

# “Enhancing trust in online business relationships of South Africa: a web interface signaling perspective”

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## SECTION 3. General issues in management

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### Enhancing trust in online business relationships of South Africa: a web interface signalling perspective

#### Abstract

Technology mediation in online shopping results in information asymmetries which may impede customers' ability to assess products and make well informed purchase decisions. Using signalling theory, this study proposes and tests a model on the influence of a stores' website on customers' ongoing trust in online retail stores and repurchase intentions. Data were collected from a sample of 201 online shoppers from Gauteng, South Africa. The findings show that website informativeness, retailer related website interaction, customer related website interaction and website security are important factors that help influence customers' trust in online stores and that trust in turn exert significant influence on repurchase intentions. Website informativeness and website security were also found to have a significant direct influence on customer repurchase intentions although this influence is partially mediated by customers' levels of trust in an online store. The findings support the notion that the online store environment is an important source of signals to consumers and that these signals have influence on trust in an online store. The findings point to the need for managers of online stores to pay attention to levels of customer trust in their stores as trust has positive influence on customers' repurchase intentions. In working on building trust, managers need to among other factors, examine their websites for levels of informativeness, and security. They also need to ensure that their online stores are associated with high levels of human interaction.

**Keywords:** online store, web interface, signalling theory, trust, repurchase intentions.

**JEL Classification:** M31.

#### Introduction

The emergence of e-commerce has had a profound impact on retailers providing them with great opportunities to expand their business reach and grow their sales (Al Kailani and Kumar, 2011). While this is so online retailing, compared to physical retailing, comes with its own unique challenges, which if not well managed can have negative impact on customers' willingness to buy products from online stores. Central to these challenges is the fact that online shopping is widely associated with higher levels of risk compared to shopping at physical stores (Hsieh and Tsao, 2014). Spatial and temporal separation between online buyers and sellers are central to high risk associated with online shopping as it leads to information asymmetry problems. This makes it easy for sellers to take opportunistic behaviors towards buyers. Such behaviors include provision of inadequate or misleading product information (Fang et al., 2011). Research shows that perceptions of risk exert significant negative influence on customer attitudes and purchasing behaviors (Crespo et al., 2009). Xu et al. (2010) found that online customers carry out a risk assessment of online retailers before deciding on whether to trust and buy from specific online stores or not. Choi et al. (2014) noted that while initial trust plays an important role in influencing initial online store purchase decisions failure to sustain trust can

result in loss of customers. Pavlou et al. (2007, p. 107) defined trust in the context of buyer seller exchange relationship as 'the buyer's intentions to accept vulnerability based on her beliefs that transactions with a seller will meet her confident expectations'. Trust is noted to be particularly important in cases where business relations are characterized by information asymmetry and fear of opportunism (Fang et al., 2011).

While the importance of trust in business relationships is widely acknowledged, the mechanisms by which perceptions of uncertainty associated with online shopping are reduced and ongoing trust enhanced are still not clear from literature. Fang et al. (2011, p. 483) argued that 'if trust is indeed an important aspect of online shopping, then understanding antecedents of trust should be a prime concern of online vendors'. Choi et al. (2014) bemoaned lack of research particularly on the concept of trust in established business relations. They noted that while the notion of ongoing trust in the context of e-commerce is acknowledged, it is rarely explored. Using the signalling theory this study examines the role played by the website in influencing customers' level of ongoing trust in online stores. The study specifically focusses on website attributes of informativeness, retailer related website interaction, customer related website interaction and website security. It develops and tests a model that examines the influence of these web attributes on customers' level of trust in online stores and ultimately on customers' behavioral intentions to repurchase from specific online stores.

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The main research question being addressed in the study is ‘what signals should managers of online stores use to enhance customers’ trust in their stores and repurchase intentions?’.

The paper is structured such that the next section provides a review of literature. In this section the conceptual framework of the study is discussed, constructs of interest reviewed and associated hypotheses presented. This is followed by the methodology and results sections respectively. Thereafter the results are discussed. The paper ends with conclusions and implications of the study.

