



AN EMPIRICAL INVESTIGATION ON E-RETAILER AGILITY, CUSTOMER SATISFACTION, COMMITMENT AND LOYALTY

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Abstract. Internet has changed the way retailers do their business. They have gone electronic and are now termed as e-retailers. These e-retailers face huge competition in securing their loyal customer base. In our study, we suggest that if e-retailers provide good information and system quality to their consumers and in turn show agility to resolve their issues, e-retailers may develop loyal customers. In our study, we propose a model to provide understanding of this process by studying the antecedents and consequences of e-retailers' agility. Partial least squares were used for testing the proposed relationships. The empirical findings based on 222 completed responses suggest that information quality and system quality of e-retailer website can be a factor in consumers perceiving e-retailers to be agile. Also, this results in customer loyalty.

Keywords: retailers' agility, consumer engagement, online reviews, electronic word of mouth, loyalty, commitment.

JEL Classification: C12, C42, L60.

Introduction

Agility has long been a competitive weapon for manufacturers and subsequently been investigated in multiple perspectives in supply chains. It is a competitive weapon in that it imparts a firm with the capability to satisfy the sudden requirements of its customers in a speedy manner (Gligor and Holcomb 2012, Tse et al. 2016). In other words, agility is, therefore, the capability of a firm to satisfy the dynamic requirements of its customers in a fast pace (Brusset 2016). Recently with the advent of the internet; e-retailers have started marketing products using the internet. Because of this growing internet operations, an e-retailer must also be in a position to quickly satisfy its customer dynamic requirements i.e. an e-retailer must be agile as the same will determine its competitive edge in the market.

An e-retailer website can be considered as an information system. Information systems quality is an important

measure of information systems success (IS) success. Several factors have been studied in the literature to investigate information system success. Specifically, information quality and system quality have been given much importance in the literature.

Online consumers are increasingly becoming selective and involved in the information they acquire about various products and brands on the internet (Burton and Khamash 2010, Zahay et al. 2015). Information is an essential part of any website and the quality of information is considered as an important tool in the hands of the marketer, in the context of online shopping (Xu and Koronios 2004, Lukyanenko and Parsons 2015, Heang and Khan 2015, San Vivian and Yazdanifard 2014). Quality is an attribute of a product or a service, which refers to the degree to which it meets customer needs and requirements (Nagel and Cilliers 1990, Dabholkar 2015). Perceived quality is similar

to attitude as it indicates the judgment and evaluation that consumers make about product/service quality based on their needs (Zeithaml 1988, Dabholkar 2015). In this study we specifically investigate system quality. System quality is an engineering oriented performance characteristics (rating interface design, functionality, response time, etc.) (Ahn et al. 2007) and has been shown to have a positive impact on perceived ease of use and usefulness of a website (Liao and Cheung 2001, Chung et al. 2015). However, extant literature has not explored the importance of e-retailer's agility in enhancing customer loyalty through satisfaction and commitment. Hence this study aims to contribute in the following ways:

1. What are the influences of information and system quality on e-retailer's agility?
2. What are the influences of e-retailer's agility in enhancing customer satisfaction and commitment?
3. What are the contributions of customer satisfaction, commitment and e-retailer's agility in enhancing customer loyalty?

1. Agility in supply chains and e-retailer's agility

Agility has been investigated in multiple ways and perspectives in supply chain arena. Agility in supply chain context has been gained in importance as a critical and dominant supply chain capability (Gligor and Holcomb 2012). Initially, supply chain agility was explored mostly from a manufacturing standpoint using different perspectives (Goldman 1995, Gligor and Holcomb 2012, Oloruntoba and Kovaics 2015, Brusset 2016).

Later, agility was extended to supply chains and targeted to increase speed and response in the supply chain with respect to the demands of the customers (Swafford et al. 2006) and hence related to the effectiveness of strategic supply chain management (Hult et al. 2007).

Extending the notion of manufacturing agility, Swafford et al. (2008) defined supply chain agility as the ability of supply chains to respond to customer needs in a speedy manner (Tse et al. 2016, Brusset 2016).

