

## CUSTOMER LOYALTY IN THE ONLINE CONTEXT: UNDERSTANDING TRUST IN DIFFERENT PARTIES

Celso Augusto de Matos\*

Unisinos Business School, Unisinos University, Brazil  
Av. Dr Nilo Pecanha, 1600, CEP 91.330-002, Porto Alegre, RS, Brazil  
ORCID: <http://orcid.org/0000-0002-2538-9089>  
[celsoam@unisinos.br](mailto:celsoam@unisinos.br)

Marcelo Curth<sup>a,b</sup>

a. Unisinos Business School, Unisinos University, Brazil  
b. Feevale University, Brazil  
RS-239, 2755 - Vila Nova, Novo Hamburgo - RS, 93525-075, Brazil  
ORCID: <http://orcid.org/0000-0002-9361-8373>  
[m.curth1979@gmail.com](mailto:m.curth1979@gmail.com)

Alexandre dos Santos Garcia

Cesuca Faculdade Inedi, Cesuca Centro Universitário, Brazil  
R. Silvério Manoel da Silva, 160 - Colinas, Cachoeirinha - RS, 94935-630, Brazil  
ORCID: <http://orcid.org/0000-0002-4411-9842>  
[garcia.alexandre2009@gmail.com](mailto:garcia.alexandre2009@gmail.com)

### ABSTRACT

B2C e-commerce sales have been growing all over the world in recent years. Research has shown that customer trust is a critical variable for online shoppers, and a key attribute that needs to be managed. However, what difference does it make if a consumer trusts a specific vendor, but has low trust in the Internet as a marketplace system? Or what if a consumer does not trust a specific vendor, but has high trust in the Internet as a marketplace? Based on two empirical studies, this research examines the influence of trust in an online shopping context, by considering trust in different parties, i.e., a specific vendor, the Internet as a marketplace system, and the third parties involved in the e-commerce process. Our findings support the argument that the effect of trust in the vendor (TV) has the most beneficial effect on customer loyalty for individuals with low trust in the Internet (TI), and the least beneficial effect for those with high TI (Study 1). We also demonstrate that this effect attenuates as trust in third parties (TTP) increases, indicating that the TI effect becomes null when TV and TTP are high (Study 2). We conclude with theoretical and practical implications.

Keywords: Trust; Loyalty; Online shopping

### 1. Introduction

B2C e-commerce sales have been growing all over the world in recent years, with a 17.6% annual growth rate in the period 2014–2019; the value reached US\$ 3.535 trillion in 2019 and it is estimated that it will be US\$ 6.542 trillion by 2023 [Statista 2020]. Customers usually have several reasons for purchasing in the online environment, including the convenience and speed of finding a product, comparing alternatives, and making the purchase [Ashraf et al. 2016; Liebermann & Stashevsky 2009]. The overall purchase experience is based on different touchpoints with the system, between the first contact with the seller's website and the receipt of the purchased item, and involves not only the vendor but also other parties, such as those responsible for delivery, payment and certifications of security or privacy, as well as the Internet itself as a marketplace system [Lemon & Verhoef 2016; Roy et al. 2017].

The literature has suggested a number of relevant predictors for customer loyalty in the online context, including trust, satisfaction [Kim et al. 2011], reputation, competence, trust [Guo et al. 2017], attitude, and system trust [Roumani et al. 2017], and has suggested that cultivating online relationships as relational exchanges is also relevant [Steinhoff et al. 2019]. Overall, the literature converges to an understanding that customer trust is a critical variable for online shoppers and a key attribute that must be managed if a seller is to gain customers and make them

---

\* Corresponding Author

willing to repurchase from that seller. For instance, in a meta-analytical study, Verma, Sharma and Sheth (2016) found support for the idea that trust is the most important predictor of a customer's intention to maintain a relationship with the online seller in the future. However, studies on online trust have usually focused on (i) identifying the factors that influence trust (i.e. its antecedents) in the online purchasing context or (ii) analyzing trust as one among various predictors of loyalty that include satisfaction, quality, and perceived value [e.g. Lionello et al. 2020].

For this reason, there is a need to obtain a better understanding of the effects of trust in the online context. A few studies have analyzed the different types or dimensions of trust in the online context. For instance, they have identified that trust in a vendor, trust in the Internet, and trust in third parties positively influence customer attitudes toward online shopping [Bianchi & Andrews 2012; Einwiller 2003; Limbu & Jensen 2018; McCole et al. 2010]. However, the analysis in these studies was limited to the influence of the distinct trust dimensions on consumer attitudes toward online purchasing, and they did not address behavioral outcomes (e.g. customer loyalty).

More specifically, we could ask: what difference does it make if a consumer trusts a specific vendor (TV), but has low trust in the Internet (TI) as a marketplace system? Or what if a consumer does not trust a specific vendor, but has high trust in the Internet as a marketplace? What is the role of trust in third parties (TTP) in this context? Thus, how is customer loyalty to a specific vendor influenced by such interactions among TV, TI, and TTP? To investigate these issues and to contribute to previous studies on online shopping behavior, this study evaluates trust in different parties and analyzes (i) the moderating effect of trust in the Internet on the link between trust in the vendor and customer loyalty, and (ii) the way in which trust in third parties interacts with trust in the Internet in its influence on the link between trust in the vendor and loyalty.

This study therefore contributes to the existing literature by supporting trust in the vendor as a significant predictor of loyalty and demonstrating that trust in the Internet is a significant moderator in this relationship. We argue that trust in the vendor has the most beneficial effects on customer loyalty if the individual has low trust in the Internet, and the least beneficial effects if the individual has high TI. In other words, to the extent that customers increase their trust in the Internet as a marketplace system, they reduce their dependence on trust in the specific vendor to make a purchase. Another contribution is to show that trust in third parties also plays a relevant role, because it interacts with the moderator (trust in the Internet) in its effect on trust in the link between vendor and loyalty; in other words, when trust in third parties and trust in the vendor are high, customer loyalty will be similar regardless of the level of trust in the Internet. Therefore, the current study contributes to previous studies about the interaction effects of different trust mechanisms on online customer loyalty [e.g. McCole et al. 2010; Sánchez & Urbano 2019].

The next sections present the theoretical background, with the proposed conceptual model and hypotheses.

## 2. Theoretical Background

The traditional notion of trust in business transactions is focused on the behavior of a particular trading partner (e.g. the seller) or the dyad (seller–customer). However, in the context of online commerce, trust also incorporates the dimension of confidence in the infrastructure and the structural conditions of the system [McCole et al. 2010]. Hence, a consumer must analyze whether or not he can rely on (1) a particular vendor or online store; (2) the overall system (the Internet); and (3) third parties who certify the security of websites, provide delivery (logistic) services and facilitate or make viable the payment services [Gao & Waechter 2017; Luo 2002; McCole et al. 2010; Zhang & Gu 2015]. These different notions of trust are presented in the text that follows.

### 2.1. Trust in the Vendor

Trust has been conceptualized as a “willingness to rely on an exchange partner in whom one has confidence” [Moorman et al. 1993, p. 82]. Thus, confidence and reliability are two important factors for conceptualizing trust in the marketing context. Research in the online context has demonstrated that a customer's trust has an important effect on behavioral constructs [Morosan 2020], and especially on the customer's loyalty, or commitment to patronize the same online seller in the future [Verma et al. 2016; Zimaitis et al. 2020].

Indeed, trust has been identified as an important antecedent of loyalty [Garbarino & Johnson 1999; Kao & Lin 2016]. Hence, Internet marketers should exhibit behaviors and signals that enhance consumer confidence in their ability, integrity, predictability, and benevolence when dealing with or serving online shoppers, to minimize the concerns and regrets of online consumers [McCole et al. 2010].

