information, and secondary use of information (Martin 2016)—for the degree the factors violate, meet, or exceed respondents' privacy expectations. I replicated the findings using factorial vignette survey methodology to identify users' privacy expectations.

*Survey 1: Impact of Violating Informal Privacy Norms on Trust.* The scenarios including the range of privacy factors in survey 0 were run, and the respondents rated the degree to which they trusted the described firm and/or website.

*Survey 2: Role of Violating Formal Privacy Notices on Trust.* The scenarios, including the range of privacy factors in survey 1, were rerun with an additional statement that the website is found to conform to (violate) the privacy notice. Respondents rated the degree to which they trusted the website.

*Surveys 3 and 4: Role of Formal Privacy Notices on Ability and Integrity.* Survey 2 was rerun with privacy factors and the degree to which the firm's actions conformed to (violated) their privacy notice. Respondents rated the degree to which they judged the firm to be honest (indicating integrity; survey 3) and competent (indicating ability; survey 4).



**Figure 1.** Sample vignette from survey 2

### 3. RESEARCH METHODS

I conducted a series of surveys using factorial vignette methodology. Factorial vignette survey methodology was developed to investigate human judgments (Jasso 2006; Rossi and Nock 1982; Wallander 2009). In a factorial vignette survey, a set of vignettes is generated for each respondent, where the vignette factors (the independent variables) are controlled by the researcher and randomly selected, and respondents are asked to evaluate each hypothetical situation.

The factorial vignette methodology enables researchers to simultaneously examine multiple factors—for example, types of websites, information, uses of information, and so on—using vignettes that are systematically varied (Ganong and Coleman 2006). Using rich vignettes enables researchers to capture respondents' equations inside the head (Jasso 2006) about judgments of complex constructs such as privacy expectations. In this study, the question asked respondents the degree to which they trusted the website in the vignette, and statistical techniques were used to identify the relative importance of each vignette factor in driving the respondents' outcome (trust in a website). Figure 1 includes a representative vignette for survey 2—each respondent rated 40 such vignettes (taking approximately 10–12 minutes).

Importantly, the factorial vignette survey methodology captures the relative importance of contextual factors for respondents. By capturing individual attributes such as institutional trust online and generalized privacy attitude separately, I was able to examine the relative impact of both individual and contextual privacy factors on trust in a website.



**Table 1.** Vignette Factors

Factor	Operationalized in Vignette
Information	Your current location information, your gender and age, the history of websites you visited, only information you voluntarily provide
Use	Tailor services for you, offer you discounts, place advertising targeted to you
Second use	Sell to a data aggregator, send advertising to friends and contacts; the site removes your name from the data and uses the data to improve their service
Storage	0, 6, 12, 18, 24 months
Context	Banking, photo sharing, search, travel
Notice (surveys 2–4)	The actions conform to the privacy policy of the website; the actions are not mentioned in the privacy policy of the website; or the actions violate the privacy policy of the website

**3.1. Vignette Privacy Factors**

To systematically vary the degree to which the hypothetical website met or violated privacy expectations, I tested a series of independent variables based on contextual approaches to privacy (Martin 2016; Nissenbaum 2010): the type of data collected, how the data are used, and why the data are collected. (See Table 1 for a summary.) Across all four surveys, each survey respondent was shown a series of vignettes that varied on the basis of the following:

*What.* the type of information received or tracked by the website, including location, demographic data, history of websites, information only voluntarily provided;

*Why (Context).* the website’s purpose—banking, photo sharing, search, travel;

*How (Used).* how the data are used such as to tailor services, offer discounts, or place advertising as well as the possible secondary use of data such as to sell to a data aggregator, send advertising to friends and contacts, and improve service. Finally, the length of time the data are stored varied from 0 to 24 months.

**3.2. Vignette Notice Factors**

For the surveys testing the importance of conforming to a notice (surveys 2–4), the vignette included a statement about whether the described action was found to conform to, not be mentioned in, or violate the web-

site's notice policy. This factor was included in the vignette and did not require the respondent to determine if the behavior conformed to or violated the notice to test the relative importance of conforming to a notice on trust.

