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A power-responsibility equilibrium framework for fairness: Understanding consumers' implicit privacy concerns for location-based services☆

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ABSTRACT

Location-based services rely on geospatial technologies that involve data that offer information of a prosocial nature – such as a nearby highway closure. The objective of this mixed method research is to examine consumers' concerns about privacy and fairness that pertain to these services. The basis for this research is the theory on the power-responsibility equilibrium. Study 1 qualitatively examines 332 comments; Study 2 uses a quantitative structural equation model with a sample of 291 non-students. Our findings indicate that fairness perceptions of privacy-related policies are enhanced when a consumer has a higher internal locus of control, higher attitude toward the communication, and lower level of privacy concern.

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1. Introduction

Imagine receiving a text or mobile alert from a government agency or contractor, such as an Amber alert or an emergency highway closure, because of your physical location or, more accurately, the location of your cell phone. Location-based services are technologies that involve data, such as navigation, tracking, and information services (Beinat, 2001). In general, these services and applications are a financial stronghold in the mobile commerce revolution. In 2014, location-based services generated approximately $12.2 billion in worldwide revenue according to a white paper by Jupiter Research (Parker, 2014). The white paper projects that the revenue from these services will be $75 billion (Statista, 2016). This is a substantial spike in the market and indicates that marketing needs research with a basis in theory to help the industry understand the consumers' perspective on any policy that affects location-based services.

The power differential between governments and consumers is an important context to study because of the prevalence of government-initiated policy. The recent research examines the effects of government privacy policies on consumers' concerns and behaviors toward risk (Miltgen & Smith, 2015). However, the literature has yet to address the effects, if any, of understanding the saliency of these issues in relation to specific non-privacy policies. For example, many states use automatic toll payments for bridges and roads to reduce traffic congestion (IBTTA, 2015) as well as 311 apps for non-urgent citizen concerns (Adler, 2016). The government policies related to these examples are not specific to privacy per se, but rather are specific location-based services in the form of automatic payments and communications.

Governments or businesses are power holders, especially when they hold customers' information, such as their location (Lwin, Wirtz, & Williams, 2007). Consumers must feel comfortable with how mobile providers use the location information that they generate. Before businesses or government organizations adopt a platform that uses the intended recipient's physical location, they must understand the consumers' perspectives on privacy and fairness.

Location-based services offer benefits to the consumer, such as targeted, relevant, and timely advertisements (Schumann, von Wangenheim, & Groene, 2014); however, disclosure of a consumer's location involves privacy concerns (Abbas, Michael, & Michael, 2014). Since the consumer is a moving target that receives specific messages because of his or her location, privacy issues continue to escalate. A consumer's response to mobile marketing and geographic targeting is relatively new territory for marketing scholars; most of the attention

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on this topic focuses on firms who use mobile marketing initiatives. Given the importance of consumers' privacy concerns, a need exists to address marketing questions relating to privacy and how to effectively communicate and enhance privacy practices. Specifically, governmental organizations must understand how to communicate privacy practices with an appropriate balance so that concerns about information privacy achieve prominence.

Because of the proliferation of location-based services, firms, organizations, and governments must understand these privacy concerns because they can inhibit the adoption of mobile marketing (Kuittinen, 2013). This study examines the perceptions of fairness in the policies around location-based services using the lens of the power-responsibility equilibrium.

This research uses a mixed method approach with two studies to better understand the privacy concerns of consumers as they relate specifically to the policies for vehicle miles travelled (VMT). Responding to calls from scholars such as Harrison (2013) and following the approach in the recent research (e.g., Cruz-Cardenas, Gonzalez, & Nunez, 2016; Krishen, Agarwal, & Kachroo, 2016), this sequential mixed approach allows researchers to confirm and discover ideas that use alternative methods (Woodside, 2010). Also known as the "third wave" of research or Pragmatism, a mixed method allows for both the inductive discovery of patterns combined with the deductive testing of theory (Johnson & Onwuegbuzie, 2004). Combining multiple methods also introduces several benefits, such as stronger results, a broader approach to research questions, and a more holistic phenomenological understanding of a topic (Davis, Golicic, & Boerstler, 2011). Study 1 provides an exploratory, qualitative, and netnographic content analysis that identifies important themes with respect to privacy and fairness. The study uses these themes to conduct a literature review and to identify a theoretical model to test the quantitative hypotheses. Study 2 tests this model by using a covariance-based structural equation.

2. Qualitative Study 1 and theoretical framework for power-responsibility equilibrium and privacy

2.1. Sampling

The National Surface Transportation Infrastructure Financing Commission (NSTIFC) recommends the VMT as a possible solution to meet infrastructure needs in the United States (NSTIFC, 2009). A VMT program charges a fee for each mile a motorist drives. This program replaces the current indirect method of paying taxes through fuel consumption. That system no longer is sufficient to cover the increasing infrastructure expenses, which creates a budget gap. Another cause of the budget gap is that more fuel-efficient cars are on the road than ever before; meanwhile, the requirements for structural maintenance and repair continue to grow. Many states in the United States are considering when and how to implement a VMT policy, so research is essential on this policy. For example, Oregon has implemented a pilot policy based on the VMT. Similarly, many European countries have implemented various versions of VMT policies. The netnographic data for Study 1 comes from a sample of consumers who post comments about the VMT policy in open forums on the States' Department of Transportation (DOT) websites. During a two-month period, the study collected and analyzed 332 unique comments.

2.2. Procedure and analysis

To conceptualize the specific behavioral reports in these comments, this study uses an iterative analytic approach, which Kozinets (2002) recommends for netnographic data. This approach interprets online content in stages, first to develop a comprehensive understanding of the consumers' comments, and then to identify patterns and differences across the comments (Thompson, 1997). The data in this study describes the consumers' everyday experiences as they relate to location-based services and privacy.

Initially, three professional judges serve as content coders (Reynolds & Arnold, 2000) who separate the comments on whether they have non-privacy or privacy content. To ensure the reliability of the process, two judges first analyze the content independently and then a third judge resolves any discrepancies (Einwiller, Fedorikhin, Johnson, & Kamins, 2006).

