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A FAIRNESS HEURISTIC ANALYSIS OF THE PRIMACY EFFECT OF REPUTATION ON PERCEIVED OF PRIVACY POLICY AND PRIVACY SEALS

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Abstract

When faced with the risk-benefit dilemma in online era, how would users make their decisions by procedural justice information as distributive justice information is uncertain? The literature implied reputation, privacy policy and seals can be regarded as the factors, which would eliminate users' privacy concern, build trust and incentivize transaction. However, research-to-date is lacking of a comprehensive model to indicate practitioners whenever and however which factor is the core compared with others or their efforts are equal. Drawing upon the fairness heuristic theory, this paper explores the impact of the three factors on them. The results from an experimental study show that the primacy effects of reputation on perceived of privacy policy and seals exist. Theoretical and practical implications arising from our results were offered.

Keywords: Privacy Concern, Trust, Transaction Intention, Reputation, Fairness Heuristic Theory, Perceived of Privacy Policy, Perceived of Privacy Seals

Introduction

The advent of the Internet and emergence of new information technologies (IT) have enhanced the capabilities of personal information collection, storage, use and communication [1]. The result is that there is a marked increase in the possibility of users' personal information and online transaction records being tracked, misused, intercepted and captured. Even though online users enjoy benefits such as plentiful data source, convenient and personalized services, they have to face with the risks of information disclosure and misuse [2]. Their concerns on privacy have become an important issue and potential obstacle of user participation in various online activities [1, 3-7]. Besides privacy concern, trust has grown to become a crucial factor of behavior intention that had been discussed in information privacy research area (i.e., [8, 9])

When faced with the cost-benefit dilemma, users know exactly what they can get within the fix exchange/transaction, but the potential costs, such as privacy invasion, are uncertain. At this point, the

outcome information that can be used to make the judgment of distributive justice is lacking. According to Van den Bos et al [10] and Flint et al [11]'s report, when comparative information about outcomes is absent or ambiguous, individuals are prone to make fairness judgments relying on procedural justice (i.e., judgment depends on procedural information)

In addition, scholars [12] suggested that firms and online information collectors need to be aware of users' evaluations both in terms of outcomes and procedures on their online business practices, because failing to do so would lead to negative users' behavior. As the procedural information, privacy policy and privacy seals are the two most general mechanisms adapted by websites and have been verified to increase users' trust [13] and decrease privacy concern [14] in some ways.

Till now, besides privacy policy and privacy seals, the bulk of the extant research focused on the effect of trust and privacy concern on behavior intention have examined antecedents such as reputation [15], firm size, website presences [16] and so on. Regrettably, these studies have investigated the influences of these factors unilaterally, rather than in an integrated manner. As a result, their combined outcomes on privacy concern elimination and trust building is unclear when websites have different level of reputation, varying degrees of privacy policy and privacy seals.

Furthermore, contrary to earlier research [17, 18], recent research [2, 19, 20] found that privacy seals have no significant impact on trust and behavior intention. The conflicting empirical results have bewildered government and e-commerce firms, and made them wonder whether it is necessary to fund third party assurance services or whether privacy policy is enough to build trust and decrease privacy concern. Therefore, when the reputation level of the website is confirmed to be different, exploring the influences of privacy policy and seals on users' trust, privacy concern and behavior intention can help government and enterprises make the decision as to whether to develop third party assurance services and to utilize privacy seals to build users' trust.

To provide some answers to these questions,

this paper draws upon the “trust building” theory [21] and Fairness Heuristic Theory [22] to investigate the primacy effect of website reputation, compared with privacy policy and privacy seals, on privacy concern, trust, and transaction intention. An experimental study was performed to test the proposed model and hypotheses. Subsequently, we offer some theoretical and practical contributions based on our empirical findings.

Research Model and Hypotheses

Zucker’s Trust Categories

Much research has been conducted on trust in the e-commerce literature, where trust is defined as a set of specific beliefs about another party that positively influence an individual’s intention to conduct online transactions [23-28]. According to Zucker[21]’s “trust building” model, there are three major categories to build trust, including process-based (i.e., reputation, experience), characteristic-based (i.e., disposition, website characteristics), and institutional-based (i.e., third-party certification, assurance). Noticeably, while trust-building model indicates the role of three types of measures on trust building and privacy concern elimination, it cannot exactly anticipate and explain whether some indicators has primacy effect compared to others. To explore and anticipate their relationships and their influences on other outcomes, we further draw upon the fairness heuristic theory to guide our conceptual developments.

