



Buyers' trust and mistrust in e-commerce platforms: a synthesizing literature review

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Abstract

Electronic markets have grown substantially, and they are considered an effective form of retail in recent years. Despite such growth, lack of physical transactions between different parties, as well as users' concerns about their privacy and security of transactions in electronic commerce (e-commerce) platforms have jeopardized users' trust. Thus, trust as a key issue for reducing consumers' perceived risk and the successful promotion of e-commerce has motivated many researchers to study it. This paper created a comprehensive and up-to-date framework that synthesized the previous studies in the literature conducted on trust in e-commerce environments. A systematic literature review method was selected to achieve this aim. The initial search in 17 top-ranked information systems journals and conferences resulted in 129 papers that met the inclusion criteria. Then these studies underwent an in-depth examination to determine how trust had been conceptualized in e-commerce environments. Further, the theoretical bases in relation to trust in e-commerce contexts used in the literature were investigated. The study concludes with implications for practice and a critical agenda for future research.

Keywords Trust · Electronic commerce platforms · Online shopping · Systematic literature review

1 Introduction

Trust is of high significance that has been argued “a complete lack of trust would prevent [us] from getting up in the morning” (Luhmann 2018, p. 4). Moreover, this concept has an ever-evolving history, going from restricted trust to family and friends to strangers in peer-to-peer platforms (Mazzella et al. 2016). Specifically,

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this concept has found its way into electronic commerce (e-commerce), which is perceived as a critical factor for success in online commerce (Chang et al. 2013) because it is considered as an essential factor separating buyers from non-buyers (Kim and Park 2013).

In a survey examining 6000 customers' data, trust in e-commerce platforms was given more importance, even, than price (Ernst and Young 2000). However, similar surveys showed that a small number of users could trust these platforms, especially when their privacy and security came into conflict (Connolly and Bannister 2007). With the growth of e-commerce as a market and economic force over the past two decades (Lim et al. 2006), the concept of trust has inevitably attracted many researchers' attention, causing to have been studying it using some models from various disciplines.

While several reviews have examined antecedents and consequences of online trust (e-trust), there appears to be confusion regarding the attribute in which e-trust is developed (Kim et al. 2006). According to Forbes, global e-commerce sales surged rapidly, from 2.9 trillion U.S. dollars in 2020 to 4.2 trillion U.S. dollars in 2021 (Verdon 2021). In addition, the COVID-19 pandemic has created an increasing desire to switch to online modes of shopping (Barnes 2020). Therefore, the growing number of studies and changes in online marketing necessitates an updated and comprehensive literature review taking various dimensions of trust, including the studies' theoretical bases into account.

Few, if any, systematic literature review has yet been done on the role of trust in e-commerce platforms, investigating the antecedents leading to improving trust in e-commerce platforms; and thus to help practitioners develop a framework for improving their platforms. Accordingly, the following research questions were sought:

RQ1. What factors are mentioned in the literature do affect trust in e-commerce platforms?

Furthermore, this study investigates the impact of trust on both other tangible and intangible features of e-commerce websites. Therefore, answering this second research question can help the investigation to illustrate the effects and benefits of e-trust better:

RQ2. What are the consequences of trust in e-commerce put forth in the literature?

Finally, the study looks at the theoretical concepts and areas used in the literature and synthesizes them in a single framework that can inform future studies. A third research question is proposed to cover this aspect of the research:

RQ3. What are the possible implications of the present study for future research?

The rest of the paper is structured as follows: an overview of the theme of trust in electronic commerce research is presented in Sect. 2. Section 3 outlines the steps of this literature review and the criteria for including and excluding research papers in

the final analysis. In Sect. 4, the literature review results are presented and explained. These results are further discussed in Sect. 5 by outlining the contributions to theory and practice with an agenda for future research, and the study concludes in Sect. 6.

2 Background

Various scholars have provided different definitions for trust based on their outlook. McKnight et al. (2002) categorized these definitions into two groups: conceptual types and referents types. Conceptual types include attitudes, beliefs, behaviors, and dispositions, whereas referent types include trust in something, trust in someone, or trust in a specific characteristic of someone (e.g., honesty). Later, drawing on this categorization, McKnight furthered different types of trust, including disposition to trust, which means one's general disposition to trust others; institutional trust, which means one's trust in situations or structures; and interpersonal trust, such as trust in e-vendor. These led to the multidimensional definitions of trust: "to willingly become vulnerable to the trustee, whether another person, an institution or people generally having taken into consideration the characteristics of the trustee."

Mayor, on the other hand, listed three varying perspectives for trust, including psychology (a tendency to trust others), social psychology (cognition considerations of a trustee), and sociology (characteristics of the institutional environment). With this respect, Mayor defined trust as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Mayer et al. 1995, p. 712, Chiu et al. 2019; Tomlinson et al. 2020). Although this definition seems outdated, it has been used in recent publications and is considered the primary source of trust definition in e-commerce literature. The article in which this definition was published has been getting thousands of citations every year, and in total, it has been cited over 25,000 times.