Studies have investigated supply chain agility from multiple aspects. Swafford et al. (2008) argued that achieving supply chain agility is an integration of other abilities residing in the firm, specifically supply chain flexibility and information technology. With support from empirical data, their study indicated IT integration enables a firm to tap its supply chain flexibility which in turn results in higher supply chain agility and ultimately higher competitive business performance. In an identical context, Li et al. (2008) reviewed agility literature between (1990–2007) and developed a theoretical model of SC agility linking the same with firm competitiveness. Their conceptual review argued SC agility to have three levels in terms of design: (a) strategic design agility (b) operational design agility

and (c) episodic design agility. They concluded that it's the accumulated effect of these three-design agility that affects the agile performance and hence determines the competitiveness of the firm.

Li et al. (2009) based on supply chain agility literature, experience surveys, and expert judges' opinion developed a measurement instrument for SC agility comprising six dimensions with twelve items. The six dimensions were strategic alertness, strategic response capability, operational alertness, operational response capability, episodic alertness and episodic response capability. Finally, using foundations of social and life science theory Gligor et al. (2013) developed a comprehensive measurement instrument for SC agility. This showed SC agility is composed of five distinct dimensions including alertness, accessibility, decisiveness, swiftness, and flexibility.

Several studies have investigated agility in supply chains from a firm perspective too. Yusuf et al. (2014) found a positive linkage between a firm's agile objectives, its competitive objectives, and business performance. Blome et al. (2013) using dynamic capabilities theory, found a positive impact of supply side competence and demand side competence on a firm's SC agility and in turn on its operational performance. Their study utilized process compliance as a moderator on the relationship between the proposed competencies (i.e. demand and supply) and SC agility. Finally, Gligor and Holcomb (2012) using an extensive literature review from 1991–2010 of agility and logistics capabilities formulated a conceptual model of SC agility. Their study suggested that firms within a supply chain must integrate their individual logistics capabilities with their focal firm for developing supply chain agility. Oloruntoba and Kovaics (2015) argued that agility is a critical characteristic for arranging relief during various environmental calamities for humanitarian operations. Tse et al. (2016) argued that the electronics industry must focus on building agile capabilities for maintaining their competitive edge in the market. Vinodh and Aravindraj (2015) using a case study analysis showed that agility is an important attribute for improving overall performance and gaining customer satisfaction. Brusset (2016) found on their empirical survey of French managers that visibility through web reporting does not necessarily improve agility; however, inter-organizational spanning processes do enhance agility. Accordingly, the current study extends the notion of agility to the context of e-retailer and contributes to the extant literature by exploring its influence on important customer dimensions e.g. commitment, loyalty, and satisfaction (Caruana et al. 2015).

However, supply chains in recent years are facing a lot of market dynamics and hence the importance of such dynamic capabilities like agility has increased manifold. Firms are focusing on developing such supply chain-wide dynamic capabilities that can help the firm and its supply chains to

respond to customer demands in a speedy manner. A significant development in recent supply chain operations is the marketing of goods through the internet. This has led to the growth of retailing through the internet and the advent of a popular term called e-retailer. Considering the importance of agility (Gligor and Holcomb 2012) in supply chain operations, we now focus on such a capability of an e-retailer. This is because an e-retailer has to ensure that its internet infrastructure is able to attract and deliver sales. Also, it has to ensure that such an infrastructure along with its operations is flexible and capable enough to accommodate sudden demand fluctuation from the market and satisfy the same in a speedy manner. As this is the core essence of agility and hence will determine the competitive position of the e-retailer in the market.

An e-retailer is defined as an e-retailer selling goods via electronic transactions on the Internet (Mitra and Fay 2010). With the growth of e-retailer businesses, we argue that an e-retailer's agility is an important dynamic capability that enables an e-retailer to respond and fulfill its customer dynamic requirements in a speedy manner. Thus, extending the essence of supply chain agility (Gligor and Holcomb 2012) to an e-retailer context, we define an e-retailer's agility is the adaptive capability of the e-retailer to respond and satisfy the demands of its customers in the shortest possible time. The faster an e-retailer can fulfill any upcoming demand from the market is an importance determinant of the competitive advantage considering it to as a dominant dynamic capability of an e-retailer (Teece 2007).