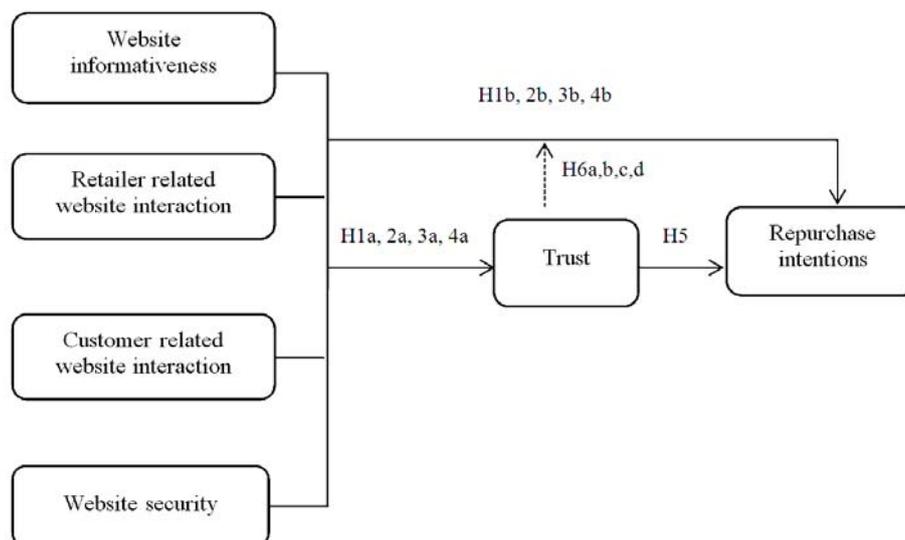
**1. Literature review**

**1.1. The signalling theory.** According to Connelly et al. (2011) as well as Basoglu and Hess (2014) signalling theory has been used by researchers in varied disciplines including finance, human resource management and marketing to help provide a basis for understanding how parties address the problem of limited or hidden information in decision making. In marketing research signalling theory has mainly been used to understand how buyers deal with the problem of information asymmetry particularly in assessing products. Focusing on product assessment Rao et al. (1999, p. 259) defined a signal as a cue that helps ‘to convey credibly about unobservable quality’. Signals can however be used to provide useful cues that customers can use to assess credibility of suppliers as well. Wells et al. (2011) identified price, branding, warranties, advertising expense and store environment as common

attributes that are used by customers as signals. Most of what is known in terms of important signals for customer purchase decision making is however based on studies done in the context of physical stores. While this is so the notion that the store environment can be an important source of signals possesses a strong parallel to online retailers’ website as source of signals. Gregg and Walczak (2010, p. 4) found that exposure to a website quickly elicits negative or positive impressions about a business. They further pointed out that ‘these impressions can be used as cues to guide perceptions of risk associated with various choice options’. Tsui (2012) noted that the ultimate goal of signalling is to positively influence desired outcomes such as behavior.

Figure 1 presents the proposed conceptual model for the study. The model takes cognisance of arguments in literature on signalling theory particularly on the role of signals in helping provide assurance relating purchase decisions and ultimately influencing customer behavior. The model proposes that informativeness, customer related website interaction, retailer related website interaction, and website security are important website attributes that positively influence trust in online store and ultimately customer behavioural intentions to repurchase from an online store. It also postulates that web site attributes have direct influence on customer repurchase intentions and that the level of this influence is mediated by levels of trust.

**1.2. Proposed conceptual framework**



**Fig. 1. Conceptual model of online store website signalling effect**

**1.3. Website informativeness.** Online customers rely on information made available by retailers through their websites in making purchase decisions. Luo (2002) defined web informativeness

as the extent to information provided on the web is perceived to be resourceful and helpful to users. Lack of openness on the part of online retailers through failure to provide detailed information

about products on offer and their retailing practices, such as return policies for example, can bring about a sense of suspicion on the part of customers. Pavlou et al. (2007) found that website informativeness helps reduce perceived risk of opportunism. Huang et al. (2013) found that provision of rich information can have significant influence on customers' trusting beliefs. A study by Gao (2007) found that perceived informativeness exerts significant influence on attitude towards online retailers site and on visitor intention to revisit. It is thus hypothesized in this study that:

- ◆ H1a: Trust in online store is positively related to perceived levels of website informativeness.
- ◆ H1b: Customers' online store repurchase intentions are positively related to website informativeness.

