

E-Commerce: A Trust Perspective

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Abstract

Research has shown trust is key to the success of electronic commerce [8] [11] [41]. However, the question of how trust is obtained and sustained online has yet to be answered. What is it that makes an online store trustworthy to consumers? This paper discusses a new and unique observational study conducted to aid in understanding the role of trust in an online shopping experience. This paper reviews the current literature regarding trust and online shopping and discusses the observational study, its findings and conclusions.

Keywords

Trust, E-Commerce, Human-Computer Interaction, Usability

1. Literature Review

From reviewing the current literature of trustworthiness online, it is seen that understanding how trust is developed and maintained in everyday relationships is a step that is overlooked. This literature review explores not only work regarding trustworthiness online relative to e-commerce, but the research of trust in itself, as in other areas such as psychology and sociology.

1.1 Trust is Important

Trust is an important issue in personal relationships [6] and in (offline) commerce [38]. However, the issue of trust online is important as well [28][16][40][19]. Salam et al. [36] state that trust "...plays a key role in many such transactions that occur over the Internet" and Jones et al. [23] state how trust in technology is "an increasingly important issue". Many authors point out how critical trust is to e-commerce [34][9][5]. Often, however, the focus of e-commerce generally tends to be on technology. Trust online is a more important issue for e-commerce than technology [24]. Many feel that the more trustworthy an online store, the more successful it will be [16][7].

1.2 Trust Defined

What is trust? In the majority of literature dealing with trust, whether it is in an offline or online setting, there is no consensus on the "true" definition of trust [9]. The lack of agreement on one definition could stem from the idea that trust is a multifaceted concept [37] [9] and is a difficult to define [17][20]. This difficulty is due in part to our daily vernacular, interchanging terms like

trustworthiness and trust, or entrusting and trusting.

Some believe trust deals with behaviors [5] [30]. Nielsen states, "true trust comes from a company's actual behavior towards customers..." [31]. Olson states "people learn to trust others by noting their behaviors" [32]. Others feel trust is a cognitive choice [27] [35]. Lewis et al. state that "we cognitively choose whom we will trust in which respects and under which circumstances, and we base the choice on what we take to be 'good reasons,' constituting evidence of trustworthiness" [27].

Trust evolves over time, but exactly how is not so clear. The literature has conflicting views on whether trust is hard or slow to build over time [31] or whether trust is built quickly in the beginning [3]. However, it is in agreement that trust in a merchant is a good thing [41] [1], but as to exactly how this trust works is not yet completely understood [41].

1.3 Intentions and Competence

Govier states that trust relationships have two dimensions: motivation and competence [17]. The intentions, or motivations, of a trusted party affect his or her level of trustworthiness [37] [30]. "Technical competence" is an important facet of trust [2]. If a person feels someone lacks ability necessary for the relationship, this person will not place trust in that someone.

1.4 Cooperation, Expectations, & Confidence

When attempting to define trust authors mention trust with respect to cooperation, expectations, and confidence. Trust promotes or causes cooperative behavior [15] [6] as Friedman states "a climate of trust eases cooperation among people..." [14]. One may assume that two people who cooperate must trust each other to a certain degree. This is Govier's view who makes a direct association between interaction and trust [17]. However, Hardin [20] points out that this is not necessarily the case. A person can engage in cooperation not because she trusts someone but because she has no alternatives.

Also, a person may trust someone but never have the opportunity to act on that trust. It is therefore important to draw a clear distinction between trust and action. According to Hardin [20], "trust is thus inherently a matter of knowledge or belief" and it is important to note

that there is no risk in trusting alone, the risk is in acting on trust.

1.5 Uncertainty, Risk, & Vulnerability

Trust is also thought as one dealing with overcoming risk [36] [23], vulnerability [14] [32] [16] [9], and uncertainty [18]. Bickmore et al. state, “trust is a prerequisite for actions involving another agent in which one may suffer physical, financial, or psychological harm . . .” [5]. Trust is only an issue if there is some amount of uncertainty involved. Moorman et al. state that trust involves “vulnerability and uncertainty on the part of the trustor” [30]. One must have enough confidence in someone to overcome this uncertainty.

