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# **Design, Layout and Review Factors that Influence Consumer Trust in Online Stores and Best Practices for Optimization**

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Design, Layout and Review Factors that Influence Consumer Trust in Online Stores  
and Best Practices for Optimization

Introduction to Annotated Bibliography

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# FACTORS INFLUENCING CONSUMER TRUST IN ONLINE STORES

## Abstract

**Website trustworthiness is recognized as one of the primary factors driving consumer intentions to buy products online. Many aspects of website design, information layout and consumer reviews impact how customers perceive trustworthiness of an online retailer. This literature review utilizing sources published between 2010 and 2016, identifies some of the most prominent aspects of retail website design, layout and consumer reviews that have the most significant impact on a potential customer's perception of website trustworthiness, as well as best practices for improving it.**

**Keywords: online consumer trust, factors of website trustworthiness, factors of consumer trust, improving online consumer trust, retail website design for trustworthiness, optimizing website design for trust**

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## Introduction to Annotated Bibliography

### Problem Statement

With the wide adoption of the Internet among consumers around the world (Pan, Woodside & Meng, 2013), prolific use of the Web for business transactions makes online retail commerce an important component of many companies' revenue stream (Chiang & Dholakia, 2003). In fact, reports show that retailers' websites are powerful drivers of online sales. "In the United States, for example, online apparel sales for 2008 versus 2007 increased to \$26.6 billion, which exceeded both computer and automobile sales" (Park, Kim, Funches & Foxx, 2012, p. 1583). However, while the Internet is a direct, convenient and engaging way for retail companies to engage remote customers, there are many factors that can affect a customer's willingness to interact with a store online (Porat & Tractinsky, 2012).

Many navigational, usability, aesthetic and technical factors contribute to a consumer's perception of total website trustworthiness and their subjective online customer experience, from intuitive website navigation and page loading speeds to information design and product reviews (Yang, Pang, Liu, Yen, & Tarn, 2015). Online consumer trustworthiness is defined as "a psychological state leading to the willingness of customers to perform payment transaction over the internet and expect the payment platform fulfilling its obligations, irrespective of customer's ability to monitor or control payment platform's actions" (Yang et al., 2015, p. 13). The broad range of factors that influence a customer's impression of a storefront ultimately affect a consumer's perception of store trustworthiness, which is one of the most important and basic components of commerce. As mentioned by Yeh and Li (2014), "trust is the basic

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connection in human society, the essential factor between interpersonal cooperation, and is also the primary mechanism in many economical activities” (p. 995).

Traditionally, successful e-commerce sites have only “relied on system features such as user-friendly product categorization, search engine, shopping cart, or preference-based recommender systems to enhance the efficiency of online purchase behavior” (Chen & Shen, 2015, p. 55). However, all of these features of website shopping efficiency are merely components of the customer’s overall perceived trustworthiness of an online business. Research shows that online trust is one of the most important key factors for success in ecommerce (Sänger & Pernul, 2014). Online markets in particular are virtual environments where the trustworthiness of trading partners is unknown. Weathers, et al. (2015) show that consumer’s perceived risk and website trust have a profound impact on the likelihood that they will complete an online transaction. While the number of potential factors that influence online trust are limitless, the problem this paper explores is how to identify some of the prominent aspects of site design, information layout and consumer reviews that have the most significant impact on consumer website trust and the best practices for improving them.

### **Purpose**

The purpose of this scholarly literature review is to identify some of the prominent factors of design, layout and consumer reviews that have the most significant impact on consumer website trust among online shoppers, as well as some best practices for web retailers to improve their perceived trustworthiness among site visitors. Ideally the best practices identified in this study will help improve the trust and willingness of customers to perform payment transactions on retail websites.

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## Research Question

1. What are some of the prominent aspects of site design, information layout and consumer reviews that have the most significant impact on consumer website trust and what are some best practices for improvement?

## Audience

This study holds significance for retail website administrators as well as online sales and customer experience executives interested in learning about specific aspects of site design, information layout and consumer reviews that have the most impact on consumer website trust as well as some of the best practices for improving them. This research has implications for how design, layout and customer reviews affect subjective perceptions of website trustworthiness and impact the likelihood of successful online retail transactions. This is particularly important for large online retailers that hope to maintain ongoing relationships with repeat customers. Secondly, this study is meant to further knowledge on the aspects of site design, information layout and consumer reviews that will most help the audience improve consumer trust, as well as to provide a baseline framework for their further research in the future.

## Search Report

**Search strategy.** The majority of research for this literature review focuses on scholarly user experience and customer satisfaction studies identifying how website design, information layout, design uniformity and customer product reviews impact onsite trustworthiness and whether they have any effect on the likelihood of successful online retail transactions. Various online sources are utilized for this study, especially



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the University of Oregon online library research resource, focusing on the Psychology, Computer Science, Business and Social Science databases. The majority of this research is conducted using the University of Oregon Library Website because it provides access to current scholarly journals which are relevant and timely resources for this study. Some of the specific databases providing the majority of this research include the IEEE Computer Science Digital Library, the MIT CogNet and Web of Science. Additionally, other related online academic search engines such as Google Scholar, Elsevier and Science Direct are also being utilized.