Fairness Heuristic Theory (FHT)

Fairness heuristic theory asserts that people use their judgments of fairness as a heuristic to guide decisions about the appropriate level of personal investment and involvement in groups, organizations, and institutions [22]. When fairness heuristic processes are engaged, people will use information from a variety of sources, such as interpersonal experiences, characteristics of formal rules and procedures and distribution of outcomes across group members, which was used to derive a general impression on how fairly he or she is being treated [22].

In the Internet era, the uncertainty of personal information collected, used and treated is pervasive. Consequently, users show concerns of information privacy, and then invoke protection intention to prevent the unauthorized intrusion [14]. They need the evidence to convince themselves to make the judgment as to whether to engage in online

activities. The collectable evidence is bounded. Fairness heuristic theory [29] can be used to explain and anticipate which factors have stronger influences on users’ attitude and intention when faced with the potential risks of privacy intrusion. As while, the theory can be used to explain why some measures do not work as people’s expectation.

In traditional procedural justice research, reputation was mostly discussed as individual’s characteristics. In this paper, reputation is the attribute of a website. Users are more likely to trust firms with a good reputation [30]. Firms with high reputation would be deemed to maintain and fulfill their stated promise compared with the low reputation ones. Thibaut et al [31] first introduced the role of third party into the procedural justice. Privacy seals are regarded as one of the third party certifications that can impact users’ judgment on procedural justice. Privacy policy, as a type of normative standards published on website detailed how the firm will use users’ information and how they will treat them, belongs to the category of procedural justice [12]. Privacy policy which comply with industry self-regulation was regarded as one of the important variables that shape users’ justice perceptions [32]. Thus, online users make their judgment through the perceptions of the usefulness or fairness of privacy policy.

Extant research suggests that justice (or fairness) is regarded as an antecedent to trust and privacy concern [9, 33]. The impact of privacy concern on trust [34] and their respective impacts on transaction intention [1, 35] have been presented in previous research. The FHT suggests that fairness judgments are more strongly influenced by information that is available at an earlier stage of interaction with the authority than by information that becomes available later [10]. It is well known that reputation exist objectively before privacy policy and privacy seals utilized for some online firms, especially for the click and mortar ones. Notably, in some area, the well-know level of privacy seals is limited, thus firm’s reputation would have impact on the perceived of privacy policy (self) and privacy seals (third party). Moreover, when distributive justice information is ambiguous, users make their justice judgment depending more on the procedural justice information. Thus, we proposed the research model in Figure 1.

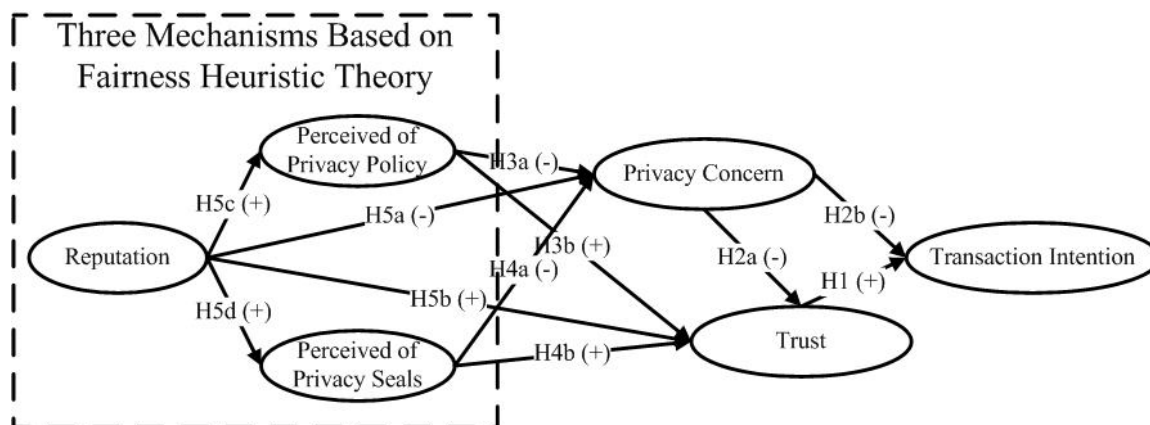


Figure 1 Research Model

Privacy Concern, Trust and Transaction Intention

Trust and privacy concern have been found as the mediators of privacy policy, privacy seals [13], and reputation [36], and have an effect on transaction intention [37, 38]. Meanwhile, previous research had provided ample evidence that privacy concern has negative effect on trust [34, 39]. Thus, we proposed that:

H1: Trust has positive effect on transaction intention

H2a: Privacy concern has negative effect on trust

H2b: Privacy concern has negative effect on transaction intention

Privacy Policy

The published privacy policy may be seen as a signal about the trustworthiness of an online enterprise [40, 41], as well as convince users that their personal information will not be violated. At present, majority of the firms post privacy policies or statements regarding collection, usage and dissemination of personal information in order to enhance users' online purchasing confidence [42-44]. Privacy policy is one of the most precious information sources available for users to judge whether or not their own privacy threshold correspond with the website [45]. Withal, it has been reported that privacy policy has negative effect on privacy concern [14] and users show more trust to a website with clear and comprehensive privacy policy [13, 40]. Therefore, we expect that:

H3a: Perceived of Privacy policy has negative effect on privacy concern

H3b: Perceived of Privacy policy has positive effect on trust

Privacy Seals

Privacy seals issued by independent third parties are utilized by online firms to show that a particular website can be trusted [20]. Much research provides empirical support that privacy seals promote feelings of security and trust [17, 18].

However, more recent findings since 2005 revealed that respondents do not fully understand the form or function of privacy seals and seldom see them as important to trust [19]. One of the reasons result in the disuse impression would be the unawareness of users on privacy seals. Means as users perceived privacy seals exist and understand what they do, the performance of privacy seals can be improved. Drawing on institution-based of trust building theory and consistent with Milne et al [46]'s view, we proposed that:

H4a: Perceived of Privacy seals have negative effect on privacy concern

H4b: Perceived of Privacy seals have positive effect on trust

Reputation

In the present study, reputation is conceptualized as the users' perception of a website's reputation, and was defined as the extent to which users believe an enterprise is honest and concerned about its customers [47]. Reputation can be an important antecedent of trust building for both direct marketers [47, 48] and web vendors [49], particularly in the preliminary trust phase [36]. For novice users, high reputation could help them to have more confidence to visit or purchase from the website. For veteran consumers, it can help boost their beliefs about vendor competence, benevolence and integrity [36]. Therefore, users would present more trust and lower concern on privacy to the well-known websites compared to the lesser-known ones.

Reputation is a strategic asset that takes time to build and requires significant investment [15]. Gefen et al and Milne et al [26, 46] suggest that firms' reputation serves as a symbol to provide assurances that their information is safe and would be regarded as a substitute for reading privacy policy. Meanwhile, firms with higher reputation would engender more favorable perceptions from users with regard to privacy policy and privacy seals. Thus, we propose that:

H5a: Reputation has negative effect on privacy concern

H5b: Reputation has positive effect on trust

H5c: Reputation has positive effect on perceived of privacy policy

H5d: Reputation has positive effect on perceived of privacy seals

Method

Experimental Design

An experimental study was designed to test the research model and hypotheses. A scenario method was utilized to increase the realism of the experiment to the participants. Specifically, subjects were shown three mechanisms sequentially. First, participants were told the target website's name and then their perceived reputation of the website was measured. Depending on the treatment, they were informed whether this website has complete privacy policy and /or privacy seals. Subjects were able to read the content of privacy policy and click on the privacy seals link. To reflect a realistic online environment, four real-life Chinese B2C websites were chosen, including dangdang.com (DD), guopi.com (GP), amazon.cn (ZY), and m18.com (MY). Privacy policy and privacy seals were manipulated in 2×2 factorial design. A pre-test was performed to verify the level of privacy policy. The treatments with high level of privacy policy (PP=H) had complete and comprehensive contents while the website with low level of privacy policy (PP=L) did not have any privacy policy or statement. The website with the privacy seals (Chinese EC Seal) was regarded as high level of privacy seals (PS=H), while the website without the privacy seals were regarded as low level of privacy seals (PS=L). We arranged the same content of privacy policy and signature of privacy seals to each higher level of privacy policy and seals conditions. The detailed experimental design is shown in Table 1.