1.6 Security & Privacy

Many discuss the issues of security and privacy when speaking of trustworthiness online [11]. Security concerns can be a major barrier in getting consumers to shop online [33]. Even though security is an important issue for trust, having a secure online store is not enough. Even if there were a perfect system for completely secure transactions, consumers will not necessarily shop online [12]. Salam et al. agree saying, “...we believe that secure technological infrastructure is only a necessary foundation and by itself not sufficient for creating the level of trust needed for spontaneous electronic transactions over the Internet” [36].

Much of the literature states that privacy issues are more of a concern than security issues [4]. That is, for example, consumers are more worried about how a company will handle their personal information such as email addresses and phone numbers, than what type of encryption is being used for transactions.

1.7 Context

Context is important when discussing trust [2] [17] [20]. Rarely do we trust a person with everything, rather we trust people in a specific context only. Davenport states, “the ‘locus of trust’ is likely to be diverse in any given situation” [10]. This can imply that trustworthiness with regards to shopping online is different than trustworthiness in shopping in brick-and-mortar stores due to the different context of online or offline.

Context can also apply to different types of products being sold online. Certain products sell more easily online than others. Ang et al. report that “it is worth noting that the experience to date clearly suggests that certain product categories are more amenable to Internet transactions. For example, CDs, software and books are the three most popular products bought on the Internet” [1]. The authors suggest that the reasoning behind this fact is the ability to easily provide more precise and accurate descriptions of these products.

1.8 Length of Relationship

The longer the relationship, the more trustworthy parties become [17] [20]. If trust had declined over time, the relationship would have been discontinued sooner or later. Thus, a long relationship generally implies strong trust that extends into the future [17]. Hardin states, “...it is primarily those with whom we have ongoing relationships that we trust. And the richer the ongoing relationship and the more valuable it is to us, the more trusting and trustworthy we are likely to be” [20].

1.9 Credibility, Brands, & Reputation

Trustworthiness is a key component to credibility [13]. A positive reputation is also a result of trustworthy behavior [18]. A merchant’s reputation can have an effect on a consumer’s view of trust of the merchant [29] as well as effect how willing the consumer is to make a purchase [18]. Hardin describes reputation as perceived trustworthiness [20]. Reputation can be created via word-of-mouth, which consumers tend to rely heavily on [11]. Brands are associated with reputation and credibility. Fang et al., state, “Brand name is one of the major factors, probably the most important one, that has an impact on shopper’s trust in an e-commerce Web site” [12]. Cheskin research states “... one key aspect of establishing trust with consumers is the reputation of a brand...” [7].

1.10 Design & Usability

Many authors feel that the design of the interface (in this case the website) can influence trustworthiness of an online store [12] [39]. The manipulation of visual elements in the interface can produce feelings of trustworthiness [9]. The quality of the website, whether the site has typos, grammatical errors, broken links, etc., has an effect on trustworthiness [12] [11].

Consumers draw on cues from the interface to determine their vulnerabilities as well as the store’s intentions [14] [35]. Olson et al. state that “the design of the interface needs to recognize the kind of experience and social cues people need to be able to feel trust...” [32]. The relative ease of use is an important determinate of trust online [11] [22]. It is important to design the interface to have strong and effective navigation [8]. The eCommerce Trust Study conducted by Cheskin Research states that “effective navigation is generally a precondition to communicating e-commerce trust and the perception that sites meet customer needs...” [7].

Marsh et al. state, “...designing interfaces which take trust into account and reason using trust will result in more effective, comfortable interactions for the user” [28]. Understanding trust will allow use to create better interfaces to online stores.

1.11 User Characteristics

All consumers are different and these differences can affect a consumer's trust online. Friedman et al. note "...people can engage in virtually identical online interactions, yet reach widely disparate judgments about whether the interactions are trustworthy" [14]. We all possess individual characteristics that affect our decision to trust [18][29] and these characteristics can include the age, experience, occupation, and disposition to trust of the consumer [39].