With the growth of e-retailers' or online shopping sites several authors have studied various aspects in the context of e-marketplaces like the impact of customer traffic and service and service process outsourcing e-retailer operational performance was studied by Perdikaki et al. (2015). Research has also studied how the perceptions towards e-retailers' image affect e-consumer behavior (San and Yazdanifard 2014). Yoo et al. (2015) studied the impact of interactivity of electronic word of mouth systems and e-quality on decision support in the context of the e-marketplace. Hu and Chuang (2012) studied the value perception and loyalty intention toward an e-retailer website.

DeLone and McLean (1992) identified six different components to information systems success; Information quality, system quality, user satisfaction, individual impact and organizational impact. Since then several authors have studied the role of information quality and system quality on perceived enjoyment and usage intention of information services (Kim et al. 2013), on website satisfaction (Schaupp et al. 2009), system quality was studied in the context of online satisfaction (McKinney et al. 2002). In our study, we propose two components; perceived information quality and perceived system quality as important enablers of e-retailer's agility.

2. Hypotheses development

2.1. Perceived information quality and e-retailer's agility

As DeLone and McLean (2003) suggested, net benefits "cannot be analyzed and understood without 'system quality' and 'information quality' measurements" (pp. 25). In this line, we posit that perceived information quality and perceived system quality as dominant enablers for perceived e-retailer's agility.

Information quality refers to the persuasive strength of arguments embedded in a message (Bhattacharjee and Sanford 2006, Lukyanenko and Parsons 2015). In the context of end user computing information- quality is assessed literature in information Systems has investigated information quality in terms of objectivity, credibility, timeliness, sufficiency and understandability (Bailey and Pearson 1983, Mahmood and Medewitz 1985, Negash et al. 2003). Research in marketing focuses effective persuasion while measuring information quality. Wixom and Todd (2005) used completeness, accuracy, format and currency as the dimensions to study information quality. In e-commerce studies, information quality is measured through accuracy, completeness, relevance, currency understandability, personalization, variety and dynamism (DeLone and McLean 2003). The most commonly used dimensions of information quality, i.e. relevance, timeliness, accuracy, comprehensiveness in studying the electronic word of mouth (Cheung et al. 2008, Filieri and McLeay 2013).

The relevance of information refers to the extent to which a message is applicable and helpful for a task at hand (Wang, Strong 1996). In the context of online reviews, the information may be relevant when it provides the kind of information that consumers or website visitors are looking for (Filieri and McLeay 2013). Timeliness of the information refers to whether the messages are current, timely, and up-to-date (Nelson et al. 2005). In the context of online reviews, consumers would prefer to read more up to date reviews rather than outdated reviews that have been there on the website for a long time. The accuracy of messages concerns the reliability of the message and represents the user's perception that the information is correct (Wixom and Todd 2005). Comprehensiveness of messages refers to their completeness (Cheung et al. 2008). Information completeness refers to the extent to which information is of sufficient breadth, depth, and scope of the task at hand (Wang and Strong 1996, Chung et al. 2015). In the context of online reviews, the information provided through the review should be perceived as complete.

A customer's perception regarding how quickly an e-retailer is able to satisfy its demands is dependent upon the information about that e-retailer and its agile capabilities as exhibited in multiple incidents, recorded and is made

available on several online sites and portals. So adopting a customer perspective in this investigation, the current study attempts to view if perceived information quality is a critical determinant of the e-retailer's agility. We argue on the importance of perceived (by customer) information quality and propose that to be a positive determinant of an e-retailer's agility. Without appropriate and relevant information being exchanged in a timely manner among the e-retailer and its web partners (helping to execute its web operations and electronic transactions); an e-retailer will not be able to respond and fulfill the dynamic requirements of its customers. Hence, we argue that higher is the perceived quality of information available in e-retailer's website; higher is the e-retailer's agility as perceived by the customers (Gharib and Giorgini 2015). Hence, we posit our first hypothesis:

H1: Perceived information quality has a positive influence on perceived e-retailer's agility.