Table 1 Experimental Design

	Treatment	N	Manipulation
DD	1	24	PP=High
GP	2	23	PS=High
ZY	3	23	
MY	4	26	
DD	5	23	PP=High
GP	6	25	PS=Low
ZY	7	22	
MY	8	26	
DD	9	27	PP=Low
GP	10	25	PS=High
ZY	11	19	
MY	12	20	

DD	13	18	PP=Low
GP	14	25	PS=Low
ZY	15	25	
MY	16	28	

Measurements and Participant

We measured the independent variables, privacy policy and privacy seals in two steps. Firstly, we asked users' perception on the privacy policy which reflects a website' commitments on protection of user's personal information, including the collection, storage, usage, transformation, etc. Next, we assessed their perception on privacy seals, which is an approval programs belonging to the third party that will ensure proper treatment of users' personal information pertaining to the local legal rules and itself statement on policy. Secondly, questions were asked whether the website has privacy policy and/ or privacy seals (yes or no; 1 or 0), the aim of which is to check out whether users know whether the website has privacy policy and/or privacy seals. Those two steps made up of weighted scored computation by multiplying the (GP), amazon.cn (ZY), and m18.com (MY). Privacy policy and privacy seals were manipulated in 2×2 factorial design. A pre-test was performed to verify the level of privacy policy. The treatments with high level of privacy policy (PP=H) had complete and comprehensive contents while the website with low level of privacy policy (PP=L) did not have any privacy policy or statement. The website with the privacy seals (Chinese EC Seal) was regarded as high level of privacy seals (PS=H), while the website without the privacy seals were regarded as low level of privacy seals (PS=L). We arranged the same content of privacy policy and signature of privacy seals to each higher level of privacy policy and seals conditions. The detailed experimental design is shown in Table 1.

The perceived score obtained in step one by the binary score in step two. The remaining of the measurement scales including reputation, privacy concern, trust and transaction intention were adapted from previous research with 7-point Likert scales. All Likert scales had the anchors 1=totally disagree and 7=totally agree in this study. Table 2 presents the source of each scale.

The actual experiment was conducted in a large Chinese university from September to December in 2008. A total of 472 students took part in the experiment, 379 completed and usable samples were received (Table 3), resulting in a response rate of 80.3%. Majority of the respondents' age is 21-22 years old (65.4%) with over 50% of the samples being male. The average Internet experiences are 5.01 years. Over 40% respondents have online purchasing experience. Nearly 40.9% of respondents have ever used credit

card to pay. The characteristics of them are pertain to CNNIC [50] reports described that the student online users features

Manipulation Checks

The ANOVA analysis results of manipulation checks for privacy policy Weighted Mean for Low=3.39, Weighted Mean for High=6.66, $T=-28.230$, $p<.01$) and privacy seals Weighted Mean for Low=3.56, Weighted Mean for

High=6.78, $T=-28.459$, $p<.01$), showed that the manipulations were successful. In addition, to ensure the selected websites' reputation include both high and low level, ANOVA analysis see Table 4) was performed, the results showed that the websites of DD and ZY have higher level of reputation compared with the websites of GP and MY.

Table 2 Measurement Scale Sources

Scale	Item	Source
Reputation	3	[23]
Trust	7	[51]
Privacy Concern	4	[37]
Transaction Intention	6	[51, 52]
Perceived of Privacy Policy	1	The privacy policy introduced why and how online firms would collect, use, store and treat users' personal information, which is the consent to not use the information out of the initial stated usage. revised from [14]
Perceived of Privacy Seals	1	The privacy seals belong to a third party, which will monitor online firms' usage of users' information compliance with its privacy policy "revised from [53]"

Table 3 Statistic Information of Samples (N=379)

Characteristics		Number	Proportion	Characteristics		Number	Proportion
Gender	Male	204	53.8%	Online Purchase times	0	199	53.4%
	Female	175	46.2%		1-3	104	28%
Age	18-20	81	21.5%		4-10	44	11.9%
	21-22	247	65.4%	11+	26	7%	
	23-25	50	13.2%	Online Payment	None	224	59.1%
Internet Experience	Ave	5.01 Year	Ever		155	40.9%	

Table 4 Manipulation Check – Reputation

Website Comparison	Mean Differences	Std.	t-value	Results
DD→ZY	-.18	.12	.477	DD's reputation is same high with ZY
DD→GP	1.11	.11	.000	DD's reputation is higher than GP
DD→MY	.99	.11	.000	DD's reputation is higher than MY
ZY→GP	1.30	.11	.000	ZY's reputation is higher than GP
ZY→MY	1.17	.11	.000	ZY's reputation is higher than MY
GP→MY	-.13	.11	.719	GP's reputation is same low with MY

Results

Partial Least Squares (PLS) as implemented in SmartPLS-2.0 [54] and SPSS 11.5 was utilized to conduct the data analysis.

