ANTECEDENTS, PROCESSES AND CONSEQUENCES OF WEB ASSURANCE SEALS: A META-ANALYSIS APPROACH

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Abstract

Web assurance seals (WASS) not only address consumer concerns about security and privacy but also promote trustworthiness in electronic-commerce websites. Although literature shows that scholars in the areas of information systems and accounting have studied the effect of diverse factors on WASS performance mostly in the context of business-to-customer e-commerce, the results of these factors are sometimes contradictory. Therefore, this study aims to develop a comprehensive framework of WASS. By conducting a meta-analytic review on the related literature, this study identifies and categorizes different factors that affect WASS performance and then proposes an integrated framework that contains key antecedents, mediators, moderators, and consequences of web assurance seals. This study also provides statistical results about the effectiveness of WASS to provide a thorough understanding of the behaviour of online shoppers. Furthermore, this study offers an opportunity to identify some missing links in the WASS area and discuss valuable implications for both academics and practitioners.

Keywords: Web Assurance Seal Services, Meta-analytic Review, Security, Privacy.

1. INTRODUCTION

Concerns about security and privacy have always been part of the Internet and web applications. These concerns have been strongly emphasized in the electronic-commerce (e-commerce) context (Roca et al. 2009). Several studies have reported that security and privacy of transactions are the most important concern of online shoppers (e.g., Odom et al. 2002), and these concerns are on the rise (Emarketer.com 2014). A recent study has shown that consumers are more concerned about online than in-store personal data security; 55% of consumers are concerned about the protection of their personal data when shopping online; 51% of shoppers are more concerned about online protection of their personal data than they were a year ago (Paul et al. 2014). Another study in the United States has shown that 71% of users are concerned about disclosure of their information without their permission; 53% are concerned about their online activity data being used to deny employment or loan applications (Rainie & Anderson 2014). As an electronic marketplace, e-commerce needs mechanisms and/or practical regulations for online privacy and security, which allow consumers and businesses to participate in exchanges and transactions as spontaneously as in the traditional marketplace (Kim et al. 2008).

One of the approaches that are used to address consumer concerns about security and privacy and promote consumers' trust in e-commerce websites is web assurance seal services (WASS). "An assurance seal is any sign, logo, tag, or seal attached to an online storefront that seeks to encourage consumer trust" (Zhang 2005). Typical examples of assurance seal services include WebTrust, Verisign, TRUSTe, BBB Online, and SysTrust. These services are mainly created by accounting firms and are specifically designed for the business-to-customer (B2C) environment (Chang et al. 2012). According to a survey about security and privacy concerns, 52% of online users in the United States believe that the presence of a privacy policy on a website is important (Smth 2014). This number equals 89% among young Japanese. Moreover, 48% indicated that they pay attention to the presence of a privacy seal on a website (Orito et al. 2013).

A review of the assurance seal literature has shown that the concept has been discussed across diverse disciplines, such as information systems (IS) (Hui et al. 2007; Kim et al. 2008), accounting (Gendron & Barrett 2004; Kaplan & Nieschwietz 2003) and marketing (Miyazaki & Krishnamurthy 2002; Xia et al. 2008). Prior studies have shown that web seals affect a diverse set of intentions and behaviours of consumers in different ways. The diverse set includes purchase intention (Chang et al. 2012; Nikitkov 2006; Zhang 2005), information disclosure (Hui et al. 2007; Miyazaki & Krishnamurthy 2002; Rifon et al. 2005; Wang et al. 2004), and auction ending prices (Nikitkov 2006; Sinason et al. 2009). Although these studies have enhanced our general knowledge of WASS, our understanding of its role and effect remains fragmented for several reasons. First, although some studies have shown that assurance seals are effective and positively affect the intention of consumers to purchase (Chang et al. 2012; Kaplan & Nieschwietz 2003; Nikitkov 2006; Zhang 2005), other studies have indicated that this effect is not significant (Moores 2005). Second, the role of web seals differs depending on the research context. For example, while some scholars have shown the direct effect of seals on consequences (Chang et al. 2012; Zhang 2005), others have found that the effect is through mediators (Fisher & Chu 2009). The set of mediators contains different factors, such as trust (Fisher & Chu 2009; Hu et al. 2010; Kaplan & Nieschwietz 2003; Lee et al. 2004) and risk (Kaplan & Nieschwietz 2003; Kimery & McCord 2006; Lee et al. 2004). Finally, some missing puzzles remain in the literature. For example, Miyazaki and Krishnamurthy (2002) showed the effect of seals on the perceptions of consumers of the favorableness of the privacy-related practices of a firm, but they did not discuss the effect of this perception on the actual behavior of consumers.