After the initial categorical coding, the study compares the sets of comments (Corciolani & Dalli, 2014) by using DICTION, a content analytic software (Digitext, 2000). This procedure is similar to previous qualitative studies that use netnographic content. According to Hart (2000), DICTION extends many packages through their word count by using the linguistic theory from social researchers (Short & Palmer, 2008). In addition, the software uses dictionaries to search the text based on five semantic features: certainty, activity, optimism, realism, and commonality. The software also uses 35 sub-features (see http://www.dictionsoftware.com/diction-overview/ for more details). As such, several studies use this software for content analysis (Bligh, Kohles, & Meindl, 2004; Zachary, McKenny, Short, Davis, & Wu, 2011). Once entered into the software, the study divides the two sets of comments into 500-word units for analysis. This process results in 46 units for non-privacy concerns and 42 units for privacy concerns.

2.3. Results

2.3.1. Analysis of all comments

The first set of results consists of an examination of the entire set of comments. To do so, the authors and content coding judges initially examine the semantic features available in DICTION as they pertain to research on mobile privacy (Krishen, Raschke, Kachroo, LaTour, & Verma, 2014). Based on a review of pertinent literature, the four semantic features that address the key ideas behind the VMT and privacy are *exclusion*, *communication*, *cognition*, and *satisfaction*. Although several other features might be interesting for future research, this study selects these to retain the most parsimonious understanding of the comments. Table 1 details the four semantic features with their corresponding ideas as pertains to the theory.

2.3.2. Comparison of privacy versus non-privacy comments

Because DICTION also provides numeric files for statistical analysis, including word counts and percentages, the next set of results uses a quantitative inferential analysis. Thus, the study tests the differences between standardized score outputs from DICTION of non-privacy and privacy comments by using multiple analyses of variance (MANOVA). Table 2 shows that all four constructs yield significant differences between comments on non-privacy and privacy concerns (Wilks' $\lambda = 0.70$, $p < 0.01$).

The exclusion feature demonstrates the consumers' need for social isolation. As such, exclusion encompasses the idea of either a voluntary disconnection from society, which includes a heightened need for privacy, or an involuntary separation from society, which might be from social nonconformity. From this feature, the study concludes that definite differences exist among consumers who have a high need for privacy versus a low need for exclusion. Given those differences, the results of Study 1 indicate that a consumer's concern for privacy should be a predominant construct in Study 2.

The communication feature entails social interactions of any nature, whether they are in person or through electronic means. Accordingly, the study links this semantic feature to privacy because the research argues that higher communication from an organization leads to a consumer's higher willingness to disclose information. In fact, this study indicates that communicative consumers are likely to have a more pronounced attitude toward marketing communications; therefore, their attitude should be more likely to contribute to their subsequent behaviors. Cognition and satisfaction both form the ideas

Table 1
Study 1: online textual analysis using DICTION software (Digitext).

Semantic feature	DICTION semantic explanation (Hart, 2000)	Rationale for Study 2 design
Exclusion	"A dictionary describing the sources and effects of social isolation. Such seclusion can be phrased passively (*displaced, sequestered*) as well as positively (*self-contained*, *self-sufficient*) and negatively (*outlaws*, *repudiated*). Moreover, it can result from voluntary forces (*secede*, *privacy*) and involuntary forces (*ostracize*, *forsake*, *discriminate*) and from both personality factors (*small-mindedness*, *loneliness*) and political factors (*right-wingers*, *nihilism*). Exclusion is often a dialectical concept: *hermit* vs. *derelict*, *refugee* vs. *pariah*, *discard* vs. *spurn*)." (p. 48)	Exclusion (need for privacy) should be higher for groups having a high concern for privacy.
Communication	"Terms referring to social interaction, both face-to-face (*listen*, *interview*, *read*, *speak*) and mediated (*film*, *videotape*, *telephone*, *e-mail*). The dictionary includes both modes of intercourse (*translate*, *quote*, *scripts*, *broadcast*) and moods of intercourse (*chat*, *declare*, *flatter*, *demand*). Other terms refer to social actors (*reporter*, *spokesperson*, *advocates*, *preacher*) and a variety of social purposes (*hint*, *rebuke*, *respond*, *persuade*)." (p. 45)	Greater communication means that the person wants to persuade, rebuke, or respond; a high level of consumer willingness to disclose can result from a high level of organizational communication.
Cognition	"Words referring to cerebral processes, both functional and imaginative. Included are modes of discovery (*learn*, *deliberate*, *consider*, *compare*) and domains of study (*biology*, *psychology*, *logic*, *economics*). The dictionary includes mental challenges (*question*, *forget*, *re-examine*, *paradoxes*), institutional learning practices (*graduation*, *teaching*, *classrooms*), as well as three forms of intellection: intuitional (*invent*, *perceive*, *speculate*, *interpret*), rationalistic (*estimate*, *examine*, *reasonable*, *strategies*), and calculative (*diagnose*, *analyze*, *software*, *fact-finding*)." (p. 45)	Greater cognition is linked to a higher internal locus of control since control is a form of intellection. Greater internal locus of control (ILOC) is linked to higher levels of privacy, and greater cognition means higher levels of privacy.
Satisfaction	"Terms associated with positive affective states (*cheerful*, *passionate*, *happiness*), with moments of undiminished joy (*thanks*, *smile*, *welcome*) and pleasurable diversion (*excited*, *fun*, *lucky*), or with moments of triumph (*celebrating*, *pride*, *auspicious*). Also included are words of nurturance: *healing*, *encourage*, *secure*, *relieved*." (p. 44)	People who have a high level of concern for privacy also think fees for vehicle miles travelled (VMT) is unfair. Unfairness means lower satisfaction, and a high level of privacy means low satisfaction.

behind the remaining components in the model. The cognition feature refers to a rationalistic need for individuals to deal with mental challenges and discoveries. Control is a form of intellection that has a basis in privacy theory; hence, Study 2 includes an internal locus of control as a key contributor to a concern for privacy. The satisfaction feature indicates that affective states differ between consumers' high and low needs for privacy. When consumers perceive a policy to be unfair, they get less satisfaction from the policy (Krishen, Raschke, & Mejza, 2010). Given the importance of satisfaction and its link to fairness, the model in Study 2 uses fairness as its dependent variable.