2.2. Perceived system quality and w-retailer's agility

As mentioned earlier, perceived system quality is another factor that has been given much importance in studying information systems. System quality in end user computing literature has been expressed by the ease of use (Rai et al. 2002), which is the degree to which a system is "user-friendly" (Doll and Torkzadeh 1988, Walther et al. 2015). McKinney et al. (2002) empirically verified that access, usability, and navigation are the three dimensions of system quality.

Access is referred to as the speed of access and availability of the web site at all times (McKinney et al. 2002). Gehrke and Turban (1999) showed that the loading speed of a page is the most important determinant of successful website design, which was rated by consumers (Gehrke and Turban 1999). Usability refers to the degree to which the web site is visually appealing, consistent, fun and easy to use (McKinney et al. 2002, Bharati and Chaudhury 2006). Navigation captures the evaluation of the links to needed information (McKinney et al. 2002). Navigation was emphasized by Nah and Davis (2002) as an important design element in a usable website (Nah and Davis 2002).

Now e-retailer's agility being the capability of the e-retailer and its web partners (e.g. software and hardware vendors providing the overall platform for executing electronic transactions) in being able to deliver and fulfill customer dynamic requirements in a speedy manner; we argue that such a capability is strongly dependent on the quality of hardware and software or the overall platform being provided for enabling electronic transactions. Further, better the customer perceives the quality of the system based on his experiences during the electronic transactions executed; higher will be the perceived e-retailer's agility. Accordingly, we frame our next hypothesis:

H2: Perceived system quality has a positive influence on perceived e-retailer's agility.

2.3. Perceived w-retailer's agility and customer satisfaction

Customer satisfaction is a strong determinant of the continuity of a customer's relationship or association with a brand. Customer satisfaction is a measure of how products and services supplied by a company meet or surpass customer expectation (Bell et al. 2005). Our study contends that perceived e-retailer's agility will increase customer satisfaction. E-retailer's agility aims to satisfy customer dynamic requirements in a speedy manner (Brusset 2016, Tse et al. 2016). Such a dynamic capability is required in recent years as firms are strategizing on achieving customer satisfaction in the best possible manner.

Hence, more the customers perceive e-retailer's agility in a positive manner; higher are the chances of their satisfaction because they know that the e-retailer will be able to meet its delivery schedule in spite of posing dynamicity at the last moment. Positive perception regarding an e-retailer's service capabilities can have positive implications for influencing customer satisfaction (Spreng and Mackoy 1996). Further; Xu et al. (2007) empirically observed perceived service quality to have a positive influence on customer satisfaction. We contend in this line that perceived e-retailer's agility will have a positive influence on customer satisfaction (Agnihotri et al. 2016). Accordingly, we posit our next hypothesis:

H3: Perceived e-retailer's agility has a positive influence on customer satisfaction.

2.4. Perceived e-retailer's agility and customer commitment

E-retailer's agility being the adaptive capability of the e-retailer and the e-retailer's web partners (e.g. software and hardware vendors providing the overall platform for executing electronic transactions) in being able to respond and fulfill the dynamic needs of the customers in a prompt manner; such a dynamic capability will have a definite influence in ensuring a long-term association with the customers. Commitment indicates the willingness to sustain an ongoing relationship for a long time (Morgan and Hunt 1994, Keiningham et al. 2015). Therefore; we argue that if a customer has a positive perception regarding an e-retailer's agility; they will be easily able to commit themselves for a long-term association with the brand. Harrison and Walker (2001) found a positive association of perceived service quality with customer commitment in the context of word of mouth communication. More recently, Park et al. (2012) observed perceived service quality has a positive influence on relationship commitment along with trust in

the context of IT services. We extend this and argue that perceived e-retailer's agility will have positive influence on customer commitment (Chung et al. 2015, Lee et al. 2015). Accordingly, we posit our next hypothesis:

H4: Perceived e-retailer's agility has a positive influence on customer brand engagement.