The notion of trust has been an area of interest in organization studies and information systems for decades (Mayer et al. 1995; Li et al. 2008). In particular, the concept of electronic commerce trust was initiated in the late 1990s, with studies focusing on trust antecedents (Fung and Lee 1999). Earlier reviews have studied some limited aspects of trust, including the impact of uncertainty, the (new) meaning and typology of trust (Grabner-Kräuter and Kaluscha 2003; McKnight and Chervany 2001), the use of existing theories regarding trust (Huang et al. 2007), and the early models of trust (Papadopouou et al. 2001). However, the recent advancements and changes in electronic markets and the massive amount of work published in the past years are not assumed mainly beneficial for providing insight into state-of-the-art research.

Previous studies have also reviewed the impact of trust on disruptive models and platforms used in electronic markets. As an illustration, in a study conducted by Hawlitschek et al. (2018) in the context of sharing economy, trust was categorized into "trust in peers" and "trust in the platform". In the end, they suggested blockchain as a technological solution to improving trust. In the realm of e-commerce, several systematic literature reviews were sought to understand the importance and

the evolving nature of trust. Beldad et al. (2010), for instance, examined antecedents of trust for commercial and non-commercial online firms, realizing that there were a host of antecedents for which they designed a framework, including three clusters: customer/client-based, website-based, and company/organization-based. A meta-analysis on this topic was carried out by Kim and Peterson (2017), surveying 150 empirical studies revealed that antecedents such as perceived service quality, perceived privacy, and perceived reputation were inherently associated with the antecedents of online trust. The study also listed the consequences, often dealt with mentioned in previous empirical studies, including satisfaction, attitude, loyalty, repeating purchase intention, and intention to use the website. While, so far, the systematic literature reviews have mainly focused on the antecedents and consequences of trust, factors such as disposition to trust, security, familiarity, and risk perception received less attention.

Although extensive research has been carried out on trust in e-commerce, few writers have thus far striven to draw on a systematic literature review, focusing on the characteristics of the antecedents and consequences of trust in the context of electronic commerce. Therefore, the current study was motivated to shed light on this area by focusing not only on the components of research models but also on the theoretical concepts deeply.

3 Methodology

To investigate the factors leading to and impacted by trust in the electronic commerce environment, the Systematic Literature Review (SLR) approach was adopted, being a methodical way to identify, evaluate, and interpret the available empirical studies conducted on a particular topic, research question, or phenomenon of interest (Kitchenham 2004). Considering the research aims in this study, the SLR approach was built on synthesizing the available literature by summarizing and organizing published articles, as well as clarifying how prior literature has contributed to knowledge development in this area (Schryen et al. 2020). To do so, First, 17 high-ranked IS journals and conferences, among the considerable number of research conducted on trust in e-commerce, were selected as a representative of the whole body of knowledge and searched with a predefined set of keywords. It is important to add that the reasons behind selecting those top journals and conferences were IS journals' available rankings (Fisher et al. 2007), previous SLR work (Tallon et al. 2019; Amrollahi et al. 2013), and their tendency for emphasis on e-commerce and related areas. Also, it should be noted that the focus of selected conferences was AIS sponsored conferences, including ICIS, PACIS, ECIS, and AMCIS. Then, through the initial search, 601 papers were found. Then, irrelevant articles were excluded after reviewing papers' titles, abstracts, and full texts. The final set of papers were investigated against the research questions in this study.

3.1 Keywords

To select the keywords with the best results, Scopus was first searched using broad keywords “trust in electronic commerce” and “online shopping trust.” After reviewing the first ten pages of the search results, the keywords were refined. Finally, the following terms were applied to limit the search in titles, keywords, and abstracts in the search engine: Trust AND (“retail” OR e-commerce” OR “electronic commerce” OR “electronic business” OR “e-business” OR “shop” OR “sale” OR “buy” OR “purchase” OR “e-Trust” OR “market”).

Table 1 An overview of selected outlets shows the outlets used as the sources for this study, the rationale for selecting the outlet, and the number of papers found in each outlet.

3.2 Data extraction and analysis

The initial search ran based on the above keywords in October 2019. To build a meticulous review of the recent literature, with the articles published in the past twenty years, a time span from 2000 was defined. The first stage search reached 601 studies. After limiting the document types to only articles and conference papers by excluding book chapters, books, reviews, conference reviews, and short surveys, as well as filtering the subject areas to business, management, and accounting, social science, economics and finance, decision sciences, arts and humanities, and psychology, I ended up with 482 studies. In the next step, to choose the relevant studies, among which their titles and abstracts were screened while putting emphasis on the role of trust, the way of its development, and its consequences in exclusively e-commerce environments, which led to obtaining a total of 129 studies for main and in-depth investigation. For this reason, technical articles excluded those investigating trust in contexts other than electronic commerce such as tourism, sharing economy, Internet of things, and those that focused on different aspects, including supply chain.