The power-responsibility equilibrium posits that privacy concerns between firms (who hold power) and consumers (who expect firms to be responsible with the power) can lead to consumers' reactions to information, such as fabrication, protection, and withholding if the firm exhibits more power and less responsibility (Lwin et al., 2007). Essentially, these reactions allow consumers to gain control over their private information. The ability of consumers to *control* access to their private information is an important predictor of their ultimate acceptance and use of a system (Rust, Kannan, & Peng, 2002). Some power holders, such as government institutions, have a dominant effect on consumers' perception of control. This study extends the model for the power-responsibility equilibrium in Lwin et al. (2007) by providing a macro-level view of a government organization's and its customers' concerns for privacy.

Table 2
Study 1: MANOVA results.

Dependent Variable	Low need for privacy[a]	High need for privacy[b]	*F*-value
Exclusion	1.43	3.40	22.52**
Communication	4.32	5.81	5.87*
Cognition	7.53	9.04	4.38*
Satisfaction	3.02	2.12	4.88*

Wilks' $\lambda = 0.70$.
[a] $n = 46$.
[b] $n = 42$.
* $p < 0.05$.
** $p < 0.01$.

From the perspective of the power-responsibility equilibrium (PRE), organizations that track the locations of their customers should be responsible with this information. The government, as a power holder, devises privacy policies to protect consumer data to ensure that organizations are responsible. Yet, government-initiated policies on location-based service are not explicitly about privacy but instead create implicit privacy risks to consumers. For example, the city of Austin and the Golden Gate Bridge only collect road and bridge tolls electronically. The policy specifically relates to payment by tolls; however, the nature of the policy carries an implicit privacy risk to the constituents. Thus, the present research utilizes the context of a government policy with implicit privacy risk, as this setting is ripe for extending our understanding of the PRE.

Fig. 1 depicts the framework for the power-responsibility equilibrium along with theory enhancements from this study. Fig. 1 shows that the three aspects of the original framework are the power holders, the interaction context of online privacy, and the users' response. The figure also shows the conceptual addition of the users' cognitions in two forms: individual differences in the internal locus of control and the consumers' resulting perceptions in the form of attitude and fairness. When studying privacy, Lwin et al. (2007) note that two relevant power holders exist: the business policy makers and the legal or regulatory policy makers.

Privacy concerns certainly affect the consumer's behavior. Consumers of e-commerce often abandon their online shopping cart due to privacy concerns (Kukar-Kinney & Close, 2010). Consumers use a privacy calculus: their willingness to disclose their location in exchange for location-specific information (Dinev & Hart, 2006). However, this calculus assumes that consumers willingly make this choice. A Federal Communication Commission's's (2012) report on location-based services states that consumers are not aware of what firms do with their location information after they collect the information. In such cases, consumers might not willingly choose to share their personal information. Hence, at the heart of consumer privacy is the ability to gain *control* over one's private information. Understanding the relation between privacy and control is important because this relation determines whether a consumer feels empowered during his/her relationship with a firm (Lwin & Williams, 2003).

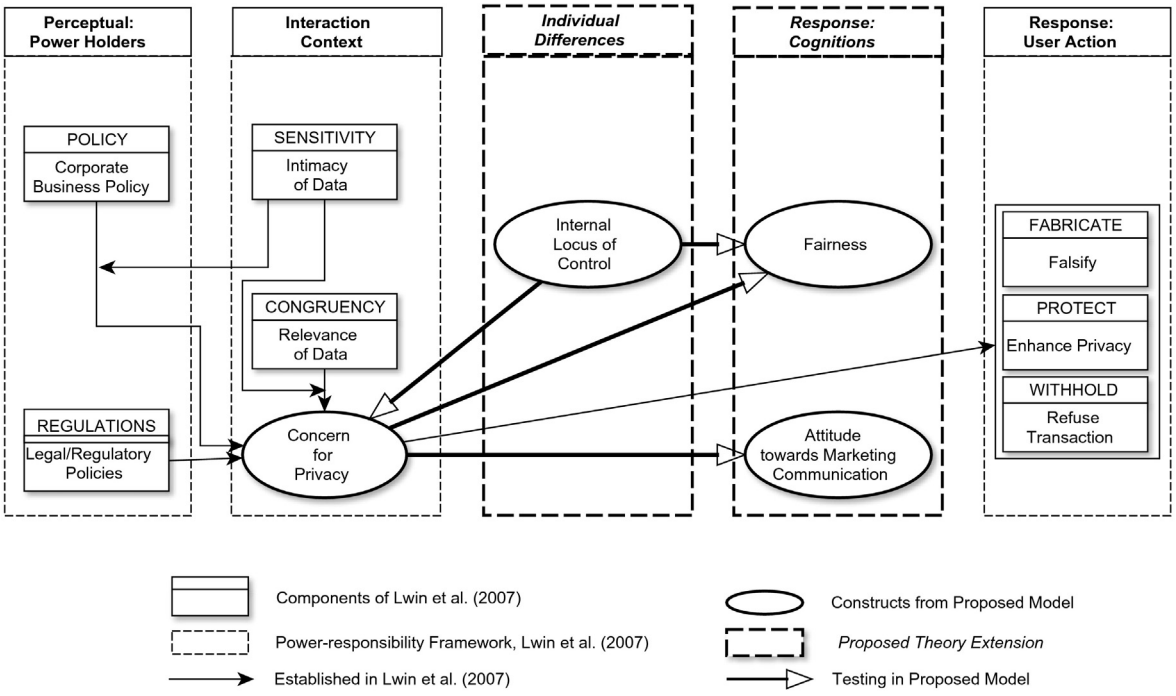

Fig. 1. Established relationships and new paths for a power-responsibility equilibrium theory of privacy, including individual differences and response cognitions.