**1.4. Human interaction – retailer and customer website interaction.** Lack of physical contact between retailers and customers in online shopping helps explain increased levels of uncertainty and risk that customers associate online retailing with compared to offline retailing (Pavlou et al., 2007). One way in which firms try to manage this problem is by finding ways of ensuring ease of human interaction so as to create a sense of social presence (Ogonowski et al., 2014; Hsu et al., 2014). Gefen and Straub (2004) observed that perceptions relating to social presence have influence on levels of trust. A study by Weisberg et al. (2011) found that online social presence influences trust as well as customers' purchase intentions. Research on customer to customer versus customer to retailer interactions however shows that customers tend to perceive fellow customers with less suspicion than they do with sales people (Ye et al., 2011). This creates the need to separating retailer from customer web related interaction when examining effects of human interaction through the web interface. Thus the hypotheses put forward in this study are that:

- ◆ H2a: Trust in online store is positively related to retailer related website interaction.
- ◆ H2b: Customers online store repurchase intentions are positively related to retailer related website interaction.
- ◆ H3a: Trust in online store is positively related to customer related website interaction.
- ◆ H3b: Customers' online store repurchase intentions are positively related to customer related website interaction.

**1.5. Website security.** Although the internet is associated with many benefits including facilitating business transactions, as an open communication medium it is vulnerable to security threats that can emanate from sources internal to online stores or

externally. Studies reveal that one of the most cited reasons among non-adopters for not taking up online shopping is to do with security concerns (Kim et al., 2010). These concerns are not limited to non-online shoppers but manifest themselves even among those who have taken up online shopping (Mpinganjira, 2014). For online stores to be able to attract and retain customers they need to ensure that they are able to assure buyers of the safety of their personal information and transaction details. Kim et al. (2010) found that perceived security levels exert significant influence on customers' trust in e-commerce. Köksal and Penez (2015) as well as Salisbury et al. (2001) reported that perceived security also has significant direct influence on purchase behavior. It is thus hypothesized in this study that:

- ◆ H4a: Trust in online store is positively related to perceived website security.
- ◆ H4b: Customers online store repurchase intentions are positively related to perceived web site security.

**1.6. Trust and repurchase intention.** Cyr et al. (2005) observed that customer intentions to stay on with an organization are an indication of loyalty. They noted that customers' purchase behavior is likely to be negatively impacted by perceptions of retailer untrustworthiness. Kim et al. (2012) as well as Rezaei et al. (2014) found that trust in an online retailer has positive influence on customers' repurchase intentions. Furthermore, Chang and Chen (2008) contend that the relationship between trust and purchase intention is strong enough to mediate the direct influence that online environment cues may have on purchase intentions. A study by Bart et al. (2005) found that trust mediates the relationship between its antecedents which included website and consumer characteristics and customers behavioral intentions related to the website. It is thus hypothesized that:

- ◆ H5: Trust has positive influence of customers' online store repurchase intentions.
- ◆ H6: Trust plays a significant mediating role in the relationship between customers' online store repurchase intentions and (a) website informativeness, (b) retailer related website interactions, (c) customer related website interactions and (d) perceived website security.

## 2. Methodology

**2.1. Measurement development.** Measurement items used in the study were adapted from literature. Use of existing measures for research helps ensure content validity of constructs. Items used to measure website informativeness were specifically adapted from Demangeot and Broderick (2007) and Luo

(2002). Items used to measure retailer related website interaction were adapted from Dholakia and Zhao (2009) as well as Wang and Head (2007). Items used to measure customer related website interaction were adapted from Srinivasan et al. (2002) as well as Dholakia and Zhao (2009). Items used to measure website security were adapted from Kim et al. (2010) as well as Chen et al. (2010). Items used to measure trust were adapted from Qureshi et al. (2009) and Zhang et al. (2011) while those used to measure repurchase intentions were adapted from Zeithaml et al. (1996) and Hausman and Siekpe (2009). All items were measured on a five point scale anchored at 1 = strongly disagree and 5 = strongly agree. The direct measurement of items used to measure the constructs means that all constructs in the study were latent.

**2.2. Survey administration.** The data were collected from online shoppers based in Gauteng, South Africa in 2013 during the months of August and September. Trained data collectors were used in administering the questionnaire. Non-probability sampling in the form of quota sampling was used to select respondents. Use of quota sampling was aimed at ensuring that both male and female online shoppers were adequately represented in the sample. Respondents were personally approached by the data collectors at public places including shopping malls and asked to participate in the study. In answering the questions, respondents were asked to keep in mind a specific online retail store, where they had recently purchased merchandise from. The use of retrospective experience approach is common in online retailing studies and is consistent with

Zhang et al. (2011) assertions that online purchase experience is memorable and can as a result be easily recalled by individual customers. A total of 201 usable responses were collected by the end of the data collection period. In terms of their profile 51.2 percent were female while 48.8 percent were male. 41.8 percent were aged between 18 and 34, 46.8 percent were between the 35 and 49 while 11.4 percent were 50 and above.