To explore the aforementioned research gaps and present a comprehensive map, this study aims to develop a comprehensive framework of web assurance seals by identifying related factors and categorizing them through an in-depth literature review. This study attempts to find answers for the following questions: (1) What are the factors that affect WASS effectiveness, as well as their roles?; (2) What are the consequences of using WASS in the electronic business context?; and (3) Which are the

most important antecedents and consequences of WASS, and how much is the relationship strength of each?

The set of diverse factors and the contradictory research findings urge this study to adopt a meta-analysis approach to investigating contradictory relationships among diverse WASS-related factors in an integrative manner. Meta-analysis has been increasingly utilized as a knowledge accumulation technique by IS researchers, but it is still underutilized in comparison with other disciplines, such as psychology (Hwang & Schmidt 2011). The expected contribution of this study is to provide new insights into WASS to both academics and practitioners by developing a comprehensive and integrated framework of information assurance seal that contains key entities, antecedents, process, and consequences of WASS.

2. DEVELOPING AN INTEGRATIVE FRAMEWORK

2.1 Conceptual Model of WASS

As a first step in developing a conceptual model, this study considers four major entities of B2C e-commerce, namely, technology, consumer, seller, and third party, which were proposed by Kim et al. (2005). In the domain of WASS, seller and consumer are two important entities because transactions are triggered by them. Technology represents the seal per se, and the third party is the issuer of the seal. Therefore, in the context of this study, the four major entities are the seal, the consumer, the seller (the e-merchant and its website), and the third-party assurance provider. They are interrelated to generate the consequences of using seals.

In the web assurance seal literature, three major interaction processes among the four entities are identified to generate the expected consequences. The first process is the interaction between firm characteristics (e-merchant) and the seal entity (third-party issuer). Firms have different information assurance concerns depending on their firm size, industry type, and reputation level (Kim et al. 2004; Sivasailam et al. 2002). These concerns affect the decision of a firm on whether to use WASS in general and their choice of web seal type in particular. The second process is the interaction between the assurance seal and the consumer. Four main groups of constructs are involved in the interaction, which are web assurance seals, interaction with seals, consumer characteristics, and mediators.

Interaction with seals, in the form of noticing the seals and/or clicking on them, affects both the mediators and the consequences (Kovar et al. 2000). The mediator group contains constructs that mediate between seals and the final consequences. Most of the mediating constructs are perceptional or expectational variables, such as trust (Fisher & Chu 2009; Hu et al. 2010; Kaplan & Nieschwietz 2003; Lee et al. 2004), "previous exposure to seals," (Kovar et al. 2000) and "knowledge about CPA (Certified Public Accountants)" (Kovar et al. 2000). The consumer characteristic group contains constructs related to individual characteristics of consumers, such as online shopping experience, knowledge about seals (Zhang 2005), and age (Runyan et al. 2008). These constructs play a moderating role in the relationships between seals and mediators on one side and the consequences on the other side. The final process is associated with the actual consequences of web seals as a result of the aforementioned processes. Examples of WASS consequences include purchase intention (Chang et al. 2012; Fisher & Chu 2009; Kaplan & Nieschwietz 2003; Kovar et al. 2000; Nöteberg et al. 1999; Zhang 2005), information disclosure (Hui et al. 2007; Miyazaki & Krishnamurthy 2002; Rifon et al. 2005; Wang et al. 2004), and privacy perception (Miyazaki & Krishnamurthy 2002). Overall, this study proposes the following conceptual model of WASS as depicted in Figure 1.

2.2 Integrated Framework of WASS

After developing a conceptual model of WASS, an in-depth literature review is conducted to identify and categorize the major WASS-related factors and then develop its integrated framework. The integrated framework needs to be aligned with our conceptual framework, specify variables in each

entity, and propose the relationships among these entities from a realistic perspective. Figure 1 shows our integrative framework of WASS (A summary table for the literature review is available upon request).

