

The development of a conceptual model for online trust

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Abstract

Trust issue is developing into an important topic as the Internet becomes increasingly ubiquitous within everyday life. Although a lot of studies focus on salient factors that persuade consumer trust towards online vendors, few studies address the issue that online trust could be affected by consumers using cognitive information processes or simple cues to build their trust toward online vendors. It is asserted that there is a strong need for theoretical and empirical research on online trust within the field of information science. As an initial step, the present study develops a conceptual model of consumer trust in an online environment by integrating the Elaboration Likelihood Model with factors influencing online trust. The model proposes that consumers process trust-related information through peripheral or central routes in order to persuade their trust towards online vendors. Furthermore, the model helps in understanding what kind of trust-related information is a better way to persuade consumer trust within personality traits.

Keywords: online trust, electronic commerce, Elaboration Likelihood Model (ELM), personality trait

1. Introduction

A lot of people use the Internet in their daily life, however, a significant proportion of these users have not utilised the Internet for making purchases [28]. Researchers have previously proposed that a possible reason for the delayed acceptance of the Internet as a retail distribution channel may be the lack of trust consumers have in the electronic channel and in the Web merchants [20], [46].

The reason why trust is important in electronic commerce has been the subject of much research. Trust is an important component of online exchange relationships that are characterized by uncertainty, lack of control, and potential opportunism [24]. Online transactions often require sharing of sensitive personal information (such as, mailing addresses, telephone numbers), corporate information (such as inventory data), and financial information (such as credit card numbers) among the transacting parties. Trust helps assure that one party will not take advantage of the vulnerability of the other during or after the transaction [34]. Further, trust can act as an informal control mechanism to reduce opportunistic behaviours [38], to reduce risk and encourage future

transactions [34], [38], [41], and to help build long-term relationships [19].

This study investigates consumer's trust attitude and intention towards online vendors in an electronic commerce environment. Understanding what motivates consumers to adopt the electronic commerce is important because it is the key to online vendors' survival in this intensely competitive market. The competition comes not only from the electronic commerce market, but also from alternative channels such as traditional retailers [10]. Attracting consumers to an Internet retailing environment is far more challenging than a traditional retailing environment because the electronic commerce marketplace requires consumers to make substantive behavioural changes associated with adopting and trusting electronic commerce technologies and making informed decisions using these technologies [2]. Therefore, obtaining knowledge about the consumers' attitude toward online vendors can help businesses develop effective marketing strategies for attracting and retaining consumers and gain competitive advantage.

There are a considerable number of factors related to online trust that require special understanding with respect to the electronic commerce environment. These include reputation, security, privacy, customer service, and website quality [24], [48]. Despite a vast amount of theoretical literature, there is little or no empirical research into how all these factors impact on online trust. Moreover, it was shown that existing studies only focus on the trust issue as judged by consumers using the cognitive information processes. In other words, consumers always scrutinize all available factors to engender their trust toward the online vendor. However, the information processes that consumers use are not only based on deliberative processes (central route) but also on little or no deliberative effort (peripheral route) in the persuasion literature [44]. As such, consumer's information-processing mechanisms can be dual modes. By persuading consumers to trust online vendors, the factors can be used as central or peripheral routes depending on the personality traits of consumers [52]. This study seeks to fill the gaps in the online trust issue and focuses on three questions.

1. What factors will cultivate consumers' trust toward online vendors?

Existing empirical studies investigating trust has conceptualized it in relatively narrow ways in order to test all potential relationships between trust and its antecedents. This study investigated mostly dominant

factors that persuade consumers to trust online vendors in the electronic commerce environment.

2. Which influence processes shape online consumer trust and how?

This study will explain that the information processes are not only using cognitive processes, but also using the dual-process. It will explain which persuasive process is most effective in different personal types.

1.1 Managers' decision making

This study can be helpful for managers' decision making. Based on the research questions, this study can be useful to enhance manager's decision making by providing knowledge about consumers' attitudes toward online vendors. This knowledge can help online businesses develop effective marketing strategies for attracting and retaining consumers and gain competitive advantage. Therefore, the managers of the online business can improve their decision making about their consumers and their business needs.

The remainder of the paper is organized as follows: Section 2 reviews relevant research. Section 3 describes the research framework and justifications. Section The final section draws conclusions based on the development of this conceptual model.

2. Literature review

2.1 Offline trust

To date, there is no universally accepted definition of trust. Trust has been studied in a traditional environment for many years. It has been conceptualized within different disciplines; each taking a different view of trust. Each of these bodies of literature offers unique insights into the nature of trust and the processes through which trust develops. Four characteristics of trust are generally observed and accepted by researchers studying trust.

