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Getting the most out of third party trust seals: An empirical analysis

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ABSTRACT

Electronic markets have successfully adopted third party trust seals as a self-regulatory mechanism to enhance consumer trust. While there exist many papers supporting the effectiveness of trust signals, interaction between trusts seals and contextual factors in e-commerce (e.g., value of shopping carts, number of trust seals displayed, shopper experience and retailer's sales volume) is an underexplored area. In this study, we exploit a dataset of over a quarter million of online transactions across 493 online retailers collected from randomized field experiments. A large trust seal provider conducted the experiments and subsequently shared the dataset with us. Our main contribution is the demonstration of four variables moderating the effectiveness of trust seals on the likelihood of purchase completion. More specifically, our work shows that trust seals are more effective for small online retailers and new shoppers, thus serving as partial substitutes for both shopper experience and seller's sales volume. Interestingly, we find that the presence of too many (i.e., more than two) seals can lower the likelihood of purchase completion. Our findings also show that trust seals are more effective for higher value shopping carts but only in the latter stages of the shopping cycle. Finally, we discuss the implications of our findings for online retailers, third party certifiers, as well as for policy makers.

1. Introduction

E-commerce retail sales as a percent of total retail sales in the U.S. has increased to 6.7% as of the fourth quarter of 2014 [1]. However, many experts believe that the potential is much higher and attribute the rather slow development of e-commerce to consumers' lack of trust in purchasing on the internet [2]; and this trend not only exists in e-commerce originating in North America but also in India [3] and the Middle East [4]. Quantifying the degree of distrust, TRUSTe 2014 U.S. Consumer Confidence Index [5] shows that 45% of American consumers do not trust online retailers with their personal information (up from 41% in 2012). Stressing the importance of initial customer trust for online retailers, Wang, Beatty and Foxx [6, pp.54] bluntly put it as, "failing to overcome the initial trust barriers, all other efforts of online retailers will be in vain".

In order to address this trust gap, online retailers often place trust-inducing features to their websites which "function as a skillful salesperson for the company and moderate the disadvantages of an impersonal website" [7, pp.115]. On top of a retail website's graphic, structure and social cue designs, many small online retailers associate their websites with more reputable and well-known businesses to transfer trust [8]. For example, selling products of well-known brands or displaying reputable companies as technology providers (e.g., Microsoft, VeriSign) can help small online retailers persuade nervous customers. Relying on this notion of trust transfer, third party trust seals (to be called "trust seals" in the rest of the paper) may help new shoppers develop initial trust in the online retailer without prior transaction history at the retailer's website [9]. In this mechanism, an independent third party verifies the reliability and trustworthiness claims of the online retailer and allows its trust seal logo to be displayed at the retailer's website as a proof of endorsement. Clicking this trust seal logo takes the customer to the certification information at the seal provider's website.

The value and effectiveness of trust seals in e-commerce has long been investigated by researchers [10–17] which made important contributions to our understanding of trust seals. Absent in these papers are the contextual factors that facilitate the functioning of trust seals. For example: Should an online retailer display the trust seal(s) uniformly to all shoppers? Do all online retailers benefit equally from these seals? Do more trust seals displayed result in higher confidence of the consumer?

Filling these gaps, this paper complements the trust seals literature in two ways. Our first contribution is to the management of trust seals at online retail websites. Extending the current e-commerce literature, we identify various contextual factors that influence the value of the trust seal (i.e., moderate the effect of trust seals on transactions); such as shopping cart value, shopper experience, presence of other trust seals and retailer sales volume. This information is useful for both researchers and practitioners because the effect of the trust seal is not uniform but depends on a set of contextual factors. Our second contribution is methodological. In this study, we exploit a unique experimental dataset comprising over a quarter of a million actual shopping carts

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and a broad range of product categories from 493 online retail websites. Academic literature in trusts seals has mostly relied on data originating from a single online retailer and product category [10], observational eBay data [13], or data generated by simulated retail web sites in lab settings [16]. By utilizing a large dataset (multiple retailers and product categories) of actual shopping carts collected through a randomized field experiment, we add to the diversity of methodologies employed by the trust seals literature and make a methodological contribution as well.

A key aspect of our dataset that enhances its empirical value is the presence of randomized field experiment (also called *random seal tests*). To measure the impact of its trust seal on key site metrics, the seal provider conducts "A/B split tests" at the participating online retail websites upon retailer certification by the seal provider. In this test, the participating retailers allow the seal provider to display the seal with 50% of the visitors to their web sites – so called A's – while not displaying the seal with the other 50% — called B's. The assignment of website visitors to A or B is random which ensures that there are no systematic differences between the two sets of shoppers other than the presence of the trust seal. Thus, the "A/B split test" allows us to establish causality and identify the seal's interaction with other variables. In fact, the A/B split test methodology has recently found widespread use outside academia as well, especially after its successful use in President Obama's 2008 and 2012 election campaigns. Deputy Director of the 2012 campaign Kyle Rush [18] reports, "Optimization was the name of the game for the Obama Digital team. We optimized just about everything from web pages to emails. Overall we executed about 500 A/B tests on our web pages in a 20 month period which increased donation conversions by 49% and sign up conversions by 161%."