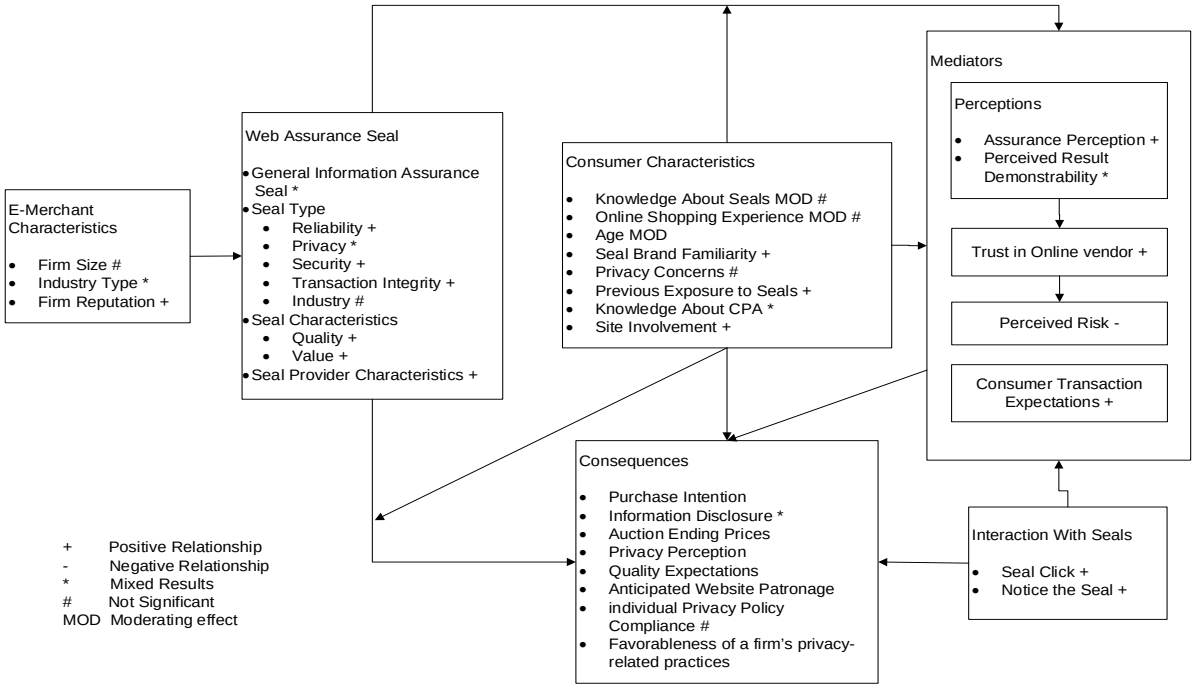

Figure 1. Integrative framework of WASS

2.2.1 Web Assurance Seals

Web assurance seals have different types; each is customized for a specific application. While most previous studies have examined the effect of general assurance seals (Lee et al. 2004; Nöteberg et al. 1999; Rifon et al. 2005; Wakefield et al. 2004), some have focused on a special type or brand of seals. Some examples include reliability assurance seal (Zhang 2005), power seller seals and mask seal (Nikitkov 2006), privacy seal (Hu et al. 2010; Hui et al. 2007; Mcknight et al. 2004; Sivasailam et al. 2002), security and transaction integrity seals (Hu et al. 2010; Sivasailam et al. 2002), WebTrust seal (Benassi 1999; Chang et al. 2012), TRUSTe seal (Hui et al. 2007; Mcknight et al. 2004), Square Trade Seal (Nikitkov 2006; Sinason et al. 2009), Systrust and Webtrust (Pugliese & Halse 2000), and industry seal (Mcknight et al. 2004). High-information-quality seals positively affect the likelihood of purchase, whereas low-information-quality seals do not influence the purchase intention of consumers (Lala et al. 2002).

2.2.2 Characteristics of E-merchants

Another part of the seal literature focuses on the characteristics of e-merchants (i.e. firms that own an e-commerce website). Kim et al. (2004) and Sivasailam et al. (2002) identified three important characteristics of firms, namely, firm size, industry type, and firm reputation, which influence the decision of firms to employ web assurance seals. Although Kim et al. (2004) found no significant relationship between firm size and information assurance concerns, Sivasailam et al. (2002) realized that large firms use more privacy seals than small- and medium-sized companies do. In addition, companies with a high reputation are concerned about information assurance (Kim et al. 2004), whereas those with a low reputation are likely to have security seals (Sivasailam et al. 2002).

2.2.3 Consumer Characteristics

Another important area in WASS literature is the different characteristics of consumers. Although the effect of the knowledge of a consumer about seals on purchase intention is not significant, the existence of seals influences inexperienced shoppers more than experienced ones (Zhang 2005). Familiarity with seal brand is another customer characteristic that affects online purchase intention (Odom et al. 2002). Compared with young people, elderly ones have a different level of confidence in purchasing online when interacting with a site with and without an assurance symbol (Runyan et al. 2008). Other important factors related to consumer characteristics include site involvement of customers, previous exposure to seals, knowledge about CPA, and online transaction expectations (Kovar et al. 2000; Rifon et al. 2005).