2. The Observational Study

Many studies have been conducted using interviews, questionnaires and observations based on mock purchases [12][3][16]. Yet, no work has been found to date that observes consumers making actual purchases. The observational study discussed in this paper was a unique study of actual purchases, with participants spending their own money, providing insight that no mock purchase study can provide. It is important to observe actual purchases because consumers cannot be expected to give accurate responses regarding actual shopping experiences while in a virtual or pretend setting. Grabner-Kraeuter commenting on the intricate nature of trust states, "...trust is a complex and dynamic phenomenon that can not simply be 'produced' by applying adequate instruments. Expectations and actions based on trust result from a delicate, situational interplay of different factors" [18].

Convenience and snowball sampling were used to obtain participants. An email was sent out to the author's Computer Science and Software Engineering department inviting anyone to participate as long as the participant came with an intention to make a purchase online. The software SnagIt (<http://www.techsmith.com/>) was used to record the participant's screen and voice during the study. The observations began by explaining the purpose of study and then participants were asked to use the "think-aloud" protocol, speaking all thoughts that came to mind while shopping. If necessary, participants were asked clarification questions during the observation, or prompted to share their thoughts if they remained quiet for a period of time.

Following the observation, a semi-structured interview was conducted with a set of predetermined open-ended questions, as well as any that arose from the observation. Using methodological triangulation by reviewing the observations and interviews, codes and themes were generated. A pilot study was conducted previously testing this method [26].

A total of nine participants participated in the study. The participants had varying computer backgrounds, but all had had at least one previous experience shopping online. Of the nine participants, six followed through with their

purchase and three did not. The overall shopping time for the participants varied from just under five minutes to over a half hour, with an average of almost sixteen minutes. Products shopped for varied from electronics, to clothes, to phone cards. See Figure 1 at the end of the paper for a shopping breakdown for each participant.

3. Findings

Trust is an important factor in online shopping.

For many of the participants, trust played a big role in the decision process of whether or not to make a purchase at a store. Greg found his product the cheapest price at an eBay store. However, Greg did not trust the eBay store enough to follow through and decided to pay more elsewhere. "\$13.95, buy it now! ...This looks good. I don't know. I've never bought anything from an eBay store. I don't know what its like compared to buying from an eBay bid. And I'm not interested in trying that out right now because I definitely need whatever I do tonight to be reliable because it is for my business."

Sue found the jewelry box she was looking for at a great price. She had never heard of the site before and was hesitant, but decided to buy it anyways. When she went to checkout, a security warning popped up and she abandoned the site stating, "...There is a problem with the security certificate? Oh no! I don't think I'm going buy it from here. Since there is a security alert, you know? Yeah, its a good price, but not worth... getting in trouble."

The more product information, the more trustworthy the online store will be perceived.

Searching for a good deal on a JVC microphone for his video camera, Bob comparison-shopped and found the product for \$20 cheaper than the JVC list price at an online store he had never visited before. This particular online store had a professional layout, a 1-800 contact number, a live help link, and touted itself as the "professional source" for photo, audio, and visual equipment. However, Bob didn't feel comfortable making a purchase there. Why? Mainly due to lack of product information; the site basically displayed the model number, a picture, and a one-line description of the microphone. Bob had done his research prior and already knew all the product information about the microphone. When asked why the store's lack of information prevented him from making a purchase even though he already knew the product information, Bob replied, "Yeah, I knew the product details already, but the fact that they don't even know the details... they might just ship me any old thing."

Thorough product information gives the perception of competence and knowledge. The more competent and knowledgeable the online store, the more trustworthy it is

perceived to be. This is inline with the current literature stating competence promotes trust. Bob also stated that he didn't feel comfortable spending a lot of money at the store. When given the scenario of his microphone only costing \$10 at the store, Bob stated, "I still wouldn't get it from [the online store]." Because of the lack of product details, Bob felt the online store lacked the competence and knowledge to send him the correct microphone.