2.5. Customer satisfaction and customer commitment

Past literature has shown that satisfaction tends to be consistently and strongly related to subjective reports of organizational commitment (Lee and Mowday 1987, Williams and Hazer 1986, Lee et al. 2015). Locke and Latham (1990) also reported a positive correlation between satisfaction and commitment thus forming the basis on our next hypothesis. Du Preez and Bendixen (2015) found job satisfaction to have a dominant influence on brand commitment in the context of financial services sector. Further, Yi et al. (2011) found a positive association of customer satisfaction with customer commitment using an electronic firm as the preferred sample. In similar lines, Lumley et al. (2011) explored and empirically established job satisfaction to have a positive influence on organizational commitment of IT sector employees. We extend this to the current context and posit that if customers are satisfied with an e-retailer's agile capabilities, they will definitely plan for long term association with the e-retailer (Agnihotri et al. 2016). Accordingly, we posit our next hypothesis:

H5: Enhanced customer satisfaction owing to e-retailer's agility will positively influence customer commitment for that particular e-retailer.

2.6. Customer satisfaction and customer loyalty

Increasing recognition, a definitive goal of consumer satisfaction estimation ought to be customer loyalty (Sivadas and Prewitt 2000). Fornell (1992) contends that high consumer satisfaction will bring about expanded loyalty for the firm and that clients will be less inclined to suggestions from rivalry. On the other hand, the capacity of consumer satisfaction scores to anticipate such loyalty has not been satisfactorily illustrated (Higgins 1997). Taylor and Baker (1994) express the trepidation that if firms are not ready to show a connection between consumer satisfaction and monetary execution, then firms may forsake the emphasis on consumer satisfaction estimation. There is some confirmation to bolster the discord that consumer satisfaction deciphers into higher than ordinary piece of the market development (Garbarino and Johnson 1999; Hollebeek et al. 2014). Fornell et al. (1996) offered proof of the linkage between consumer satisfaction and loyalty. Anderson et al. (1994) additionally called attention to that customer loyalty is resolved to a substantial degree by consumer satisfaction. More recently, Chang et al. (2013) observed that

patients' satisfaction exerts a positive influence on gaining patients loyalty for concerned hospitals. Further, in the hospitality industry, Kim et al. (2015) empirically found customer satisfaction and loyalty to be strongly associated. We extend this continuum in this context and posit our next hypothesis:

H6: Enhanced customer satisfaction owing to e-retailer's agility will positively influence customer loyalty for that particular e-retailer.

2.7. Customer commitment and customer loyalty

It is for the most part acknowledged that commitment is not quite the same as loyalty in that commitment prompts loyalty, in spite of proceeding with perplexity between the two (Morgan and Hunt 1994). Jacoby et al. (1978) contrasted the part of commitment and that of loyalty, contending that commitment emerges when looking through brands before settling on decisions, while loyalty emerges later. In like manner, the researchers saw commitment as the establishment for the improvement of brand loyalty (Harrison-Walker 2001) More recently, Ruben et al. (2015) suggested a strong association between customer commitment and loyalty in a business to business services context. Further, Lariviere et al. (2014) observed a strong relationship between customer commitment and loyalty using longitudinal panel survey data. Extending this conjecture to our current context, we argue that customer commitment is positively associated with customer loyalty. Accordingly, we formulate our next hypothesis:

H7: Enhanced customer commitment owing to e-retailer's agility will positively influence Customer loyalty for that particular e-retailer.

Figure 1 below summarizes the proposed hypotheses.

3. Methodology

3.1. Data collection and sample demographics

The data was collected through face to face interview through a survey instrument. The survey instrument was pretested by administering it to a small sample of customers.