2.2.4 Consequences

While the most frequently used outcome variable in studying the effect of web assurance seals is purchase intention (Chang et al. 2012; Zhang 2005), other outcome variables have also been considered, such as web purchase behaviour (Chang et al. 2012), information disclosure (Wang et al. 2004), price (Nikitkov 2006), consumer perceptions (Miyazaki & Krishnamurthy 2002), and website patronage (Miyazaki & Krishnamurthy 2002). Many studies have found the direct effect of seals on purchase intentions (Chang et al. 2012; Nikitkov 2006; Zhang 2005). Zhang (2005) suggested that seals have different effects on the purchase of different types of products. His findings showed that information assurance seals affect the purchase of commodity products only, whereas reliability assurance seals have a positive effect on the purchase of both look-and-feel and commodity products. Another important outcome variable is information disclosure. Several studies have shown the significant effect of seals on information disclosure of online consumers (Wang et al. 2004). Miyazaki and Krishnamurthy (2002) found that seals have a positive effect on the information disclosure and site patronage of high-risk consumers but not on those of low-risk consumers. Price is also considered an important outcome variable, particularly in auction websites. For example, bidders pay a high price when the website has a Square Trade seal (Nikitkov 2006). Kaplan and Nieschwietz (2003) used three outcome variables, namely, willingness to purchase, quality, and risk, and found that web assurance has significant direct and indirect effects on all the three outcome variables.

2.2.5 Mediators

One of the consensuses of prior studies is that web assurance seals affect outcomes not only directly but also through a few mediating variables. Trust has been regarded as the most important mediator. Hu et al. (2010) found that privacy assurance seals significantly enhance the initial trust of consumers. Fisher and Chu (2009) also showed the mediating effect of trusting beliefs on the purchasing intentions of online shoppers. Some other studies have considered trust toward e-commerce websites as an outcome of seals (Rifon et al. 2005; Yang et al. 2006). However, many other studies have confirmed the mediating role of trusting in seal-purchase relationship (Kaplan & Nieschwietz 2003; Lee et al. 2004). The effect of web seals on the trust of consumers is mediated by the perceived value of the seal (Wakefield et al. 2004). For example, Kimery and McCord (2006) concluded that the familiarity of consumers with seals affects the capability of seals to fulfil their goal of increasing consumer trust online. Another important mediator in the seal-outcome process is risk. Trust in the online vendor affects the purchase intention of consumers not only directly but also through reducing the perceived risk of online shopping (Lee et al. 2004). Other significant mediators include assurance perception (Yang et al. 2006) and online transaction expectations (Kovar et al. 2000).

2.2.6 Interaction with Seals

To the best of our knowledge, only one study has investigated the interaction of users with seals. Kovar et al. (2000) studied the interaction of online customers with web seals. Their study showed that both noticing and clicking seals by customers significantly enhance the online transaction expectations and purchase intention of online shoppers.

3. RESEARCH DESIGN AND CURRENT STATUS

As aforementioned, this study adopts a meta-analytic literature review approach, which is valuable for integrating research findings across prior studies. First, a thorough analysis of empirical studies on web assurance seals is necessary. We do not limit our search to any specific journals, as suggested by R Rosenthal (1994), to minimize the effect of publication bias. The keywords "web seal," "seal of approval," and "third-party seal" are used to search in peer-reviewed academic journals and conferences from 1998 to 2014 using Google Scholar. We obtained 48 papers published in journals and conferences. Of the 48 papers, 6 are conceptual papers and 2 are in the field of design science. These 8 studies are excluded because they do not provide any empirical evidence on the performance of seals. The remaining 40 papers are in the areas of IS, accounting, and marketing, as summarized in Table 1. We are in the process of conducting an in-depth review of 40 selected papers. The objective of the review is not only to confirm the variables in Figure 1 but also to find any additionally important variables related to WASS. Moreover, some variables that are not directly connected to web seals will be removed from Figure 1.