3.3 Data analysis

To analyse the final list of articles, first, they were differentiated based on their perceptions of trust and the different theories they used. Then, content analysis was performed to extract the factors that were believed to impact various forms of trust, along with its potential consequences in electronic markets. Afterward, these factors were categorized into multiple groups. To triangulate the data, the whole set of papers and the finalized categories of factors impacting trust and its consequences were presented to two colleagues with expertise in e-commerce to check them and create their own categories. The results of the data analysis are explained in the following section (Fig. 1).

Table 1 An overview of selected outlets

Outlet	The rationale for choosing the outlet	The first set of papers	The final collection of papers
European Journal of Information Systems	AIS Senior Scholars' Basket, Q1, ABDC: A*	11	8
Information Systems Journal	AIS Senior Scholars' Basket, Q1, ABDC: A*	7	2
Information Systems Research	AIS Senior Scholars' Basket, Q1, ABDC: A*	17	7
Journal of Information Technology	AIS Senior Scholars' Basket, Q1, ABDC: A*	46	3
Journal of Management Information Systems	AIS Senior Scholars' Basket, Q1, ABDC: A*	29	13
Journal of Strategic Information Systems	AIS Senior Scholars' Basket, Q1, ABDC: A*	9	4
Journal of the Association for Information Systems	AIS Senior Scholars' Basket, Q1, ABDC: A*	7	1
MIS Quarterly	AIS Senior Scholars' Basket, Q1, ABDC: A*	17	5
Information and Management	Q1, ABDC: A*	47	14
Communications of the Association for Information Systems	AIS journal, Q2, ABDC: A	7	2
Information Technology and People	Q1, ABDC: A	17	7
Electronic Commerce Research	Q1, ABDC: A	22	5
International Conference on Information Systems (ICIS)	AIS International conference	77	8
Pacific Asia Conference on Information Systems (PACIS)	AIS regional conference	60	19
European Conference on Information Systems (ECIS)	AIS regional conference	36	5
Americas Conference on Information Systems (AMCIS)	AIS regional conference	111	11
Hawaii International Conference on System Sciences (HICSS)	Oldest IS conference with international recognition	81	15
Total		601	129

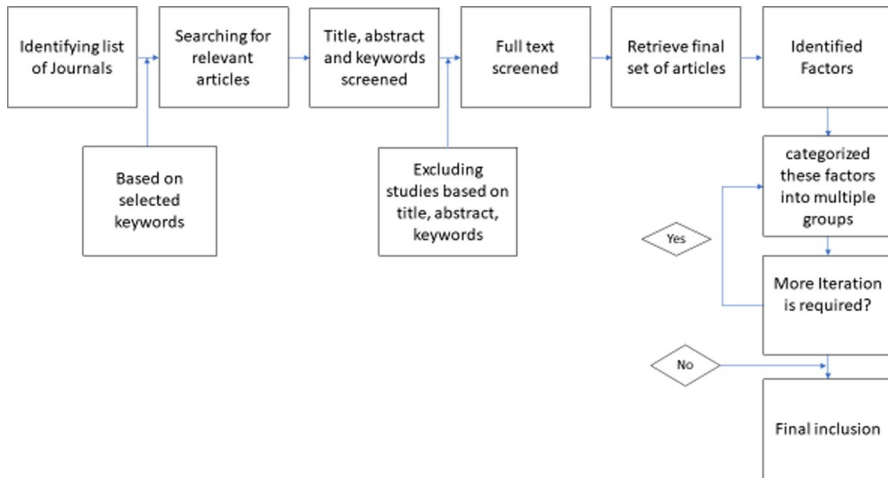


Fig. 1 Stages of research methodology

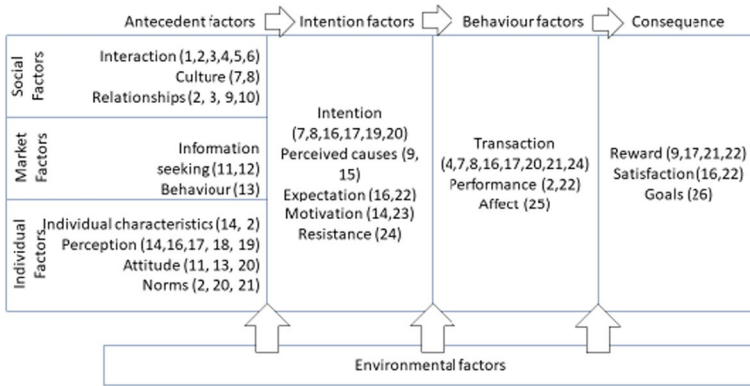
4 Results

4.1 Theories

By meticulously examining the literature review, 29 theories from various disciplines were found, including Marketing, Psychology, Economy, Sociology, Management and Organization Science, Computing, Information Systems, and Philosophy. It should be noted that due to the interdisciplinary characteristics of many of these theories in most cases, the origin of the discipline, where it had been published, was checked. Then, I probed into each theory to see if and how the constructs might fit into the notion of trust in e-commerce. Among these, Technology Acceptance Model (Davis et al. 1989; Venkatesh and Davis 2000) and Theory of Planned Behavior (Ajzen 1991) had been cited most as explained the processes leading to trust-related behavior and how technological components can be trusted in an e-commerce environment.