1. Trustor and trustee. Any trust relationship should involve two specific parties such as a trusting party (trustor) and a party to be trusted (trustee). The two parties could be persons or organizations. Further, the two parties will evaluate all interactions between them in order to build their relationship. The level of trust is based on the ability of the trustee to act in the best interest of the trustor and the trustor's evaluation of the trustee.
2. Vulnerability. Trust is only needed, and actually flourishes, in an uncertain and risky environment. Mayer *et al.* [34, p724] stated "one [trustor] must take a risk in order to engage a trusting action". In other words, trustors must be willing to take a risk for trust to develop. Trustors have to take the risk that the trustees will not engage in opportunistic behaviour against them.
3. Actions. Trust leads to actions, mostly risk-taking behaviours. The form of the action depends on the situation and the action may concern something either tangible or intangible. For example, a person lends his or her money to a friend because the

friend is trusted to pay back the money later, or patients follow doctor's advice because they trust doctor's professionalism in the patient-doctor relationship.

4. Subjectivity. Trust is directly related to and affected by individual differences and situational factors. Different people view the role of trust differently in different scenarios and have different levels of trust towards different trustees.

These characteristics of offline trust would be similar to the characteristics of online trust. Therefore, they can be considered as important starting points for seeking a deeper understanding of trust in an online context.

2.2 The definition of online trust

Although no universally accepted definition of trust, some researchers called for specifying the domain and connotative meaning of the trust construct in the context of a certain discipline [4]. The aim of this study focuses solely on the consumer's perceptions of online trust in the electronic commerce environment between the consumer and the online vendor. The focus is on developing a framework to explain online trust that can be used in electronic commerce (individual buyer) contexts. For this study, the definition of online trust is adapted from Mayer *et al.* [34] – "online trust is the willingness of a consumer to be vulnerable to the actions of an online store based on the expectation that the online store will perform a particular action important to the consumer, irrespective of their ability to monitor or control the online store". This definition is general enough to encompass trust for all types of operations and transactions. It is specifying the realm and implicative meaning of the online trust construct in the electronic commerce context in several ways. First, across disciplines there is agreement that trust only exists in an uncertain and risky environment. Online trust also exists in uncertain or vulnerable situations controlled by online stores. Second, online trust is expectancy or predictability. It cannot exist without some possibility of being in error. Third, online trust requires mutuality. There must be a trusting party (trustor) and a party to be trusted (trustee) in any trust relationship. Fourth, online trust is related to good (or nonnegative) outcomes.

2.3 Dominant Factors engendering online trust

A rich body of research has investigated the role of trust and also identified antecedents associated with online trust [22]. This study classified salient factors that influence consumer online trust in the following sections.

2.3.1 Dispositional trust

The concept of dispositional trust means that a person has a general tendency to trust others across situations or has a general faith in human nature [36]. Such a disposition is especially important in the initial stages of a relationship [34], [37]. Dispositional trust should be especially important for new online consumers, since, in the absence of social cues and experience with an online retailer, they are forced to base their trust primarily on

their socialized dispositional trust [20]. Therefore, their general trusting disposition will play a major role in determining their level of trust for the online vendor and more generally the motivation of Internet users to trust online shopping as a trust channel.

2.3.2 Third-party assurance

Third-party assurances or intermediary mechanisms refer to the assurance of the trustworthiness of online vendors to facilitate transaction success between exchange parties by reputable industry organizations [12], [42]. In the electronic commerce context, consumers have no control over the online vendors, no guarantee of the quality of the online content, and no power to influence the website's behaviour. Because of the underdeveloped legal environment of electronic commerce, market-driven intermediary mechanisms (for example, third-party seal, escrow service, and insurance service) used in online marketplaces are increasingly perceived as viable complements or substitutes for legal mechanisms [42], [53]. Thus, third-party assurance can engender consumer trust in the electronic commerce environment and facilitate online transactions by reducing perceived risk.

2.3.3 Perceived security

Security has been widely recognised as one of the major obstacles to adoption of electronic commerce [17]. Security has been defined as the protection against the threat that creates "circumstance, condition, or event with the potential to cause economic hardship to data or network resources in the form of destruction, disclosure, modification of data, denial of service, and/or fraud, waste, and abuse" [26, p177]. Using this definition, in the context of electronic commerce, threats can be made either through network and data transaction attacks or through unauthorised access to the account. According to [59], [62], [63] as perception of security risk decreases, trust in an online store is expected to increase.