Second, we will follow the directions of Hedges and Olkin (2014) for the meta-analysis. After collecting the papers, the subsequent step is to code observed correlation coefficient r, sample size N, and moderators in each study. Pearson's correlation coefficient will be used as the primary effect size (ES) estimator because most of the previous studies have reported the value of r, and it is also simpler to interpret in terms of practical importance than other indices (Glass, McGaw, & Smith, 1981). We will correct each of r values by using reliabilities of variables because measurement error can lead to the attenuation of correlation coefficient (Hunter & Schmidt, 1990; Schepers &Wetzels, 2007).

When a direct effect exists, we use Fisher's Z transformation to compute the corresponding Z_{ri} of each r. The weighted mean Z_r is calculated and reported as ES in consideration of sample size. The 95% confidence intervals for each ES are generated by using standard errors of the weighted mean ES. Once the confidence intervals are created, the correlation r of the pair-wise relationship is transformed back using inverse Z–r transformation. To assess the moderating effect of the proposed moderators, the analysis of variance (ANOVA) is used to test the explaining power of each single categorical variable. Weighted least square (WLS) regression will be used subsequently to test the joint effect of moderator variables. In sum, this study will use the formulas summarized in Table 2.

Journal	Studies	Journal	Studies
Accounting Forum	Runyan et al. (2008)	Journal of Computer Information Systems	Wakefield et al. (2004)
ACM conference on Electronic commerce (1st)	Ackerman et al. (1999)	Journal of EC in Organizations	Kimery and McCord (2006)
Communications of the ACM	Moores (2005)	Journal of Information Systems	Kovar et al. (2000); Mauldin and Arunachalam (2002); Nikitkov (2006); Odom et al. (2002)
Communications of the IIMA	Aiken and Vanjani (2004)	Journal of Interactive Marketing	Wang et al. (2004)
Contemporary Accounting Research	Gendron and Barrett (2004)	Journal of Internet Commerce	Lee et al. (2004)
Decision Support Systems	Hu et al. (2010); Kim et al. (2008)	Journal of IT Theory and Application	Zhang (2005)
European Conference on Information Systems (ECIS)	Lansing et al. (2013)	Journal of Management Information Systems	Pennington et al. (2003)
Electronic Commerce Research and Applications	Edelman (2011); Utz et al. (2012)	Journal of the American Society for	Lowry et al. (2012)

		Information Science and Technology	
Electronic Markets	Kim et al. (2004); Mcknight et al. (2004)	Management Research News	Sinason et al. (2009)
International Conference on Information Systems (ICIS)	Nöteberg et al. (1999)	Managerial Auditing Journal	Fisher and Chu (2009)
Information Systems Research	Özpolat et al. (2013)	MIS Quarterly	Hui et al. (2007)
International Journal of Accounting Information Systems	Kaplan and Nieschwietz (2003); Lala et al. (2002)	Online Information Review	Chang et al. (2012)
International Journal of Information Management	Shah et al. (2014)	Psychology & Marketing	Yang et al. (2006)
International Marketing Review	Bianchi and Andrews (2012)	The Journal of Applied Business Research	S. H. Kim (2013)
IT Professional	Sivasailam et al. (2002)	The Journal of Consumer Affairs	Miyazaki and Krishnamurthy (2002); Rifon et al. (2005)
Journal of Accounting Research	Jamal et al. (2003)	Tourism Management	Ponte et al. (2015)

Table 1. The studies in each journal and conference

Indices	Formulas	Key References
Corrected r	$r_{corrected} = \frac{r_{uncorrected}}{\sqrt{reliability_x}\sqrt{reliability_y}}$	Wu and Lederer (2009)
Fisher's r to Z transformation	$Z_i = 0.5 \log\left(\frac{1+r_i}{1-r_i}\right)$	Lipsey and Wilson (2001)
Weighted mean ES	$\overline{ES} = \frac{\sum(N_i - 3)Z_i}{\sum N_i - 3}$	Robert Rosenthal (1991)
Fail-safe N	$N_{fs0.05} = \left(\frac{\sum ES}{1.645}\right)^2 - N$	Robert Rosenthal (1979)
Standard error of the mean ES SEES	$SE_{ES} = \sqrt{\frac{1}{\sum N_i - 3}}$	Lipsey and Wilson (2001)
Z-Test	$Z - test = \frac{\overline{ES}}{SE_{ES}}$	Lipsey and Wilson (2001)
Confidence interval	$CI_{ES0.05} = \overline{ES} \pm 1.96\ (SE_{ES})$	Lipsey and Wilson (2001)

Table 2. Formulas used in meta-analysis

4. EXPECTED CONTRIBUTIONS AND IMPLICATIONS

As an early stage of research, the current version of this study shows important entities related to web seals, their relationships, and processes by developing an integrative framework based on a thorough review analysis. As shown in Figure 1, e-merchant characteristics affect the choice of WASS. Web seals also influence the purchase intention of consumers directly and through mediators. Consumer characteristics moderate the effect of seals on both mediators and consequences. Personal characteristics also directly affect consequences. Finally, interaction with seals affects consequences directly and through mediators.