Concerning trust theories within the discipline of marketing, Signalling Theory (Spence 1974) and Expectation Confirmation Theory (Li et al. 2015), had been cited in the literature to explain customers' behavior in seeking relevant information and modeling factors, leading to their satisfaction. Typically, marketing theories look at social factors that influence trust; on the other hand, psychological theories mainly focus on customers' individually trusting behavior. Finally, sociological and organizational theories, such as Social Exchange Theory (Woisetschläger et al. 2011) and Social Capital Theory (Coleman 1988), are used to model social relationships between human actors and how trust can be developed as a result of these interactions.

As illustrated in Fig. 2, four elements were identified to be considered as the antecedents in these theories, including intention, behavior, consequence, and environmental factors. Such antecedent factors can result in a specific behavior.



1. Stakeholder Theory, 2. Social Capital Theory, 3. Social Network Theory, 4. Social Presence Theory (SPT), 5. Theory of Social Responses to Computers, 6. Toulmin's Model of Argumentation, 7. Hofstede Cultural Theory, 8. Fukuyama Theory of Trust, 9. Social Exchange Theory, 10. Trust Transfer Theory, 11. Attribution Theory, 12. Economics Of Information Theory, 13. Elaboration Likelihood Model, 14. Theory of Impression Management, 15. Attribution Theory, 16. Associative Network Model of Memory, 17. Cognitive Dissonance Theory, 18. Tam, 19. Social Presence Theory (SPT), 20. Theory of Planned Behavior, 21. Theory of Reasoned Action, 22. Expectation Confirmation Theory, 23. Commitment Theory of Relationship Marketing, 24. Status-quo Bias Theory, 25. Social Cognitive Theory, 26. Cognitive-affective Mediating Process

Fig. 2 Synthetization of theories in the final set of research studies

More specifically, such antecedents usually lead to a set of factors, broadly named intention factors by which any intrinsic motivation or resistance to perform a behavior can be triggered and resulting in some consequences, such as reward or satisfaction. Furthermore, in e-commerce trust literature, we also found three other different antecedent factors based on the theory's level and origin (individual, market-related, and social factors).

In Fig. 2, the numbers in front of each item shows the theories used in the particular component. For example, TAM depicted with number 17, posits perceived usefulness and perceived ease of use (being a part of perception in antecedent factors) as an individual's intention to use a system (being a part of intention in intention factors); also, intention of an individual as a mediator of actual system use (being a part of transaction in behavior factors and reward in consequences).

4.2 Types of trust

As a part of the systematic literature review, I tried to carefully examine and differentiate various types of trust in the e-commerce context. To differentiate these types of trust, I found multiple stakeholders in a trusted transaction and the mechanism that they trust each other. Under such scrutiny, I recognized four types of trust and demonstrated them in Table 2.

Table 2 Different types of trust

Trust construct label	Truster (person trusting)	Trustee (object of trust)	Trust construct type	Purpose of trust construct
Customer trust in sellers	Customers	Sellers	Interpersonal ($P = > O$)	Sellers expect buyers to do an accepted behavior
Community Trust	Customers /Sellers	Customers/sellers	Interpersonal ($P = > O$)	Trusting many trustees or trustors
Technology Trust	Customers	Technology (online stores or platform)	Person-to-technology ($P = > O/O = > P$)	Truster's beliefs about Information Technology (IT)'s trustworthiness to perform a task
Seller trust in customers	Sellers	Customers	Interpersonal ($P = > O$)	Buyers expect sellers to do an accepted behavior

4.2.1 Customers' trust in sellers

The most common type of trust we found in this study is when customers as trustors expect another party (usually sellers) to do an accepted behavior. For example, Carter et al. (2014) studied the impact of trust on travelers' loyalty to online service providers. While many studies have focused on the effect of trust on behaviors, like performing a transaction (McKnight et al. 2002; Pennington et al. 2003; Kim et al. 2009), other studies have looked at long-term factors like loyalty (Li et al. 2015) and adoption of e-commerce (Pavlou and Fygenson 2006).

4.2.2 Community trust

Community trust serves as a *generalized trust* (one-to-many). It refers to trusting many trustees or trustors, especially those considered an unknown group of sellers or buyers, with the help and support of a specific online marketplace (Pavlou and Gefen 2004). It suggests that there would be a slight possibility for online buyers encountering the same seller twice in this research category (Pavlou and Gefen 2004). Sun (2010, p. 6) defined trust in the community of buyers as a "seller's subjective beliefs that buyers will behave in accordance with the seller's confident expectations by showing ability, integrity, and benevolence."