**Information evaluation criteria.** Based on specific keyword searches for studies relating to user experience, information design, consumer trust, customer product reviews and customer satisfaction in online stores, research articles are gathered and generally examined for conclusions relevant to the success or failure of online retail transactions. Then, the resources are judged according to the University of Florida's (2014) five research evaluation guidelines of authority, quality, relevancy, timeliness and bias. Authority is typically judged by the membership of the authors in an academic community of higher learning such as a university or scholarly society. Quality is established by the absence of errors and typographical mistakes, the thoroughness of the research and whether or not the researchers follow an established scientific method. Relevancy is judged by the keyword density of related search terms. The prevalence and density of relevant search terms gives a general indication of relevancy. Additionally, these articles are chosen for their timeliness. With the exception of one legacy resource used for baseline definitions, no articles are referenced that are older than ten years. Most of the articles used for references and citations in the body of this

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research are no older than five or six years old. These recent research articles form the basis of this scholarly literature review. Finally, each article is evaluated for any hint of bias. Any articles that favor specific groups, entities or results are discarded. There is considerable research available that is relevant to online retail, customer satisfaction and consumer trust. For the purposes of this literature review, the research focus is on studies of larger retail websites such as Amazon and eBay, examining various aspects of trustworthiness including uniform site design, product search, product comparison and customer product reviews.

### **Search terms included in this literature search:**

- Ecommerce Conversion Rates
- Online Trust and Successful Ecommerce
- Aesthetic and Informational Factors of Online Trust
- Product Search, Presentation and Online Trust
- Information Design, Website Layout and Online Trustworthiness
- Online Retail and Product Review Trustworthiness
- Internal Decision Making and Consumer Trust
- Information Design, Trust and Online Shopping
- Online Product Reviews and Customer Satisfaction
- Perceived Consumer Risk and Online Commerce

**Documentation approach.** References are gathered and documented by searching for the keywords in various scholarly databases and then ranking each of

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them, from best to worst, based on relevancy, timeliness and validity. Then, each resource is examined with the purpose of identifying pertinent quotes and information that are useful to the topic of this literature review. A master list of the best references is created with the most useful quotes and information listed below each entry.

Throughout the creation of this document, the master reference list is a work in progress as the focus of the research continues to narrow.

## Annotated Bibliography

### Introduction

The following Annotated Bibliography presents 16 references used to examine the importance of trust to online commerce and the best practices in website design, information layout, design uniformity and presentation of consumer reviews that facilitate online consumer trust of retail sites and affect online sales conversion rates. These references have been chosen for their relevance and timeliness and consist of a full bibliographic citation, abstract and summary. All of the abstracts included are the full published length.

### **Factors affecting website trustworthiness and consumer intentions to buy products online.**

**Ling, K., Chai, L., & Piew, T.** (2010). The effects of shopping orientations, online trust and prior online purchase experience toward customers' online purchase intention. *IBR*, 3(3). <http://dx.doi.org/10.5539/ibr.v3n3p63>

**Abstract.** The advancement of the World Wide Web has resulted in the creation of a new form of retail transactions- electronic retailing (e-tailing) or web-shopping. Thus, customers' involvements in online purchasing have become an important trend. As such, it is vital to identify the determinants of the customer online purchase intention. The aim of this research is to evaluate the impacts of shopping orientations, online trust and prior online purchase experience to the customer online purchase intention. A group of 242 undergraduate information technology students from a private university in Malaysia participated in this research. The findings reveal that impulse purchase intention, quality orientation,

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brand orientation, online trust and prior online purchase experience are positively related to the customer online purchase intention.

**Summary.** This study examines the importance of online trust and prior online purchase experience to customer purchase intention and successful online commerce. A sample of 242 information technology students from Malaysia are given a self-administered survey which asks respondents to answer questions about their most recent online purchase experience. The results of this study show how important online trust and prior purchase experience are to the probability of future online purchases. This source is important to this study because it explains how online trust and past experience affect a consumer's subjective purchase intention.

**Liu, S., Jiang, C., Lin, Z., Ding, Y., Duan, R., & Xu, Z. (2015).** Identifying effective influencers based on trust for electronic word-of-mouth marketing: A domain-aware approach. *Information Sciences*, 306, 34-52.

<http://dx.doi.org/10.1016/j.ins.2015.01.034>

**Abstract.** Because effective influencers in an online social network (OSN) can significantly affect consumers' purchasing decisions via trust among users in electronic word-of-mouth (eWOM) marketing, identifying these influencers with respect to user trust relationships has become increasingly important. However, many existing studies overlook the domain attribute of trust and the time-varying nature of social networks and only analyze a static snapshot of a user trust network (UTN). To address these issues and investigate this topic in the ecommerce context, this study proposes a research framework that takes into

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account the dimensions of trust, domain, and time. A time-varying hypergraph is developed to model the OSN using the time-varying features of multi-type relationships, and an algorithm is developed to extract a domain-aware UTN based on the time-varying hypergraph and user trust relationships. Reinforced by the dimensions of trust, domain, and time, a novel product review domain-aware (PRDA) approach is conceived that identifies effective influencers and categorizes them into three types, i.e., emerging influencers, holding influencers, and vanishing influencers, based on their popularity status across the life cycle. The experimental results from the E-pinions dataset show that the PRDA approach outperforms both the social network-based influence-evaluating approach and the “popular author” approach.

