Successful loyalty in e-complaints: FsQCA and structural equation modeling analyses

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Abstract

This study analyzes antecedents of customer loyalty following complaint behavior in business-to-consumer (B2C) e-commerce. The study uses structural equation modeling (SEM) and fuzzy-set qualitative comparative analysis (fsQCA) to test relationships among distributive, interactional, and procedural justice, positive and negative emotions, satisfaction with service recovery, and trust. Justification for the use of both methods lies in the complementarity and interdependent relationships that exist between the variables. The sample comprises 303 e-commerce users who lodge complaints after making online purchases. Results highlight the importance of procedural and interactional justice, positive emotions, and satisfaction with service recovery.

Keywords: Justice, Trust, Emotions, Loyalty, SEM, FsQCA

1. Introduction

An increasing number of consumers shift their buying activities from physical stores to retail websites. The reasons for this change are lower prices, more convenience and time savings, and a wider selection of products and services available on websites (Brunner et al., 2014). In Europe, 565 million people already use the Internet (79% of the population), and 47% make online purchases (Ecommerce Europe, 2014). The percentage of Internet users who purchase online is growing every day. Thus, business to consumer (B2C) e-commerce is a flourishing business that allows stores to reach a wider public. Nevertheless, despite numerous advantages of online shopping, achieving a successful formula for e-commerce is difficult.

Despite B2C e-commerce firms' efforts to offer high quality services, providing a failure free service seems almost impossible. Service failures can cause dissatisfaction among customers, which may lead to customer complaints and a loss of loyalty in future purchases. To avoid such problems, firms act to rectify service failures through the process of service recovery. Depending on how firms handle service recovery, results may vary massively: from losing an angry customer to retaining a satisfied, relieved one, who may still be willing to purchase again in the future.

This research focuses on the following factors: distributive, procedural, and interactional justice, positive and negative emotions, satisfaction

with service recovery, and trust. The study addresses two research questions. First, what factors should firms apply to ensure customer loyalty following a complaint? Second, does the combination of these factors should be study, in a better approach, using fuzzy set qualitative comparative analysis (fsQCA)?

Section 2 of the article describes antecedents of loyalty through a review of the literature on complaint behavior and presents the hypotheses. Section 3 describes the sample, analyzes measurement scales' validity and structural model using traditional structural equation modeling (SEM) and fsQCA, and presents the results with both statistical methods. Finally, section 4 discusses conclusions, managerial implications, and research limitations.

2. Antecedent factors of loyalty in complaint behavior

2.1. Justice as an antecedent of emotions, satisfaction with service recovery, trust, and loyalty

Adams' theory of perceived justice (Adams, 1963) is a highly effective tool to study individuals' reactions when engaging in complaint behavior (Río Lanza et al., 2009). Distributive justice consists of the tangible resources the company devotes to correcting and compensating for a service failure, including financial compensation, exchanging the item or service, and discounts for future purchases (Mattila, 2001). Procedural justice refers to the processes and methods necessary to address service recovery (Mattila, 2001), including the choice of the most suitable process to solve a problem (Kim et al., 2009). This concept covers aspects such as resolution time, control procedures, and

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execution policies (Maxham & Netemeyer, 2002) to adapt to customers' needs. Interactional justice refers to how customers experience justice in their interaction with the employees of the firm during the service recovery process (Sparks & McColl Kennedy, 1998). Several authors analyze the relationship between justice and emotions.

Río Lanza et al., (2009) report that distributive and interactional forms of justice do not exert significant influences on negative emotions. DeWitt et al., (2008) study the influence of perceived justice (without differentiating between components of justice) on positive and negative emotions, observing a greater influence on positive emotions than on negative emotions. Chebat and Slusarczyk (2005) analyze the effect of justice dimensions on emotions. The authors report that all three dimensions of perceived justice affect negative emotions significantly, and that interactional justice and distributive justice affect positive emotions. Distributive justice has a greater effect on positive emotions than on negative emotions. Schoefer and Ennew (2005) find that all three dimensions of justice have significant effects.

McColl Kennedy and Sparks (2003) emphasize the importance of interactional justice in emotions. These authors also state that poor treatment by the employee can cause negative emotions on the customer, weakening the effects of adequate justice efforts. Procedural justice is a basic requirement because customers expect service providers to have the procedures and speed to correct service failures. In this regard, low levels of procedural justice elicit negative emotions (Schoefer & Ennew, 2005).