3. Hypotheses development

From a government policy perspective, the PRE assumes constituent reactions; however, this theoretical framework has yet to test expansive conditions. Specifically, the main contribution of this study is to expand the theoretical framework through the examination of government regulation that is not explicit on privacy policy but is implicit because the government is providing the location-based services to the constituent.

With the potential for growth in location-based services, consumers must feel comfortable with how providers use the location information that they generate. Again, because privacy is a concept of personal control, researchers must understand both the antecedents to privacy and also the consequences of consumers' privacy concerns in order to fully develop effective marketing policies along with practices to reduce those concerns (Phelps, Nowak, & Ferrell, 2000). While the ongoing research debates the exact definition or conceptualization of privacy (c.f., Margulis, 2003), additional research (e.g., Culnan & Armstrong, 1999; Raschke, Krishen, & Kachroo, 2014) describes the concern for information privacy as a construct that reflects the extent to which firms collect information and how their use of it troubles people. Smith, Milberg, and Burke (1996) develop and test a multidimensional construct for information privacy that consists of collection, errors, improper access, and unauthorized secondary usage. The research has used this construct in the context of internet privacy (Bellman, Johnson, Kobrin, & Lohse, 2004) and location-based services (Junglas, Johnson, & Spitzmueller, 2008) along with other applications.

Personality traits might also influence the concern for information privacy. Junglas et al. (2008) study the antecedents to this concern, such as the personality traits of conscientiousness, agreeableness, emotional stability, extraversion, and openness. Their findings show that an individual's personality influences his/her perception of a privacy threat. Other research finds that privacy is an issue of personal control (Zweig & Webster, 2002; Phelps, D'Souza, & Nowak, 2001) which makes it reasonable that other well-known personality traits, such as an internal locus of control, might influence perceptions of privacy.

Individuals with a high internal locus of control perceive that the outcomes and events in their life are subject to the influence of their personal actions and behaviors, as opposed to those of external forces over which they have no control (Karkoulian, Srour, & Sinan, 2016). Schwaig, Segars, Grover, and Fiedler (2013) identify multiple variables for individual differences as inputs to control for information privacy. Also, as in their model, attitude is a consequence of the concern for privacy.

Fig. 1 shows that individual differences play a crucial role in understanding the PRE between those in power who consumers expect to act responsibly and the consumers' reaction to an imbalance in the equilibrium. The connection between an internal locus of control and privacy is clear because control is by definition at the heart of privacy (Milne & Bahl, 2010). When personal information is in the hands of others, individuals with a high locus of internal control should have a higher level of concern about information privacy. Thus, this study offers a set of hypotheses that stem mainly from the theory on the power-responsibility equilibrium.

H_1. Consumers with a higher internal locus of control have a greater concern about information privacy.

The PRE proposes that consumers respond to imbalances in privacy protection through actions such as fabricating, protecting, or withholding their identities and information (Lwin et al., 2007). In addition to behaviors, their beliefs, which encompass their attitudes and fairness perceptions toward government regulation, are important to consider, specifically, the fairness of the government's use of location-based services. Organizations not only have the responsibility to take into consideration the societal effects of their actions and to take an active role in self-regulation regarding privacy but also to derive long-term benefits from doing so (Smith, 2009). Therefore, individuals judge the fairness of outcomes by examining the proportional relation between rewards and costs, also known as distributive justice (Colquitt, Scott, Judge, & Shaw, 2006). In fact, Sweeney, McFarlin, and Cotton (1991) find that individuals with a higher locus of control have a higher perceived influence and therefore experience a higher level of fairness or procedural justice. Research also finds that the ability to voice concerns increases the perceived fairness in organizational settings; those with a higher internal locus of control should also have higher voice opportunity and therefore ultimately higher perceived fairness (Avery & Quinones,

2002). Hence, a consumer who believes that his/her actions determine outcomes is more likely to think that a program is fair. For example, Czap, Czap, and Bonakdarian (2010) show that when individuals believe that their actions determine or influence outcomes, they are more likely to contribute to the group good. The next hypothesis argues that consumers with an internal locus of control are more likely to see a government practice that relies on location-based services as fair.

H_2. Consumers with a higher internal locus of control have higher perceptions of fairness.

The Federal Communications Commission (FCC) cites respect for consumer choice, transparency, data breach notification, and data security as the key things consumers should know about their information sharing. The FCC continues to unveil efforts to assure consumer privacy (Wheeler, 2016). This set of principles, known as the *Industry Framework*, argues that privacy rules should prohibit unfair practices (FCC, 2016). As the FCC notes and due to the even higher concern for privacy associated with location-based services, we expect to find a negative correlation between privacy concern and fairness (FCC, 2012). The research defines fairness as an inherent need for justice and finds that the factors that contribute to the perception of fairness are the consumers' voice and control over outcomes (Culnan & Armstrong, 1999). In addition to governmental concerns, organizations are also cognizant of the potentially negative effects that can come from the privacy and fairness of their marketing campaigns, especially in the digital marketing realm (Martin, 2015). The literature on personnel policies and the invasion of privacy predicts that this relation is negative. For example, Stoughton, Thompson, and Meade (2015) show that invasions of privacy can result in negative procedural justice and fairness perceptions. Similarly, information privacy concerns have a negative association with organizational intentions to use location-based services in an employment screening context (Bauer et al., 2006). If consumers perceive that their information is at risk, then they experience a loss of satisfaction, a lack of procedural justice, and a diminished sense of fairness (Smith, Bolton, & Wagner, 1999). Thus, this study hypothesizes:

H_3. Consumers with a high concern for information privacy have lower perceptions of fairness.