### 3.3. Control Variables

Before and after the vignettes, the survey instrument supplied respondents with several questions to allow me to compare respondents. I collected respondents' age and gender before the vignettes, and questions measuring the privacy, experience, and trust controls were asked after the vignettes to avoid priming the respondents.

Research suggests that individuals who transact online more frequently may better understand, and agree with, those rules of engagement—such as privacy norms and expectations—compared with an outsider. Insiders have a better understanding of the privacy norms compared with outsiders to a community (Martin 2012). In addition, trust increases because of the effects of familiarity (Gefen 2002; Pavlou and Gefen 2004), and trust developed through experience has been found to increase customer satisfaction (Doney and Cannon 1997; Morgan and Hunt 1994), which leads consumers to be increasingly resilient in their satisfaction with firms. Similarly, users with more experience with a type of business have a confirmation bias and wish to frame experiences as meeting their expectations (McKnight, Choudhury, and Kacmar 2002; McKnight, Cummings, and Chervany 1998).

To capture experience online, I gathered the respondents' knowledge of the Internet, frequency of purchases online, and computer coding experience. In addition, I captured two trust measures (the respondents' general dispositions toward trust and institutional trust in websites) and two privacy measures (the respondents' belief that privacy is important and level of concern about privacy). The respondents were asked to rate on a scale from "strongly disagree" to "strongly agree" their agreement with the statement "In general, I trust mobile applications." This rating captured respondents' institutional trust online. The second rating task asked for their agreement with the statement "In general, I believe privacy is important." This rating captured respondents' general privacy belief. (See Table A1 in the online appendix for a summary of the control variables.)

### 3.4. Dependent Variables

Pirson, Martin, and Parmar (2014) distinguish between institutional and stakeholder trust in firms. Institutional trust captures when individuals assess favorable conditions for transactions through norms, procedures, and controlling mechanisms and is specific to a context such as an industry or type of business. However, stakeholder trust is closer to personalized trust in that an individual is willing to accept vulnerability of the actions of a particular organization. As such, stakeholder trust is influenced by both the general trusting belief of the stakeholder (trustor) and the ability, benevolence, and integrity of the organization (trustee) (Mayer, Davis, and Schoorman 1995; Pirson and Malhotra 2010; Pirson, Martin, and Parmar 2014).

The focus of this study is the highly particular stakeholder trust in a firm—specifically, the consumer’s trust in a particular website. The surveys examine how meeting privacy expectations and conforming to a privacy notice impact a consumer’s trust in a hypothetical website.

For each vignette, respondents were instructed “Tell us how much you agree with the statement below, using a sliding scale from –100 to 100, with –100 indicating ‘strongly disagree’ and 100 indicating ‘strongly agree.’” Respondents rated their agreement with the following prompt for each vignette (see also Table A2 in the online appendix for a summary of the surveys):

*Survey 0 (Privacy Expectations).* “This website meets my privacy expectations.”

*Survey 1 and Survey 2 (Trust).* “I trust this website.”

*Survey 3 (Integrity).* “I would characterize this website as honest and sincere.”

*Survey 4 (Ability).* “I would characterize this website as competent and effective.”

Surveys 1 and 2 measure the respondent’s stakeholder trust in the described website. Surveys 3 and 4 measure the perceived trustworthiness of the website—specifically, trust in the website’s ability and integrity (Belanger, Hiller, and Smith 2002).

### 3.5. Sample

The surveys were deployed over the course of 4 months (January–April 2015) using Amazon’s Mechanical Turk; see Table 2 for a description of