Integrity is another factor that can impact trust in a website [Lu & Fan 2014]. This is a component related to practical behavior, which, within a virtual environment, implies the observance of commonly accepted values, principles, and rules [Wu et al. 2010].

As Urban, Amyx, and Lorenzon (2009) argue, since the birth of the Internet, lack of trust has been considered to be the greatest barrier to consumers purchasing online, and this barrier is usually manifested in the privacy and

security provided by the seller's website. However, with the evolution of the Internet and electronic commerce, including the possibility of purchasing through different devices such as computers and smartphones and the emergence of social commerce (i.e. transactions via the social media environment), consumers have come to expect more from online businesses, and their requirements for trust have also increased [Bleier et al. 2020; Urban et al. 2009]. For instance, fulfillment and non-deception are positively related to website credibility, which ultimately impacts on consumers' attitudes toward the retailer's website [Limbu & Jensen 2018].

## 2.2. Trust in the Internet

Trust in the Internet refers to "the perceived ability of the Internet to perform the task it is supposed to, as well as the speed, reliability, and availability of the system" [McCole et al 2010, p. 1019]. In a similar vein, Weitzl (2017, p. 48) argues that "people are able to form trust in the Internet as a social system", meaning the Internet as a shopping or research channel. Several studies have shown that trust in the Internet is relevant as an antecedent to make e-commerce viable [Limbu & Jensen 2018; Lu et al. 2016].

Indeed, the performance of online business transactions depends on hardware and software operation and data safety, including aspects such as cryptographic codes [Grabner-Kräuter & Kaluscha 2003]. Trust in online transactions has been classified into individual-level and system-level trust [Li et al. 2012].

According to Lee and Turban (2001), human confidence in an automated and computerized system depends on three factors: (1) the technical competence of the system; (2) the level of performance perceived in the system; and (3) the user's understanding of the characteristics and technical processes that govern the behavior of the system. More recent research has shown that e-commerce has evolved into social commerce, meaning the delivery of e-commerce activities and transactions through the social media environment [Lu et al. 2016]. In this context, trust at the marketplace level, that is, institution-based trust, should receive more attention, because the online purchase environment has become more socially rich than before. Hence, trust as a macro-level phenomenon (e.g. institution-based and system-based trust) needs more research.

## 2.3. Trust in Third Parties

Third parties are becoming an important channel for increasing consumers' confidence about participating in online activities. Third parties are impartial organizations that ensure the credibility of the electronic transaction. In the area of electronic commerce, there are several types of third parties, such as banks, certifying companies, credit card companies, and online consumer privacy institutions [Kim et al. 2005; Lockl et al. 2020]. It is believed that certifications provided by third parties can balance the interests of the parties and provide the necessary trust between vendors and customers [McCole et al. 2010].

Generally, certificates issued by third parties are more likely to address concerns about breaches of privacy. With the involvement of a third party that attests to the security or privacy of a given environment, there is a greater likelihood of establishing the necessary trust between the online seller and the buyer [Graaf 2019; Hong & Cho 2011; Luo 2002].

Hence, third parties such as privacy certification organizations have evolved as major self-regulating organizations in response to consumer concerns about privacy during online transactions [Kim & Kim 2011]. The confidence they create can relieve the different types of risks that are prominent in transactions over the Internet, such as financial risk (e.g. loss of money), functional risk (e.g. receiving incomplete or damaged products, or a virus), and time risk (such as a delay in receiving the product) [Ribbink et al. 2004].

## 2.4. Conceptual Model and Hypotheses

Based on the reviewed literature, we develop a conceptual model to evaluate the trust in different parties and the way in which this affects the loyalty of online consumers, as shown in Figure 1. In the text that follows, we explain the model and the hypotheses.

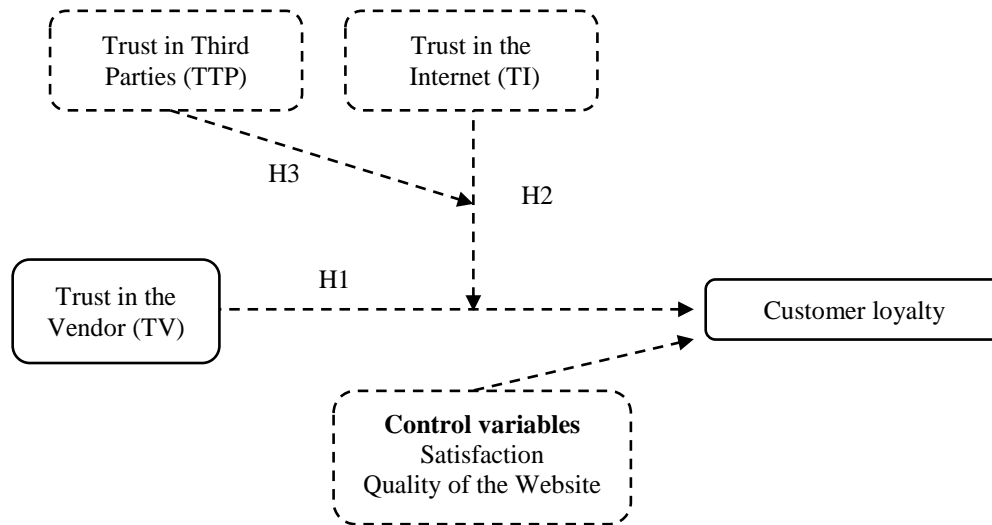


Figure 1: Research Model

Trust in the vendor is defined as the customer’s confidence in the seller’s ability, integrity, and reliability [McCole et al. 2010]. In the online context, trust can influence a customer’s interactions at all stages of the purchase process, such as the recognition of a need, the information search, the evaluation, the negotiation and selection, the purchase, the payment and delivery, and the after-sales service and evaluation [Kim & Kim 2006]. More specifically, customers will be more likely to repurchase from sellers who are more trustworthy and can communicate reliability and integrity [Silva et al. 2019; Wu et al. 2010]. Hence, Internet marketers should strive to increase customers’ trust in the online vendor [McCole et al. 2010; Silva et al. 2019]. More recent research confirms that trust is also relevant for mobile shopping [Marriott & Williams 2018].

Indeed, the marketing literature has clearly established that confidence plays an important role in behavioral variables [Morosan 2020], especially in the customer’s propensity to remain loyal to the same service provider [Kim & Peterson 2017; Roy et al. 2018; Silva et al. 2019]. In the online context, trust is an important variable that influences both attitudes [Bianchi & Andrews 2012; Nunkoo & Ramkissoon 2013; Roumani et al. 2017] and intentions to engage in online transactions [Al-Dweeri et al. 2017; Hernandez-Ortega 2011; Marriott & Williams 2018]. Based on the above discussion, we propose:

*H1: Trust in the vendor (TV) positively influences customer loyalty.*

However, what is the effect if a consumer trusts a specific vendor, but has low trust in the Internet as a marketplace system? Or, on the other hand, what if a consumer does not trust a specific vendor, but has high trust in the Internet as a marketplace? What are the consequences for the customer’s purchasing or repurchasing decisions? Although previous studies have recognized those different dimensions of trust [e.g. Bianchi & Andrews 2012; Nunkoo & Ramkissoon 2013; Roumani et al. 2017], there is a gap regarding the interaction between them and their effect on customer loyalty in the online context. Therefore, we build on the extant literature of trust dimensions in the online purchase context and propose that the effect of trust in the vendor (TV) on customer loyalty is moderated by trust in the Internet (TI).