Greg shopped online for an Audiovox cell phone transfer cable. The majority of the sites displayed a picture and model number for the cable, but Greg became frustrated due to all of the sites he visited not explicitly stating whether his purchase included driver software.

Design and usability are not high trust factors online.

Literature has stressed the important of design and usability when it comes to the trustworthiness and success of an online store. This study, on the contrary, found consumers place less importance on site design and usability and more on other aspects of shopping online, such as product details, contact information, and price.

As Tina stated regarding the site she purchased her international phone card, "...this website, I don't like its layout, but ...I always use this one. I trust this one, so I don't care." And as Sue stated, "I think if its something I need or want, it doesn't matter if the page looks good. ...Of course, aesthetics make things look easier and better or whatever, but if its something I know I really want or need, I'm gonna buy it anyways..." When asked how he felt usability affects a store's trustworthiness, Greg stated "...I'm not sure if I can decide whether or not to trust a site based on its usability at all."

Of course, an online store has to be usable enough for consumers to be able to make a purchase. Jan purchased her dog-tracking collar at a site with extremely poor site design having a very dated and unattractive look. However, Jan didn't seem to mind. The site had what she was looking for and was usable just enough for her to follow through with the purchase. When asked if she trusted the site she purchased from, Jan replied, "Yeah, more so than some of the other ones...because they are pretty much 'ma and pa' shops. Typically, the type of people that have [dog tracking collars] ... are not the type that I think either have the ability to or would try to take advantage of the situation."

It is possible for poor usability to have a negative affect on trustworthiness if consumer cannot figure out all the details of their purchase. Jack stated, "If I can't find out shipping really easily, that would concern me because if something would go wrong I imagine I would get the runaround if I tried to phone them. If I could even find

their number on the website." As long as the consumer can do what he/she wants to do, anything more than that seems like "icing on the cake". For example, it's unlikely that a consumer really cares if it takes five clicks versus two clicks to find a product.

First impressions last.

If an online store makes consumers happy the first time around, the consumers are likely to come back. Even if when they do come back they have a bad experience, consumers are likely to be more forgiving than of a store they are experiencing for the first time.

During Bob's product search for a JVC microphone, he visited a preferred site – one where he had been to the physical store, and also made a purchase from online. Bob went on and on at how great the customer service was at the store and how they have all kinds of brands of electronics. However, Bob couldn't find the microphone on the site. The site had changed since he last visited and Bob was unable to navigate the store. Trying the site's search function yielded no results either. Bob spent several minutes of frustration trying to find the microphone on the site. When asked in the interview about his experience at his preferred site, Bob stated, "...I know there was a section where you could list products by brand stores, I think they have JVC, Sony, etc., but I couldn't find it. But I have no idea if they are no longer doing that thing anymore or if they were. But I already bought something from them, so it's okay."

Cindy shopped at her preferred site for jeans for tall women. Her site frustrated her during navigation and checkout. She wanted to be able to log in and have the site already have her information from her previous purchases. She couldn't find the link and had to re-enter all of her information. Cindy didn't mind too much though because she had shopped there before and was satisfied with their service and products. This study's findings give the impression that trust can be built quickly and is easily sustained in the future if the consumer has a positive first time shopping experience.

Context matters.

The study was consistent with the literature regarding context and trust. Some products are simply easier to buy online than others. The quickest and easiest shopping experience was Chuck's. He purchased a magazine subscription at a popular online bookstore that he had previous positive experience with. His product was the cheapest of all of the participants and had an extremely low risk factor.

User characteristics impact the consumer's view of a store's trustworthiness.

User characteristics affect their view of a store's trustworthiness. Jan, who purchased a \$150 dog-tracking collar at a small online store, characterized herself as a trusting person. Marsha, however, was the opposite. Her shopping experience was full of hesitations regarding how to check out, if her credit card information was safe, if the shipping price and dates were feasible. Marsha's previous online shopping experience only consisted of a few eBay purchases. During the observation, she was shopping for a Christmas present for her boyfriend's pre-teen sister. In the end she bought slippers from a very popular teen clothing site. Marsha said the main reason she has not shopped online much in the past was because she is a suspicious by nature.