**Table 2.** Survey Statistics

	Survey 1: Privacy Norms		Survey 2: Privacy Norms + Notice	
	Mean	SD	Mean	SD
Respondent control variables:				
KnowInternet	2.90	.93	2.82	.92
PurchaseOnline	2.32	.54	2.28	.52
PrivacyImportant	55.42	38.63	53.59	41.75
TrustSites	-10.15	46.78	-13.11	46.30
CodingExp	3.82	1.21	3.90	1.18
PrivacyImportant	81.21	24.60	78.57	25.64
Gender	1.43	.50	1.46	.50
Age	3.39	1.12	3.49	1.13
Sample statistics:				
Average vignette trust rating	-15.87		-27.85	
SD	28.20		23.29	
Intraclass correlation coefficient (%)	23.4		17.0	
Respondent $R^2$	.741		.778	
Users	403		408	
Vignettes	16,204		16,320	

the sample statistics for surveys 1 and 2.<sup>3</sup> (Additional survey statistics are in online appendix Table A3.) For surveys 1–4, approximately 400 respondents each rated 40 vignettes, for a total of approximately 16,000 vignettes for each survey. Mechanical Turk workers from the United States were recruited and paid \$2 for completing the survey.

### 3.6. Analysis

The resulting data set can be thought of in two levels: the vignette contextual factors and the respondent control variables. If  $i$  is the number of

3. Although use of Mechanical Turk (mTurk) for survey deployment can be controversial (Lease et al. 2013; Ross et al. 2010), studies have shown that mTurk workers are more representative of the US population than the samples often used in social science research. In a separate survey on privacy expectations for websites, I compared results from Amazon mTurk with results from a nationally representative sample from KnowledgeNetworks (GfK). The survey from the mTurk sample produces the same theoretical generalizations as the survey from the GfK sample, which illustrates the ability to build generalizable theory from mTurk samples in online privacy studies (Martin 2013). However, a separate study comparing mTurk with a 2013 Pew Research Study conducted over the phone found mTurk workers were more likely to request anonymity, worry about online information sharing, and believe they should be able to be anonymous online (Kang et al. 2014). See also Kugler and Strahilevitz (2015).

the respondents with level 2 individual variables and  $k$  is the number of vignettes answered with level 1 factor variables, the general equation is

$$Y_{ij} = \beta_0 + \sum \beta_k V_{jk} + \sum \gamma_b R_{bi} + u_i + e_j,$$

where  $Y_{ij}$  is the rating of vignette  $k$  by respondent  $n$ ,  $V_{jk}$  is the  $k$ th factor of vignette  $j$ ,  $R_{bi}$  is the  $b$ th characteristic of respondent  $i$ ,  $\beta_0$  is a constant term,  $\beta_k$  and  $\gamma_b$  are regression coefficients for  $k$  vignette factors and  $b$  respondent factors,  $u_i$  is a respondent-level residual (random effect), and  $e_j$  is a vignette-level residual. The model conceptualizes the ratings as a function of the contextual factors described in the vignette ( $\sum V_k$ ) and the characteristics of the respondent ( $\sum R_b$ ) as hypothesized.

Since the data can be modeled at two levels—the vignette and the individual respondent—multilevel modeling was used to control for and measure individual variation in privacy judgments. Multilevel modeling (xtmixed in STATA) accounts for the possibility that the error terms are not equal across individuals and, later in the post hoc analysis, that the intercepts and coefficients may vary across respondents with random intercept and random slope models.

Finally, a respondent-specific equation (Jasso 2006) was developed by regressing the rating task onto the contextual factors for each respondent ( $N = 40$ ). A new data set was formed for each survey with approximately 400 rows with a trust equation for each respondent. The respondent-specific equation includes the respondent's intercept, the relative weight for each contextual factor, and a respondent-specific  $R^2$  as in the following equation:

$$Y_i = \beta_i + \sum \beta_k V_k + e_i.$$

#### 4. RESULTS

To measure the importance of meeting or violating informal privacy norms to trust in a website, the substance of privacy norms and expectations of users is necessary: for example, what actions by the firm constitute meeting versus violating privacy to users? To identify the important contextual factors to users' privacy expectations, an initial survey (survey 0 in Table A4 in the online appendix) was conducted with only contextual privacy factors in the vignette and the rating task of responding to the prompt "This website meets my privacy expectations." This dependent variable was regressed on the vignette privacy factors (see the results in Table A4 in the online appendix). The results provide the important

privacy-violating practices—such as the secondary use of information—used in surveys 1 and 2, which measure trust.