4.2.3 Technology trust

In this study, we considered trust in online shopping as a shopping mode, the Internet as an online store or platform, and social commerce websites as elements of technology trust. McKnight (2005) defined technology trust as the trustor's beliefs in Information Technology (IT)'s trustworthiness to perform a task. With higher reliance on technology in recent years, trust in technology has gained more attention, too. For instance, upon conducting an online purchase, customers expect the technological infrastructures to provide appropriate conditions to help with online tracking, online supports, pictures, quality, and information specificity. However, technology trust is considered beyond transaction fulfillment as many websites offer such features, including product recommendations, product comparisons, and customer reviews (Li et al. 2009).

4.2.4 Sellers' trust in customers

Although there are many studies conducted on the role of trust in sellers, far too little attention has been paid to sellers' trust in other stakeholders, especially buyers. In this line, Sun (2010), in his study, mentioned that there is a substantial difference in trust behavior between sellers and buyers, stemming from various technical, political, and institutional dimensions. Therefore, sellers' trust is defined as the willingness of sellers to risk participating in a transaction, even when uncertainties occur. Sellers need to trust that buyers can make transactions with competence, benevolence, and integrity (Chong et al. 2003; Resnick and Zeckhauser 2002). For instance, Guo et al. (2018) surveyed Chinese sellers in a Business-to-Business (B2B) platform

to understand the mechanism under which they could trust an online trading transaction. Similarly, in other studies, the possibility of a transaction as the outcome of B2B model was considered (Sun and Zhang 2008).

4.3 Antecedents to trust

As explained in the methodology part, after analyzing the final set of papers, the factors that impact trust, along with outcomes for online trust were extracted and categorized into different groups. In this section, you can see these categorized factors in detail as antecedents and consequences of trust.

Antecedents to trust are categorized based on various actors in an online transaction. Figure 3 illustrates these identified categories, which are customer-related antecedents, seller-related antecedents, technology and third-party antecedents, and environment-related antecedents. The findings of this section allow us to begin answering RQ1: What factors are mentioned in the literature do affect trust in e-commerce platforms. The remainder of this section explains each category in more detail.

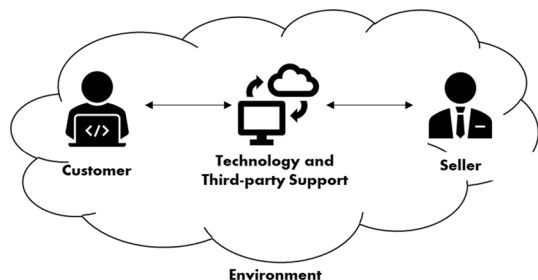
4.3.1 Customer-related antecedents

Understanding the antecedent of customers' trust can provide invaluable insights into the factors that can possibly urge them to create trust and improve their intentions to make an online transaction. Based on the literature, customer concerns, disposition to trust, trusting beliefs, familiarity, calculative-based trust, accessibility of information, and other similar terms were considered as the main antecedents for this category.

In e-commerce, the process of building trust for customers is affected by customers' concerns, which are considered severe obstacles in electronic transactions (Agag et al. 2020; Kim 2008). According to the literature, four primary concerns for online customers are privacy, security, perceived technology risk, and integrity concerns (Connolly and Bannister 2007; Shukla 2014).

Disposition to trust, also known as *propensity to trust*, is "the extent to which a person displays a tendency to be willing to depend on others across a broad spectrum of situations and people" (McKnight et al. 2002, p. 339). McKnight and Chervany (2002) suggested that the effects of dispositional factors on trust are more than other

Fig. 3 The relationship among identified antecedents of trust



factors such as institution-based trust. Such a general propensity to trust in others can influence the intentions and beliefs of trustors about e-vendors.

Another type of customer-related antecedent is familiarity, which relates to a customer's prior behavior. Bhattacharjee (2002, p. 220) noted that "familiarity refers to one's understanding of another's behavior based on prior interactions or experiences." He also mentioned that familiarity gradually develops over time as trustees become accustomed to trustors' behavior and, in turn, improve trust in online buyers.

Based on calculative-based trust, an online customer can build trust through cost–benefit analysis of trustees whose behavior shows whether they are cheating or cooperating. Since calculative-based trust is deterrence-based, customers will not engage in opportunist behavior when they feel that the e-vendor is untrustworthy. Customers will trust e-vendors when they believe that the e-vendor either has more to lose by cheating or has nothing to gain by breaking the consumer's trust (Gefen et al. 2003a).

4.3.2 Seller related antecedents

The second category of factors that has an impact on trust is those related to sellers. Elements such as institution-based trust, reputation, communication, and interaction are considered sellers' characteristics in the literature.

As the first characteristic of sellers studied in the literature, reputation refers to the extent to which a trustee believes that a trustor has integrity and is concerned about its consumers (Kit et al. 2013). Researchers seem to have adopted different terms, referring to reputation, such as perceived effectiveness of feedback mechanism, brand awareness, brand image, perceived accreditation, portal affiliation, and online aesthetic appeal. In fact, these researchers in their studies indicated that reputation leads to trust in the e-commerce context. Therefore, there is a positive relationship between reputation and online trust (Hoffmann et al. 2014; Kit et al. 2013; Shiau and Chau 2015). In a similar vein, other researchers suggest that reputation has a vital role in engendering trust and in repurchase intention (Qureshi et al. 2009).