**Summary.** This quantitative, empirical research study examines best practices for online retailers who seek to build consumer trust through the use of social network resources and online word-of-mouth marketing. The authors assert that effective use of social media can help online retailers reach more customers and also increase their response rate by building online trust. They seek to identify effective influencers among online social networks and onsite consumer reviews. By identifying these effective influencers, online retailers can save costs by focusing their marketing efforts on the potential customers with the highest likelihood of influencing others. Using a research framework that takes into account the dimensions of trust, domain, and time the authors created a time-varying hypergraph developed to model online social networks using the time-varying features of multi-type relationships. Based on the time-varying

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hypergraph and user trust relationships, another algorithm examines the most influential user trust networks. Reinforced by the dimensions of trust, domain, and time, a novel product review domain-aware (PRDA) approach identifies effective influencers and categorizes them into three sub-types: emerging influencers, holding influencers, and vanishing influencers. The results of this study are useful for identifying valuable leads, shoppers and community members whose reviews and social media presence influence the most potential customers. This study is also an important source of online retailers' best practices for building consumer trust through social media engagement.

**Sänger, J & Pernul, G.** (2014). Visualizing transaction context in trust and reputation systems. In *Proceedings of the 2014 Ninth International Conference on Availability, Reliability and Security (ARES '14)*. IEEE Computer Society, Washington, DC, USA, 94-103. <http://dx.doi.org/10.1109/ARES.2014.19>

**Abstract.** Transaction context is an important aspect that should be taken into account for reputation-based trust assessment, because referrals are bound to the situation-specific context in which they are created. The non-consideration of transaction context may cause several threats such as the value imbalance problem. Exploiting this weakness, a seller can build high reputation by selling cheap products while cheating on the expensive ones. In the recent years, multiple approaches have been introduced that address this challenge. All of them chose metrics leading to numerical reputation values. These values, however, are non-transparent and quite hard to understand for the end-user. In this work, in contrast, we combine reputation assessment and visual analytics to

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provide an interactive visualization of multivariate reputation data. We thereby allow the user to analyze the data sets and draw conclusions by himself. In this way, we enhance transparency, involve the user in the evaluation process and as a consequence increase the users' trust in the reputation system.

**Summary.** This study focuses on the importance of trust to successful online transactions and how reputation systems that rate actors based on past experiences transform the way consumers perceive the trustworthiness of websites. In particular, the authors contend that transaction context plays an important role in online trust assessment. Utilizing a commerce data set from eBay, the researchers compute various conceptual models to visualize the connections between transaction context, website trustworthiness and online sales conversion rates. This study is important because it shows how trust related factors such as perceived credibility, reliability and confidence affect the likelihood of successful online transactions.

### **Elements of website design and layout that affect consumer opinions of online stores.**

**Loureiro, S., & Roschk, H.** (2014). Differential effects of atmospheric cues on emotions and loyalty intention with respect to age under online/offline environment. *Journal of Retailing and Consumer Services*, 21(2), 211-219.

<http://dx.doi.org/10.1016/j.jretconser.2013.09.001>

**Abstract.** Effects of atmospheric cues are usually not compared across offline and online contexts as well as across age groups. This study proposes a model that examines the effect of the atmospheric cues such as graphics design and information design on positive emotions and loyalty intentions. The model is



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compared across offline and online stores and regards the consumers' age as moderator. A field study was conducted, which collected data from 363 customers. Hypotheses are tested using structural equation modeling. Results for the offline context reveal that graphics design foster positive emotions and loyalty. Information design predicts loyalty. Results for the online context reveal that information design is salient over graphics design. Information design fosters positive emotions and loyalty, while graphics design does not. Further, we found that in the offline context positive emotions predict loyalty among younger customers but not among older ones. In the online context the effect of graphics design on loyalty is stronger and, thus, significant for younger customers than compared to older ones.

**Summary.** This research study examines the effect of graphic design and information design on consumer satisfaction and loyalty. The authors contend that information design and website navigation are important to the formulation of positive user impressions such as customer trust. Using a survey examining a variety of online retail businesses such as car sales, travel agencies and apparel retailers, the researchers find that information design factors such as usability and intuitiveness dramatically impact a consumer sense of security or insecurity, which contributes to their overall trust of the online store. The authors conclude that, due to the remote nature of website retail sales, customers typically experience certain types of transactional insecurity related to shopping online. This research shows that information design is of particular importance to establishing customer trust, due to consumers' inherent desire to evaluate the

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relative transactional insecurities posed by different websites and retailers online.

This resource is important because it directly relates to identifying onsite best practices for site design and website layout that can impact a consumer's subjective perception of trust.

**Manganari, E., Siomkos, G., Rigopoulou, I., & Vrechopoulos, A. (2011).** Virtual store layout effects on consumer behavior. *Internet Research*, 21(3), 326-346.