#### 4.1. Importance of Informal Privacy Norms for Trust

To measure the role of a website violating informal privacy norms for users' trust in the website, the survey measuring the factors driving privacy expectations (survey 0) is compared with the survey measuring trust in the website (survey 1). The only difference between the two surveys is the rating task: survey 0 asks respondents the degree to which the described website meets their privacy expectations, whereas survey 1 asks respondents the degree to which the respondents trust the (similarly) described website.

The findings suggest that meeting and violating informal privacy expectations are important to trust in a website. The factors that meet privacy expectations of users also drive trust in the website; similarly, factors that violate privacy expectations drive down trust in the website: the secondary use of information for advertising to friends ( $\beta_{\text{privacy}} = -58.98$ ;  $\beta_{\text{trust}} = -49.69$ ) and selling to a data aggregator ( $\beta_{\text{privacy}} = -54.66$ ;  $\beta_{\text{trust}} = -49.13$ ) are top violators of privacy expectations and drive down trust, as shown in Table A4. However, both context and the use of information (to give discounts) are important only for meeting privacy expectations and are not significant for determining trust in the website. Respondents make trust judgments around the use of information but not on the basis of the website's context (for example, banking, photo sharing, and so on).

#### 4.2. Research Question 1: Impact of Conforming to a Privacy Notice on Trust

To measure the importance of conforming to or violating a privacy notice on trust, survey 2 was conducted with the privacy factors of survey 1 and a statement that the described behavior conformed to, was not mentioned in, or violated the website's privacy notice. The only difference between surveys 1 and 2 is the notice statement in the vignette, and the results of survey 2 can be compared with survey 1 to measure the importance of privacy notices. The results are shown in Table 3 and explored below.

First, invoking formal contracts about privacy makes respondents trust websites less. The mere inclusion of a statement about privacy notices—which systematically varied between conforming to, not being mentioned in, and violating the privacy notice—decreased the average

**Table 3.** Regressions of Rating Task on Vignette and Respondent Factors

	Survey 1: Privacy Norms		Survey 2: Privacy Norms + Notice	
	$\beta$	<i>p</i> -Value	$\beta$	<i>p</i> -Value
Context (null = SearchCxt):				
BankingCxt	-.25	.79	-1.46 <sup>+</sup>	.10
PhotoCxt	-1.22	.19	-.46	.60
TravelCxt	-.78	.40	.45	.60
Information (null = Demographic):				
LocationInfo	-6.01**	.00	-5.41**	.00
HistoryInfo	-17.55**	.00	-10.58**	.00
VolunteerInfo	18.32**	.00	8.70**	.00
Use (null = TailorService):				
AdUse	-3.50**	.00	-2.34**	.00
DiscountUse	1.49 <sup>+</sup>	.06	.75	.33
2nd Use (null = No 2nd Use):				
Friend2ndUse	-49.69**	.00	-25.96**	.00
Sell2ndUse	-49.13**	.00	-25.89**	.00
Internal2ndUse	7.48**	.00	5.136**	.00
StorageRange	-3.192**	.00	-1.82**	.00
Notice (null = No Mention):				
NoticeConforms	N.A.	N.A.	40.89**	.00
NoticeViolate	N.A.	N.A.	-29.71**	.00
Controls:				
Age	-2.22*	.04	-1.60 <sup>+</sup>	.08
Gender	2.76	.27	.70	.75
KnowInternet	.90	.53	-.44	.72
PurchaseOnline	2.74	.22	1.78	.37
PrivacyConcern	-.11**	.00	-.16**	.00
TrustSites	.26**	.00	.17**	.00
CodingExp	-.751	.48	.06	.94
PrivacyImport	-.17**	.00	-.03	.52

**Note.** N.A. = not applicable.

<sup>+</sup> *p* < .10.

\* *p* < .05.

\*\* *p* < .01.

trust rating of the vignettes from -15.87 (survey 1) to -27.85 (survey 2) (*t* = 6.30, *p* = .00), as shown in Table 2.

