Consumer’s Trust in using E-Commerce Websites

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Abstract— E-commerce plays a very important role in today’s world especially in the trading business such as in an online shopping business. For an Internet business to succeed, sellers have to gain consumer’s trust. The objective of this paper is to develop a framework on what is trust based on and how decision is made by a consumer when purchasing products from a website and the risk a consumer perceives while making online transactions. Several studies were made based on how trust and risk in e-commerce correlate with each other. One of the issues which are of most concern is privacy which is related to security of online transactions based on consumer’s trust. In this paper, the findings also show that consumer’s trust is negatively related to perceived risk where trust acts as an antecedent for the risk.

Keywords—E-commerce, B2C, trust, consumer, consumer risk, hypothesis, perceived, privacy

I. INTRODUCTION

According to U.S. Legal Definitions, a consumer transaction is defined as “a sale, lease, assignment, award by chance, or other disposition of an item of personal property.” [1] Here, inclusion of leasing means that a customer need not pay the full amount upfront for a purchase to legally meet the definition of “consumer transaction.” Additionally, he/she does not even need to directly purchase a product. Consumer transactions serve the purpose of providing people with the products and services they need or want. [1] These financial interactions are vital for keeping companies in business and providing jobs to people who, in turn, become consumers themselves.

In e-commerce (electronic commerce), B2C (business to consumer) is a transaction between the business or organization and its customers. In other words, it is an e-commerce and an internet model where transactions take place between a business and consumer. Consumer trust may be even more important in electronic, “cyber” transactions than it is in traditional, “real world” transactions [2]. This is because of some of the characteristics of Internet cyber transactions — they are blind, borderless, can occur 24 hours a day and 7 days a week, and are non-instantaneous (payment may occur days or weeks before delivery is completed) — can cause consumers to be concerned that the seller would not adhere to its transactional obligations. Consequently, trust in an Internet business is focused much more on transaction processes.

To succeed in Internet business, there should be an establishment of trusted transaction processes where e-sellers create an environment in which an expected consumer can relax and have confidence about any transactions which he/she expects. There is an urgent need to analyze an online consumer’s decision-making process which can provide an understanding of the complex and dynamic phenomena of trust in online exchanges, given the increasing fact of B2C Internet commerce.

As Quech and Klein noted, “Trust is a critical factor in stimulating purchases over the internet”. [3] Keen argues that the most significant long-term barrier for realising the potential of Internet marketing to consumers was the lack of consumer trust, both in the merchant’s honesty and in the merchant’s competence to fill Internet orders. Hart and Saunders [3] argue that trust has a changing and evolving dynamic. The introduction of technology challenges the trust relationship, thus causing it to be redefined or renegotiated. Till now a lot of effort is done for examining the issue of trust in E-commerce, especially on security, privacy, adoption and participation. Basically, trust is the important concept of customer relationship management with the market for development of B2C.

Trust is characterised by uncertainty, vulnerability, are and dependence [3]. These characteristics are reflected in an online transaction, where customers cannot see the seller face to face, physically examine the merchandise, or collect the merchandise upon payment. The expectation of getting the right delivery is based on belief in the merchant’s technical competence, goodwill and past experience with the merchant due to the fact that both regulatory and technical systems of B2C e-commerce are far from perfect.

Mayer et al. defined trust as a willingness to take risk and perceived risk as the likelihood of both positive and negative outcomes.[7] A number of recent studies of B2C e-commerce have then adapted the Mayer et al. model.

Most users believe online transaction exist potential risk and cannot trust the security of the internet financial sales platform [4]. Therefore, trust is growing in importance as a topic of study and its influence on Internet financial sales platform is increasing. Trust is crucial in many transactional
relationships; especially those containing an element of risk, such as online transactions (Reichheld and Scheffter 2000, Moorman et al. 1993, Morgan and Hunt 1994). Commerce Net’s report suggests that trust is the third of 10 top barriers and inhibitors to e-commerce (Brian et al. 2003).

II. RELATION BETWEEN CONSUMERS’ RISK AND TRUST

This section discusses about how ‘risk’ and ‘trust’ are two important terms that play a key role in the discussion of e-commerce.