Indeed, McCole, Ramsey, and Williams (2010) show that “fears” surrounding the Internet as a marketplace system limit the potential of e-commerce. Consistent with this result, the research confirms that security is still a critical issue in digital markets [Sánchez & Urbano 2019]. Research has shown that trust in the Internet significantly moderates the impact of attitudes and the intention to use online services [Mangin et al. 1970]. In addition, trust has been confirmed as a moderator for the influence of perceived risk and repurchase intentions [Chen et al. 2015]. The rationale that is common to these studies is that behavioral responses are influenced by antecedents (e.g. attitude) in different ways, depending on the individual’s level of trust in the Internet (e.g. low vs high). The reason for this is that trust in the Internet is a major determinant of the adoption of e-commerce, social commerce, and new technologies [Sánchez & Urbano 2019].

We build on this logic and argue that, for those individuals with lower confidence in the Internet as a purchasing system, trust in the vendor’s website is even more relevant for achieving customer loyalty. In other words, customer loyalty is more dependent on trust in the vendor for individuals who are more skeptical about the Internet and online purchasing. On the other hand, for consumers with higher trust in the Internet, an increase in trust in the vendor will not cause such an increase in their loyalty to that vendor. Hence, we propose:

*H2: Trust in the Internet (TI) moderates the relationship between trust in the vendor (TV) and customer loyalty, in such a way that TV has the most beneficial effect on loyalty in individuals with low TI and the least beneficial effect in those with high TI.*

We expect that the effect of TI proposed in H2 will be contingent on trust in third parties (TTP). Trust in third parties is seen in the confidence that customers have in firms or institutions that (i) ensure the credibility of the electronic transaction (e.g. firms that certify security and privacy), (ii) facilitate the payment process (e.g. banks and credit card companies) and (iii) organize the delivery and logistics involved in the transportation of the purchased item [McCole et al. 2010]. Research has shown that consumer confidence in these third party institutions is relevant for online commerce [Bianchi & Andrews 2012; Lockl et al. 2020; Wakefield & Whitten 2006].

Based on the extant literature, we propose that higher TV will result in higher loyalty when there is a combination of low TI and low TTP. This is because, in this scenario, consumers are the most skeptical about online purchases, since they have low confidence in the Internet as a marketplace and low trust in third parties. In this condition, consumers need more confidence that a specific online seller will mitigate the risk if they are to engage in the online purchase [McCole et al. 2010].

Also, to the extent that TTP increases, we expect the beneficial effect of TV on loyalty for low TI to attenuate. In other words, for low TTP we expect that customer loyalty will be more influenced by TV when the customer has low TI. The reason for this is that customers will need more trust in a specific seller if they do not have much confidence in the Internet or third parties, as discussed above. On the other hand, when TTP is high, customers with low TI will not depend so much on the TV to make a purchase. This is because consumers with high TTP will have higher confidence in the institutions that make e-commerce viable (e.g. those involved with payment, delivery, and web assurance seals).

Another explanation for this interaction effect of TTP (i.e. TTP attenuating the influence of TI proposed in H2) is that third parties like delivery or payment agents are closely related to the vendor and the specific purchase of the customer [Gefen et al. 2003; Luo 2002]. Therefore, if consumers do not trust the firms that are responsible for delivering or finishing the payment process, they will not engage in the online purchase. By contrast, TI is more related to an anonymous system or institutional arrangement [Fassnacht & Köse 2007; Grabner-Kräuter & Kaluscha 2003] and, hence, to an entity that is more abstract for the customer.

Therefore, we propose an interaction of TTP and TI in the effects of TV on customer loyalty, as illustrated in Figure 1 and the following hypothesis:

*H3: Trust in third parties (TTP) interacts with trust in the Internet (TI) and its effect on the link between TV and loyalty in such a way that the beneficial effect of TV on loyalty for low TI consumers is more salient for low (vs. high) TTP individuals.*

The text that follows presents the sequence of the two studies conducted to test H1 and H2 (Study 1) and H3 (Study 2).

### **3. Study 1**

#### **3.1. Methods**

We conducted a laboratory experiment using a between-subjects 2 (TV: high vs. low) X Continuous (trust in the Internet) design, manipulating trust in the vendor and measuring trust in the Internet as a continuous variable. The stimuli were based on two different scenarios, which were pretested and are reproduced below.

##### **High Trust in the Vendor**

*Imagine the following scenario: You go to do a work placement in another country that is to last six months. After a few weeks, you need some books that you left in your own country. So you decide to buy some of them online. After talking to friends and doing some online searches, you find out that:*

*The online bookseller that you have used in your country also operates in this country.*

##### **Low Trust in the Vendor**

*Imagine the following scenario: You go to do a work placement in another country that is to last six months. After a few weeks, you need some books that you left in your own country. So you decide to buy some of them online. After talking to friends and doing some online searches, you find out that:*

*The online bookseller that you have used in your country also operates in this country, but customers from the city where you are living have presented complaints.*

The authors contacted students to participate in the study. The students were randomly assigned to one of the two groups. First, the respondents answered three questions regarding their trust in the Internet as a marketplace system, with possible answers varying from 1 = completely disagree to 7 = completely agree (I consider the Internet sufficiently safe to shop there for my personal needs; I trust the Internet as a predictable system; Overall, I trust the Internet as a place where I can shop; Cronbach's alpha = 0.78), based on the literature [McCole et al. 2010]. After

that, they were presented with one of the two scenarios. They were asked to answer the remaining questions based on the scenario they were given. One question was used as a manipulation check (i.e., Your degree of trust in this online store is...; varying from 1 = very low to 7 = very high).

Loyalty was measured by three items adapted from the paper by O’Cass and Carlson (2012), varying from 1 = very unlikely to 7 = very likely, with the following statements, “Based on this scenario, the next time I go shopping online, the chance that I will choose this same bookseller is...”, “My likelihood of making new purchases from this website is...”, “The chance that I will consider this bookseller in my future purchases is...” (Cronbach’s alpha = 0.98). Final questions measured gender, age, education, and previous experience with (i) purchasing online and (ii) purchasing books online (varying from 1 = rarely to 10 = several times). A final open-ended question was presented for respondents to add any further comments about the experience.

3.2. Results

A total of 79 subjects participated in the study and were equally distributed across the two conditions, with 40 participants in the low TV condition and 39 in the high TV group. Of the participants, 54% were female, 82% were undergraduates and 18% were graduate students. Their ages varied from 18 to 60 (median = 26). A mean score was computed for the three items of trust in the Internet, and the respondents presented a mean of 4.8 (SD = 1.01), with 20% in the range of lower trust (1 to 4) and 16% in the range of higher trust (6 to 7).

Table 1 shows the descriptive statistics for the variables. As expected, only the manipulation check for trust in the vendor and the loyalty measures are significantly different between the two groups (i.e. higher in the high TV group). Trust in the Internet (TI) was not different between the two groups. This is expected because TI was only measured (i.e., not manipulated) in the experiment. Likewise, there was no significant difference between the groups regarding either their previous experience with online purchasing (7.78 vs. 7.89) or their experience with online book purchasing (4.93 vs. 4.55).