**2.3. Data analysis.** The data were analyzed using structural equation modelling (SEM). A two-step approach as recommended by Hair et al. (2010) as well as Anderson and Gerbing (1988) was followed in the main analysis of the data. The first step entailed assessment of the measurement model for reliability and validity. The second step involved testing of structural relationships among the latent constructs. The data were subjected of exploratory analysis in order to test for the uni-dimensionality of constructs, before the main analysis. The results referred to Table 1, show that all scales had a uni-dimensional structure.

**3. Results**

**3.1. Assessment of measurement model.** The measurement model was evaluated using tests for construct reliability, convergent validity and discriminant validity. Reliability was assessed using composite reliability coefficients. The results, presented in Table 1, show that all the constructs had values of above 0.7, which is the commonly accepted level for good levels of reliability (Hair et al., 2010). The results specifically show that composite reliability of the constructs ranged from .765 to .889.

Table 1. Measures and factor loadings

Constructs and items	Composite reliability coefficient	Factor loadings
<b>INFO – Informativeness</b> INFO 1 - I feel that I could learn a lot about the products from this website INFO 2 - The website adequately met my information needs INFO 3 - The website provides enough information for me to make a well informed purchase decision	0.827	0.786 0.894 0.887
<b>RRWI – Retailer related website interaction</b> RRWI 1 - This website gives me the opportunity to easily communicate back RRWI 2 - This site has customer representatives available online RRWI 3 - The website facilitates two way communication	0.765	0.796 0.856 0.822
<b>CRWI – Customer related website interaction</b> CRWI 1 - This website allows customers to easily share their shopping experiences with other customers. CRWI 2 - Customers easily socialize with other members of the customer community on this website CRWI 3 - I felt that I had a lot of control when I wanted to check other customers' views.	0.888	0.849 0.833 0.772
<b>WS – Website security</b> WS 1 - The online store uses advanced information technologies e.g. encryptions in order to make it safe for customers to use their site WS 2 - I believe this online retailer has adequate security features WS 3 - This website seems security conscious	0.850	0.806 0.921 0.904
<b>TIOS – Trust in online store</b> TIOS 1 - I believe that this online retailer has high integrity TIOS 2 - I believe that this online retailer is dependable TIOS 3 - I feel that I can trust this online retailer	0.889	0.852 0.783 0.821

Table 1 (cont.). Measures and factor loadings

Constructs and items	Composite reliability coefficient	Factor loadings
<b>OSRI – Online store repurchase intentions</b>	0.815	
OSRT 1 - I will definitely buy products from this site again in the near future		0.718
OSRT 2 - I intend to purchase through this site in near future		0.775
OSRT 3 - It is likely that I will purchase through this site in the near future		0.688

Convergent validity was tested by examining the average variance extracted (AVE). According to Hair et al. (2010) AVE values of 0.5 and above are an indication of adequate convergence. The results in Table 2 show that all the AVEs ranged from .525 to .731. The results show that conditions for convergent validity were met.

Discriminant validity was assessed by examining the relationship between the square root of AVEs and

construct correlation coefficients. Chiu et al. (2009) observed that discriminant validity is evident when the square root of the AVE of a construct is larger than the absolute inter-construct correlation values associated with it. Table 2 presents the square root of AVEs on the diagonal with inter-construct correlation coefficients presented off diagonal. Based on the results it can be concluded that the constructs have sufficient discriminant validity.

Table 2. Construct validity

Construct	1	2	3	4	5	6
1. Informativeness	<b>.783</b>					
2. Retailer related website interaction	.172	<b>.855</b>				
3. Customer related website interaction	.466	.656	<b>.725</b>			
4. Website security	.604	.225	.445	<b>.825</b>		
5. Trust in online store	.728	.060	.415	.653	<b>.854</b>	
6. Online store repurchase intention	.653	.089	.413	.602	.733	<b>.770</b>
AVE	.613	.731	.525	.681	.729	.593
MSV	.530	.430	.430	.426	.537	.537

Note: 1. All correlation were significant at the 0.01 level (2-tailed).  
 2. Diagonal values in bold are the square root of the AVE. Off diagonal values are construct correlations

**3.2. Assessment of structural relationships.** Table 3 presents results of tests done to examine the structural paths in the model. As hypothesized, website attributes of informativeness, retailer related website interaction, customer related website interaction as well as website security had significant influence on customers' trust in online

store. The standardized regression coefficients are .449 (p = .000) for informativeness, .143 (p = .025) for retailer related website interaction, .176 (p = .003) for customer related website interaction and .325 (p = .000) for security. The results thus provide support for hypotheses H1a, 2a, 3a and 4a.