The results of this study expect to contribute to both theory and practice. This study has the following theoretical contributions. First, we attempt to identify key players of WASS and provide a macro view of the relationships between the key players and the consequences of WASS. Second, we offer an integrative framework of the functional process of seals in B2C e-commerce. In other words, we aim to show how assurance seals influence consumers and their behaviour. We attempt to identify the most important constructs and their relationships in the context of WASS. Finally, upon conducting our study, we expect to address inconsistencies in the literature. As aforementioned, the findings of prior studies are sometimes inconsistent and contradictory. By verifying our integrative framework, we can either find consistent results between major entities and their relationships or seek alternative explanations to the contradictory findings of prior studies. With tested results and evidence using a meta-analytic approach, our arguments can be highly fortified. In sum, our conceptual model and its empirical result would add value to existing theories and methodologies on WASS.

Practically, our research provides several implications. First, by conducting an extensive literature review, our research provides a thorough understanding of the role of seals in increasing the trust of online consumers and inspiring them to purchase online. Second, we identify the important variables associated with seal performance, which can be used by e-merchants to increase their online sales. Therefore, this study can help e-merchants to better understand WASS-related entities and their relationships from a broader perspective. A better understanding of the overall picture of WASS will also help e-merchants identify which area is weak and which area is strong in their businesses to ensure long-term survival. Finally, we show some factors that do not have a significant effect on web seal performance. These factors should be ignored by practitioners to save their energy and to focus on important factors. Therefore, the result of this study will provide valuable information to practitioners who seek practical guidance in terms of how to adopt and implement WASS in a highly effective manner.

References

Ackerman, M. S., Cranor, L. F., & Reagle, J. (1999). *Privacy in e-commerce: examining user scenarios and privacy preferences*. Paper presented at the Proceedings of the 1st ACM conference on Electronic commerce, Denver, Colorado, United States.

Aiken, M., & Vanjani, M. B. (2004). Likelihood of Purchase On-Line: Reliability, Security, and Design. *Communications of the IIMA, 4*(2), 1.

Benassi, P. (1999). TRUSTe: an online privacy seal program. *Communications of the ACM, 42*(2), 56-59. doi: 10.1145/293411.293461

Bianchi, C., & Andrews, L. (2012). Risk, trust, and consumer online purchasing behaviour: a Chilean perspective. *International Marketing Review, 29*(3), 253-275.

Chang, R.-D., Fang, C.-J., & Tseng, Y.-C. (2012). The Effects of WebTrust Assurance on Consumers' Web Purchase Decisions: An Experiment. *Online Information Review, 36*(2).

Edelman, B. (2011). Adverse selection in online "trust" certifications and search results. *Electronic Commerce Research and Applications, 10*(1), 17-25. doi: 10.1016/j.elerap.2010.06.001

Emarketer.com. (2014). Consumers of All Ages More Concerned About Online Data Privacy. from http://www.emarketer.com/Article/Consumers-of-All-Ages-More-Concerned-About-Online-Data-Privacy/1010815

Fisher, R., & Chu, S. Z. (2009). Initial online trust formation: the role of company location and web assurance. *Managerial Auditing Journal, 24*(6), 542 - 563.

Gendron, Y., & Barrett, M. (2004). Professionalization in Action: Accountants' Attempt at Building a Network of Support for the WebTrust Seal of Assurance. *Contemporary Accounting Research, 21*(3), 563-602.

Hedges, L. V., & Olkin, I. (2014). *Statistical method for meta-analysis*: Academic press.

Hu, X., Wu, G., Wu, Y., & Zhang, H. (2010). The effects of Web assurance seals on consumers' initial trust in an online vendor: A functional perspective. *Decision Support Systems, 48*(2), 407-418.

Hui, K.-L., Teo, H. H., & Lee, S.-Y. T. (2007). The value of privacy assurance: an exploratory field experiment. *MIS Quarterly, 31*(1), 19-33.

Hwang, M. I., & Schmidt, F. L. (2011). Assessing moderating effect in meta-analysis: a re-analysis of top management support studies and suggestions for researchers. *European Journal of Information Systems, 20*(6), 693-702.