Table 1 – Descriptive Statistics for Study 1

Variable	Low TV	High TV	sig
	n=40	n=39	
	Mean (sd)	Mean (sd)	
TI1.Overall. I trust the Internet as a place where I can shop. <sup>(a)</sup>	5.20 (1.18)	5.47 (0.83)	.234
TI2.I trust the Internet as a predictable system. <sup>(a)</sup>	4.56 (1.50)	5.00 (1.19)	.155
TI3.I consider the Internet sufficiently safe to shop there for my personal needs. <sup>(a)</sup>	4.37 (1.32)	4.53 (1.13)	.565
Your trust in this vendor is: (manipulation check) <sup>(b)</sup>	3.54 (1.31)	6.39 (0.72)	.001
L1. Considering this scenario, the next time I go shopping online, the likelihood of my choosing the XXX site is... <sup>(b)</sup>	3.49 (1.53)	6.34 (0.91)	.001
L2.My likelihood of making new purchases on the XXX site is... <sup>(b)</sup>	3.63 (1.62)	6.50 (0.73)	.001
L3.The likelihood that I consider XXX site in future purchases is... <sup>(b)</sup>	3.78 (1.60)	6.58 (0.59)	.001
Age	29.74 (11.2)	29.87 (9.4)	.958
How many times have you bought books online? <sup>(c)</sup>	4.93 (3.64)	4.55 (3.52)	.648
What is your experience with online shopping? <sup>(d)</sup>	7.78 (2.07)	7.89 (1.99)	.804

Notes: (a) Likert scales varying from 1 = strongly disagree to 7 = strongly agree; (b) 1 = very low to 7 = very high; (c) 1 = rarely to 10 = several times; (d) 1 = very low to 10 = very high; TI = trust in the Internet; L = loyalty.

Our manipulation checks suggest that trust in the vendor was successfully manipulated. Trust in the vendor presented a mean of 3.54 in the group of low TV (n = 40) and of 6.39 in the group of high TV (n = 39), with  $F = 142$  and  $p < 0.001$  in the ANOVA test. In the sequence, we tested the influence of TV and TI on customer loyalty, using Model 1 of PROCESS v.3.3 [Hayes 2018]. As can be seen in Table 2, about 76% of the variance in the loyalty variable is explained by TV, TI, and the TV\*TI interaction.

Table 2 – Effects of TV and TI on Loyalty

<i>Variables</i>	<i>coeff</i>	<i>se</i>	<i>t</i>	<i>p</i>
constant	-1.13	1.03	-1.097	.276
TV	1.52	.23	6.683	.001
TI	.38	.23	1.665	.100
TV * TI	-.14	.05	-3.043	.003

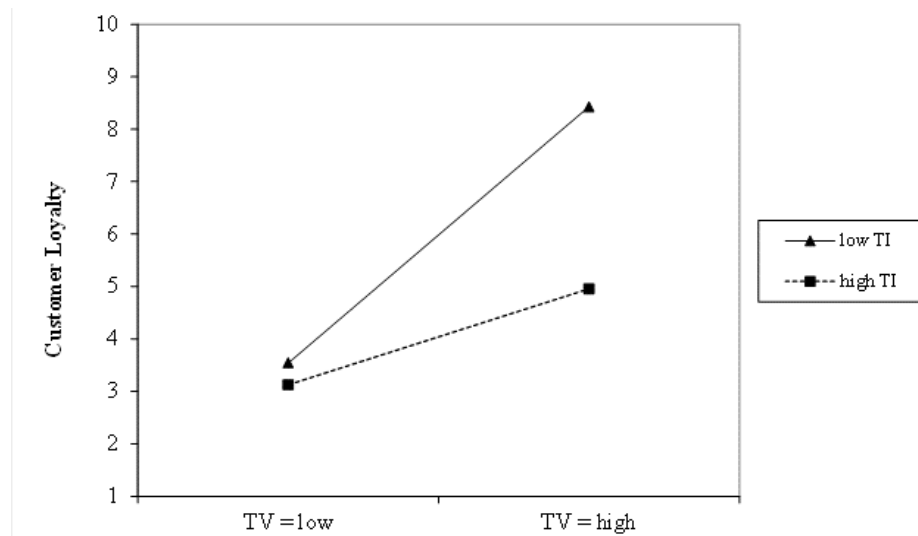
<i>Test(s) of highest order unconditional interaction(s):</i>				
	<i>R2-change</i>	<i>F</i>	<i>df1,df2</i>	<i>p</i>
TV*TI	.03	9.26	(1,75)	.003

<i>Conditional effects of the focal predictor at values of the moderator(s):</i>				
TI	<i>Effect</i>	<i>t</i>	<i>Df1,df2</i>	<i>p</i>
3.83	.96	13.91	(1,75)	.001
4.85	.82	14.07	(1,75)	.001
5.86	.67	8.33	(1,75)	.001

Notes: Model 1 Hayes [2018] with Y = loyalty; X = TV; W = TI. There are no statistically significant transition points within the observed range of the moderator found using the Johnson–Neyman method; n = 79; R square = 75.8%.

More specifically, TV has a positive and significant main effect on loyalty ( $p < 0.001$ ), supporting H1 and confirming that customers with higher trust in the vendor are more likely to repurchase from the same online store. We can also note that TV significantly interacts with TI ( $t = -3.04$ ;  $p < 0.003$ ). As illustrated in Figure 2, an increase in trust in the vendor increases the customer’s loyalty to the specific vendor. However, this effect is stronger for customers with lower (vs. higher) trust in the Internet (TI), meaning that, as customers develop higher trust in the Internet, they are less dependent on trust in a specific vendor. In other words, when trust in the Internet is high, an improvement in trust in the vendor has a lower effect on loyalty. These results support H2.



Note: TV = trust in the vendor; TI = trust in the Internet

Figure 2 – Interaction between trust in the vendor and trust in the Internet on loyalty

On the other hand, the TV\*TI interaction might be dependent on other facets of trust in the context of online purchases. One of these dimensions is trust in third parties (TTP), where third parties are defined as institutions that provide certificates of integrity/privacy, web seals, or product delivery [McCole et al. 2010]. It is expected that the presence of reputable agents can increase a customer’s intention to purchase online [Bianchi & Andrews 2012; Thompson et al. 2019; Zhou 2014]. Because of the limitations of the laboratory experiment used in Study 1, a new study was conducted, based on real purchases reported by respondents in a survey; this is described in the next section.

#### 4. Study 2

Study 1 investigated the direct effect of trust in the vendor (TV) on loyalty (H1: TV→LOY), as well as the interaction TV\*TI (H2) in a controlled experiment. Study 2 aimed to expand these findings and show that TTP interacts with TV\*TI (H3). The advantage of Study 1 is that it is a laboratory experiment and, hence, presents higher internal validity (i.e. the study manipulates TV, and shows that this affects customer loyalty and that the effect is dependent on the customer's trust in the Internet, after controlling for extraneous variables). On the other hand, Study 2 is a field correlational study (survey) and presents higher external validity (it analyses real online purchases reported by respondents), but lower internal validity (i.e. there is no manipulation). More details of Study 2 are presented in the next section.

##### 4.1. Methods

A survey was carried out with 270 online shoppers. The respondents were contacted through online social networks and face to face. A total of 183 (68%) of the participants had purchased an electronic item online in the last three months and were used for further analysis. The Mahalanobis  $D^2$  was used to check potential outliers; results exceeding 3 or 4 in larger samples may be considered atypical (Hair et al. 2006). In this study, ten cases were identified as outliers because they had  $D^2/df$  higher than 3, and they were thus excluded. Therefore, the final sample size was 173 valid cases.

The final data collection instrument used Likert scale questions of 7 points each. Ten of the questions were on the customer's profile for online purchases, and 23 measured the constructs of trust in the Internet, trust in the vendor, trust in third parties, loyalty, perceived quality of the site, and satisfaction (see Table 3).

The first four questions were used to identify which electronic product had been purchased, the date of the most recent purchase, the site, and the value of the purchase. In addition, five questions sought to identify the profile of the consumer, and the last question consisted of an open-ended question about online shopping. The data were analyzed using moderated regression analysis with the PROCESS macro in SPSS [Dawson 2014; Hayes 2018]. The next section of the paper presents the empirical results.