Measurement Model

In order to examine the convergent validity and discriminant validity of the instrument, we tested the measurement model. Three tests were performed to determine the convergent validity of measured reflective constructs in a single instrument, they are items' reliability, constructs' composite reliability and average variance

extracted by constructs [53]. The item loadings should exceed 0.707 and the average variance extracted [55] of the construct should exceed 0.50. The composite reliability score should exceeded 0.7 [53]. The Cronbach's alphas were higher than 0.7. The square root of the variance (diagonal) shared between the constructs and their measures are greater than the correlations (non-diagonal) between the constructs and any other constructs, which verified the different constructs are distinct. Thus, the measurement of each construct was verified valid and reliable (Table 5).

Structural Model

A bootstrapping technique was used to estimate path coefficients significance. The structural model explained 30.3% of the variance in transaction intention. Trust has significant positive effect on transaction intention. Privacy concern has significant negative effect on trust contrary to the transaction intention. Thus, H1 and 2a were supported, but H2b was not significant. The significant positive effect of privacy policy on trust was verified, thus H3b was supported. However,

the effects of privacy policy and privacy seals on privacy concern and the effect of privacy seals on trust were not significantly, hence H3a, 4a, and 4b were not supported. As hypothesized, reputation has significant positive effect on trust, privacy policy and privacy seals but negative effect on privacy concern, thus H5a, 5b, 5c, 5d were supported. The data analysis results were presented in Table 6 and the revised model was shown in Figure 2.

Table 5 Descriptive Statistics of Constructs

Construct	M	S.D.	CR	1	2	3	4
1.Reputation	4.21	0.97	0.85	0.81			
2.Privacy Concern	5.29	1.09	0.91	-0.24	0.85		
3.Trust	4.36	0.76	0.89	0.43	-0.20	0.73	
4. Transaction Intention	3.68	1.06	0.92	0.45	-0.18	0.54	0.81

Note: Shaded elements along the diagonal represent the square root of the variance shared between the constructs and their measures.

Table 6 Results of Hypotheses Testing

Hypothesis	Path Estimate	t-value	Supported	Hypothesis	Path Estimate	t-value	Supported
H1: T→TI	0.531**	12.827	YES	H4b: PS→T	0.040	0.770	NO
H2a: PC→T	-0.106*	1.966	YES	H5a: RE→PC	-0.244**	3.916	YES
H2b: PC→TI	-0.127	1.140	NO	H5b: RE→T	0.430**	6.504	YES
H3a: PP→PC	0.014	0.240	NO	H5c: RE→PP	0.199**	3.730	YES
H3b: PP→T	0.148*	2.845	YES	H5d: RE→PS	0.126*	2.058	YES
H4a: PS→PC	0.036	0.565	NO	R2	30.3%		

*p<0.05, **p<0.01

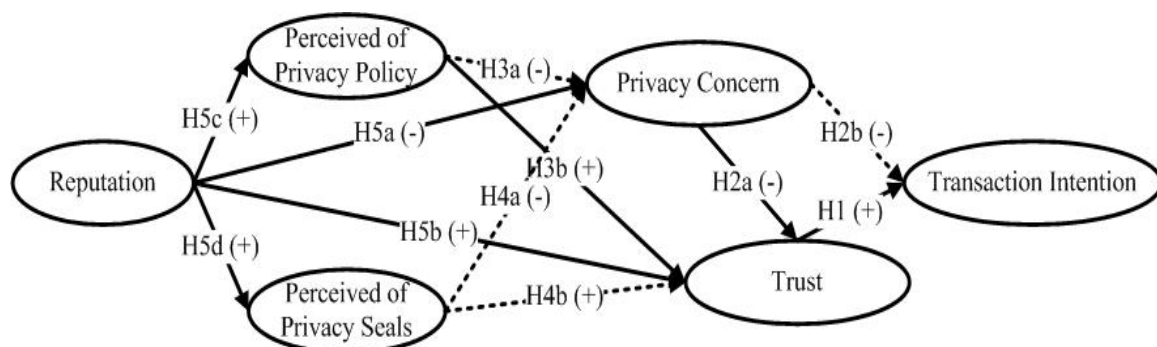


Figure 2 Final Research Model (Supported Relationships Bolded)

Discussion, Implications and Limitations

Our findings provide substantial empirical support that privacy concern has negative effect on trust, consistent with previous research, such as [46], but its influence on transaction intention is not significant, which is inconsistent with [37]'s findings. Trust has significant positive effect on transaction intention. A plausible explanation is that according to Wirtz et al [9], privacy concern mediates the relationship between antecedent justice dimensions and prevention-focused

behaviors. Correspondingly, trust mediates the relationship between antecedent justice dimensions and promotion-focused behaviors. The behavior intention to transact belongs to one of the promotion-focused behaviors.