In addition, conforming to a formal contract about privacy (the notice), all else being equal, matters for trust. Conforming to or violating a notice impacts the respondent's trust in the described website. The data for survey 2 in Table 3 show that conforming to a notice positively impacts the respondent's trust in the website ( $\beta_{\text{conform}} = 40.89$ ) and that violating a notice negatively impacts the respondent's trust in the website

**Table 4.** Relative Importance of Vignette Factors to Trust under Formal Contract Conditions

Importance of Privacy Violate	Conforms to Notice	Not Mentioned in Notice	Violates Notice
Friend2ndUse	-38.18	-28.32	-12.30
Sell2ndUse	-37.97	-27.29	-12.54
Average vignette trust rating (mean)	9.84	-31.45	-60.89
Intraclass correlation coefficient (%)	37.6	41.4	51.6

**Note.** Values are coefficients.

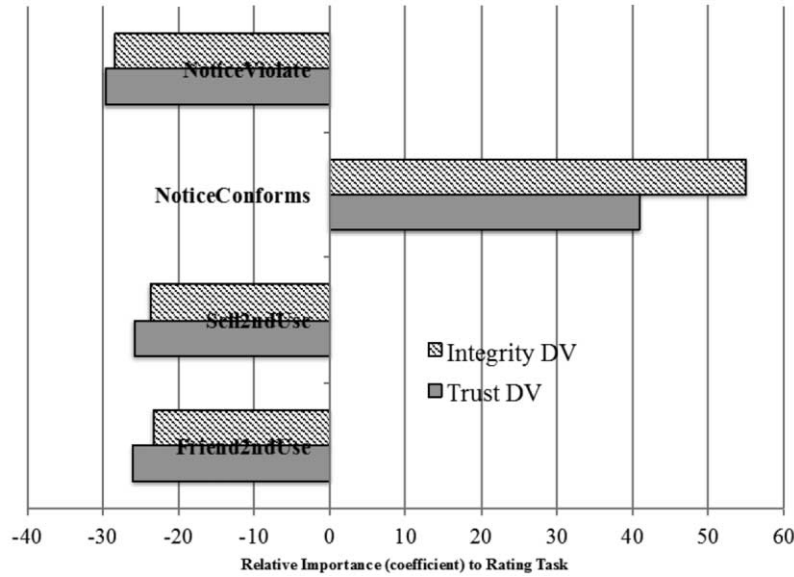
( $\beta_{\text{violate}} = -29.72$ )—even when taking into consideration what information is gathered and how the information is used in the vignette.

#### 4.3. Research Question 2: Comparison of Formal and Informal Privacy Contracts

The relative importance of informal privacy norms is dampened by the mere introduction of conforming to or violating privacy notices. The informal privacy norms mattered less when information about conforming to or violating the privacy notice was included. For example, the importance of the secondary use of information to target friends ( $\beta_1 = -49.69$  versus  $\beta_2 = -29.97$ ;  $\chi^2 = 228.02$ ,  $p = .00$ ) and selling to data aggregators ( $\beta_1 = -49.13$  versus  $\beta_2 = -25.89$ ;  $\chi^2 = 224.91$ ,  $p = .00$ ) diminished between surveys 1 and 2. In addition, the positive impact of using only volunteered information diminished in importance between surveys 1 and 2 ( $\beta_1 = 18.33$  versus  $\beta_2 = 8.71$ ;  $\chi^2 = 39.36$ ,  $p = .00$ ). The inclusion of the reference to the privacy notice dampened the role of the contextual privacy factors.

To test the impact on trust of violating versus conforming to a formal notice, the rating task—the respondent's trust in the website—was regressed on subsamples for each of the notice conditions, where the vignette included scenarios that conformed to, were not mentioned in, or violated the privacy notice. The results are in Table 4 for survey 2 and illustrated in Figure 2 (DV = trust). If the website's collection and use of information was not mentioned or addressed in the privacy notice, respondents retained strong judgments about privacy factors and judged violations of privacy expectations to be violations of trust. Under the condition of the practice not being mentioned in the website's privacy policy, the average trust rating drops to  $-31.45$  from  $9.84$  when conforming to the notice ( $\chi^2 = -41.33$ ,  $p = .00$ ).