Jamal, K., Maier, M., & Sunder, S. (2003). Privacy in E-Commerce: Development of Reporting Standards, Disclosure, and Assurance Services in an Unregulated Market. *Journal of Accounting Research, 41*(2), 285-309. doi: 10.1111/1475-679x.00104

Kaplan, S. E., & Nieschwietz, R. J. (2003). A Web assurance services model of trust for B2C e-commerce. *International Journal of Accounting Information Systems, 4*(2), 95-114.

Kim, D. J., Sivasailam, N., & Raghav Rao, H. (2004). Information Assurance in B2C Websites for Information GoodsServices. *Electronic Markets, 14*(4), 344-359.

Kim, D. J., Song, Y. I., Braynov, S. B., & Rao, H. R. (2005). A multidimensional trust formation model in B-to-C e-commerce: a conceptual framework and content analyses of academia/practitioner perspectives. *Decision Support Systems, 40*(2), 143-165.

Kim, D. J., Steinfield, C., & Lai, Y.-J. (2008). Revisiting the role of web assurance seals in business-to-consumer electronic commerce. *Decision Support Systems, 44*(4), 1000-1015.

Kim, S. H. (2013). Empirical Examination Of Effects Of Web Assurance Seals On Perceived Level Of Assurance And Price Tolerance With A Focus Being Placed On CPA-Associated Seals. *Journal of Applied Business Research, 29*(2), 339-350.

Kimery, K. M., & McCord, M. (2006). Signals of Trustworthiness in E-Commerce: Consumer Understanding of Third-Party Assurance Seals. *Journal of Electronic Commerce in Organizations, 4*(4), 52-74.

Kovar, S. E., Burke, K. G., & Kovar, B. R. (2000). Consumer responses to the CPA WEBTRUST Assurance. *Journal of Information Systems, 14*(1), 17.

Lala, V., Arnold, V., Sutton, S. G., & Guan, L. (2002). The impact of relative information quality of e-commerce assurance seals on Internet purchasing behavior. *International Journal of Accounting Information Systems, 3*(4), 237-253.

Lansing, J., Schneider, S., & Sunyaev, A. (2013). *Cloud Service Certifications: Measuring Consumers' Preferences For Assurances.* Paper presented at the ECIS.

Lee, S., Choi, J., & Lee, S.-G. (2004). The Impact of a Third-Party Assurance Seal in Customer Purchasing Intention. *Journal of Internet Commerce, 3*(2), 33.

Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis* (Vol. 49): Sage publications Thousand Oaks, CA.

Lowry, P. B., Moody, G., Vance, A., Jensen, M., Jenkins, J., & Wells, T. (2012). Using an elaboration likelihood approach to better understand the persuasiveness of website privacy assurance cues for online consumers. *Journal of the American Society for Information Science and Technology, 63*(4), 755-776.

Mauldin, E., & Arunachalam, V. (2002). An Experimental Examination of Alternative Forms of Web Assurance for Business-to-Consumer e-Commerce. *Journal of Information Systems, 16*(1), 33-54.

Mcknight, D. H., Charles, J. K., & Vivek, C. (2004). Shifting Factors and the Ineffectiveness of Third Party Assurance Seals: A Two-Stage Model of Initial Trust in a Web Business. *Electronic Markets, 14*(3), 252-266.

Miyazaki, A. D., & Krishnamurthy, S. (2002). Internet Seals of Approval: Effects on Online Privacy Policies and Consumer Perceptions. *Journal of Consumer Affairs, 36*(1), 28-49. doi: 10.1111/j.1745-6606.2002.tb00419.x

Moores, T. (2005). Do consumers understand the role of privacy seals in e-commerce? *Communications of the ACM, 48*(3), 86-91. doi: 10.1145/1047671.1047674

Nikitkov, A. (2006). Information Assurance Seals: How They Impact Consumer Purchasing Behavior. *Journal of Information Systems, 20*(1), 1-17.

Nöteberg, A., Christiaanse, E., & Wallage, P. (1999). *The role of trust and assurance services in electronic channels: an exploratory study*. Paper presented at the Proceedings of the 20th international conference on Information Systems, Charlotte, North Carolina, United States.

Odom, M. D., Kumar, A., & Saunders, L. (2002). Web Assurance Seals: How and Why They Influence Consumers' Decisions. *Journal of Information Systems, 16*(2), 231-250. doi: 10.2308/jis.2002.16.2.231

Orito, Y., Murata, K., & Fukuta, Y. (2013). Do online privacy policies and seals affect corporate trustworthiness and reputation? (Vol. 19): International Review of Information Ethics.