<http://dx.doi.org/10.1108/106622411111139336>

**Abstract.** The purpose of this paper is to examine the virtual store layout's perceived ease of use effects on consumer behavior and the perceived differences of two layout patterns most commonly used in air travel web sites (i.e. grid and freeform layout). Data is collected through a laboratory experiment from a sample of 241 students at a business school. Structural equation modeling (SEM) is used to evaluate the research model and test the research. Results confirm and extend available knowledge regarding virtual store layout effects on shopper responses. However, findings imply that layout pattern affects perceived pleasure and not ease of use in the investigated sector. Additionally, the study confirms the moderating role of atmospheric responsiveness. Managers should consider and apply the optimal level of ease of use at their web stores' virtual layout to facilitate and yet engage consumers during their online trip. In the context of e-tailing, past research examined store layout effects on consumer behavior mostly through a Technology Acceptance Model (TAM) approach. Elaborating on these research insights, the present research attempt employs an environmental psychology approach measuring the effects of perceived layout on

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consumer behavior in the online travel industry through the S-O-R paradigm perspective.

**Summary.** This study examines the importance of website layout and ease of use on perceived trust and customer behavior on retail travel websites. This study is based on the Stimulus-Organism-Response paradigm which states that environmental stimuli affect consumers' internal states and overall responses. Based on the results of this study, the authors show the link between web sites' organizational structure and users' satisfaction and trust. This source is important because it proves a direct connection between information design, website layout and customer satisfaction and trust.

**Park, E., Kim, E., Funches, V., & Foxx, W.** (2012). Apparel product attributes, web browsing, and e-impulse buying on shopping websites. *Journal of Business Research*, 65(11), 1583-1589. <http://dx.doi.org/10.1016/j.jbusres.2011.02.043>

**Abstract.** This study explores the relationship among product attributes, web browsing, and impulse buying for apparel products in the Internet context. University students completed a total of 356 usable questionnaires. Data analysis was conducted using confirmatory factor analysis and structural equation modeling via LISREL 8.8. Findings confirm that apparel product attributes consist of three factors: variety of selection, price, and sensory attributes. The study confirms that two types of web browsing occur: utilitarian and hedonic. In an estimated structural model, the variety of selection has a positive effect on utilitarian web browsing, whereas price has a positive effect on hedonic web browsing. Additionally, utilitarian web browsing has a negative effect on impulse

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buying, whereas hedonic web browsing has a positive effect on impulse buying for apparel on shopping websites. In particular, the factors of variety of selection and sensory attributes have direct effects on e-impulse buying for apparel.

Managerial implications for more effectively managing the process of securing online customers through the use of utilitarian and hedonic product information concludes the article.

**Summary.** This qualitative study identifies specific aspects of online retail store design that allow customers the opportunity to eliminate or reduce their perceived risks related to online shopping tasks. Some of the perceived risks that consumers typically worry about are the trustworthiness of a website as well as possible misrepresentation of products and price savings. A total of 356 self-completed questionnaires are collected and followed up with supplemental individual interviews. The majority of the respondents are females between the ages of 17 to 35 years old who are interested in online retail stores specializing in apparel. This study found that various on-site factors such as variety of selection, the ability to browse by product attributes and price comparison help online consumers subjectively reduce their perceived risks and build trust in an online store. Elevated trust in online consumers is then shown to improve the likelihood of consumers making impulse purchases and becoming repeat customers. This study is relevant to online retailers because it identifies best practices for onsite product variety, attribute search and comparison that most impact perceptions of website trust.

**Porat, T., & Tractinsky, N. (2012).** It's a pleasure buying here: The effects of web-store

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design on consumers' emotions and attitudes. *Human-Computer Interaction*, 27, 235-276. <http://dx.doi.org/10.1080/07370024.2011.646927>

**Abstract.** We draw on research in human–computer interaction, information systems, environmental psychology, and marketing to develop and to test a model, which suggests that salient design characteristics of the web store (aesthetics and usability) influence the emotions of visitors to the store's site, which in turn affect their attitudes toward the store. A study examined the proposed model in two e-commerce domains—bookstores and apparel stores. The results, based on data collected from 327 participants, suggest that the effect of the design aspects on attitudes toward the store was partially mediated by affect. In addition, certain design aspects also affected attitudes directly. Specifically, effects of perceived aesthetic aspects of the online store are mainly mediated by affect. The influence of perceived usability is mainly direct and less mediated by affect. Both pleasure and arousal are associated with attitudes toward the store, with pleasure being the main mediator between store design and attitudes toward the store.

**Summary.** This study contends that salient features of website design such as aesthetics and usability have an effect on the emotions of potential customers visiting an online store. By collecting data on consumers from two types of online retailers, bookstores and apparel stores, the researchers show that aesthetic factors of website design are interpreted subjectively, but can have a lasting effect on consumers' attitude of the store. Despite the comparable importance of website usability, the effects of aesthetic preference can have a larger impact on

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consumer attitudes and likelihood of making a purchase. The authors assert that a consumer's perception of an online environment can affect the emotional state of the individual, including perceived trustworthiness and aversion to risk. They argue that factors such as usability and aesthetic preference have a significant impact on whether a consumer views an online store positively or negatively. This study is important because it shows how environmental stimuli such as landscape and a store's ambiance, aesthetics and graphic design impact a person's affective states and influence them to approach an environment or avoid an environment. In the context of online retail, this is a determining factor in the establishment of trust as well as the likelihood of a consumer making purchases and becoming a repeat customer.

**Roth, S., Tuch, A., Mekler, E., Bargas-Avila, J., & Opwis, K.** (2013). Location matters, especially for non-salient features – An eye-tracking study on the effects of web object placement on different types of websites. *International Journal of Human-Computer Studies*, 71(3), 228-235.