##### 4.2. Results

Table 3 shows the descriptive statistics for the variables measured in the questionnaire. Overall, the means were higher than 4 (the average in a 1 to 7 Likert scale), suggesting that the participants gave favorable responses about their reported online purchases in their evaluation of trust in the Internet, trust in the vendor, trust in third parties, loyalty, quality of the site, and satisfaction. In addition, all the scales presented satisfactory reliability indices, with Cronbach's alpha varying from 0.72 (trust in third parties) to 0.93 (loyalty).



Table 3 – Descriptive Statistics for Study 2

<i>Constructs and items</i>	<i>Mean</i>	<i>SD</i>
<b><i>Trust in the Internet</i></b> [McCole et al., 2010; Lee & Turban, 2001] (Cronbach's alpha=.87)		
I consider the Internet sufficiently safe to shop there for my personal needs.	4.45	1.43
I trust the Internet as a predictable system.	4.91	1.17
Overall, I trust the Internet as a place where I can shop.	5.02	1.25
<b><i>Trust in the vendor</i></b> [McCole et al., 2010; Loicano et al., 2007] (Cronbach's alpha=.88)		
I trust in the XXX site.	5.76	1.16
I trust in the integrity of XXX site.	5.93	1.02
I trust in the security of XXX site.	5.83	0.99
I trust in the honesty of XXX site.	5.86	1.11
<b><i>Trust in Third Parties</i></b> [McCole et al., 2010; Luo, 2002] (Cronbach's alpha=.72)		
Overall, I trust third parties (companies, websites, and organizations) that certify the security and the veracity of virtual stores.	4.77	1.28
I trust third parties that provide delivery services to the XXX site (e.g. courier, carriers, or post office).	5.13	1.30
I trust third parties that provide payment services to the XXX site (e.g. Banks, digital payment, or credit cards).	5.62	1.20
<b><i>Loyalty</i></b> [O'Cass & Carlson, 2012] (Cronbach's alpha=.93)		
The next time I go shopping online, the likelihood that I will choose the XXX site is...	5.92	1.33
My likelihood of making new purchases on the XXX site is...	5.97	1.29
The likelihood that I consider XXX site in future purchases is...	5.76	1.38
<b><i>Quality of the site</i></b> [Parasuraman, Zeithaml, & Malhotra, 2005] (Cronbach's alpha=.81)		
Browsing XXX does not waste my time.	5.39	1.37
It is easy and fast to complete a purchase transaction on XXX site.	6.01	1.05
The organization and layout of the XXX site make it easy to find products.	5.96	1.07
The product was delivered in the time (deadline) promised by the site XXX.	6.24	1.40
The product I received corresponded to the one presented on the site.	6.55	1.07
I feel my privacy is protected when I purchase the XXX website.	5.76	1.26
I feel secure when I am making transactions/purchases with the XXX site	5.87	1.23
XXX website has the security features needed for a good purchase on the internet	5.99	1.07
<b><i>Satisfaction</i></b> [Gummerus et al., 2004] (Cronbach's alpha=.87)		
The degree of satisfaction in the purchase through the website XXX is...	6.26	1.02
In general, for having purchased from the website XXX. I feel. ...	6.18	1.11
Actually, my decision to buy from the website XXX was one of the best possible	5.79	1.32

Notes: SD = standard deviation; Likert scales varying from 1 = strongly disagree to 7 = strongly agree.

A test of invariance supported the merger of the subsamples collected online and face to face, since the differences were low when comparing the Unconstrained (U) and Constrained (C) measurement models: RMR = 0.24 vs. RMR = 0.25, GFI = 0.80 vs. GFI = 0.80, AGFI = 0.73 vs. AGFI = 0.73, PGFI = 0.59 vs. PGFI = 0.61 [Garson 2015].

Our hypotheses predict a moderating effect of TI and TTP on the relationship between TV and customer loyalty. We tested moderation using the Model 3 approach proposed by Hayes (2018), taking into account satisfaction and website quality as control variables. The results are presented in Table 4.

It can be seen from Table 4 that trust in the vendor (TV) has a positive and significant effect on loyalty ( $B = 2.57, p < 0.029$ ), indicating that customers with higher trust in the vendor are more likely to repurchase from the same online website. On the other hand, trust in the Internet (TI) has a negative interaction effect with TV ( $B = -0.48, p < 0.036$ ), suggesting that, to the extent that consumers increase their confidence in the Internet as a marketplace system, they reduce their loyalty to a particular vendor. In this way, Study 2 also supports H2 and is consistent with Study 1.

Table 4 - Moderating Effects of Trust in the Internet (TI) and Trust in Third Parties (TTP) on Loyalty

Variables	coeff	se	t	p
constant	-12.8	6.77	-1.892	.060
TV	2.57	1.17	2.205	.029
TI	2.37	1.37	1.728	.086
TV*TI	-.48	.23	-2.120	.036
TTP	3.20	1.52	2.102	.037
TV*TTP	-.55	.25	-2.174	.031
TI*TTP	-.63	.29	-2.114	.036
TV*TI*TTP	.11	.05	2.300	.023
Satisfaction	.56	.08	7.063	.001
Quality	.31	.12	2.517	.013

Test(s) of highest order unconditional interaction(s):				
	R2-change	F	df1,df2	p
TV*TI*TTP	.012	5.29	(1,163)	.023

Test of conditional X*W interaction at value(s) of Z:				
TTP	Effect	F	Df1,df2	p
4.18	-.022	.14	(1,163)	.713
5.17	.088	1.93	(1,163)	.166
6.17	-.198	4.39	(1,163)	.038

Notes: Model 3 Hayes (2018), with Y= loyalty; X = TV; W = TI; Z = TTP; n = 173; R square = 63.4% ; coeff = unstandardized coefficient; se = standard error

Also, H3 predicts that the TV\*TI interaction is dependent on the levels of trust in third parties (TTP). Indeed, as we can see in Table 4, there is a significant three-way interaction (TV\*TI\*TTP,  $p < 0.023$ ), suggesting that the TV\*TI interaction is more relevant when TTP is high, as indicated by the test of the conditional X\*W interaction ( $p < 0.038$ ). This interaction is illustrated in Figure 3.

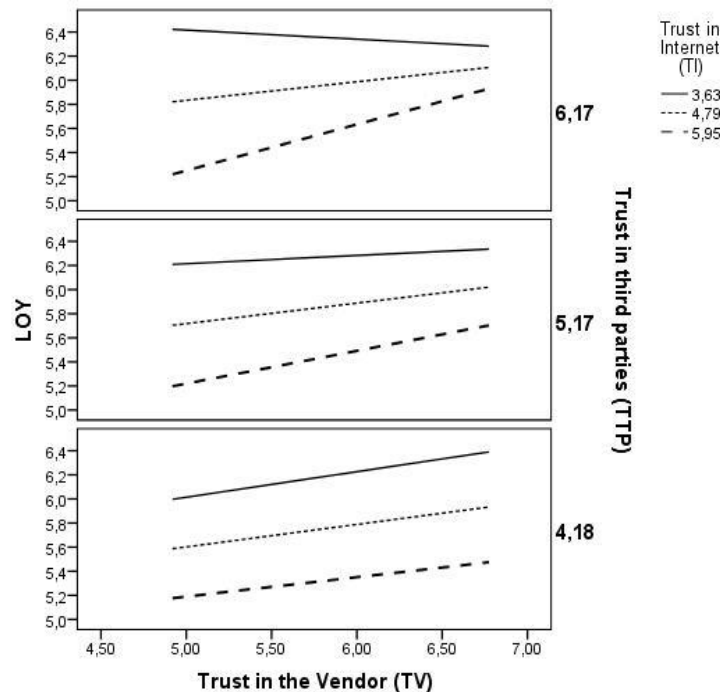


Figure 3 – Moderating effect of Trust in third parties (TTP) in the TV\*TI interaction

We can see from Figure 3 that when TTP is high (upper half of the diagram), the effect of TV on loyalty is different for the three levels of trust in the Internet (TI). In the condition of high TTP and high TV (upper right side), customer loyalty is similar for different levels of TI, meaning that, for customers who have high TV and high TTP,

the level of TI does not matter. On the other hand, in the opposite condition with high TTP and low TV (upper left side), customer loyalty varies with the levels of TI, with lower TI producing higher loyalty.