Therefore, a fourth hypothesis suggests a different outcome for consumers who have a concern about information privacy. A large body of literature argues through the lens of the social exchange theory that consumers provide private information in return for firms being transparent with marketing communications (Hung & Wong, 2009; Li, 2012; Milne, Bahl, & Rohm, 2008). When consumers have a high level of concern about privacy, the research indicates that they also tend to value open communication and ongoing relationships with those firms with whom they share their information (Sheehan & Hoy, 2000). According to the social response theory, individuals are more likely to disclose personal information when they feel that the firm they are interacting with is doing the same (Li, 2012). Highly concerned consumers tend to expect control over their information, which they can obtain through a high level of interaction with their providers (Rohm & Milne, 2004). When corporations have high concerns about the protection of digital privacy, they tend to respect communication privacy more and provide higher information transparency to consumers (Hung & Wong, 2009). Hung and Wong (2009) argue that because of the social exchange theory, consumers view firm-based information transparency as a benefit for which their privacy is a cost in the two-way relationship; as such, information transparency means the provision of more information to customers. Marketing communications regarding privacy information can be classified as either pre-exchange or post-exchange and can be either harmful or beneficial to consumers (Milne et al., 2008). When consumers perceive marketing communications as covert, they lose trust that ultimately damages the firm's reputation and results in lower intentions to purchase.

H_4. Consumers who have a greater concern about information privacy have a more positive attitude toward marketing communications.

In addition, the research shows that individuals who have a greater concern about privacy often have a lower likelihood of engaging in e-commerce (Hoffman, Novak, & Peralta, 1999). The research also shows that satisfaction with a service is a consequence of the perception of the fairness in the pricing and delivery (Singh & Sirdeshmukh, 2000); this satisfaction tends to have a positive association with an attitude toward a target object, situation, or policy (Orsingher, Valentini, & de Angelis, 2010). Further, the research highlights the importance of the framing of advertising and marketing communications to alleviate consumers' concerns about privacy when using social networks (Tucker, 2014), which can generalize to privacy concerns regarding location-based services. With regards to ecological economics, Jorgensen, Wilson, and Heberlein (2001) find that when firms ask individuals to pay for environmental improvements for the public good, their perception of the fairness of the payment process affects their positive attitude toward paying for the good. The literature on organizational behavior clearly demonstrates the positive link between attitudes toward policies and the perceptions of fairness in such policies (Huang, Lu, Tang, & Huang, 2004).

H_5. Consumers with a more positive attitude toward marketing communications have a higher perception of fairness.

4. Study 2

4.1. Sampling

The goal in Study 2 is to understand the theoretical relations between the constructs for privacy and to test the hypotheses. Many aspects of the relations have a basis in the themes in Study 1 and the theory on the power-responsibility equilibrium. A total of 291 subjects from the Southwestern United States participated in the study. The sample consists of 48% males and 51% females (1% do not report their gender) that range from 22 to 90 years old. After pre-testing, undergraduate business students with training in data collection procedures collect a quota convenience sample from subjects who are not university students. This sampling procedure, which studies have used previously (e.g., Giebelhausen, Robinson, & Cronin, 2011) requires data collectors to randomly ask respondents who have driver's licenses, hold full-time employment, and are at least 18 years old to participate in a questionnaire concerning a transportation policy. In contrast to quasi-convenience sampling methods (e.g., snowball sampling), the estimation problems or biases are less applicable when the samples are large (Chen, Chen, & Xiao, 2013).

The study assured respondents that all responses were confidential and that the study would only present aggregate results. Further, the study obtained the appropriate consent during the collection. The students collected a total of 309 responses; however, due to incomplete responses, the study excluded 18, yielding a non-response rate of 5.83%.

4.2. Procedure and analysis

The previous research has validated all of the constructs in Study 2. Table 3 lists the constructs. The survey instrument uses 7-point Likert scales that range from 1 = strongly disagree to 7 = strongly agree. The *Internal locus of control* (ILOC) is the degree that a consumer believes his/her actions have some bearing on situational outcomes (Cleveland, Kalamas, & Laroche, 2005). The *Attitude toward marketing communications* (AMC) measures the subjective attitude toward any type of marketing communication with three items, in this case, the communication is provided in Appendix A (Pinkleton, 1997). *Fairness* (FAIR) measures the perceived fairness of the VMT policy with three

Table 3
Study 2: confirmatory factor analysis statistics.

		Item loading
Fairness (FAIR; CR = 0.89; AVE = 0.73) (Gilligan & Richardson, 2005; Krishen et al., 2010)		
1. For the average American, I believe that the vehicle mile taxation system is fair.	Fair1	0.88
2. For me personally, I believe that the vehicle mile taxation system is fair.	Fair2	0.86
3. Generally, I believe that the manner in which the vehicle mile taxation burden is distributed across taxpayers is fair.	Fair3	0.83
Internal locus of control (ILOC; CR = 0.71; AVE = 0.59) (Cleveland et al., 2005)		
1. I would accept paying 10% more taxes to pay for an environmental cleanup program.	Iloc1	0.68
2. I would be willing to spend an extra $10 per week in order to buy less environmentally harmful products.	Iloc2	0.84
Attitude toward marketing communications (AMC; CR = 0.80; AVE = 0.61) (Pinkleton, 1997)		
1. The passage I read about vehicle miles travelled is informative.	Amc1	0.71
2. The passage I read about vehicle miles travelled is interesting.	Amc2	0.62
3. The passage I read about vehicle miles travelled is useful.	Amc3	0.95
Concern for collection (CFC; CR = 0.92; AVE = 0.68) (Junglas et al., 2008)		
1. It bothers me if my cellular phone provider stores my location information.	Cfc1	0.81
2. It bothers me when my location information is available to my cellular phone provider.	Cfc2	0.88
3. I'm concerned that my cellular phone provider will collect too much location information about me.	Cfc3	0.80
4. I'm not comfortable with the idea that my cellular phone provider is able to track me at any time.	Cfc4	0.82
5. I would rather not provide my location information to my cellular phone provider.	Cfc5	0.82
Concern for error (CFE; CR = 0.77; AVE = 0.58) (Junglas et al., 2008)		
1. All location information should be double-checked for accuracy – no matter how much it costs.	Cfe1	0.55
2. My cellular phone provider should have thorough procedures to correct errors in location information.	Cfe2	0.88
3. My cellular phone provider should not disclose location information to unauthorized parties.	Cfe3	0.84
Concern for unauthorized use (CFUU; CR = 0.83; AVE = 0.55) (Junglas et al., 2008)		
1. My cellular phone provider should not disclose location information to unauthorized parties.	Cfuu1	0.63
2. My cellular phone provider should never share location information without my consent.	Cfuu2	0.71
3. My cellular phone provider should not use my location information for any purpose unless it has been authorized by me.	Cfuu3	0.82
4. My cellular phone provider should never sell location information of its customers to other firms.	Cfuu4	0.81
Concern for improper access (CFIA; CR = 0.85; AVE = 0.63) (Junglas et al., 2008)		
1. My cellular phone provider should devote a lot of time and effort to preventing unauthorized access to location information.	Cfia1	0.82
2. Databases that contain location information should be protected from unauthorized access – no matter how much it costs.	Cfia2	0.71
3. My cellular phone provider should take more steps to make sure that unauthorized people cannot access personal mobile location service information.	Cfia3	0.85