Effective communication is also another element regarded as crucial for trust in e-commerce. Moreover, interpersonal relationships or the ability to interact intimately in social networks are considered examples of trust antecedents in this category. And finally, institution-based mechanisms such as warranty and structural assurance are significant factors leading to trust in e-commerce (Huang et al. 2005; Wang and Benbasat 2008).

4.3.3 Technology and third-party related antecedents

The positive impact of website quality and third-party institutions on trust has been supported in many studies. For instance, Jones and Leonard (2008) examined trust in customer-to-customer (C2C) environments. They confirmed that when customers do not know each other in online environment, they take cues from social signals, including website quality and third-party institutions. Perceived website quality

demonstrates user's perceptions of some features such as the ease of use and usefulness of information (Awad and Ragowsky 2008). Web users need to feel the website is well designed, organized, timely, and accurate to believe web vendors' trustworthiness (Flavin et al. 2006; Qureshi et al. 2009).

The role of intermediaries in developing consumers' trust in e-commerce markets is remarkably important, especially for small e-vendors (Datta and Chatterjee 2008). McKnight and Chervany (2002) believe that since trust is transferable, an intermediary can have such responsibility for transferring consumers' trust in a brand to e-vendors. With this regard, Pavlou and Gefen (2004, p. 44) defined an online intermediary as a "third-party institution that uses internet infrastructure to facilitate transactions among buyers and sellers in its online marketplace by collecting, processing, and disseminating information." Consumers need to receive strong signals to trust other parties. A trusted third party, thus, can play this role to facilitate transactions (Clemons et al. 2016). Intermediaries can reduce the risk of making transactions in an e-commerce environment by producing a reliable and secure environment, instantiating fair and open rules and procedures, presenting accreditation and evaluation, getting rid of problematic sellers, and encouraging benevolent transaction norms. In this way, for instance, some intermediaries such as eBay and Amazon try to reduce transactions risk by providing coverage up to a limit of \$250 to guarantee their auction transactions so that buyers could reduce their actual risk in transactions (Pavlou and Gefen 2004).

For sellers, online intermediaries can help them obtain market signals, reduce search costs, discover better prices, deliver products at a lower price, facilitate transaction settlements, and monitor buyers (Giaglis et al. 2002). Sellers need to trust that the intermediary performs these functions honestly, competently while having the interests of sellers in mind.

4.3.4 Environment-related antecedents

According to the literature, environment antecedents consist of word of mouth (WOM), culture, trusting beliefs, and perceived size. E-WOM is at the center of consumer behavior and is defined as any positive, negative, or neutral comments, recommendations or statements about a product, service, brand, or company based on prior experiences and knowledge created by former, potential, or actual web users. E-WOM will usually spread via the Internet and social networks (Hennig-Thurau et al. 2004). An influential study with respect to the investigation of e-WOM and its effect on trust by Awad and Ragowsky (2008) approved that e-WOM quality can positively impact online trust. Kim (2008) also supported the idea that positive referrals and posts can directly affect customer's trust in an e-vendor.

Regarding investigating the impact of culture on trust and consumer behavior, previous studies have mainly employed Hofstede's cultural dimensions. He defined culture as "the collective programming of the mind that distinguishes the members or category of people from another" (Hofstede et al. 2010, p. 6). Hofstede's original four dimensions of culture, including uncertainty avoidance, power distance, collectivism, and masculinity, have been frequently studied in the e-trust literature. Some studies focused on examining the effect of uncertainty avoidance on trust and online

consumer behavior (Bui et al. 2013; Hwang 2005), while other studies have cited individualism/collectivism as a primary antecedent of trust in Internet shopping (Sia et al. 2009).

4.4 Consequences of trust

Different studies demonstrate various outcomes for online trust. For instance, McKnight et al. (2002) stated that online trust significantly affects online consumers' purchase intention; similarly, Sun (2010) referred to the positive impact of trust on repurchase intention. Trust can change risk perception, consumer attitude, and consumer's perception regarding website and seller (Jarvenpaa et al. 2000). Trust can also result in e-loyalty and satisfaction in online shopping procedures (Honglei Li et al. 2015; Shankar et al. 2002). The results of this section provides an answer to RQ2: What are the consequences of trust in e-commerce put forth in the literature? Each category related to the consequences of trust is discussed below in more detail.

4.4.1 Transaction intention

Transaction intention is the trustor's willingness to participate in an online transaction with a trustee (McKnight et al. 2002; Pavlou and Gefen 2004). According to the theory of reasoned action (TRA), trust can be regarded as a behavioral belief that makes a positive attitude toward purchase intention (Jarvenpaa et al. 2000; Pavlou and Gefen 2004). As discussed earlier, this behavioral intention is a common component in many other theories used in online trust literature. Consistent with previous studies in the literature, online consumer trust demonstrates a substantial positive influence on transaction intention (Kim et al. 2015; Kim and Ahn 2007).