A considerable number of studies deal with justice and satisfaction with service recovery (Karatepe, 2006; Maxham & Netemeyer, 2002; Schoefer & Ennew, 2005), and some show that procedural justice has a positive effect on customer satisfaction in service recovery (Homburg & Fürst, 2005; Karatepe, 2006; Ok et al., 2005; Schoefer & Ennew, 2005). Satisfaction with service recovery is the feeling of affection toward a company resulting from the handling of an interaction complaint (Davidow, 2003).

Other empirical studies show that interactional justice contributes to satisfaction after a complaint (McCollough et al., 2000). Río Lanza et al., (2009) find a positive relationship between interactional justice and satisfaction with service recovery. Interactional justice is important because of its intrinsic value (treating someone with respect and politeness) and its role as a signal to the customer about how the company behaves (Chiu et al., 2010).

Beliefs about a firm's benevolence, competence, and integrity constitute the concept of trust (Doney & Cannon, 1997). The majority of unhappy customers do not complain, but those who do expect a just response from the organization. Not receiving such a response, or receiving an inadequate response, causes the customer to lose trust in the organization (DeWitt et al., 2008). Trust develops over time if the customer feels that the service provider behaves honestly and fairly (Morgan & Hunt, 1994). Trust is essential to satisfying e-commerce customers (Ratnasingham, 1998).

Findings regarding the influence of different types of justice on behaviors such as loyalty, however, are inconclusive (Wang et al., 2011). Effective measures of service recovery can strengthen the customer's trust in the quality of products or services, and develop customer loyalty. Other research suggests that service recovery efforts to remedy service failures are crucial to maintaining relations with existing customers (Ha & Jang, 2009). Loyalty refers to continuity in the purchasing relationship between a customer and a company (Keller, 1993). Loyalty implies that the customer abstains from changing firm, even if he or she must pay more for the service (Shankar et al., 2003). Numerous authors study the effect of justice in customer retention (Chebat & Slusarczyk, 2005; McCollough et al., 2000; Wang et al., 2011).

According to these premises, the study tests the following hypotheses:

H1. Justice has negative influence in negative emotions.

H2. Justice has a positive influence on positive emotions.

H3. Justice has a positive effect on satisfaction with service recovery.

H4. Justice has a positive effect on trust.

H5. Justice positively affects customers' loyalty.

2.2. Emotions as antecedents of trust, loyalty, and satisfaction with service recovery

Although research into the influence of emotions on service recovery are scarce (Río Lanza et al., 2009), some authors report the influence of emotional factors following a complaint (Menon & Dubé, 2004; Schoefer & Ennew, 2005; Smith & Bolton, 2002). The following describes very briefly the relationships studied in the literature between emotions and trust, loyalty, and satisfaction with service recovery.

In this context, whereas Schoefer and Ennew (2005) suggest that perceived justice has a relationship (through emotions) with customer satisfaction, Westbrook (1987) highlights how positive and negative emotions significantly influence customer satisfaction, explaining almost as much variance as other cognitive variables.

Researchers explore the influence of some emotions on trust in service recovery contexts (Kim et al., 2004). Highly negative emotions (e.g., anger) can play a significant moderating role in these processes, and can damage trust. Action to mitigate these types of emotions is likely to contribute to regaining trust (Kim et al., 2004). In addition, emotions play an important role in building trust and positive emotions, enabling individuals to make the leap of faith from feelings to beliefs (Andersen & Kumar, 2006). Wicks et al., (1999) indicate that positive emotions are an indispensable condition for building trust. Findings show that emotions can cause more stable and deeper levels of trust than feelings that stem purely from rational sources (Williams, 2001).

Customers' emotions stemming from perceived justice affect loyalty (DeWitt et al., 2008). Successful service recovery causes an individual to remain loyal to the provider. Conversely, if negative emotions arise, then the customer may become disloyal or may unsubscribe from the service (DeWitt et al., 2008). Affect control theory (ACT) addresses the influence of emotions on loyalty. When customers experience inadequate service recovery, those customers express their emotions and act to regain their own identity (Chebat & Slusarczyk, 2005).

According to these premises, this study tests the following hypotheses: negative emotions have a negative influence on satisfaction with service recovery (H6), trust (H7), and loyalty (H8). Positive emotions have a positive influence on satisfaction with service recovery (H9), trust (H10), and loyalty (H11).