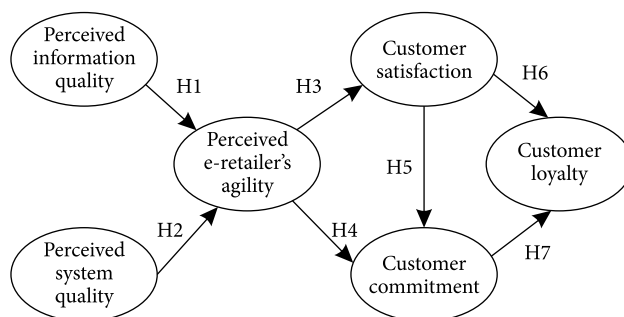


Fig. 1. Theoretical model

Some of the measurement items were adapted to suit the context based on the feedback received during pretesting. The surveyed respondents were asked to respond based on their experience with different e-retailer. Table 1 shows the sample profile.

We interviewed 650 customers and asked them to respond to different questions related to the research objectives framed in the study. The interview process ended with 257 partially completed responses giving a response rate of 39.53% (257/650). However, we considered only completed responses for testing our hypotheses through partial least squares. Hence for final analysis the study has 222 completed responses.

3.1.1. Non-response bias

We tested for the non-response bias by comparing the early and late respondents (Armstrong and Overton 1977, Nishimura et al. 2015). There were no significant mean

differences between these two groups on key measures such as firm size and industry affiliation.

3.1.2. Common method bias

Since we collected several responses from a single respondent using a single questionnaire, an assessment of common method bias was deemed necessary. Analysis of Harman's single-factor test of common method bias (Podsakoff et al. 2003) showed six factors with Eigen values above one, explaining 76.8 % of the total variance. The first factor explained 29.4 % of the variance, which is not the majority of the total variance. We performed a second test of common method bias by applying a confirmatory factor analysis to Harman's single-factor model (Flynn et al. 2010). The model's fit indices of chi-sq/df=8.9; NFI= 0.67; CFI=0.62 and RMSEA=0.16 were predominantly worse than those of the measurement model.

Suggesting that single factor model is not acceptable; thus, the common method bias is not a threat (Jakobsen, Jensen 2015).

Table 1. Sample profile

	Number	Percentage %
Gender		
Male	134	60.36
Female	88	39.64
Age Group		
0–20	43	19.37
21–30	95	42.79
31–40	48	21.62
41–50	19	8.56
51 and above	17	7.66
Income Level		
<10,000	8	3.60
10,000–20,000	72	32.43
>20,000	142	63.96
Geographical Classification		
Rural	10	4.50
Semi-Urban	82	36.94
Urban	130	58.56

Table 2. Convergent validity

Construct	Items	Item loadings	Composite reliability	AVE	Cronbach's Alpha
Perceived information quality	4	0.764–0.899	0.905	0.704	0.856
Perceived system quality	3	0.913–0.936	0.947	0.857	0.916
Perceived e-retailer's agility	4	0.745–0.919	0.913	0.726	0.869
Customer satisfaction	5	0.740–0.896	0.917	0.690	0.882
Customer commitment	3	0.873–0.943	0.934	0.637	0.890
Customer loyalty	5	0.734–0.893	0.909	0.667	0.870

3.2. Survey Instrument

All the constructs used in the model have established scales for measurement and hypothesis testing. The measures were suitably adapted (wherever needed) to suit the context. A total of 24 survey items (refer. Appendix-1) was used to measure independent and dependent variables in the study. An important contribution of this study is the development of a measurement scale for perceived e-retailer's agility. The study is the first to operationalize perceived e-retailer's agility. For this we have followed the steps as suggested by Churchill (1979). This is including in-depth literature search, generating items through interviewing practitioners and e-retailers. As expected, the items loaded appropriately on a single factor and the reliability and validity tested adequate as demonstrated in Table 2 and 3.