Model fit: χ^2 (222) = 451.13, p = 0.00; CFI = 0.94; TLI = 0.92; RMSEA = 0.06.

items and is adapted from Gilligan and Richardson (2005) and Krishen et al. (2010). The *Concern for Privacy* (CFP) is a second-order reflective construct consisting of four first-order constructs: (1) *Concern for Collection* (CFC), (2) *Concern for Error* (CFE), (3) *Concern for Unauthorized Use* (CFUU), and (4) *Concern for Improper Access* (CFIA). This construct measures privacy concerns of an individual with 15 items previously validated (Junglas et al., 2008). The following consumer constructs measure attitude, perceived fairness, and privacy concerns. The attitude toward marketing communications (AMC) measures the subjective attitude toward a marketing communication stimulus against the three items by using, in this case, the fabricated news article in the appendix (Pinkleton, 1997).

Table 3 provides the item loadings, average variance extracted (AVE), composite reliability, and the item details for the constructs. The scale purification process for all constructs results in the dropping of one item from the ILOC scale due to a low item loading. For all of the items and scales, each item has a loading that exceeds 0.60 on its own construct, which supports the construct's reliability (Fornell & Bookstein, 1982). The composite reliability measures the proof of internal consistency in the scales (Fornell & Larcker, 1981). The AVE assesses the convergent validity for each construct; because all of the AVE values range between 0.55 and 0.73, which are greater than the suggested cut-off of 0.50, the convergent validity does exist (Fornell & Larcker, 1981). Table 4 provides the means and correlations for the privacy sub-

Table 4
Study 2: privacy sub-construct and constructs: factor means, standard deviations, correlations, and square root of AVE (diagonal elements).

Panel A

Privacy sub-construct	Mean	Standard deviation	Factor 1	Factor 2	Factor 3	Factor 4
Concern for collection	4.89	1.51	0.82			
Concern for error	4.14	1.37	0.15*	0.76		
Concern for unauthorized use	6.26	1.09	0.50**	0.13**	0.74	
Concern for improper access	5.75	1.28	0.44**	0.33**	0.66**	0.79

Panel B

Construct	Mean	Standard deviation	Fairness	ILOC	AMC
Fairness (FAIR)	3.13	1.56	0.85		
Internal locus of control (ILOC)	3.94	1.42	0.29**	0.77	
Attitude toward marketing communication (AMC)	4.27	1.34	0.24**	0.28**	0.78
Concern for privacy (CFP)	5.28	0.97	0.01	0.19**	0.25**

** Significant at $p < 0.01$.
* Significant at $p < 0.05$.

Table 5
Study 2: cross factor loadings.

Construct	Fairness	ILOC	AMC	CFC	CFE	CFUU	CFIA
Fair1	**0.919****	0.249**	0.234**	−0.034	0.133*	−0.058	−0.039
Fair2	**0.909****	0.301**	0.229**	−0.041	0.101	−0.013	−0.033
Fair3	**0.901****	0.228**	0.202**	0.004	0.135*	0.022	0.020
Iloc1	0.216**	**0.815****	0.231**	−0.003	0.172**	0.083	0.145*
Iloc2	0.216**	**0.835****	0.234**	0.010	0.277**	0.118*	0.221**
Amc1	0.142*	0.209**	**0.837****	0.172**	0.075	0.159**	0.233**
Amc2	0.190**	0.233**	**0.805****	0.219**	0.145*	0.157**	0.186**
Amc3	0.281**	0.270**	**0.892****	0.237**	0.191**	0.171**	0.205**
Cfc1	−0.049	−0.030	0.161**	**0.852****	0.121*	0.489**	0.409**
Cfc2	−0.033	0.048	0.222**	**0.898****	0.160**	0.442**	0.367**
Cfc3	−0.038	0.062	0.286**	**0.846****	0.197**	0.410**	0.418**
Cfc4	−0.017	−0.011	0.211**	**0.871****	0.073	0.423**	0.366**
Cfc5	0.030	−0.003	0.217**	**0.874****	0.116*	0.390**	0.336**
Cfe1	0.093	0.221**	0.069	0.157**	**0.777****	0.051	0.259**
Cfe2	0.135*	0.290**	0.190**	0.095	**0.893****	0.068	0.237**
Cfe3	0.109	0.257**	0.204**	0.131*	**0.860****	0.189**	0.326**
Cfuu1	0.068	0.141*	0.183**	0.284**	0.054	**0.803****	0.479**
Cfuu2	0.014	0.132*	0.190**	0.487**	0.125*	**0.859****	0.608**
Cfuu3	−0.122*	0.015	0.150*	0.501**	0.113	**0.770****	0.441**
Cfuu4	−0.013	0.065	0.116*	0.334**	0.103	**0.842****	0.629**
Cfia1	−0.032	0.167**	0.208**	0.340**	0.281**	0.608**	**0.885****
Cfia2	0.033	0.229**	0.261**	0.362**	0.333**	0.466**	**0.863****
Cfia3	−0.053	0.177**	0.175**	0.441**	0.220**	0.660**	**0.880****