Risk Affecting Consumer Trust - According to various studies, risk is always present in E-commerce and there is a relationship with trust. Mayer et al. argue that risk taking activities in an organizational context is affected by both trust and perceived risk. [7]. Perceived risk is powerful at explaining consumer’s behaviour because “consumers are more often motivated to avoid mistakes than to maximise utility in purchasing” [8].

Consumers using Internet faces lots of risk in E-Commerce like technology, vendor and product. Consumers who use telephone shopping perceive risk because they cannot personally inspect products or compare the quality, size, or style of products. Consumers also perceive risk because time may be lost or frustration may result where the purchases are unsuccessful. [9]

Online shopping is similar to telephone shopping. Therefore, it faces risk where a consumer cannot see the products, and also when buying of the product becomes unsuccessful.

Trust Defined in E-commerce - Moorman et al. [5] define trust as a willingness to rely on an exchange partner in whom one has confidence. Morgan and Hunt define trust as the perception of “confidence in the exchange partner’s reliability and integrity”. Both definitions highlight the importance of confidence and reliability in the concept of trust.

The traditional view of Customer Relationship Management (CRM), centered on a one-to-one or one-to-many interaction with customers, has changed, digital communications now allow multi-channel customer relationship management. [6]

Relation between Risk and Trust - Mayer et al. argue that risk taking activities in an organizational context is affected by both trust and perceived risk [7]. Table 1 below shows the relation between risk and trust which researchers have summarized them into four types [10].

In case (a) of Table I, Stewart examines effects of trust in a Web-site and perceived risk in transaction channel on consumers’ willingness to purchase online. She considers perceived risk to be a moderating factor on the relation between consumers’ trust and their willingness to purchase products from Internet vendors. In case (b), Kim and Prabhakar suggest that consumers’ adoption of Internet banking is determined by a balance between trust and perceived risk. If the level of trust exceeds the level of perceived risk, consumers will perform the trusting behaviour (i.e., adopting Internet banking). In (c), Cheung and Lee suggest that trustworthiness of Internet vendors is affected by four factors: perceived security control, perceived privacy control, perceived integrity, and perceived competence. Moreover, they describe trust as an antecedent of perceived risk in their model. It suggests that consumers’ trust of Internet vendors is negatively associated with their perceived risk in Internet shopping. On the contrary, (d) Mitchell considers perceived risk to be an antecedent of trust and the relation between the two factors to be non-recursive [10]. For a customer, trust is a safety net for situations where risk occurs. Therefore, it takes a lot of time to build trust.

TABLE 1: Relation between Perceived Risk and Trust

<table>
<thead>
<tr>
<th>Case</th>
<th>Description</th>
<th>Reference</th>
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<tbody>
<tr>
<td>(a)</td>
<td>Trust</td>
<td>Willingness to buy</td>
</tr>
<tr>
<td>(b)</td>
<td>Perceived Risk</td>
<td>Trusting Behaviour</td>
</tr>
<tr>
<td>(c)</td>
<td>Trust</td>
<td>Perceived Risk</td>
</tr>
<tr>
<td>(d)</td>
<td>Perceived Risk</td>
<td>Trust</td>
</tr>
</tbody>
</table>

III. REVIEW OF HYPOTHESES RELATED TO CONSUMERS’ RISK AND TRUST

According to the research study by Dan J. Kim, Donald L. Ferrin and H. Raghav Rao [3], the following hypotheses related to consumer risk and trust in e-commerce are derived as shown in Table 2.

Table 2: Levels of Hypothesis

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Explanation</th>
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<tbody>
<tr>
<td>Hypothesis 1</td>
<td>A consumer's intention to purchase (INTENTION) through a vendors' Website positively affects the purchase decision (PURCHASE).</td>
</tr>
<tr>
<td>Hypothesis 2</td>
<td>A consumer's perceived risk (RISK) negatively affects a consumer's intention to purchase (INTENTION) on the Internet.</td>
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<tr>
<td>Hypothesis 3</td>
<td>A consumer's perceived benefit (BENEFIT) positively affects a consumer's intention to purchase (INTENTION) on the Internet.</td>
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<tr>
<td>Hypothesis 4a</td>
<td>A consumer's trust (TRUST) negatively affects the consumer's perceived risk (RISK) of a transaction.</td>
</tr>
<tr>
<td>Hypothesis 4b</td>
<td>A consumer's trust (TRUST) positively affects the consumer's intention to purchase (INTENTION).</td>
</tr>
<tr>
<td>Hypothesis 5a</td>
<td>A consumer's perceived information quality (IQ) positively affects the</td>
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</tbody>
</table>
Hypothesis 5b A consumer's perceived information quality (IQ) negatively affects the consumer's perceived risk (RISK).