Özpolat, K., Gao, G., Jank, W., & Viswanathan, S. (2013). Research Note-The Value of Third-Party Assurance Seals in Online Retailing: An Empirical Investigation. *Information Systems Research, 24*(4), 1100-1111.

Paul, A. K., Sides, R., & Hogan, S. K. (2014). Deloitte's 2014 annual holiday survey: Deloitte.

Pennington, R., Dixon, w. H., & Varun, G. (2003). The Role of System Trust in Business-to-Consumer Transactions. *Journal of Management Information Systems, 20*(3), 197-226.

Ponte, E. B., Carvajal-Trujillo, E., & Escobar-Rodríguez, T. (2015). Influence of trust and perceived value on the intention to purchase travel online: Integrating the effects of assurance on trust antecedents. *Tourism Management, 47*, 286-302.

Pugliese, A. J., & Halse, R. (2000). SysTrust and WebTrust. *CPA Journal, 70*(11), 28.

Rainie, L., & Anderson, J. (2014). The future of Privacy: Pew Research Center.

Rifon, N. J., LaRose, R., & Choi, S. M. (2005). Your Privacy Is Sealed: Effects of Web Privacy Seals on Trust and Personal Disclosures. *Journal of Consumer Affairs, 39*(2), 339-362. doi: 10.1111/j.1745-6606.2005.00018.x

Roca, J. C., Garc, a, J. J., Vega, J. J., & de, l. (2009). The importance of perceived trust, security and privacy in online trading systems. *Information Management & Computer Security, 17*(2), 96-113.

Rosenthal, R. (1979). The file drawer problem and tolerance for null results. *Psychological bulletin, 86*(3), 638.

Rosenthal, R. (1991). *Meta-analytic procedures for social research* (Vol. 6): Sage.

Rosenthal, R. (1994). Statistically describing and combining studies *The handbook of research synthesis* (pp. 231-244).

Runyan, B., Smith, K. T., & Smith, L. M. (2008). Implications of Web assurance services on e-commerce. *Accounting Forum, 32*(1), 46-61.

Shah, M. H., Peikari, H. R., & Yasin, N. M. (2014). The determinants of individuals' perceived e-security: Evidence from Malaysia. *International Journal of Information Management, 34*(1), 48-57.

Sinason, D. H., Webber, S. A., & Nikitkov, A. (2009). The value of assurance service: an example from the market for baseball cards. *Management Research News, 32*(12), 1147 - 1162.

Sivasailam, N., Kim, D., J., & Raghav Rao, H. (2002). What Companies Are(n't) Doing about Web Site Assurance. *IT Professional, 4*(3), 33-40. doi: 10.1109/mitp.2002.1008535

Smth, A. (2014). What Internet users know about technology and web: Pew Research Center.

Utz, S., Kerkhof, P., & van den Bos, J. (2012). Consumers rule: How consumer reviews influence perceived trustworthiness of online stores. *Electronic Commerce Research and Applications, 11*(1), 49-58.

Wakefield, R. J., Stocks, M. H., & Wilder, W. M. (2004). The role of web site characteristics in initial trust formation. *Journal of Computer Information Systems, 45*(1), 94-103.

Wang, S., Beatty, S. E., & Foxx, W. (2004). Signaling the trustworthiness of small online retailers. *Journal of Interactive Marketing, 18*(1), 53-69. doi: 10.1002/dir.10071

Wu, J., & Lederer, A. (2009). A meta-analysis of the role of environment-based voluntariness in information technology acceptance. *MIS Quarterly, 33*(2), 419-432.

Xia, Y., Ahmed, Z. U., Stone, S., Wei, C. S., Eng, C. L., & Lian, H. L. (2008). Determinants of consumers perceptions and attitudes towards assurance seals for internet marketing: an Asia Pacific marketing perspective. *International Journal of Internet Marketing and Advertising, 4*(2-3), 156-178.

Yang, S.-C., Hung, W.-C., Sung, K., & Farn, C.-K. (2006). Investigating initial trust toward e-tailers from the elaboration likelihood model perspective. *Psychology & Marketing, 23*(5), 429-445.

Zhang, H. (2005). Trust-promoting seals in electronic markets: impact on online shopping decisions. *Journal of Information Technology Theory and Application*, *6*(4), 29-40.