2.3.4 Perceived privacy

Perceived privacy is defined as "the subjective probability with which consumers believe that the collection and subsequent access, use, and disclosure of their private and personal information is consistent with their expectations" [11, p13]. Privacy involves the protection of personal information – not sharing consumers' personal information with other sites, protecting anonymity, and providing informed consent [18].

Public opinion surveys continue to find that a majority of consumers express concern about losing control over the ways in which organisations handle their personal information [23]. The ultimate aim of perceived privacy is to enhance autonomy and/or minimise vulnerability [23]. Consumers in an online environment, contrary to traditional retail environment, perceived little control over information privacy. This has been particularly influential on their willingness to engage in exchange relationships with online vendors. It is the willingness of consumers to share information over the Internet that allows purchases to be concluded. However, it is clear

that consumer concern with information privacy is having an impact on the consumer Internet market.

2.3.5 Reputation

Reputation is conceptualized as the consumer's perception of a store's reputation, where reputation means that consumers assign attributes to a store based on second-hand information about it [37]. Where consumers do not have personal experience with a vendor, word-of-mouth reputation can be a key to attracting consumers. Hearing from others of their positive experience with a vendor can help ease users' perceptions of risk and build consumer trust when interacting with the online vendor.

2.3.6 Website quality

Sinha *et al.* [49] suggested website quality should be judged by the quality of content, structure and navigation, and functionality. Content is the information provided on the website. Good content should be engaging, relevant, and appropriate for the consumer. Structure and navigation refers to the organisation of information on the website and the method in which users move through the various sections. Websites having a good organisation of information are consistent and effective. The quality of structure and navigation can help users with easy access to the breadth and depth of the website's content that they need. Functionality is the utilization of technology on the website. Good functionality means the website loads quickly, has live links, and any new technology used is functional and relevant for the intended audience.

In the traditional environment, the most salient source of trust in a retail setting is the salesperson, where consumer trust depends on the salesperson's expertise, likeability, and similarity to the consumer [14]. However, with online shopping, this physical salesperson is replaced by help buttons and search features, thereby removing the traditional basis of consumer trust in the shopping experience [32]. In the online environment, a well-designed website should provide consumers with sufficient information for making purchase decisions, user-friendly navigation, smooth interactions, and an easy ordering procedure. It should influence consumers to trust an online vendor in a similar way as a salesperson in traditional retailing environment.

2.3.7 Customer service

Wagenheim and Reurink [58, p246] defined customer service as "an organizational perspective and process that focuses on meeting customer expectations by doing the right things right the first time". The process by which an organisation delivers its services or products allows the consumer to access them in the most efficient and cost effective way and so meet the consumer's expectations. A poor customer service effort may substantially reduce consumers' future intentions to purchase from the organisation, because the organisation does not keep its promise and that dramatically reduces the trustworthiness of the organisation. On the other hand, an effective customer service can decrease consumer risk and inspire consumer trust.

2.5 Dual information processes

Factors influencing trust in the electronic commerce environment were identified in the previous section. The factors are based on consumer evaluation of trust toward an online vendor. It can be inferred from the existing studies in the online trust literature that consumer evaluation of trust toward an online vendor is determined by salient factors associated with the online vendor, as well as by the strength of these associations. Those studies recognize that consumers always scrutinize all available trust-relevant information (the cognitive processes) when building their trust attitudes toward the online vendor. However, not every consumer scrutinizes all of the trust-relevant information. For example, the findings from Roy and Ghose's study [46] indicated that only online trust significantly persuaded Internet users to become online buyers and that 70% Internet users would consider shopping online when they trust the online vendor. Further, a study conducted by Wolfinbarger and Gilly [60] stated that 71% of online shoppers are goal-oriented or utilitarian; that is, they are more task-oriented and deliberate. A further 29% of online shoppers are experiential or heuristic, and as such, they are more impulsive. These findings implied that although consumers trust the online vendor and purchase online, not all of them apply deliberative information processes in order to transform their trust toward the online vendor. Thus, the cognitive information processes are inadequate for explaining what types of information are most effective in persuading consumer perceptions on online trust and why. Further, cognitive information processes do not consider whether such persuasion applies equally or differentially across user populations and whether the influences are temporally persistent.

Several empirical studies apply the ELM in the information systems and Internet research literature and provide support for the empirical validity of ELM in different IS and Internet contexts as well as demonstrating the existence of the dual routes of information processing within these same contexts [3], [33], [50], [52], [60]. The ELM shown in Figure 1 will be used in this study to explain the impacts of dual information processes related to online trust in the electronic commerce environment.