Thus, our study shows that, for customers with lower TI, loyalty is more dependent on TV (i.e. higher slope), but that this dependence reduces as TTP increases (see solid line in Figure 3). In summary, when TI is low, an increase in TV results in higher loyalty only for low TTP, because as TTP increases this effect is attenuated, supporting TTP as a moderator for the TV\*TI interaction. These findings support H3.

Moreover, customer satisfaction and website quality were considered as control variables and are significant in the model, supporting the idea that higher satisfaction and higher quality lead to increased loyalty.

## 5. Discussion and Conclusions

Faced with the heterogeneity of the online shopping market, researchers seek to understand how consumers make their purchases, how they build confidence in specific sellers, and how they eventually become loyal to those sellers [Guo et al. 2017; Marriott & Williams 2018; Sánchez & Urbano 2019; Silva et al. 2019; Villa et al. 2018]. This study aims to contribute to this literature by investigating the effects of trust in different parties in the context of online purchase behavior. More specifically, and based on the extant research, we proposed three specific hypotheses. First, we proposed that trust in the vendor (TV) influences customer loyalty (H1). Although this is a well-established relationship in e-commerce literature, it is our starting point to demonstrate the direct effect of TV on loyalty and to present boundary conditions with moderating effects. Second, we proposed that trust in the Internet (TI) moderates the effects of trust in the vendor (TV) on customer loyalty (H2). Finally, we proposed that trust in third parties (TTP) moderates the TV\*TI interaction (H3). A laboratory experiment was conducted with online shoppers to test H1 and H2 and a survey using a retrospective design of real online purchases tested H3. The main findings are discussed next.

First, both of our studies support the notion that customers with greater trust in the vendor are more likely to engage in future purchases from the same website, supporting H1 and previous studies [e.g. Kim & Peterson 2017; Roy et al. 2018; Silva et al. 2019]. After addressing the main effects of the proposed model, we sought to test the moderating role of two dimensions of trust, trust in the Internet (TI) and trust in third parties (TTP). Our findings from both studies show that trust in the Internet as a marketplace system is a significant moderator for the effects of TV on loyalty, supporting H2. This is relevant because customer loyalty is positively influenced by an increase in the trust in a specific vendor (TV), but this is more salient for customers with lower TI. Hence, loyalty towards an online retailer might be reduced to the extent that customers develop higher trust in the Internet as a marketplace system.

In other words, customers with greater confidence in the Internet as a marketplace system will not be as much dependent on trust in a specific vendor. One possible reason is that these consumers compare more alternatives before making a purchase decision and perceive the switching costs from a specific seller to be lower. Also, given that these consumers are more used to buying online, they probably search for other attributes, such as product availability, website design, and price discounts [Bianchi & Andrews 2012; Zhou et al. 2009]. On the other hand, those consumers who are more skeptical about the Internet as a marketplace system will need more trust in a specific vendor to purchase online from that seller. Hence, the current study contributes to previous studies about the interaction effects of different trust mechanisms [e.g. McCole et al. 2010; Sánchez & Urbano 2019].

As managerial contributions, the study can suggest several actions that vendors may take to increase consumer confidence in the online context. One implication for managers is that, as the Internet evolves, more and more online sellers will achieve the minimum level of confidence expected by consumers, and, hence, the online environment will become more competitive. In markets where the product is the same regardless of the seller (e.g. books, electronics), customers will look for price discounts and/or faster delivery. Thus, websites selling such products need to provide a competitive price or faster delivery to differentiate themselves from their competitors. In addition, online sellers should monitor the different facets of trust in their market, that is, the extent to which their customers trust different sellers, the Internet as a marketplace system, and the third parties involved in the purchase/delivery process. Moreover, trust-inducing mechanisms, such as positive recommendations from other customers [Zhang & Gu 2015], should be used to gain the hearts and minds of customers, given that cognitive and affective elements are involved in the online purchase process [Pengnate & Sarathy 2017; Ye et al. 2020].

In addition, we proposed that another dimension of trust (i.e. trust in third parties, TTP) would moderate the interaction between TV and TI. Our findings from Study 2 supported that hypothesis (H3), suggesting that third parties involved in an online transaction (e.g. institutions attesting to security and privacy or supporting delivery or payment services) are important actors in the e-commerce ecosystem, which supports the findings of previous studies [e.g. Dogbe et al. 2019; Ducuing 2019; Graaf 2019; Lockl et al. 2020; McCole et al. 2010].

More specifically, when trust in third parties is low, an increase in trust in the vendor will produce higher loyalty regardless of the level of trust in the Internet, meaning that trust in the vendor will be the key driver for the loyalty of these customers. On the other hand, when trust in third parties is high, an increase in trust in the vendor will increase loyalty for customers with a high trust in the Internet but will decrease loyalty for those customers with low trust in the Internet. Therefore, despite the increase in the number of online purchases [Statista 2019], and possibly the advances in the Internet in the last few years, third parties involved in online transactions (e.g. delivery and payment services) are important actors for sustaining relationships between online sellers and customers [Villa et al. 2018]. This is also consistent with the findings of Kim and Kim (2006), who argue that the perception of trust among customers at all stages of the Internet purchase process—such as information search, evaluation, negotiation, purchase, payment, and delivery—will also increase customer satisfaction with online purchases [Limbu & Jensen 2018].

Thus, a practical implication for online business managers refers to the careful choice of third parties for the operationalization of activities, especially third parties that are vital to the core competence of the activities or that have an influence on the relationship with sales (for example, credit card operators), as they directly influence the "strengthening" of the trust seen by their customers. In addition, it is suggested that a consumer is presented with information about third parties (e.g., the average delivery time for the last purchases of other customers) and other best practices that can lower the "barriers" to the customer finishing the purchase. In this sense, the choice of companies and institutions that will act as third parties (e.g., reputable agents; delivery companies) is of strategic importance for the sustainability of online companies.

Moreover, our study contributes to filling the gaps that exist in online loyalty studies about the influence of distinct trust dimensions, and answers the call for more research on the mechanisms of interaction between the different trust dimensions [Bianchi & Andrews 2012; Guo et al. 2017; McCole et al. 2010; Roy et al. 2017]. More specifically, we demonstrate that trust in different parties can be analyzed with three different variables (trust in the vendor, trust in the Internet as a marketplace system, and trust in third parties). We add to the literature by showing that trust in the Internet acts as a significant moderator for the effect of trust in the vendor on loyalty, as well as demonstrating that this effect is contingent on the customer's trust in third parties.

Hence, our findings can contribute to studies on online shopping behavior and the effects of distinct trust dimensions on customers' purchases [Lockl et al. 2020; Roy et al. 2017; Urban et al. 2009; Zhang & Gu 2015]. Our study also expands the study by Bianchi and Andrews (2012), which addressed trust in different parties but limited the analysis to the influence of the distinct trust variables on consumer attitudes toward online purchasing.