2.3. Satisfaction with service recovery as an antecedent of trust and loyalty

Finally, studies in scientific literature report connections among satisfaction with service recovery, trust, and loyalty. In service recovery, customer trust reflects how willing customers are to embrace their vulnerability and expect a positive solution after experiencing service failure (Dunn & Schweitzer, 2005). When customers receive unsatisfactory responses to complaints, those customers lose trust in their service provider (DeWitt et al., 2008); likewise, satisfactory resolution of complaints may increase customers' trust in the provider. Trust develops over time if the customer perceives the provider is reliable, and behaves fairly and honestly (Morgan & Hunt, 1994). Trust is essential for creating satisfied, loyal customers in e-commerce (Ratnasingham, 1998).

The literature reports links between customers' loyalty and their levels of satisfaction. Nevertheless, the literature reveals a lack of consensus on satisfaction's effect on loyalty. Although a relationship exists between satisfaction and loyalty, satisfaction explains around 8% of the variance in loyalty, with this figure improving with the inclusion of a greater number of moderating and mediating variables. Whereas some studies report a linear relationship between satisfaction and loyalty, others indicate that the relation is non-linear and asymmetric, with

satisfaction often a necessary but not sufficient condition for loyalty (Kumar et al., 2013). Levels of agreement between customers and employees also relate to satisfaction (Chang & Chang, 2010; Kelley & Davis, 1994). Andreassen (2001) indicates that customers' satisfaction with service recovery has a positive relationship with loyalty. Therefore, satisfaction with service recovery positively influences trust (H12) and loyalty (H13).

2.4. Trust as an antecedent of loyalty

Trust largely determines the establishment and maintenance of relationships between customers and providers and plays a fundamental role in developing loyalty in online environments (Kim et al., 2004). To gain customers' loyalty, vendors must first gain customers' trust (Reichheld et al., 2000). Additionally, the spatial and temporal separation between purchasers and sellers in B2C e commerce means that trust is a key factor in maintaining loyalty (Chiu et al., 2010).

Trust is also key to building relationships between buyer and seller (Sirdeshmukh et al., 2002). In any relationship of this kind, customers' trust evaluations directly influence their post purchase satisfaction (Singh & Sirdeshmukh, 2000). In electronic commerce, where trust may act as a trigger to initiate a transaction, this relationship may also hold. Customers perceive a higher level of risk with online retailers than traditional retailers do in terms of delivery, payment, information disclosure, and so forth. B2C e commerce customers may therefore prefer to buy from online retailers they can trust (Singh & Sirdeshmukh, 2000). Therefore, trust positively influences loyalty (H14).

Fig. 1 presents the study's model and the research hypotheses.

3. Method and results

3.1. Sample and procedure

Research on service recovery often takes the form of laboratory studies, but this empirical research, following other studies (Chebat & Slusarczyk, 2005), is a field study of users who experienced service problems. An online questionnaire validates the research model. Respondents come from a sample of an official database of B2C e commerce. The owner of this database is the public corporate entity Red.es, responsible for promoting and studying the development of the information society in Spain. The sample designs for the database are a random proportional stratification following population size, location of the household social class, and number of persons per

household; the sample has a pattern similar to that of other reports of B2C e commerce in Spain. Customers in this database received an email asking whether they purchased a product or service through the Internet during the previous year. If they answered yes, a second question asked whether they experienced any kind of problem and whether they had complained. Those who answered yes to all questions then received an invitation to participate in the survey.

First, participants had to recall the last time they had experienced a service failure with an Internet purchase about which they had complained. Participants named the e vendor and the specific failure.

From the initial sample of 5000 Internet users, 59% declared that they had made an online purchase in the last year. Of this 59%, 10.3% experienced failures with their purchases and lodged some kind of complaint with the company or an ombudsman. The response rate of e shoppers who lodged complaints about purchase problems is 6.07%, a normal figure for service recovery studies (Gustafsson, 2009). The final sample consists of 303 respondents who issued at least one complaint after a B2C transaction in the previous year, and experienced service recovery actions from vendors following their complaint. Interviewees also gave the main reason for their complaint. The main reasons are delays in delivery (41.6%), defective products (38.9%), and receipt of the wrong product (29.4%). The field study took place between May and July 2012. Table 1 shows the socio demographic characteristics of the sample.