Construct measures highlighted in bold.
* Significant at $p < 0.05$.
** Significant at $p < 0.01$.

constructs (Panel A) as well as all of the main constructs (Panel B). The table shows that four separate factors exist as well as the square root of AVE as diagonal values. To test for discriminant validity, the diagonal values should be higher than their corresponding non-diagonal values. Both panels of the table show that the values are greater and therefore the model provides discriminant validity. In addition, Table 5 displays the cross factor loadings for all of the construct items. Because all items load higher on their corresponding constructs than on other ones, the model has discriminant validity.

Fig. 2 illustrates the latent variable structural equation modeling (LVSEM) with a maximum likelihood estimation. The fit indices indicate that the theoretical model fits the data relatively well: ($\chi^2(222) = 451$, $p < 0.05$; incremental fit index [IFI] = 0.94; Tucker-Lewis Index [TLI] = 0.92; confirmatory fit index [CFI] = 0.94; and the root mean square error of approximation [RMSEA] = 0.06).

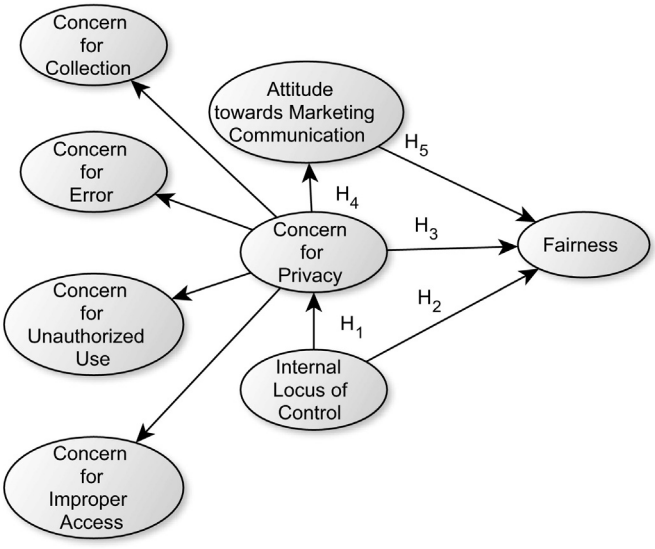

Fig. 2. Conceptual model for a power-responsibility equilibrium theory of privacy, fairness, and attitude toward marketing communication.

The study takes several steps to mitigate the common method bias. The first step uses reverse coded items in the instrument and counterbalances the question order throughout the survey (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Second, the study controls for the common-scale format issues by using both Likert-type and semantic differential scale items, with fillers as MacKenzie and Podsakoff (2012) recommend. In addition, the study also controls for item-priming effects by placing items that measure behavioral outcome variables at the end of the survey. Third, the study uses Harman's single factor analysis for all observed measures with a varimax rotation (Podsakoff & Organ, 1986). The sample has six clearly interpretable factors with no significant cross-loadings among the measures and with the independent constructs loaded as separate factors. Because the concern for privacy is a second-order measure with several sub-factors, the factors should not all load independently; however, fairness, internal locus of control, and AMC each load as separate factors. These analyses show that a multiple-factor solution and a first-factor variance provide a value of 16.98%, which is well below the level of <50% that the literature suggests (Baumgartner & Steenkamp, 2001; MacKenzie & Podsakoff, 2012). This value indicates that common method bias is not a problem.

4.3. Results

Table 6 and Fig. 3 show the directions of the hypothesized relations. The results support all hypotheses.

Specifically, H_1 predicts a positive relation between the internal locus of control and a concern for information privacy, and H_2 predicts a positive relation between the internal locus of control and policy fairness. The findings indicate a strong positive relation between the internal locus of control and the concern for information privacy and fairness constructs (H_1: $\beta = 0.26$, $t = 3.22$, $p < 0.01$; H_2: $\beta = 0.26$, $t = 3.41$, $p < 0.01$). Thus, the results support H_1 and H_2. H_3 predicts that a high level of privacy concern has a negative relation with a low level of fairness toward the policy. The results of $\beta = -0.16$, $t = -2.32$, and $p < 0.05$ support H_3. H_4 predicts a positive relation between the concern for information privacy and the attitudes toward a public policy. The results of $\beta = 0.27$, $t = 3.78$, and $p < 0.01$ support H_4. And the same is true for H_5 that predicts a positive relation between the AMC and fairness (H_5: $\beta = 0.30$, $t = 4.27$, $p < 0.01$).

Building on the themes in Study 1, the results from Study 2 indicate that the quantitative data fits well with the theoretical model. In addition, the qualitative results provide a great number of insights regarding the central theme of concerns about information privacy and the consumer's internal locus of control. Further, the findings disclose important relations among these two constructs and the perception of fairness. A consumer's ability to have control over private information is an imperative consideration from which to devise an adequate marketing message. By means of these studies, this research provides implications for decision makers, such as an understanding of the effect that personality traits have on

Table 6
Study 2: path model results.

Dependent variable	Independent variable	β value*	t-Value	Hypothesis
CFP ($R^2 = 0.06$)	ILOC	0.26	3.22	H_1 supported
FAIR ($R^2 = 0.14$)	ILOC	0.26	3.41	H_2 supported
FAIR ($R^2 = 0.14$)	CFP	−0.16	−2.32	H_3 supported
AMC ($R^2 = 0.07$)	CFP	0.27	3.78	H_4 supported
FAIR ($R^2 = 0.14$)	AMC	0.30	4.27	H_5 supported

β is a standardized coefficient.
CFP = concern for privacy; FAIR = perceived fairness; AMC = attitude towardmarketing communication; ILOC = internal locus of control.
* All β values are significant at $p < 0.05$ (two-tailed).