It is important to note that consumers' buying behavior online is influenced by multiple factors (such as consumer, product and website characteristics) — , the presence of trust seals being one of them. Among these confounding factors, the randomized seal test methodology isolates the trust seal's impact on purchase completion [10]. However, our unique contribution is identification of moderating factors that influence the seal's effectiveness. We find that the trust seal works better for, (i) low-volume online retailers, (ii) less-experienced shoppers, and (iii) high value shopping carts when the shopper is at a later stage of the shopping cycle. Interestingly, while increasing the number of trust seals at a retailer's site increases the shopper's likelihood of purchase completion, this relationship persists only until a certain optimal number of trust seals and it reverses thereafter.

The rest of the paper is structured as follows. In Sections 2 and 3, we first provide an overview of the related literature followed by the development of research hypotheses. Then, we describe the dataset and explain the statistical methodology used to test our hypotheses in Section 4. Results are introduced in Section 5. We conclude in Section 6 by discussing the contributions of the findings to the literature and impact of our work on seal providers, online retailers and academic literature. Finally, we conclude the paper by discussing limitations and future research opportunities in Section 7.

2. Theoretical background

2.1. Trust

Long time ago, Confucius asserted that trust is a fundamental requirement for all social relationships [19]. Trust plays a key role in personal relationships in many different settings including families, schools, groups and organizations. Hirsch [20] assesses the role of trust in economic exchanges and suggests that trust is a "public good" required for a functioning economic system. Viewing commerce as a form of social exchange, it is safe to say that trust matters in online shopping as well.

Among the many definitions in the literature, Mayer et al. [21, pp.712] define trust as "willingness of a party (trustor) to be vulnerable to the actions of another party (trustee) based on the expectation that the other party will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party." As trust is operational only when the trustor is vulnerable to the actions of the trustee, many inherent risks (e.g., delivery of faulty products, fraud, compromising private information) make trust an important concept in the context of e-commerce.

In this study, we draw upon the Mayer et al. [21] integrative model of trust (see Fig. 1) because it clearly distinguishes between the trustworthiness (of the retailer), trust (in the retailer), and risk-taking (by the consumer), all of which are critical in an online retail context. Exploring the model, on the left side of Fig. 1, we see that trustworthiness of the trustee (as perceived by the trustor) is an antecedent of trust and this relationship is moderated by the trustor's individual propensity to trust. Trustor's level of trust in the trustee is then compared with trustor's level of perceived contextual risk. If level of trust is higher than the level of risk, trustor takes risk in the relationship. Finally, the outcomes of this relationship are fed back by a loop. While positive outcomes of the risk taking in the relationship enhance the perceived trustworthiness of the trustee, negative outcomes could erode it over time. Early in a relationship, there is not much accumulated feedback yet and trustworthiness perceptions could be built based on trustee's reputation and third party information. This integrative model of trust will be applied to e-commerce in the motivation of hypothesis in Section 3.

2.2. Consumer trust in e-commerce

While trust matters in all forms of commerce, it is critical in e-commerce because consumers perceive higher degrees of risk and uncertainty on the internet [22]. Beldad et al. [23, pp.860] cite two risk factors, "the risk of losing one's money during the exchange" and "the threat of having one's private sphere penetrated". As consumers can only see the images or videos of products but cannot touch, feel or test them before purchase, uncertainty in product quality is another risk factor in e-commerce. Moreover, many statistics point to an increasing trend of online fraud. According to the 2013 Internet Crime Report [24], 262,813 online fraud complaints were filed in the U.S., with an adjusted dollar loss of approximately US$ 780 million (48.8% above the 2012 level). Hence, for many consumers, shopping online means exposing personal and financial information on the Internet, leading to concerns over privacy [25]. Another issue that plagues the online markets is security threats, such as dubious websites, fraudulent access or attacks on consumers' computers from hackers [26]. All these factors may erode the confidence in e-commerce.

Besides concerns of privacy and security, online shoppers also worry about unfamiliar online retailers. Daignault et al. [27, pp.2] assert that "Trust depends on identity, the condition of being distinguishable from others." Verification of the brick and mortar merchants' identity is relatively easier because factors such as premier location, investment in the store assortment, and personal communication with customers, signal quality in traditional settings. However, the very nature of the internet makes these features difficult to replicate in an online setting [28] and the absence of interaction with a live salesperson reduces the number of objects that online shoppers could build trust on [23]. Moreover, most online retailers are small in size and often lack the resources to invest in branding and advertising. Consequently, many shoppers feel nervous about issues such as order delivery, security of personal data and product quality — especially when they are first time visitors to a retail website. This lack of trust often motivates them to seek deeper discounts with these small retailers or to abandon their shopping carts and go to well-known retailers. While there may also be other reasons behind shopping cart abandonment (e.g., compare prices, use the cart as a shopping list), "one of the major reasons why most online buyers abandon their shopping carts is because they feel the website is not trustworthy" [29]. As cart abandonment rate is increasing [30], online