**Figure 2.** Relative importance of notice and privacy norm violations to trust and integrity of a website.

In addition, the informal privacy norms remain significant to the privacy judgment when conforming to the notice: the secondary use of information to target friends and to sell to a data aggregator has a significant negative impact on trust regardless of whether the described use of information is not mentioned in or conforms to the privacy notice. In fact, the secondary use of information still drives down trust in the website ( $\beta = -38.18$ ) for targeting friends even when the website conforms to its privacy notice. The findings suggest that the use of the privacy notice to engender trust may be limited.

However, notices remain important. Table 5 shows that under conditions of conforming to informal privacy norms, respondents still penalize websites for violating the privacy notice by decreasing their trust in the website ( $\beta = -37.61$ ) and reward websites for conforming to the privacy notice ( $\beta = 44.91$ ). Similarly, when under the condition of violating the informal privacy norm, violating ( $\beta = -21.46$ ) and conforming to ( $\beta = 35.64$ ) the formal notice remains important to trust—however, less than under the condition in which the website conforms to informal privacy norms. In other words, under a condition in which the website violates the informal contract, and the respondent is aware of the breach, respon-

**Table 5.** Relative Importance of Vignette Factors to Trust under Informal Contract Conditions

Importance of Notice	Conformed to Privacy Norm	Violated Privacy Norm
NoticeViolate	-37.61	-21.46
NoticeConform	44.91	35.64
Average vignette trust rating (mean)	-13.60	-41.94
Intraclass correlation coefficient (%)	20.1	31.6

**Note.** Values are coefficients.

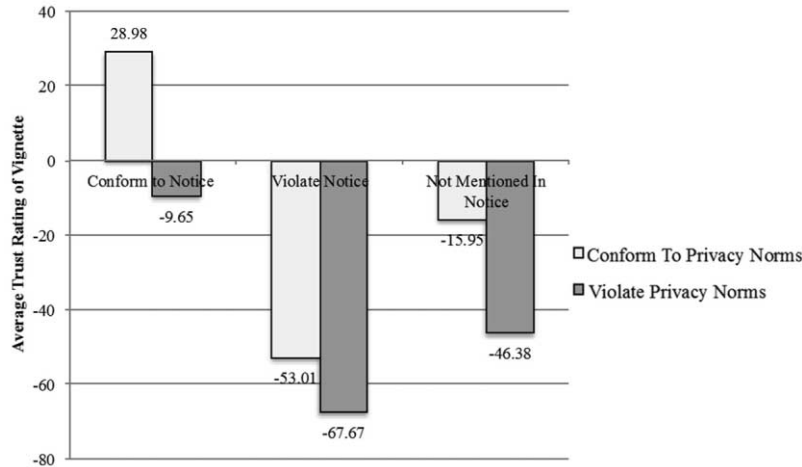
dents care less about the formal privacy contract—but they still care. Any condition of violating a contract—formal or informal—appears to be a “loud” breach of trust where other factors are relatively less important while still being significant.

Finally, to examine how notices impact the trust factors of ability and integrity of the website, the vignettes in survey 2 were rerun with the trust factors of integrity (survey 3) and ability (survey 4) as the rating task to measure the role of privacy factors and notice on the specific trustworthiness of the website. The results are shown in Table A5 in the online appendix. When examining the impact on trust factors, the overall rating remains statistically the same, but the importance of conforming increases from 40.89 to 54.93 ( $\chi^2 = 139.08$ ,  $p = .00$ ) for the integrity of the website. Conforming to a privacy notice is important for integrity of the website, which suggests that respondents see notices as a form of a promise.

Stepping back, if we compare the average trust ratings under each of the conditions of informal privacy norms and formal privacy notices as shown in Figure 3, the only scenario that consumers judged trustworthy conforms to both the formal notice and informal norms—thus illustrating the importance of both. In fact, when the scenario is merely not mentioned in the privacy notice, respondents still do not on average trust the website.