Another user characteristic aspect of the study was participants were either very price-oriented or need-oriented. The price factor correlates with the literature involving risk and trust. The less the product costs, the less risk the consumer is taking. Participants tried to minimize their risk by shopping for the product with the cheapest price.

When participants were also driven by need, they seem to do whatever it took to make the purchase. This study was conducted in November and December and many participants were buying holiday gifts. Because of their need of a gift, many were willing to place a purchase even if they did not trust the site. This verifies the literature that states cooperation does not necessarily imply trust. Conversely, during the interview, participants were asked if they could think of an online store they trusted, but could never see themselves making a purchase from. Many could, which is consistent with the literature regarding the distinction between knowledge and action. An online store could be extremely trustworthy, but this does not necessarily mean it will be successful.

4. Conclusion

It is evident that trust is an important facet in the online shopping experience. Providing sufficient product information with fair pricing shows good intentions and competence, giving positive effects on consumer's view of an online merchant's trustworthiness. Online stores need to realize certain products are more difficult to sell online than others. The more difficult the product is to sell, the more trust the consumer has to place on the merchant. Because of the different types of consumers, stores need to appeal to the less-trusting consumers by providing all information relative to the shopping experience, product, price, shipping, and contact information, in an upfront and clear manner. The observational study provided valuable qualitative data, aiding in understanding not only the

process of how consumers shop online, but the role trust plays in that process.

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Participant									
Pseudo name	Bob	Jack	Jan	Marsha	Chuck	Cindy	Sue	Tina	Greg
Gender	Male	Male	Female	Female	Male	Female	Female	Female	Male
Age Range	20-25	26-30	20-25	20-25	30-35	40-45	30 - 35	20-25	20-25
Item									
Item	JVC Microphone	Game Joystick / Dean Martin DVD	Dog tracking collar	Slippers	Magazine Subscription	Jeans	Jewelry Box	Phone Card	Audiovox Cell Phone Cable
Followed thru with Purchase	NO	NO	YES	YES	YES	YES	NO	YES	YES
Mid Price	\$137	\$39.99 / \$9.95	\$135	\$18	\$15	\$46 per pair	\$47.88	\$20	\$34.95
Max Price	\$149	n/a	\$144	n/a	n/a	n/a	\$64	\$80	\$41
Lowest Price	\$125	n/a	\$125	n/a	n/a	n/a	\$37.98	\$18	\$13.95
Shopping									
Time to find product	00:58	02:30 / 00:44	01:45	07:14	01:31	01:43	00:48	00:28	04:50
Time before purchase	n/a	n/a	08:03	20:39	01:31	03:36	04:58	05:05	08:15
Time to make purchase	n/a	n/a	03:10	8:58	02:19	04:07	N/A	01:15	01:45
Overall shopping time	11:55	26:49	11:27	30:30	04:18	18:21	22:25	07:05	10:00
Purchase price	n/a	n/a	\$155.75	\$23.95	\$15	\$104	N/A	\$18.14	\$46.40
Driven by	Price Details	Need / price	Need	Need / price	Need / Price	Need / price	Price	Price	Details Price
Sites									
Number of sites visited	12	16	6	2	1	2	11	1	7
Number of pages visited	33	53	32	86	16	70	45	15	17
Started w/ search engine	Yes	No	No	No	No	No	Yes	No	Yes
Used search engine	Yes	Yes	Yes	No	No	No	Yes	No	Yes
Used comparison shopping site	Yes,	No	No	No	No	No	Yes	No	No
Security window popups	Yes, privacy msg about cookies	Yes, security warning - flash install	No	No	No	No	Yes, Problem with site's security certificate	No	Yes, problems with displaying page properly

Figure 1: General Participant Shopping Statistics