<http://dx.doi.org/10.1016/j.ijhcs.2012.09.001>

**Abstract.** Users have clear expectations of where web objects are located on a web page. Studies conducted with manipulated, fictitious websites showed that web objects placed according to user expectations are found faster and remembered more easily. Whether this is also true for existing websites has not yet been examined. The present study investigates the relation between location typicality and efficiency in finding target web objects in online shops, online newspapers, and company web pages. The sample in this study consists of forty

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participants in an eye-tracking experiment. The researchers assert that typical web object placement leads to fewer fixations and participants find target web objects faster. However, some web objects are less sensitive to location typicality, if they are more visually salient and conformed to user expectations in appearance. Placing web objects at expected locations and designing their appearance according to user expectations facilitates orientation, which is beneficial for first impressions and the overall user experience of websites.

**Summary.** This quantitative research study examines the importance of web design uniformity on consumer perceptions of usability and website trust. The authors assert that the location typicality of common user interface elements affects the customer's subjective perception of the trustworthiness and usability of a retail website. In a live experiment, participants' reactions are studied using an eye tracker to detect eye movements around a particular webpage. The research shows that location typicality and uniformity of design help consumers make purchase decisions faster and have more confidence in the checkout process. The result of this study shows that aesthetic information design and uniformity factors have an impact on a consumer's likelihood to make a purchase online. This study is important because it establishes specific factors of web object placement and site layout that best facilitate the perceptions of usability, design uniformity and ultimately website trust. The authors also show that when online retail websites follow best practices of web object placement and design uniformity, consumer perceptions of trust are improved.

**Xu, L., Duan, J., & Whinston, A. (2014).** Path to purchase: A mutually exciting point

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process model for online advertising and conversion. *Management Science*, 60(6), 1392-1412. <http://dx.doi.org/10.1287/mnsc.2014.1952>

**Abstract.** This paper studies the effects of various types of online advertisements on purchase conversion by capturing the dynamic interactions among advertisement clicks themselves. It is motivated by the observation that certain advertisement clicks may not result in immediate purchases, but they stimulate subsequent clicks on other advertisements which then lead to purchases. We develop a stochastic model based on mutually exciting point processes, which model advertisement clicks and purchases as dependent random events in continuous time. We incorporate individual random effects to account for consumer heterogeneity and cast the model in the Bayesian hierarchical framework. We propose a new metric of conversion probability to measure the conversion effects of online advertisements. Simulation algorithms for mutually exciting point processes are developed to evaluate the conversion probability and for out-of-sample prediction. Model comparison results show the proposed model outperforms the benchmark model that ignores exciting effects among advertisement clicks. We find that display advertisements have relatively low direct effect on purchase conversion, but they are more likely to stimulate subsequent visits through other advertisement formats. We show that the commonly used measure of conversion rate is biased in favor of search advertisements and underestimates the conversion effect of display advertisements the most. Our model also furnishes a useful tool to predict future purchases and clicks on online advertisements.



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**Summary.** This quantitative study evaluates the sales conversion rate of different types of online advertising based on a “Bayesian Hierarchical Model which incorporates the mutually exciting point process and individual heterogeneity” to identify the most influential types of clicks that lead to purchases. (p. 30). A mutually exciting point process is defined as a “multivariate stochastic process in which different types of clicks and purchases are modeled as different types of random points in continuous time. The occurrence of an earlier point affects the probability of occurrence of later points of all types so that the exciting effects among all advertisement clicks are well captured” (Xu, Duan, & Whinston, 2014, p. 5). By examining the sales conversion rates of different types of online interactions in formats such as banner ads, search marketing and popups, this study gives insight into the common paths web consumers take from initial searches to final checkout. This study is important to show how pleasant paths to purchase experiences help eliminate purchase-related anxiety and improve brand trust. Increased brand trust is shown to improve the probability of repurchase or the further browsing of promotional information.

### **Impact of product reviews, electronic word-of-mouth and social networking on consumer perceptions of trustworthiness.**

**Thakkar, A.** (2015). Trustworthiness and analysis of sentiment of user semantic Feedback in e-commerce. *International Journal On Recent and Innovation Trends in Computing and Communication*, 3(2), 767-768.  
<http://dx.doi.org/10.17762/ijritcc2321-8169.150270>

**Abstract.** This quantitative study focuses on the important of user reviews in the

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establishment of online trust by potential retail website customers. This recent research examines aspects of one of the most important aspects of online trust, peer review, and how online consumers navigate truthful and untruthful reviews to make a final purchase decision. This study was published in the International Journal On Recent and Innovation Trends in Computing and Communication, which indicates a high level of quality and relevance.

**Summary.** This study examines the connection between website consumer trust and the analysis of customer feedback posted in online retail websites. This study focuses on the factors of inherent trust that are part of traditional commerce, based on physical presence of the seller and product, the ability to verify quality and the ability to negotiate personally. The authors assert that those factors are diminished when customers visit online stores due to the remote nature of website commerce. The method used to study this hypothesis is a live survey where participants can like or dislike pre-analyzed customer feedback. Some of the feedback is positive, other feedback is negative or entirely fabricated. Participants provide their opinion on the validity of the feedback and whether it would improve their trust of the site and their likelihood to make a purchase. The authors conclude that scores such as Trust Weight and Sentiment help users make decisions about whether or not to purchase a product online. This conclusion is essential to show the importance of establishing trust among potential online retail customers.