Hypothesis 6a A consumer's perceived privacy protection (PPP) positively affects the consumer's trust (TRUST).

Hypothesis 6b A consumer's perceived privacy protection (PPP).

Hypothesis 7a A consumer's perceived security protection (PSP) positively affects the consumer's trust (TRUST).

Hypothesis 7b A consumer's perceived security protection (PSP) negatively affects the consumer's perceived risk (RISK).

Hypothesis 8a The presence of a third-party seal (TPS) positively affects the consumer's trust (TRUST).

Hypothesis 8b The presence of a third-party seal (TPS) negatively affects the consumer's perceived risk (RISK).

Hypothesis 9a A positive site reputation (REP) positively affects the consumer's trust (TRUST).

Hypothesis 9b A positive site reputation (REP) negatively affects the consumer's trust (TRUST).

Hypothesis 10a A consumer's familiarity (FAM) with a selling party positively affects the consumer's trust (TRUST).

Hypothesis 10b A consumer's familiarity (FAM) with a selling party negatively affects the consumer's perceived risk (RISK).

Hypothesis 10c A consumer's familiarity (FAM) with a selling party positively affects the consumer's intention to purchase (INTENTION).

Hypothesis 11 A consumer's disposition to trust (CDT) positively affects the consumer's trust (TRUST).

The research model shown in Figure 1 aims to explain the acceptance of mobile Internet [19]. In the model, Use Behaviour (UB) is explained according to the Behavioural Intention (BI) and also according to consumer context related to the phenomenon by the facilitating conditions and habit. Moreover, BI is explained by two groups of antecedent variables. The first group is generally used in other contexts and it is composed of performance expectancy, effort expectancy and social influence. The second group is associated with the consumer context and is composed of hedonic motivation, price value, facilitating conditions and habit.

Figure 1: Research model and hypothesis [19]

Taking the example of a technologically developing country, Chile, the following hypotheses are derived [19] for the above Figure 1:-

H1: Performance expectancy is positively related to behavioural intention in the adoption of mobile Internet in Chile.

H2: Effort expectancy is positively related to behavioural intention in the adoption of mobile Internet in Chile.

H3: Social influence is positively related to behavioural intention in the adoption of mobile Internet in Chile.

H4: Facilitating conditions are positively related to use behaviour in the adoption of mobile Internet in Chile.

H5: Behavioural intention is positively related to use behaviour in the adoption of mobile Internet in Chile.

H6: Facilitating conditions are positively related to behavioural intention in the adoption of mobile Internet in Chile.

H7: Hedonic motivation is positively related to behavioural intention in the adoption of mobile Internet in Chile.

H8: Price value is positively related to behavioural intention in the adoption of mobile Internet in Chile.

H9: Habit is positively related to behavioural intention in the adoption of mobile Internet in Chile.

H10: Habit is positively related to use behaviour in the adoption of mobile Internet in Chile.

IV. CRITICAL ISSUES RELATED TO CONSUMER TRUST IN E-COMMERCE

A certain issue which affects consumer’s trust the most is privacy. Fisher [2001] reported that “Forty-one percent of web buyers surveyed last year by Forrester Research of Cambridge, Mass., said they have contacted a site to be taken off their databases because they felt that the organization used their information unwisely”. As of 1998, the FTC found that the majority of online businesses “had failed to adopt even the most fundamental elements of fair information practices. (Culnan 2000).” Indeed, relatively few consumers believe that they have very much control over how personal
information, revealed online, is used or sold by businesses [Culnan and Armstrong 1999].

Why is privacy of concern to e-commerce? We believe this concern stems from a new technical environment for consumers and businesses, the resulting data flow with substantial benefits to businesses and consumers, consumer concerns in this new environment, and regulatory attempts to govern this environment. It is important to understand each one of these, and to understand the tradeoffs. Privacy as a business issue is extremely sensitive to changes in the surrounding context. Changes in people’s expectations (such as when they become accustomed to data transfer in commercial settings) or in regulatory governance (such as new laws, governmental regulations, or even case law in the US) can dramatically alter business issues and possibilities.