Table 3. Results of the hypothesis testing – direct effects

			Standardized regression coefficient	SE	p	Conclusion
Trust in online store	<----	Informativeness	.449	.059	.000	H1a supported
Trust in online store	<----	Retailer related website interaction	.143	.053	.025	H2a supported
Trust in online store	<----	Customer related website interaction	.176	.041	.003	H3a supported
Trust in online store	<----	Website security	.325	.057	.000	H4a supported
Online store repurchase intention	<----	Trust in online store	.348	.068	.000	H5 supported
Online store repurchase intention	<----	Informativeness	.154	.064	.030	H1b supported
Online store repurchase intention	<----	Retailer related website interaction	.103	.052	.131	H2b not supported
Online store repurchase intention	<----	Customer related website interaction	.064	.041	.318	H3b not supported
Online store repurchase intention	<----	Website security	.244	.059	.000	H4b supported

According to Table 3, results relating to the structural paths from the four website attributes to behavioral intention provide support for two of the

four related hypotheses. The results specifically show that repurchase intentions are significantly influenced by informativeness ( $\beta = .154$ ;  $p = .030$ )

and website security ( $\beta = .244$ ;  $p = .000$ ). Hypotheses H3b and H4b are thus accepted. Retailer related website interaction and customer related website interaction were found not to have direct influence on customers' repurchase intentions. The results specifically show standardized regression coefficients for retailer related website interaction of .103,  $p = .131$  and .064,  $p = .318$  for customer related website interaction. Hypotheses H1b and H2b are thus rejected.

**3.3. Hypotheses testing: mediating effect of trust.**

In order to test the mediating effect, the process recommended by Baron and Kenny (1986) was followed. The process entails establishing first that the independent variable affects the dependent and the mediator variable as well as establishing that the mediator variable affects the dependent variable. Keeping in mind the results in Table 3 that show that retailer related website interaction and customer related website interaction had no significant influence on repurchase intentions, tests for mediation effect were done on only the relationship between behavioral intention as the dependent variable and informativeness as well as website security respectively as the independent variables.

According to Baron and Kenny (1986) full mediation exists when the direct path becomes insignificant in the presence of the mediator variable while partial mediation effect exists when the direct paths lose level of significance of effect when the mediator variable is present.

Table 4. Results of hypothesis testing – mediation effect

Relationship	Direct effect without mediator		Direct effect with mediator		Conclusion
	Regression coefficient	p value	Regression coefficient	p value	
Online store repurchase intention – informativeness	.337	.000	.164	.020	Partial mediation
Online store repurchase intention – Website security	.374	.000	.253	.000	Partial mediation

The results in Table 4 show that trust had partial mediation effect on the relationship between informativeness as well as web site security and customer repurchase intentions respectively. The results specifically show a drop in the beta coefficient and p value from  $\beta = .337$ ;  $p = .000$  to  $\beta = .164$ ;  $p = .020$  for informativeness path and from  $\beta = .374$ ;  $p = .000$  to  $\beta = .253$ ;  $p = .000$  for the website security related path. The results provide support for

hypotheses H6c and H6d. As not all conditions for assessing mediation were met for retailer related website interaction and customer related website interaction presence H6a and H6b are not supported.

**4. Discussion of findings**

The findings in this study show that website attributes play an important role in influencing customers' level of trust in online stores. These findings are consistent with the notion that a store's environment is a source of important signals to consumers (Gregg and Walczak, 2010). While all the four attributes examined were found to have significant influence on trust levels, informativeness and web security respectively had the greatest influence on trust. These results are consistent with arguments that indicate information asymmetry as the major source of uncertainty in online shopping.

On the influence of website attributes on customer behavioral intentions, the findings show that only two out of the four website related factors exert significant influence. These were informativeness and web security. The findings on the role of informativeness and web security are in a way consistent with those reported by Salisbury et al. (2001). Findings relating to both retailer and customer website interaction are however inconsistent with arguments by Weisberg et al. (2011) who noted that social presence influences not only customers' levels of trust but also their behavioral intentions. Based on the findings it may be argued that their influence is indirect in so far as they impact on trust.