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**Elwalda, A., Lü, K., & Ali, M.** (2016). Perceived derived attributes of online customer reviews. *Computers in Human Behavior*, 56, 306-319.

<http://dx.doi.org/10.1016/j.chb.2015.11.051>

**Abstract.** The influence of online customer reviews (OCRs) on customers' purchase intention has recently gained considerable attention, in both academic and business communities. Technology allows customers to freely and easily post their comments and opinions online about any product or service; this type of customer review can have a significant effect on customers' purchase decisions. Previous studies, however, have mainly focused on the influence of the virtual attributes of OCRs such as volume and valence on consumers' intentions, while limited attention has been paid to understand the effects of the derived attributes. This study, thus, aims to understand the impact of the perceived derived attributes of OCRs on customer trust and intention. This study develops a Perceived Derived Attributes (PDA) - model, based on the inclusion of perceived control from the Theory of Planned Behaviour (TPB) with the Technology Acceptance Model (TAM), in order to investigate the effects of OCRs on customers' purchasing intention. The sample in this study consists of 489 responses to a survey collected from users of amazon.com. The findings from this study suggest that customer trust in an e-vendor and their intention to shop online are significantly affected by perceived usefulness, perceived ease of use and perceived enjoyment of OCRs. Furthermore, the sense of control derived from OCRs significantly affects customer intention and significantly affects customer trust in e-vendors, particularly for customers who frequently check

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OCRs before making a purchase. Clearly, those attributes of OCRs are linked to the development of the shopping environment, which consequently can affect sales.

**Summary.** This quantitative study focuses on how online customer reviews affect customer trust and intention to make a purchase. Using a survey, customers of Amazon.com are questioned on the perceived usefulness, ease of use and enjoyment of customer reviews and how they affect their trust in a vendor. The authors find that usefulness and enjoyment of online reviews significantly impact customers' sense of the trustworthiness of the site. This empirical resource shows that aesthetic, subjective factors can dramatically impact a customer's belief in the validity of an online review and ultimately trust in an online retailer. This source is important for this study because it helps establish best practices for the display and sorting of online product reviews. Factors such as placement on the page and default sorting of the most helpful reviews impact a customer's perceived trustworthiness of the reviews and website as a whole.

**Korfiatis, N., García-Bariocanal, E., & Sánchez-Alonso, S.** (2012). Evaluating content quality and helpfulness of online product reviews: The interplay of review helpfulness vs. review content. *Electronic Commerce Research and Applications*, 11(3), 205-217. <http://dx.doi.org/10.1016/j.elerap.2011.10.003>

**Abstract.** With the popularity and growth of social networking, consumers often rely on the advice and recommendations from online friends when making purchase decisions. Social commerce in this regard represents a shift in

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consumers' thinking from inefficient individual-based consumption decisions to collaborative sharing and social shopping. In this study, we investigate social commerce from two different but interrelated angles (i.e., social shopping and social sharing). Built on the literature of social support, commitment-trust theory, and trust transfer theory, a research model was developed and empirically examined. The findings of this study demonstrated that both emotional and informational social support significantly affected consumers' trust and community commitment, which in turn exerted profound impacts on both social shopping and social sharing intention. Trust toward members also can be transferred into trust toward community, which further leads to users' community commitment. Limitations and implications for both research and practice are discussed.

**Summary.** The visibility and prevalence of online reviews on retail websites has grown over the past ten years. This qualitative study examines how the conformity, understandability and expressiveness of online reviews affect a consumer's perception of the helpfulness and trustworthiness of the review. Using data gleaned from users of Amazon UK and focusing on content specific characteristics of product review text, the authors are able to show that several factors affect the perceived validity of reviews including reviewer reputation, relevancy, language, readability and length of the review. Of these factors, reputation and relevancy are seen as the most important. This source is important for this study because it identifies specific details of online review text that have the most impact on the perceived trustworthiness of the reviews and

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the website as a whole.

**Mudambi, S. M., & Schuff, D.** (2010). Research note: What makes a helpful online review? A study of customer reviews on Amazon.com. *MIS Quarterly*, 34(1), 185–200. Retrieved from <http://www.jstor.org/stable/20721420>

**Abstract.** Customer reviews are increasingly available online for a wide range of products and services. They supplement other information provided by electronic storefronts such as product descriptions, reviews from experts, and personalized advice generated by automated recommendation systems. While researchers have demonstrated the benefits of the presence of customer reviews to an online retailer, a largely uninvestigated issue is what makes customer reviews helpful.

**Summary.** In light of the recent prevalence of customer reviews featured in online retail websites, this study establishes the helpfulness of those reviews to potential customers based on measurable factors such as review extremity, review depth and product type. Data is collected for this study using online reviews published on Amazon.com and their Star Ratings. Users are prompted to enter a score of 1 to 5 stars next to product reviews in Amazon.com in order to indicate their helpfulness. Based on regression analysis, the authors determine that the product type and length of the product review typically have the most effect on the perceived helpfulness and inherent trustworthiness of the review. This source is important to this study because it shows specifically how the validity and reliability of online recommendation systems can positively impact buyer trust.

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**Roghanizad, M. & Neufeld, D.** (2015). Intuition, risk, and the formation of online trust.