The use of digital systems allows data capture at a much larger rate and scope than previously; e-commerce sites could potentially collect an immense amount of data about personal preferences, shopping patterns, patterns of information search and use, and the like about consumers, especially if aggregated across sites. Not only is it easier than ever to collect the data, it is also much easier to search these data [Dhillon and Moores 2001].

New computational techniques allow data mining for identifying patterns and other personal trends. [14] These data can be used to personalize a customer’s e-commerce experience, augment an organization’s customer support, or improve a customer’s specific e-site experience. The data are valuable for reuse, for example, in finding potential sales to existing customers. As well, the data are also valuable to aggregators (who may look for other personal trends and patterns) or for other types of resale. Indeed, reuse and resale are simultaneously both potential opportunities and problems. "Ironically, the same practices that provide value to organizations and their customers also raise privacy concerns." [Culnan and Armstrong 1999].

From the viewpoint of customers, many e-commerce sites have done foolish things with their customers’ data [Fisher 2001]. Consumers’ opinions in this have been confirmed by media stories of particularly egregious privacy failures and public relations nightmares. Broadly speaking, consumers are merely confirmed in their opinions by the media. As mentioned, few consumers trust companies to keep their data private. In one survey, 92% of respondents indicated that even when companies promised to keep personal data private, they would not actually do so [Light 2001].

Culnan and Armstrong [1999] make the argument that consumers have two kinds of privacy concerns. First, they are concerned over unauthorized access to personal data because of security breaches (see below) or the lack of internal controls. Second, consumers are concerned about the risk of secondary use – the reuse of their personal data for unrelated purposes without their consent. This includes sharing with third parties who were not part of the transaction in which the consumer related his or her personal data. It also includes the aggregation of a consumers’ transaction data and other personal data to create a profile.

A number of technologies have altered the current privacy debates. Clark [2001] divides the technologies in question into 4 groups. Clarke argues that there are technologies used for surveillance, the technologies for forming agreements (contracting) about the release of private data, the technologies for labeling and trust, and privacy-enhancing technologies (PETs).

Balancing these tracking mechanisms are privacy enhancing technologies (PETs), which attempt to defeat or neutralize the surveillance or tracking technologies. Basic PETs include cookie managers and personal firewalls.

V. CONCLUSION

Past research has recognized that electronic purchase decisions are inherently risky, and therefore trust may be an important factor in giving consumers the confidence they need to engage in such transactions.

The empirical results suggest that a consumer's trust directly and indirectly affects his or her purchasing intention. [3] A consumer's trust has a strong positive effect on the purchasing intention as well as a strong negative effect on a consumer's perceived risk. This study also provides evidence that a consumer's perceived risk reduces the consumer's intention to purchase, whereas a consumer's perceived benefit increases the consumer's purchasing intention. And finally, we found that these effects of trust, perceived risk, and perceived benefit on purchase intentions ultimately had a "downstream" effect on consumers' actual purchase decisions. Thus, these findings validate the argument that a consumer's trust is an important factor in electronic, "cyber" transaction decision, and thereby support our extended version of the valence framework. Finally, the results indicate that trust to a large degree addresses the risk problem in ecommerce in two ways: by reducing perceived risk and by increasing purchase intentions directly.

According to Kim, Ferrin et. al, future research will be needed to assess the generalizability of our findings. [2] For example, older consumers may be even less comfortable with online purchasing due to their lack of familiarity with computers and the Internet. It is likely that for these consumers, trust and risk will loom even larger than for younger, more experienced individuals, therefore our model may be equally if not more predictive of purchase decisions for such consumers. Yet research is needed to consider whether this is so. Alternatively, trust could be positioned as a moderator of the relationship between perceived risk and purchase intention. In this view, trust would influence purchase intention only when the transaction is perceived as risky.

According to N. Lim, to reduce consumers’ perceived technology risk, it is important for businesses to upgrade their security measures and emphasize the safety of their sites on their Web-pages. Businesses should also enhance their customer services and avoid asking for unnecessary data. In terms of consumers’ perceived product risk, businesses could consider offering incentives such as warranty or money back guarantee.
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