3.3. Scale Validation

The current study employed Partial Least Squares for scale validation and hypothesis testing. PLS is a structural equation modeling based methodology that deploys a

component based approach for estimating the parameters. The benefit of using PLS extends from allowing the researcher to model formative constructs to estimating the required parameters with a minimal sample size. For PLS, the required sample size is ten times the no of indicators of the largest construct present in a theoretical model. As PLS does not provide a significance test or interval estimation, a bootstrapping analysis was conducted with 1000 sub-samples for calculating the path co-efficient, statistical significance and allied parameters. The procedure was executed in two steps. First, reliability and convergent validity was assessed. The second step assessed the discriminant validity.

The study first assessed reliability using the criterion, Cronbach's alpha larger than 0.7 (Chin 1998). Convergent validity was next assessed using multiple criteria: (1) item loading larger than 0.70 and statistical significance, (2) composite construct reliability larger than 0.80 and (3) average variance extracted (AVE) larger than 0.50 (Fornell and Larcker 1981). Further, discriminant validity was assessed using the criterion: the square root of AVE for each construct greater than its correlations with all other constructs (Fornell and Larcker 1981). As indicated in Table 3, standardized item loadings range from 0.734 to 0.943, composite reliabilities range from 0.905 to 0.947, and average variance extracted (AVEs) range from 0.637 to 0.857. In Table 4, the square root of AVE for each construct is larger than its correlations with all other constructs. Hence, these

results show a highly acceptable level of reliability, convergent and discriminant validity.

4. Hypotheses testing

PLS was used to estimate the path coefficients in the structural model. The estimation was executed in two steps (Chin 1998). First, it was required to estimate the path coefficients and statistical significance for the dominant paths. Second, coefficient of determination (R-square) for endogenous variables was computed to assess their predictive power.

Table 4 below gives a summary of hypotheses testing results.

As shown, most of the hypotheses have found empirical support. Based on our analysis above, the model established perceived information quality and perceived system quality as dominant antecedents of perceived e-retailer's agility.

The validated empirical model explained 59.6 percent of the variance in perceived e-retailer's agility which accounted for 23.1 percent of the variance in customer satisfaction. Further, customer satisfaction and perceived e-retailer's agility accounted for 16.1 percent of the variance in customer commitment. Lastly, customer commitment and customer satisfaction accounted for 18.7 percent of the variance in customer loyalty. Figure 2 shows the path values model and the significance values (t-values).

Table 3. Discriminant validity

Constructs	INFQ	SQ	RA	SAT	CMT	LOY
Perceived information quality (INFQ)	0.839					
Perceived system quality (SQ)	0.704	0.925				
Perceived e-retailer's agility (RA)	0.706	0.717	0.852			
Customer satisfaction (SAT)	0.326	0.535	0.480	0.830		
Customer commitment (CMT)	0.562	0.362	0.401	0.192	0.798	
Customer loyalty (LOY)	0.226	0.318	0.135	0.312	0.354	0.816
Diagonal value: Sq. root of AVE; Non diagonal value: inter construct correlations						

Table 4. Summary of hypotheses testing

Summary of Hypotheses Testing				
No.	Relationship	Path coefficient	T values	Supported?
H1	Perceived information quality → perceived e-retailer's agility	0.399	2.867	Yes
H2	Perceived system quality → perceived e-retailer's agility	0.436	3.405	Yes
H3	Perceived e-retailer's agility → customer satisfaction	0.481	4.588	Yes
H4	Perceived e-retailer's agility → customer commitment	0.402	4.111	Yes
H5	Customer satisfaction → customer commitment	-0.001	0.007	No
H6	Customer satisfaction → customer loyalty	0.253	2.169	Yes
H7	Customer commitment → customer loyalty	0.305	3.170	Yes

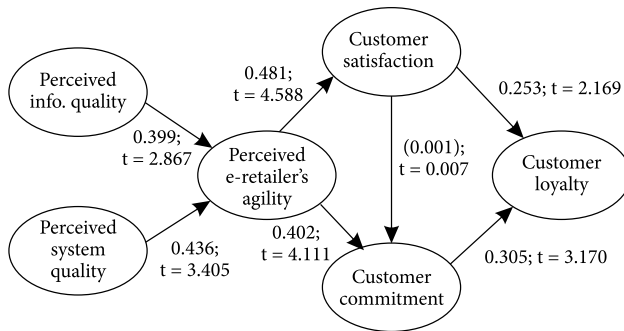


Fig. 2. Structural model results

5. Contributions

Our study has several contributions. First it suggests that perceived information quality and perceived system quality effects perceived e-retailer's agility, this provides us clarity and helps fulfill the primary objective of the paper by providing evidence of the relationship among these three variables. The results further provide support the agility may also influence customer satisfaction and commitment; this supports the second objective of the study. Further, both customer satisfaction and commitment act as dominant enablers of customer loyalty, which is the third contribution of our study