*Computers in Human Behavior*, 50, 489-498.

<http://dx.doi.org/10.1016/j.chb.2015.04.025>

**Abstract.** Understanding how consumers evaluate website trustworthiness is a critical factor for online vendors. The dominant view espouses a deliberative trust formation process whereby shoppers evaluate security certificates, return policies, user feedback and the like, implying a highly rational underlying trust calculus. In this paper we use a laboratory experiment to explore an alternative perspective, based on the non-rational associative reasoning approach. Our findings show that when faced with a no-risk hypothetical decision about whether or not they would purchase a book from an online bookseller, subjects' decision-making processes were indeed consistent with the dominant deliberative view. However, when confronted with a decision entailing risk (i.e., sharing sensitive personal information with an unknown website), subjects became reliant on their non-rational, gut-level intuition. We adopt a dual process reasoning theory to make sense of these findings, and recommend that vendors take into account associative reasoning factors when designing online interfaces. Future research directions are provided.

**Summary.** This quantitative research study examines how non-rational intuition affects online consumer trust in risky and non-risky retail situations. The authors assert that associative reasoning factors influence the non-rational intuition of online consumers. Studying the online book purchase habits of a sample of 245 male and female individuals between the ages of 18 and 35, the authors find that

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elements such as intuitive user interface, usable navigation and simple product search functionality benefit quick associative reasoning, the elimination of perceived transactional risk and improve website trustworthiness. This resource is important to this study because it identifies specific factors of website design and information layout that affect consumer perceptions of trustworthiness in online purchases.

**Shan, Y.** (2016). How credible are online product reviews? The effects of self-generated and system-generated cues on source credibility evaluation. *Computers in Human Behavior*, 55, 633-641. <http://dx.doi.org/10.1016/j.chb.2015.10.013>

**Abstract.** Online product reviews are important information sources in the consumer decision-making process. Despite the importance of online reviews in product evaluation, there is an emerging need to address the role of self-generated and system-generated information in enhancing the credibility of online reviews. Two experiments were conducted to examine the topic. Study 1 found significant interactions between perceived similarity and source reputation on the evaluation of trustworthiness and expertise. Study 2 extended the findings of study 1 by examining how argument quality influenced credibility perception under different levels of similarity and source reputation.

**Summary.** This study seeks to establish the specific factors of electronic word-of-mouth communication, online reviews and social networking that influence consumer trust and perceived credibility of online retailers. The authors assert that web users adopt cognitive strategies to judge the credibility of online word-of-mouth communication and that these judgments affect the user's perception of



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site trustworthiness. Using an online survey, respondents are asked to comment on their level of involvement with various hotel websites and the elements of customer reviews they most attribute to online trust. The results of this study show that the reputation and peer-rating system of review websites are directly related to the level of trust users attribute to the site. This research has implications for review sites to develop mechanisms to enhance the credibility of their online reviews. This source is important to this study because it shows how consumers base their perceptions of website trustworthiness on many different sources of electronic word-of-mouth communication.

**Weathers, D., Swain, S., & Grover, V. (2015).** Can online product reviews be more helpful? Examining characteristics of information content by product type.

*Decision Support Systems, 79*, 12-23.

<http://dx.doi.org/10.1016/j.dss.2015.07.009>

**Abstract.** Many online retailers and other product-oriented websites allow people to post product reviews for use by shoppers. While research indicates that these reviews influence consumers' shopping attitudes and behaviors, questions remain about how consumers evaluate the product reviews themselves. With the current research, we introduce a new methodology for identifying the review factors that shoppers use to evaluate review helpfulness, and we integrate prior literature to provide a framework that explains how these factors reflect readers' general concerns about the diagnosticity (uncertainty and equivocality) and credibility (trust and expertise) of electronic word-of-mouth. Based on this framework, we offer predictions about how the relative importance of

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diagnosticity and credibility should vary systematically across search and experience product types. By analyzing secondary data consisting of over 8000 helpfulness ratings from product reviews posted by shoppers on Amazon.com, we find that, while review content affects helpfulness in complex ways, these effects are well explained by the proposed framework. Interestingly, the data suggest that review writers who explicitly attempt to enhance review diagnosticity or credibility are often ineffective or systematically unhelpful. Our findings have implications for both IS developers and retailers for designing online decision support systems to optimize communication practices and better manage consumer-generated content and interactions among consumers.

**Summary.** This study examines how website trust is conceptualized in terms of consumers' desire to not only reduce uncertainty but also to reduce their perceived purchase risks. The focus of this research study is to identify factors of online reviews that facilitate the reduction of uncertainty and perceived risks. The authors analyze 8327 ratings for helpfulness on Amazon.com product reviews to determine the impact of perceived review helpfulness on the customer's overall attitude towards Amazon and their likelihood to make a purchase. This source is important to this study because it shows how subjective perceptions of helpfulness have an effect on overall trustworthiness of a website.

### **Conclusion**

Throughout this annotated bibliography, various scholarly resources identify the importance of website trustworthiness to online shoppers and some of the specific factors of website design, information layout and consumer reviews that most impact customer perceptions. Based on the qualitative and quantitative research studies presented in this annotated bibliography, it is possible to identify general best practices for website design uniformity, navigational usability, aesthetic elements, information layout and consumer review format that benefit retail website administrators as well as online sales and customer experience executives interested in optimizing their site's perceived trustworthiness.