## 5. DISCUSSION

This paper empirically examines the impact of formal privacy notice and informal privacy norms on trust online to answer two questions: Is the use of formal contracts to contract over privacy effective in increasing consumer trust? Which governance structure—respecting or violating in-



**Figure 3.** Average trust rating of vignette under conditions for formal privacy notice and informal privacy norms.

formal privacy norms or formal privacy contracts—is more important in developing consumer trust? Given the prevalence of privacy concerns online and attempts to govern meeting privacy expectations by both the government and business, the findings have managerial as well as academic implications.

The results suggest that merely invoking the privacy notice as an explanation of firm practices may damage trust in the firm. One explanation for why including a reference to the privacy notice negatively impacted trust in the website is that formal contracts can indicate a lack of trust—particularly when formal contracts are not expected (Puranam and Vanneste 2009). Consumers may not expect firms to justify their practices with a reference to a formal contract online. Similarly, more explicit and formal contracts—long privacy notices with an attempt at completeness—may also negatively impact trust in the website (Poppo and Zenger 2002).

In addition, the results show that the relative importance of informal privacy norms—such as the secondary use of information—is dampened by the mention of conforming to or violating privacy notices. When respondents take into account the privacy notice, what the firm actually does with the data matters less. In other words, the notice is a loud signal to consumers about the trustworthiness of the website—particularly around the integrity of the website. However, if the website’s collection

and use of information are not mentioned in the privacy notice, respondents retain strong judgments about informal privacy norms and judge violations of privacy expectations to be violations of trust. In fact, respondents on average do not trust websites when the practice is not mentioned in the notice. Respondents rely on informal privacy norms to guide judgments about the appropriateness of the exchange regardless of whether the website conforms to or violates the privacy notice.

The finding that conforming to a notice impacts not only trust but the perception of integrity of the website in particular has implications for how respondents perceive the role of notices online. Research has shown that violating control provisions in contracts impacts a firm's perceived integrity, whereas coordination efforts impact a firm's perceived ability (Malhotra and Lumineau 2011). The results here, with conforming to the notice having a statistically larger impact on the integrity of the firm, suggest that the respondents perceive the notice as a form of control rather than coordination. Similarly, the formal contract is closely tied to the concept of promise, and a breach of the formal contract is seen as a broken promise and a lack of integrity (Wilkinson-Ryan and Baron 2009).

Here the focus has been on formal privacy notices and informal privacy norms being respected or violated. However, most consumers are not aware of transgressions or the content of privacy notices and would not know if a scenario violated the privacy notice unless they were told. These findings speak only to instances in which consumers are aware of a problem and are told that the use of information breached the privacy notice. For example, when Facebook conducted the emotion experiment on their users, most had to be told whether or not the incident existed and was mentioned in the privacy notice. In addition, the use of information included in the vignettes ranged from marketing to tailoring services and performance improvement. Further research is needed on the use of information and other uses such as cybersecurity.

The results suggest that the use of formal contracts to govern information exchanges online is problematic to fostering trust. In fact, the salience of the notice violation is heightened in the vignette—perhaps artificially—in comparison with the salience of the information norm violation, thereby perhaps understating the importance of privacy norms relative to a privacy notice.<sup>4</sup> The formal contracts online (privacy notices)

4. The salience of informal privacy norms appears to be particularly diminished by mentioning the privacy notice. The same experiment conducted invoking violating or conforming to a consumer report guideline does not impact the importance of informal privacy norms.

are implemented by firms that have little asset specificity, no uncertainty, and little risk of the opportunism of their exchange partners (consumers). When exchange partners are vulnerable to the hazards of asset specificity, uncertainty, and lack of enforcement, the identity of the partners matters, and formal, generic contracting should fail, with more complex contracting written by the vulnerable parties being necessary (Martin 2013; Poppo and Zenger 2002; Williamson 1991).

Much of the analysis on governance structures assumes bilateral uncertainty and the threat of opportunism. Privacy online differs markedly in that only one party—the user—faces uncertainty, opportunism, and lack of enforcement. With users' greater sense of vulnerability online, we would expect users to rely on implicit agreements or norms around how information will be gathered, stored, used, and shared, as shown here. In other words, users have terms of use for information that is disclosed or gathered by a website regardless of what is written in the privacy notice. More work is needed to identify the minimums of the terms of use across consumers to help firms navigate informal privacy norms.

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