Conclusions

The study has several implications. First, website administrators should give importance and careful consideration regarding the quality of information they are making available on their website. Information related to products, (i.e. product features, price, availability, reviews etc.) transaction details, vendor details are crucial factors in consumer decision making and hence the quality aspect has to be given much importance. Second, the system quality is also of much importance as consumers would like to shop on such e-retailer website that provides high system quality. As the findings suggest that information quality and source credibility play an important role in perceived e-retailer agility and agility in turn affect loyalty, e-retailers could focus on aspects of the website which might give the consumers a signal of being more agile. The paper suggests that there can be benefits of making a website such that the online shoppers perceive that the website is agile i.e. the website can handle consumer needs, adapt to immediate situations etc. This would in turn help the website as more loyal customers could be generated.

Limitations

The study suffers from several limitations. The direct relationship which may exist between e-retailers' agility and customer loyalty has not been studied. It could be possible

that consumers arrive at a state of loyalty with the e-retailer just by looking at their agility and this progression to loyalty may not always go through the stages of satisfaction or commitment. Further the inter-relationship between information quality and system quality needs to be investigated. Factors apart from information and system quality like service quality may affect consumers' perceived agility of the e-retailer and this should be given due attention in future investigations.

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APPENDIX

Measurement items

All constructs were measured on a 7 point Likert Scale with 1: Stringly Disagree and 7: Strong Agree
<p>Perceived Information Quality (Adaped from Fiieri & McLeay (2013))</p> <p>The information obtained from the e-retailer website is accurate and reliable</p> <p>The information obtained from the e-retailer website is easy to read and interpret</p> <p>The information obtained from the e-retailer website is relevant and matches my need</p> <p>The information obtained from the ee-retailer website involves me and helps me to understand both posidve and negative aspects of information.</p>
<p>Perceived System Quality (McKinney et al. (2002))</p> <p>The e-retailer website is easy to use and well organized</p> <p>The e-retailer website quickly loads all relevant tests and graphics</p> <p>The e-retailer website provides easier navigation</p>
<p>Perceived e-retailer's Agility (Newly developed)</p> <p>The e-retailer is very capable to handle customer's dynamic needs</p> <p>The e-retailer can respond in a swift manner to sudden demands from the market</p> <p>The e-retailer can quickly adapt to changing circumstances</p> <p>The e-retailer can respond effectively to uncertainties and disruptions</p>
<p>Customer Satisfaction (Adaped from Lau & Lee (1999))</p> <p>I am happy with selecting this e-retailer for my buying my products</p> <p>I enjoy bringing products from this e-retailer</p> <p>Using the services of the e-retailer has been satisfactory</p> <p>I feel good about my decision of using this e-retailer for buying products</p> <p>The e-retailer has performed as per my expectations through its products and services</p>
<p>Customer Commitment (Adaped from Garbarino & Johnson (1999))</p> <p>It feels great to associate myself with this e-retailer</p> <p>I feel a sense of belonging with this e-retailer</p> <p>I care about the long term success of this e-retailer</p>
<p>Customer Loyalty (Adaped from Lau & Lee (1999))</p> <p>If this e-retailer is facing problems in its operation, I will buy from another one</p> <p>I often tell my friends how good is this e-retailer and its services</p> <p>I do intend to continue buying from this e-retailer</p> <p>If some one makes a negative comment about this e-retailer, I would defend it</p> <p>I would believe a person if he makes a positive comment about this e-retailer.</p>

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