Consistent with prior research, such as [13, 40], this study has verified the positive effect of perceived of privacy policy on trust. Conversely, its negative effect on privacy concern was not significant. The effects of perceived of privacy seals on both privacy concern and trust were not significant. On the contrary, both the negative

effect of reputation on privacy concern and its positive effect on trust were confirmed significantly. Reputation has significant positive effect on perceived of privacy policy and privacy seals, which means that users' perception on privacy policy and seals would be influenced by the website reputation. One of our most significant findings is that reputation, compared with the other two antecedents - privacy policy and privacy seals, has more significant positive effect on privacy concern and trust. These outcomes indicate that when reputation exists, privacy policy and privacy seals do not play as important role as reputation does. Noticeable, this finding was gotten in the condition of the well-know level of privacy seals is limited. Thus, in B2C e-commerce environment, the reputation of website would be more meaningful to decrease privacy concern, increase trust and further incentivize users' intention to transact especially when the privacy policy and seals are not stronger enough.

Furthermore, our findings could help explain the emerging contradictory results on the impact of privacy seals because prior research did not consider the influences of reputation on the role of privacy seals. Without considering the primary effect of reputation on perceived of privacy seals, the declaration on whether the privacy seals are useful or not is indiscriminate. Our study overcomes this limitation as it examined three mechanisms simultaneously. The aim of the firms post privacy seals over the website is to enhance users' trust and eliminate their concern on privacy, while, users' feedbacks are not consistent with firms' expectations. These findings indicate that the current privacy seals, as one kind of third party certification, have not strong enough to persuade users to trust and decrease concern compared with websites' reputation.

It is worth mentioning that majority of the extant Fairness Heuristic Theory research has explored the primacy effect of distributive justice information and procedural justice information on judgment when their sequence were presented successively. This study complement that the primacy effect exist among three procedural justice information as well.

Implications, Limitations and Future Research

Our results present two direct suggests to online B2C firms. Firstly, establishing higher reputation for their website would be more effective than publishing privacy policy or post third-party certification- privacy seals, especially as the privacy policy and seals are general not but specialties at this time. Secondly, the form and content of privacy policy need to be enhanced to show the firm's idiographic property. Objectively,

as third-part certification, privacy seals should play an independent role, but the outcomes verified they are influenced by website reputation, means which do not bear the burden. Of course, the third party company, industry and government should pay more efforts to update and revised the privacy seals (i.e. the appearance, famous level, disseminate) or create new way to provide the third party monitor.

This paper provided some new insights to explain users' perception when the distributive information (transaction outcomes) is uncertain. It elucidates the influence of the three mechanisms on privacy concern, trust and behavior intention based on fairness heuristic theory. Considering the effects of the three procedural justice information together help explain the effect of privacy policy and seals on privacy concern and trust when the websites' reputation level is fixed. This finding provides more concrete guidance for practitioners compared to past research. Meanwhile, the use of FHT in individual information privacy research area provide a new perspective for future research, for instance, scholars could compare between procedural and distributive (i.e., reward, monetary incentives) information on privacy concern, trust and behavior intention, similar to what Lind et al [22] have done in organizational behavior.

While our results offer substantial managerial and theoretical contributions, there are several limitations in this study that should be acknowledged. The generalization of the outcomes is limited to only the experiment study characteristics but also the type of websites selected and university students targeted. Therefore, future studies could overcome these shortcomings with a large scale survey, and examining different types of websites and using adult online users as participants.

Conclusions

Drawing on trust-building model and fairness heuristic theory, this paper investigated the effects of three factors namely, reputation, privacy policy and privacy seals on privacy concern, trust and transaction intention. Overall, the findings provide implications for online marketers that the importance of reputation in reducing privacy concern and trust building. In particular, attention should be paid to the importance of the primacy effect of reputation and its influences on users' perception of two types of procedural justice information. Future work can perform more investigations on how procedural and distributive justice information may impact on privacy concern, trust and behavior intention in order to uncover the most essential factors to incentivize users' online participation.

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