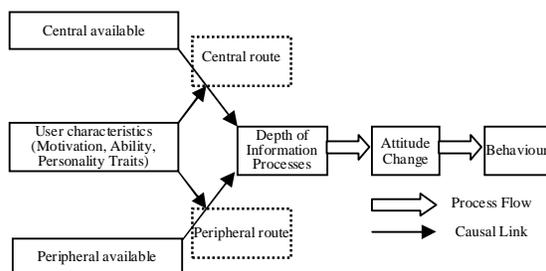


Figure 1: Elaboration Likelihood Model [52, P274]

The ELM postulates that there are two relatively distinct “routes to persuasion”: the central route and the peripheral route [44], [45]. These routes differ in terms of

the amount of cognitive processes expended and in terms of the cognitive approach used to evaluate information. According to the ELM, the central route to attitude formation and change is likely to occur as a result of an individual's careful scrutiny of the arguments or the relevant information presented in support of an issue [44], [45]. However, the peripheral route to attitude formation and change is likely to occur as a result of a persuasive cue that induces change without necessitating such scrutiny [44], [45].

The choice of which route a message recipient takes depends upon an individual's motivation to the extent of the elaboration and her/his ability to assess relevant information [9], [44], [45]. The two facets of user characteristics, motivation and ability, will determine whether or not a recipient will think about the persuasive information. Thus, two questions are of concern.

Firstly, is the recipient motivated to process the information? Recipients will not be motivated to think about every message they have received. For example, Petty and Cacioppo [44] reported that recipients become less motivated to think about a message when many others are also evaluating it. On the other hand, Petty and Cacioppo [43] stated that recipients become more motivated to think about a message that has high individual relevance, regardless of either case, there are many variables that can affect a recipient's motivation to elaborate upon the content of a message. However, motivation to think about a message is not sufficient for message elaboration to occur. The recipient must also have the ability to process the message.

The other question of concern is: does the recipient have the ability to process the information? There are also many variables that can impact on elaboration ability. For example, the more a message is repeated, the greater the opportunity the recipient has to think about the message content [5]. Petty and Cacioppo [44] stated that if the person has no framework for relating the message to his or her existing beliefs, then no processing can occur, even if sufficient motivation was present. Thus, individual motivation and ability are shown to determine the dual routes of information processes [44].

The elaboration continuum from low elaboration to high elaboration is critical in the ELM [45]. Motivation and ability to process relevant information form the level of elaboration likelihood – the extent to which a person carefully scrutinizes the available information relevant to the issue [45]. If a person has a high motivation and a high ability to process relevant information, then it creates high “elaboration likelihood”. High elaboration likelihood leads to the use of the central route in which considerable cognitive resources are applied in retrieving and assessing relevant information. If the person has a low motivation or a low ability to process relevant information, then it creates low “elaboration likelihood”. Low elaboration likelihood leads to the use of the peripheral route in which little cognition is used and attitude is formed mainly based on simple positive or negative cues in the context (for example, the reputation of the person providing information).

3. Dual-process model for online trust

The ELM, as shown in Figure 1, and salient factors are used as the basis for developing a dual information processing model of online trust. There are several reasons for the development of such a model.

Firstly, a central variable is considered when individuals expend their cognitive processing and carefully scrutinize available information in order to change their attitude [45]. This study argued that several variables such as website quality, customer service, perceived security and perceived privacy are central variables. There are several reasons for classifying those variables as central variables.

- All factors depend on online vendors themselves to provide services and protections for consumers in order to build their trust toward online vendors.
- All factors are important because consumers need to have experiences with the website or the online vendor in order to judge the trust-related issue. The more interactions there are, the greater the cognition that will happen [5].
- Individuals always use good reasons or evidence in order to develop their trust relationship [31], [35]. For instance, the provision of excellent services and high quality website design can be considered as the evidence of trusted online vendors [29].

Secondly, a peripheral variable is one where individuals change their attitude without necessarily scrutinising all of the available information and only use simple cues [45]. Peripheral variables also consider several variables such as dispositional trust, third party assurance and reputation. There are several reasons for classifying these three factors as peripheral variables.

- The factors are not controlled by the online vendor.
- Doney *et al.* [15, p606] stated that “trust may develop through a transference process, during which the trustor transfers trust from a known entity to an unknown one”. Third party assurance and reputation can be classified into the variable of transference process because consumers favour a reputable third-party endorsement [21], [27] and a good reputation in the marketplace [18], [25], [48].
- All three factors are similar so that individuals have the tendency (or emotion) to use relatively little thought to judge the trust issue. In the other words, individuals build their trust toward online vendors because they apply simple cues and use little cognitive processing.