The study also presents some limitations. For instance, the study was conducted in an emerging economy, where Internet and online commerce have been progressing over the last years and, hence, new studies should be conducted in contexts where the online commerce is matured to increase the generalizability of the current study. Also, customer loyalty was measured as a repurchase intention reported by the customer. In cases where performance indicators (e.g. real purchases) are available, the test of the influence of trust would achieve greater external validity. Moreover, different types of online sellers (e.g. retailers, service providers) were not analyzed, and the influences of trust might be different for them. In addition, the study does not address consumer-to-consumer interactions (e.g. online reviews) and their possible influences on purchase decisions. Therefore, as suggestions for further research, it would be important to conduct new studies in the online context to investigate whether the moderating effects of trust in the vendor and trust in third parties also apply to other outcomes, such as customers' recommendation behavior (i.e. word-of-mouth), e-satisfaction and improved return on investment (ROI), advancing the extant literature [e.g. Roy et al. 2017; Steinhoff et al. 2019]. With the advent of social commerce (i.e. transactions via the social media environment [Bleier et al. 2020; Lu et al. 2016; Urban et al. 2009]), in particular, more research should be conducted to obtain a better understanding of how trust in different parties can influence customer loyalty, as well as the boundary conditions.

### **Acknowledgment**

Authors would like to thank the financial support received by CAPES/PROEX N° AUXPE: 1636/2018.

### **REFERENCES**

- Al-dweeri, R. M., Z. M. Obeidat, M. A. Al-dwiry, M. T. Alshurideh, and A. M. Alhorani, "The impact of e-service quality and e-loyalty on online shopping: moderating effect of e-satisfaction and e-trust," *International Journal of Marketing Studies*, Vol .9, No.2:92-103, 2017.

- Ashraf, A.R., N.T. Thongpapanl, and S. Spyropoulou, "The connection and disconnection between e-commerce businesses and their customers: Exploring the role of engagement, perceived usefulness, and perceived ease-of-use," *Electronic Commerce Research and Applications*, Vol. 20: 69-86, 2016.
- Bianchi, C. and L. Andrews, "Risk, trust, and consumer online purchasing behaviour: a Chilean perspective," *International Marketing Review*, Vol. 29, No. 3: 253-275, 2012.
- Bleier, A., A. Goldfarb, and C. Tucker, "Consumer privacy and the future of data-based innovation and marketing," *International Journal of Research in Marketing*, 2020.
- Chen, Y., X. Yan, W. Fan, and M. Gordon, "The joint moderating role of trust propensity and gender on consumers' online shopping behavior," *Computers in Human Behavior*, Vol. 43: 272-283, 2015.
- Dawson, J. F., "Moderation in management research: What, why, when, and how," *Journal of Business and Psychology*, Vol. 29, No. 1:1-19, 2014.
- Dogbe, C. S. K., M. Zakari, and A. G. Pesse-Kuma, "Perceived Online Risk, Consumer Trust, and M-Shopping Behaviour," *e-Journal of Social & Behavioural Research in Business*, Vol.10, No.1:10-23, 2019.
- Ducuing, C., "How to Make Sure My Cryptokitties Are Here Forever? The Complementary Roles of Blockchain and the Law to Bring Trust," *European Journal of Risk Regulation*, Vol.10, No. 2:315-329, 2019.
- Einwiller, S., "When reputation engenders trust: an empirical investigation in business-to-Consumer Electronic commerce," *Electronic markets*, Vol. 13, No. 3:196-209, 2003.
- Fassnacht, M. and I. Köse, "Consequences of web-based service quality: Uncovering a multi-faceted chain of effects," *Journal of Interactive Marketing*, Vol. 21, No. 3:35-54, 2007.
- Gao, L. and K. A. Waechter, "Examining the role of initial trust in user adoption of mobile payment services: an empirical investigation," *Information Systems Frontiers*, Vol. 19, No. 3:525-548, 2017.
- Garbarino, E. and M. S. Johnson, "The Different Roles of Satisfaction, Trust, and Commitment in Customer Relationships," *Journal of Marketing*, Vol. 63, No. 2:70-87, 1999.
- Garson, D.G., *Structural Equation Modeling*. Statistical Associates Publishers, Asheboro, NC, 2015.
- Gefen, D., E. Karahanna, and D. W. Straub, "Trust and TAM in online shopping: an integrated model," *MIS Quarterly*, Vol. 27, No.1:51-90, 2003.
- Graaf, T. J.de., "From old to new: From internet to smart contracts and from people to smart contracts," *Computer Law & Security Review*, Vol. 35, No. 5:105322, 2019.
- Grabner-Kräuter, S. and E. A. Kaluscha, "Empirical research in on-line trust: a review and critical assessment," *International Journal of Human-Computer Studies*, Vol. 58, No. 6:783-812, 2003.
- Guo, W., D. Straub, X. Han, and P. Zhang, "Understanding vendor preference in the crowdsourcing marketplace: the influence of vendor-task fit and swift trust," *Journal of Electronic Commerce Research*, Vol. 18, No. 1:1-17, 2017.
- Hair, J. F., W.C. Black, B.J. Babin, R.E. Anderson and R.L. Tatham, *Multivariate Data Analysis*, Upper Saddle River, NJ: Pearson Prentice Hall, 2006.
- Hayes, A. F., *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*, Guilford Publications, New York, 2018.
- Hernandez-Ortega, B., "The role of post-use trust in the acceptance of a technology: Drivers and consequences," *Technovation*, Vol. 31, No.10-11:523-538, 2011.
- Hong, I. B. and H. Cho, "The impact of consumer trust on attitudinal loyalty and purchase intentions in B2C e-marketplaces: Intermediary trust vs. seller trust," *International Journal of Information Management*, Vol. 31, No. 5:469-479, 2011.
- Kao, T-W. and W. T. Lin, "The relationship between perceived e-service quality and brand equity: A simultaneous equations system approach," *Computers in Human Behavior*, Vol. 57, No. 1: 208-218, 2016.
- Kim, D.J., Y.I. Song, S.B. Braynov, and H.R. Rao, "A multidimensional trust formation model in B-to-C e-commerce: a conceptual framework and content analysis of academia/practitioner divide," *Decision Support Systems*, Vol. 40, No. 2:143-165, 2005.
- Kim, K. and E. Kim, "Suggestions to enhance cyber store customers' satisfaction," *Journal of the American Academy of Business*, Vol. 9, No. 1: 233-240, 2006.
- Kim, K. and J. Kim, "Third-party Privacy Certification as an online Advertising Strategy: An Investigation of the Factors Affecting the Relationship between Third-party Certification and Initial Trust" *Journal of Interactive Marketing*, Vol. 25, No.3:145-158, 2011.
- Kim, M.J., N. Chung, and C.K. Lee, "The effect of perceived trust on electronic commerce: Shopping online for tourism products and services in South Korea," *Tourism Management*, Vol. 32, No.2: 256-265, 2011.
- Kim, Y. and R.A. Peterson, "A Meta-analysis of Online Trust Relationships in E-commerce," *Journal of Interactive Marketing*, Vol. 38: 44-54, 2017.