4.4.2 Retention and loyalty

Customer retention can be achieved when one believes in the trustworthiness of an e-vendor and his/her ability in fulfilling promises, which in turn, increasing the possibility of repurchase intention (Hong and Cho 2011; Liu and Tang 2018). Customer loyalty in an online environment, also known as e-loyalty, refers to "an enduring psychological attachment by a customer to a particular online vendor or service provider" (Cyr et al. 2007, p. 44).

The direct and piercing impact of trust on retention (Qureshi et al. 2009) and e-loyalty (Carter et al. 2014) have been discussed in previous literature. For example, trust has been considered a factor engendering affective commitment, which helps develop an online customer's intention to revisit the website and purchase in the upcoming future (Liu and Tang 2018). As for trusting beliefs, when online consumers already establish trusting beliefs, they will hardly switch to other e-vendors because of the risk and uncertainty involved with finding a new online seller and difficulties associated with establishing a new trusting relationship (Carter et al. 2014).

4.4.3 Perception about seller

To trust sellers, customers and buyers are expected to have an improved image of sellers, the appropriate technological conditions used for online transactions, and improved conditions of the services offered to. This feature comprises perceived usefulness of used technology, perceived enjoyment, perceived benefits, perceived value, price premium, and e-WOM intention about the seller. When buyers trust sellers as a result of an improved perception, they allow sellers to obtain premium prices and yield above-average profits (Klein and Leffler 1981; Shapiro 1983) to compensate seller transaction risks (Ba and Pavlou 2002).

4.4.4 Satisfaction

A desirable outcome of a trust-based relationship is satisfaction (Cannon 1999). When online customers trust a web vendor, they are likely to be satisfied with their transactions (Pavlou 2002). The relationship between trust and satisfaction has been investigated in many studies. For instance, Chang et al. (2016) investigated the effect of trust on satisfaction, indicating that customers' trust had significant and positive impacts on perceived satisfaction and transaction intention. Likewise, Pavlou (2002) stated that trust in the sellers' credibility positively influences buyers' satisfaction. Even recently, more studies have investigated a complicated relationship between trust, satisfaction, and transaction (Chang et al. 2016).

4.4.5 Risk perception

Finally, according to the literature, customers' and sellers' perceptions of the risks involved in an online transaction can be impacted by their trust in the other party. This relationship is different from research studies that considered risk perception an antecedent of trust (Gefen et al. 2003b). Perceived risk is defined as "the possibility of loss" and "an inherently subjective construct." However, the notion of risk is closely related to more general items and, consequently, emphasizes the possibility of economic loss (Dinev and Hart 2006). Electronic vendors try to reduce the risk perceptions of e-consumers through IT tools, e.g., third-party insurances (Gefen et al. 2008). In summary, trust can substantially help decrease negative risk perceptions toward an e-commerce context (Connolly and Bannister 2007; Guo et al. 2018; Shukla 2014; Heijden et al. 2001; Verhagen et al. 2006).

5 Discussion

This study presented a comprehensive and systematic review of antecedents and consequences of trust in online markets. Unlike the previous reviews, the present study considered both antecedents and consequences of trust from both customers' and sellers' points of view by providing a model using a synthesis of conceptually

related theories in this area. Figure 4 illustrates a comprehensive model of trust based on my review of related studies in the literature.

Although the factors demonstrated in Fig. 4 have used with differing frequencies in the literature, their comprehensive and unified review can usefully provide a big picture of the research studies conducted earlier on this topic. This section will discuss these findings by listing potential implications for research and practice.

5.1 Implications for research

In answer to RQ3, we looked at the theoretical concepts and contextual dimensions in the literature beyond investigating the factors impacting on or being impacted by online trust. The present study can benefit future research in several different ways. First, reviewing the theories used in this area can help future studies identify their similarities and differences.

In addition, a synthesis of the theories used in the review can highlight the factors which have been less focused on. For example, the review of literatures indicates that little is known about interpreting trust by different parties. Therefore, in the current study, we suggest three future directions which can be conducted on online trust studies. First, future research can make perfect use of different models and theories, such as motivational model (Keller 1983) and accountability theory (Lerner and Tetlock 1999) to shed light on the less studied factors in online trust, like social presence, accountability, relevance, and confidence.