#### **Defining online trustworthiness and its importance to online sales**

Online consumer trustworthiness is defined as, "a psychological state leading to the willingness of customers to perform payment transaction over the internet and expect the payment platform fulfilling its obligations, irrespective of customer's ability to monitor or control payment platform's actions" (Yang et al., 2015, p. 13).

Roghanizad and Neufeld (2015) note that the perception of trustworthiness is a crucial factor in the success of online retail sales (p. 489). Additionally, "researchers agree that engaging in online transactions evokes feelings of uncertainty and risk for consumers" (Roghanizad & Neufeld, 2015, p.491). Thus, eliminating subjective sources of uncertainty and risk helps improve the perceived trustworthiness of a website and ultimately increase online sales.

#### **Elements of website design and layout that affect trustworthiness of online stores.**

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Various resources in this annotated bibliography show the importance of website design and information layout that affect the trustworthiness of online stores. Roth, Tuch, Mekler, Bargas-Avila and Opwis (2013) show how website design uniformity and the placement of common web objects such as the Login button, Checkout and Search impact user perceptions of website trustworthiness (Roth et al., 2013). Additionally, Manganari, Siomkos, Rigopoulou and Vrechopoulos (2011) explain how information layout, website organizational structure and perceived ease-of-use influence users' satisfaction and trust. Internal subjective factors such as consumers' emotional states are also shown to be affected by graphic design and aesthetic web design preferences in Loureiro and Roschk's (2014) study.

### **Evaluating the importance of consumer reviews to website trustworthiness.**

In addition to navigational, aesthetic and information design elements, consumer reviews are shown to be an influential part of website content that significantly impact a retail website's trustworthiness. Thakkar (2015), demonstrates the connection between website consumer trust and the analysis of customer feedback posted in online retail websites. He shows that peer review is essential to the subjective elimination of transactional risk and the establishment of online trust (Thakkar, 2015). Elwalda et al. (2016), demonstrate in their study how consumer perceptions of usefulness and enjoyment of online reviews significantly impact their sense of the trustworthiness of the site. This empirical resource shows that factors such as language, humor and relevance dramatically impact a customer's belief in the validity of an online review and ultimately trust in an online retailer (Elwalda et al., 2016).

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While the body of research presented in this annotated bibliography provides a baseline by which to evaluate the aspects of website design, information layout and product reviews that most affect online trustworthiness, there is much more research that can be done to further the knowledge in this area. A recommendation of further research to be done to further identify specific design, layout and review factors of online trust could focus on online consumers who have identified themselves as primarily concerned with website trustworthiness. This sample of respondents would then be asked to evaluate specific details of design, layout and reviews on large, established retail websites that they most associate with online trustworthiness. Then they can be presented with website mockups showing small variations in graphic design, navigation, information layout and review formatting and asked whether or not their perceptions of trustworthiness are affected.

In conclusion, this annotated bibliography establishes a core list of timely, relevant, empirical research that details the importance of trust to online commerce, some of the most prominent factors of design, layout and reviews that impact consumer trust, and some of the basic best practices for optimizing those factors in order to improve online trustworthiness.

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## Appendix: Literature Review Definitions

### Related Definitions

**Online trustworthiness.** For the purposes of this literature review, Online consumer trustworthiness is defined as:

a psychological state leading to the willingness of customers to perform payment transaction over the internet and expect the payment platform fulfilling its obligations, irrespective of customer's ability to monitor or control payment platform's actions (Yang, Pang, Liu, Yen, & Tarn, 2015, p. 13).

**Online purchase transaction.** For the purposes of this literature review, a successful online purchase transaction is defined as a:

shopping activity performed by a consumer via a computer-based interface, where the consumer's computer is connected to, and can interact with, a retailer's digital storefront, implemented on some computer through a network. A consumer can engage in online shopping in any location, but the conceptualization is based on assumptions that the products of interest are not physically present at the time. (Häubl & Trifts, 2000).

**Conversion rate.** A term commonly used in discussions of online marketing and retail, "conversion marketing is the act of converting site visitors into paying customers" (Conversion Marketing, 2015, p.1). However, a conversion is not always limited to sales and "the desired action can take many forms, varying from site to site. Examples include sales of products, membership registrations, newsletter subscriptions, software

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downloads, or just about any activity beyond simple page browsing” (IOS, 2010, p.6).

**Online product review.** Online customer reviews “can be defined as peer-generated product evaluations posted on company or third party web sites” (Mudambi & Schuff, 2010, p. 186).

**Mutually exciting point process.** A mutually exciting point process is defined as a “multivariate stochastic process in which different types of clicks and purchases are modeled as different types of random points in continuous time. The occurrence of an earlier point affects the probability of occurrence of later points of all types so that the exciting effects among all advertisement clicks are well captured” (Xu, Duan, & Whinston, 2014, p. 5).

**Trust.** Trust has been defined as “the extent to which one party is willing to depend on the other party in a given situation with a feeling of relative security, even though negative consequences are possible. This definition recognizes that trust cannot exist without risk—that the ‘negative consequences’ of risk must be present in order for trust or distrust to emerge. Researchers agree that engaging in online transactions evokes feelings of uncertainty and risk for consumers” (Roghanizad & Neufeld, 2015, p.491).