- Lee, M. K. O. and E. Turban, "The Trust Model for Consumer Internet Shopping," *International Journal of Electronic Commerce*, Vol. 6, No.1:75-91, 2001.
- Lemon, K. N. and P.C. Verhoef, "Understanding customer experience throughout the customer journey," *Journal of Marketing*, Vol. 80, No.6: 69-96, 2016.
- Li, F., D. Pięnkowski, A. Moorsel, and C. Smith, "The Holistic Framework for Trust in online Transactions," *International Journal of Management Reviews*, Vol.14, No.1:85-103, 2012.
- Liebermann, Y. and S. Stashevsky, "Determinants of online shopping: Examination of an early- stage online market," *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration*, Vol. 26, No.4:316-331, 2009.
- Limbu, Y. B. and R.W. Jensen, "The determinants and consequences of website credibility in e-retailing: examining the roles of ethical issues," *International Journal of Electronic Marketing and Retailing*, Vol. 9, No. 1:89-108, 2018.
- Lionello, R. L., L.A. Slongo and C.A. de Matos, "Electronic service quality: a meta-analysis," *Marketing Intelligence & Planning*, Vol. 38, No. 5:619-635, 2020.
- Lockl, J., V. Schlatt, A. Schweizer, N. Urbach, and N. Harth, "Toward Trust in Internet of Things Ecosystems: Design Principles for Blockchain-Based IoT Applications," *IEEE Transactions on Engineering Management*, 2020.
- Loicano, E.T., R.T. Watson, and D.L. Goodhue, "WebQual: an instrument for consumer evaluation of web sites," *International Journal of Electronic Commerce*, Vol. 11, No.3:51-87, 2007.
- Lu, B. and W. Fan, "Social Presence, Trust, and Social Commerce Purchase Intention: an Empirical Research," *PACIS, Proceedings*, Paper 105, 2014.
- Lu, B., Q. Zeng, and W. Fan, "Examining macro-sources of institution-based trust in social commerce marketplaces: An empirical study," *Electronic Commerce Research and Applications*, Vol. 20:116-131, 2016.
- Luo, G. "Trust production and privacy concerns on the internet: the framework based on relationship marketing and social exchange theory," *Industrial Marketing Management*, Vol. 31, No.2:111-118, 2002.
- Mangin, J.P. L., N. Bourgaul, C.C. Porral, O. Mesly, I. Telahigue, and M. Trudel, "The moderating role of risk, security and trust applied to the TAM model in the offer of banking financial services in Canada," *The Journal of Internet Banking and Commerce*, Vol. 19, No.2:1-21, 1970.
- Marriott, H. R. and M.D. Williams, "Exploring consumers perceived risk and trust for mobile shopping: A theoretical framework and empirical study," *Journal of Retailing and Consumer Services*, Vol. 42: 133-146, 2018.
- McCole, P., E. Ramsey, and J. Williams, "Trust considerations on attitudes toward online purchasing: The moderating effect of privacy and security concerns," *Journal of Business Research*, Vol. 63, No.9:1018-1024, 2010.
- Moorman, C., R. Deshpandé, and G. Zaltman, "Factors affecting trust in market research relationships," *Journal of Marketing*, Vol. 57, No.1:81-101, 1993.
- Morosan, C. "Hotel Facial Recognition Systems: insight into guests' system perceptions, congruity with self image, and anticipated emotions," *Journal of Electronic Commerce Research*, Vol. 21, No.1:21-38, 2020.
- Nunkoo, R. and H. Ramkissoon, "Travelers' E-Purchase Intent of Tourism Products and Services," *Journal of Hospitality Marketing & Management*, Vol. 22, No.5:505-529, 2013.
- O'Cass, A. and J. Carlson, "An empirical assessment of consumers' evaluations of web site service quality: conceptualizing and testing a formative model," *Journal of Services Marketing*, Vol. 26, No. 6:419-434, 2012.
- Parasuraman, A., V. Zeithaml, and A. Malhotra, "E-S-Qual a multiple item scale for assessing electronic service quality," *Journal of Service Research*, Vol. 7, No. 3: 213-233, 2005.
- Pengnate, S. F. and R. Sarathy, "An experimental investigation of the influence of website emotional design features on trust in unfamiliar online vendors," *Computers in Human Behavior*, Vol. 67: 49-60, 2017.
- Ribbink, D., C.R. Allard, V. Van Riel Liljander, and S. Streukens, "Comfort your online customer: quality, trust and loyalty on the internet," *Managing Service Quality*, Vol. 14, No. 6: 446-456, 2004.
- Roumani, Y., J. K. Nwankpa, and Y. F. Roumani, "Adopters' trust in enterprise open source vendors: An empirical examination," *Journal of Systems and Software*, Vol. 125: 256-270, 2017.
- Roy, G., B. Datta, and R. Basu, "Trends and Future Directions in Online Marketing Research," *Journal of Internet Commerce*, Vol. 16, No.1:1-31, 2017.
- Roy, S. K., M. S. Balaji, G. Soutar, W. M. Lassar, and R. Roy, "Customer engagement behavior in individualistic and collectivistic markets," *Journal of Business Research*, Vol. 86: 281-290, 2018.
- Sánchez, M. and A. Urbano, "Security in digital markets," *Journal of Business Research*, Vol.101: 485-491, 2019.

- Silva, J., J. C. Pinho, A. Soares, and E. Sá, "Antecedents of online purchase intention and behaviour: uncovering unobserved heterogeneity," *Journal of Business Economics and Management*, Vol. 20, No.1:131-148, 2019.
- Statista, "E-Commerce:Retail e-commerce sales worldwide from 2014 to 2023", [www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/](http://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/) 2020.
- Steinbock, L., D. Arli, S. Weaven, and I. V. Kozlenkova, "Online relationship marketing," *Journal of the Academy of Marketing Science*, Vol. 47, No. 3:369-393, 2019.
- Thompson, F. M., S. Tuzovic, and C. Braun, "Trustmarks: Strategies for exploiting their full potential in e-commerce," *Business Horizons*, Vol. 62 No. 2:237-247, 2019.
- Urban, G. L., C. Amyx, and A. Lorenzon, "Online Trust: State of the Art, New Frontiers, and Research Potential," *Journal of Interactive Marketing*, Vol. 23, No. 2:179-190, 2009.
- Verma, V., D. Sharma, and J. Sheth, "Does relationship marketing matter in online retailing? A meta-analytic approach," *Journal of the Academy of Marketing Science*, Vol. 44, No. 2:206-217, 2016.
- Villa, E., Ruiz, L., A. Valencia, and E. Picon, "Electronic commerce: factors involved in its adoption from a bibliometric analysis," *Journal of Theoretical and Applied Electronic Commerce Research*, Vol. 13, No.1:39-70, 2018.
- Wakefield, R. and D. Whitten, "Examining user perceptions of third party, organization credibility and trust in an e-retailer," *Journal of Organizational and End-user Computing*, Vol.18, No.2:1-19, 2006.
- Weitzl, W., *Measuring electronic word-of-mouth effectiveness: developing and applying the eWOM trust scale*. Springer Gabler, Wiesbaden, Germany, 2017.
- Wu, J. J., Y.-H. Chen, and Y.S. Chung, "Trust factors influencing virtual community members: A study of transaction communities," *Journal of Business Research*, Vol. 63, No. 9-10: 1025-1032, 2010.
- Ye, C., C.F. Hofacker, J. Pelozo, and A. Allen, "How online trust evolves over time: The role of social Perception," *Psychology & Marketing*, 2020.
- Zhang, Z. and C. Gu, "Effects of consumer social interaction on trust in online group-buying contexts: An empirical study in China," *Journal of Electronic Commerce Research*, Vol. 16, No. 1:1-21, 2015.
- Zhou, T. "An empirical examination of initial trust in mobile payment," *Wireless Personal Communications*, Vol. 77, No. 2:1519-1531, 2014.
- Zhou, T., Y. Lu, and B. Wang, "The relative importance of website design quality and service quality in determining consumers' online repurchase behavior," *Information Systems Management*, Vol. 26, No.4:327-337, 2009.
- Zimaitis, I., M. Degutis, and S. Urbonavicius, "Social Media Use and Paranoia: Factors That Matter in Online Shopping," *Sustainability*, Vol.12, No. 3:2-10, 2020.