Furthermore, models and theories concerned with communication and media (Shannon and Weaver 1949; Toulmin 2003; Miller 1956) can be used to identify the way trust is understood and perceived in an online environment and the way it can be transferred to various situational contexts (Schultz 2006). Such theoretical perspectives can also be extended to explore the unobservable events that impact and

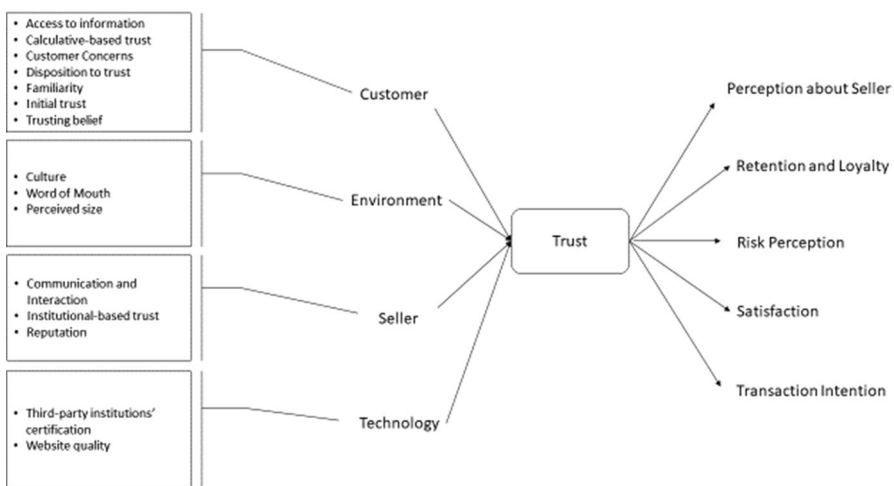


Fig. 4 A detailed model of antecedents and consequences of trust in e-commerce

create trustworthiness in an online environment and give inter-subjective meaning to trust by different stakeholders in various contexts (Dobson et al. 2007; Phillips and Brown 1993). In terms of research approaches and perspectives, the literature, so far, seems to have ignored them. Future studies can benefit from available research design and methods (Hevner 2007; Gregor and Jones 2007) and extend the existing literature on prescriptive work to improving trust in e-commerce.

Moreover, as mentioned in the previous sections, most studies in the literature (almost 96%) have focused on the mechanisms under which customers trust buyers, technology, and a community. Apart from customers, other stakeholders involved in an online transaction can receive considerable attention. In particular, sellers as trustees should be paid more attention in future research. Future studies should also go beyond available research on B2B e-commerce (Tsatsou et al. 2010; Pavlou 2002) and online auctions (Pavlou and Dimoka 2006) to focus on disruptive technologies that promote the position of customers in e-commerce (Hawlitshchek et al. 2018). Such a trend brings new changes and possibilities to electronic markets in which customers are put a central position. Additionally, future research calls for more attention to new forms of transaction and technological advancements in payment such as blockchain and distributed ledger (Lacity 2018; Lindman et al. 2017) and how customers put trust in these technologies.

Surprisingly, the existing knowledge on trust in e-commerce in the literature seems to be very constrained in terms of demographic characteristics since most studies have mainly taken North American, European, and East Asian contexts into account. In the same way, there are rare studies addressing significant differences of trust in e-commerce platforms in developed and developing countries (Hajli 2019; Shareef et al. 2018). In terms of subjects' age, although a wide range of subjects differing in their age has been reported in studies in the literature (Hoffmann et al. 2014), many of which are usually targeted at subjects with young-age groups, like students. However, in the long term, this type of research will result in the exclusion of certain parts of society (Cushman et al. 2008). Therefore, future research on trust in e-commerce calls for the inclusion of a diversity of subjects, especially those who belong to the older generation of users.

5.2 Implications for practice

The present study is of high significance from different aspects. In effect, the classification proposed in this study is beneficial for practitioners, managers, and owners of e-commerce platforms and online businesses as they can be empowered to put those factors that influence customers' trust in e-commerce into practice to bring about improvements in their e-commerce platforms and online businesses. In particular, reliability, coherence, visual appearance, and website qualities that are likely to affect customers' trust in e-commerce could be enhanced. Likewise, to make buyers and customers trust more on e-commerce platforms, their owners can make use of a trusting third party or an intermediary. Also, practitioners need to consider

online seals, encryption certificates, assurance, and guarantees in the process of trust.

Further, it will help practitioners to form new approaches to develop and refine the notion of trust in e-commerce flourishingly. Finally, as the current study suggested, e-commerce platform developers are required to be technologically accustomed to improving the conditions under which customers can trust their platforms.

6 Conclusion

Despite long-standing research conducted in the past two decades on trust in e-commerce environments, no comprehensive study has examined the research body of knowledge in this area, aimed to develop a comprehensive framework. Hence, this paper used a systematic literature review approach to investigate the factors that can impact trust in e-commerce platforms, as well as to find out its possible consequences. Based on my review of 129 papers in high-ranked IS journals and conferences, I identified various antecedents and consequences of trust.

Like any other review type of research, the study is not devoid of some limitations. For example, the study did not include those high-ranked journals and conferences that could not satisfy the designated metrics with respect to the topic of interest. Also, despite my attempts to form a comprehensive set of keywords, some of which may have been missed due to different terms that could be used in a specific interface. However, the study made an endeavour to be successful in developing a comprehensive framework in relation to trust among customers and sellers in e-commerce platforms using a synthesis of related theories in this area, which may be beneficial for future research and practice.

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