This study also shed light on the role of trust in influencing online customer purchase intentions. The results specifically show that trust does not only have a direct influence on customer repurchase intentions but that it also plays a significant mediating role on the relationship between website related factors and repurchase intentions. The findings are in line with assertions by Kim et al. (2012) as well as Chang and Chen (2008) on the critical role that trust plays in influencing online customer's perceptions and purchase decision making.

**5. Conclusions and implications**

**5.1. Conclusions.** Drawing from signalling theory, this research study examines ways in which online retailers can enhance trust in their online stores and positively impact on customers' intentions to repurchase from their online stores. The findings show that the website can be an effective source of cues to this end. Specifically the findings show that informativeness of the website, retailer related website interaction, customer related website interaction and web security can effectively be used

to positively influence trust. They also show that the importance of trust extends to not only influencing customer repurchase intentions but also mediating the level of direct influence that website related factors, specifically informativeness and web security, have on customers' repurchase intentions. The findings in this study have wide research and managerial implications as outlined below.

**5.2. Research implications.** The study makes several contributions to research. Firstly, the study provides support for existing findings on the impact of trust on purchase decision making in buyer seller relationships particularly in the context of online retailing. Spatial and temporal separation between buyers and sellers makes online customers particularly prone to opportunistic behaviors by sellers. The results show that low levels of trust have significant negative impact on ongoing online exchange relationships.

Secondly the study draws from signalling theory to examine the influence of website related factors on trust as well as on customer behavioral intentions. In so doing the study extends signalling theory to online retail stores. Consistent with signalling theory, the research findings show that the online environment is an important source of cues that can help reduce levels of uncertainty in online retailing by impacting positively on customers' trust in specific online stores.

Thirdly, the findings of the study contribute to understanding the relative effect of different website related attributes on both online customer trust and behavioral intentions. Of the four factors investigated, the findings show that the website related factor that impacts trust and behavioral intentions the most is informativeness followed by website security. The results show that the influence of social presence associated with both customers and retailers is limited to trust and not customer repurchase intentions. By focusing on both customers and retailers, the study contributes to understanding not only the importance of social presence but also the relative influence that social presence associated with different social players has on online customers. Lastly, by testing the model on customers of not just a single online store or a single class of websites as is sometimes done in online retailing studies, this study shows the robustness of the model to different online store targets.

**5.3. Managerial implications.** The findings in this study have important managerial implications for online retailers. They confirm that trust in an online store is an important factor that affects customers' plans including repurchase intentions. Firms

therefore need to focus on finding ways of enhancing customers trust in them. The results specifically point to the need for managers to focus on informativeness, retailer related interaction, customer related interaction and website security if they are to impact positively on customers' trust in their online stores.

In terms of informativeness, the findings point to the need for managers to ensure that they use their website to provide customers with detailed information that can assist them easily make purchase decisions. Focusing only on quantity without looking at usefulness and well as usability of information may therefore not be helpful. This is more so when one takes cognisance of the fact that people do not have unlimited cognitive capacity with which to process information (Sasaki et al., 2011). This points to the need for managers to identify information that customers really need in making purchasing decisions and making sure that such information is made available in a form that customers can easily engage with. Findings on interaction point to need for managers to appreciate not only the fact that interaction does play an important role in influencing customers' trust but also that the different types of social players may have different levels of influence. Retailer related website interaction can be used by online retail managers to help provide assurance to customers of the fact that they are available to serve their customers irrespective of spatial separation that may be there. Retailer related website interaction has the potential to also positively impact on retail stores levels of responsiveness to customer's needs including inquiries. Customer related interaction on the other hand can help online stores provide assurance to customers of their commitment to face public scrutiny and engage with them in ensuring provision of satisfactory online shopping experience.

The findings also point to the need for managers to take measures aimed at positively influencing customers' website security perceptions. Managers can do this by checking security features of their websites. Use of advanced information technologies including encryptions can give customers the impression that a store is concerned about security and is taking measures to ensure improved security.

#### **Limitations of the study and suggestions for future research**

While the study advances understanding of trust in the context of online retailing, it is not without limitations. The limitations provide the basis for some of the recommendations into future research.

One limitation associated with the study is to do with the fact that the data were collected from online customers from a single province in South Africa. This limits the extent to which the findings can be generalized to customers located in other areas. Future research needs to take this factor into consideration and find ways of including customers from all around the country or replicating the study

in other areas so as to enable comparison of findings. Another limitation associated with the study relates to the fact that the model only focused on limited number of web site related factors. Future research could deal with this problem by investigating additional website related factors that may help explain trust and customer behavioral intentions.

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