Thirdly, the user characteristics in Figure 1 include motivation, ability and personality traits. The motivational factor can be any variable affecting the extent of information processing [45]. Such variables include involvement [33], [50], [60], need for cognition [6], [7], [8], [52], and job relevance [3] depending on the specific situation. In the Internet environment, Roy and Ghose [46] indicted that only online trust significantly persuades Internet users to become online buyers. In other words, online trust is an important issue for Internet users when they shop online. Thus, it is important to

understand how Internet users get the trust-related information they need to become online buyers. According to the Jungian typology, the personality traits of individuals will affect how they collect information even though they go through the same situations. Thus, individuals will acquire related information depending on whether they are sensing or intuitive [39], [40]. In the electronic commerce context, this study intends to explain how personality traits affect Internet users collecting trust-related information. Therefore, the personality type of sensing or intuitive is a better variable in this specific situation.

The ability factor can also be any variable that affects the consumer's ability of information processing [45]. Such variables include trait anxiety [61], and user expertise [3], [50]. Areni *et al.*'s [1] study indicated that personality traits play a key role in the evaluation of a persuasion message. In other words, the same information will create different levels of evaluation based on the personality traits of the receiver. According to the Jungian typology of personality types, individuals evaluate information and make a choice depending on a personality trait such as thinking or feeling [39], [40]. Individuals of the thinking type, tend to enjoy analysis, and exhibit higher information processing capability, while feeling types tend to use affective and emotional processes in decision making [47]. The personality types of thinking or feeling will distinguish who will be likely to process trust-related information. Thus, the thinking or feeling type of individual could be a better variable to understand the dual-process information processing in electronic commerce contexts.

This study replaces motivation and ability with the personality types sensing/intuitive and thinking/feeling as the determinants of central or peripheral routes. These determinants will better demonstrate how general Internet users apply their information processes to persuade themselves to trust online vendors.

Fourthly, the depth information processes as shown in Figure 1, divides into cognition-based and affect-based because the individual information processes for trust-related issues could be cognitive or emotional [35], [51]. Cognition would involve the person's use of evidence and analysis from attributes of the trust-related information [30], [35], [51]. Emotion or affect is an emotional security that enables consumers to go beyond the available evidence and feel assured and comfortable about relying on an online vendor [30], [35], [51]. The trust attitude about an online vendor may generate either emotional trust or cognitive trust, depending on how consumers process trust-related information [30].

Finally, for most online vendors, the primary objective is to persuade consumers to make a purchase. To purchase online, the consumers must be willing to transact. If the consumers are willing to transact with an online vendor, then they are more likely to be willing to have behaviours associated with using the website, such as sharing information and purchasing from the website. According to the Theory of Reasoned Action, which is used extensively in marketing and information system

research, individuals evaluate the consequences of a particular behaviour and create intentions to act that are consistent with their evaluations [16]. Prior research has also confirmed a strong correlation between behavioural intentions and actual behaviours [13], [54], [55], [56], [57]. Therefore, behavioural intentions (such as willingness to transact) can be used as a substitute

The proposed research model that incorporates the dual information processing routes and the drivers to route selection is presented in Figure 2.

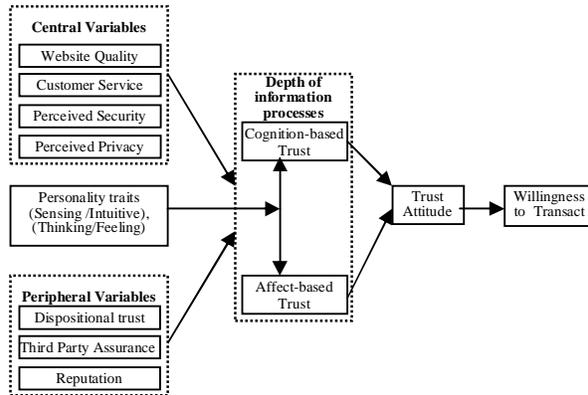


Figure 2: Dual-process framework of online trust

4. Conclusion

The conceptual model proposes that consumers process trust-related information through peripheral or central route in order to persuade their trust towards online vendors. Furthermore, it can help in understanding what kind of trust-related information needed to persuade consumer trust within personality traits. This study elaborates two alternative modes of persuasion, explains which persuasive process is most effective for different personality types, and presents a useful theoretical framework that can serve as the basis for further exploration of the role of persuasion in online consumer trust. Theoretically, such research can enrich the online trust literature by addressing a previously unexplored area of relevance, namely the processes of influence that can shape potential consumers' perceptions related to online trust. Additionally, this research examines moderating factors that mitigate the effects of these influence processes on online trust, variations in the effects of these processes across a consumer population.

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