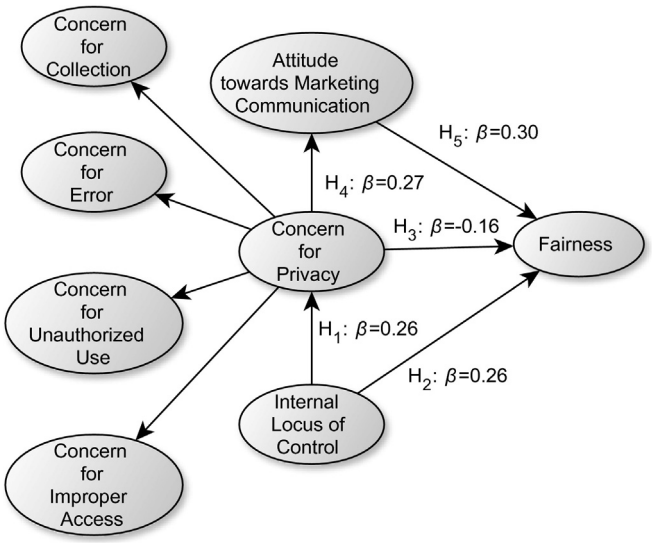

Fig. 3. Final model with beta values for a power-responsibility equilibrium theory of privacy, fairness, and attitude toward marketing communication.

attitudes toward public practices and the perception of fairness in location-based services. Such individual differences include a need for control, among other factors, and have a direct relation to information privacy.

5. Discussion

The results of the mixed method approach in this study contribute to the theory on the power-responsibility equilibrium in three main areas: theory, methodology, and marketing and public policy.

5.1. Contributions to theory

This study extends the power-responsibility equilibrium for information privacy by adding a key variable for individual differences. Specifically, this new framework shows the importance of the consumer's locus of control in contrast to the research that discusses other individual difference variables as they relate to permission marketing and privacy concerns (Kumar, Zhang, & Luo, 2014).

This extension of the power-responsibility equilibrium includes constructs on consumers' perceptions in the areas of fairness and the AMC. While the model examines the outcome for the perception of fairness, the literature does not tie this construct to the consumer's attitude in relation to the way power holders actually communicate a policy to consumers. In doing so, the study adds attitudinal components to the framework within the context of a broader citizen-consumer "marketing as society" framework. Research from Li (2014) argues that rather than providing exclusion and solitude to consumers, they instead want to feel a sense of fairness from receiving their desired level of privacy.

The study extends the breadth of concern for privacy in the theory, which is a second-order construct. The study also explores other aspects of privacy concerns beyond the original power-responsibility equilibrium. In sum, by means of these three specific extensions or developments to the PRE, this study develops and tests new theoretical linkages. In doing so, the study develops a deeper theoretical rationale from the privacy literature for the pre-established linkages among a consumer's locus of control and the perceptions of privacy and fairness in location-based services. An additional contribution of this study is the linkage between consumer cognitions or perceptions of privacy and their subsequent intended behaviors. As such, this research also considers how consumers' perception of control over their situation might affect their subsequent fairness perceptions.

5.2. Implications for marketing and public policy

The implications provide a deeper understanding of the intricate dimensions in privacy and location-based services. This deeper conceptualization of power-responsibility issues and the consumer's need for privacy is especially crucial given that the market in location-based services is a surging industry. An understanding of the relative importance of these dimensions will allow organizations to consider the larger impact to society as they implement privacy standards (Acquisti, John, & Loewenstein, 2012).

As this new power-responsibility and privacy model suggests, a power holder's implementation of privacy standards can lead to increases in fairness for citizen-consumers. Further, the results provide insights for public and organizational decision makers to consider feedback from consumers prior to a practice taking place. Specifically, this study shows that understanding the qualitative feedback from public meeting forums helps identify themes of concern as they relate to a government's practice when generating a usage tax from a mobile location technology. Organizations must realize the need to understand the effects that technology has on its citizen-consumers prior to implementing a practice. Often, governments embed technology in the implementation or monitoring aspects of a practice, ignoring citizen-consumer concerns. This practice can lead to a low level of acceptance.

6. Limitations and future research

Limitations create space for future research on consumers' perceptions of privacy matters with respect to marketing and location-based services. One limitation is that the research context is related to a government's location-based service. Future studies can apply this model to other contexts from which organizations use location-based services both within the organization to monitor employees and outside the organization. Another limitation is that this study does not address the legal and ethical questions from implementing marketing messages with location-based services. The difference between explicit and implicit risks for privacy can also be the subject of an interesting research agenda that future scholars should consider. In the current study, privacy considerations came implicitly from the potential tracking of consumer mileage rather than an obviously communicated privacy policy. In addition, the present research measures attitudes toward indirect communication from the media to introduce implicit privacy concerns as opposed to direct communication from firms; future research can test differences between such indirect and implicit privacy concerns and direct or explicit ones. These limitations bring new research ideas to light.

The marketing discipline encompasses more than solving immediate problems with a narrow focus on consumers, and marketing should broaden the discipline to include the creation of value for all citizen-consumers. Marketing's fragmentation limits scholars' understanding of how the field can address societal and consumer communication issues (Wilkie & Moore, 2012). Indeed, Webster and Lusch (2013, p. 390) state: "Unfortunately, marketing scholars who have generally done little public policy research have not provided public policy makers the knowledge to make informed regulatory decisions." One area that affects society while intersecting technology and consumer privacy is the widespread use of location-based services, which has implications for marketing scholarship as well as to any consumer who, willingly or not, uses location-based services. Future research should examine other contexts in which technology and policy intersect, such as public health and emergency management services. Hence, understanding the balancing act of control between an organization and the consumer – as well as the boundaries within the perspective of privacy – will continue to be of interest.

Appendix A. Study 2: marketing communications stimuli

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