The scales come from previous studies: justice (Chebat & Slusarczyk, 2005; Chiu et al., 2010; Tax et al., 1998), satisfaction with service recovery (Kim et al., 2009; Maxham & Netemeyer, 2002; Tax et al., 1998), negative and positive emotions (Chebat, 2005; DeWitt et al., 2008; Río Lanza et al., 2009), trust (Chiu et al., 2010; DeWitt et al., 2008; Kim et al., 2009; Tax et al., 1998) and loyalty (Chebat & Slusarczyk, 2005; DeWitt et al., 2008). All items use seven point Likert scales.

Following Chiu et al., (2010), justice is a formative indicator, comprising distributive justice, procedural justice, and interactional justice. To evaluate formative indicators, the examination of the weights using SPSS software provides information about how the indicator contributes to the construct. The results show that procedural justice and interactional justice have weights of 0.93 and distributive justice has a weight of 0.43. Multicollinearity should be absent from formative indicators. If present, multicollinearity could lead to unstable results. Variance inflation factors (VIF) are 4.7 (procedural justice), 3.7 (distributive justice), and 3.6 (interactional justice), all below the limit of 5 (Hair et al., 2010).

Fig. 1. Research model.

Table 1
Socio-demographic characteristics of the sample.

		Percentage
Sex	Male	66.7
	Female	33.3
Age	16–24	13.9
	25–34	26.4
	35–49	49.8
	50–64	9.2
	>65	0.7
Employment status	Self-employed	13.2
	Employee	60.4
	Unemployed	7.9
	Retired	3.0
	Student	10.9
	Other	4.7
Education	Primary/compulsory	4.3
	Secondary	38.3
	Higher education	46.9
	Postgraduate	10.6

The next section describes data analysis using SEM and fsQCA.

3.2. Structural equation modeling (SEM)

Partial Least Squares (PLS) is a SEM technique that allows analyzing non normal data with small samples. The study uses PLS Graph version 3.00 to analyze the data through (1) measurement model testing and (2) structural model testing: explained variance of the endogenous variables (R^2), path coefficients or standardized linear regression weights (β) and their respective levels of significance.

Prior to analyzing the measurement model, a test is necessary to verify single item reliability of reflective indicators measuring the factor loadings of the variable indicators. Reflective indicators should present factor loadings greater than 0.707 (Hair et al., 2010), although loadings of 0.5–0.6 may be acceptable in preliminary phases (Esposito et al., 2010). In the present study, all the factor loadings exceed 0.90, except one of the loyalty indicators, whose value (0.79) nonetheless exceeds the lower limit by a wide margin (Nunnally, 1978). From these results, all indicators are valid at this stage.

Next, this method requires a composite reliability analysis, a Cronbach's alpha measurement, and an analysis of the average variance extracted (AVE) from the constructs. These values should be greater than 0.7, 0.7, and 0.5, respectively (Fornell & Larcker, 1981; Hair et al., 2010). In this case, the values for Cronbach's alpha are greater than 0.87, values of composite reliability are greater than 0.92, and the average variance extracted is greater than 0.8 (Table 2).

Average variance extracted (AVE) analysis tests discriminant validity. This analysis consists of verifying that the average shared variance between a construct and its measurement scales is greater than the shared variance between the construct and the other constructs in the model (i.e., squared correlation between two constructs). Here, the square root of the AVE is higher than the correlations between constructs, and is greater than 0.7 (Fornell & Larcker, 1981). Furthermore,

correlations between different constructs confirm that every construct differs from all others (Kline, 1998).

3.3. Fuzzy set qualitative comparative analysis (fsQCA)

QCA is a family of methods that provides an alternative to regression based analysis. Using fsQCA, researchers can explore complex causal patterns among different causal or independent variables by studying a small number of cases. By considering causal configurations, fsQCA does not analyze how two or more independent variables affect an outcome, but rather explores all possible interactions among variables. These interactions are of great interest in studies of complaint behavior. Different combinations of causal factors can thereby lead to the same outcome. Depending on the context and potential combination with other factors, an outcome can derive from the presence or absence of a certain causal factor.

As per Ragin (1987), by analyzing causality according to context and background, fsQCA yields different underlying causal configurations arising from comparison between diverse case studies. For the Likert scales in this study, 7 represents full membership in a category, 1 represents non membership in a category, and 4 represents maximum inde termination regarding membership in a category (Leischnig et al., 2014).

In fsQCA, the choice of solution depends on two parameters: consistency and coverage. Taking a value between 0 and 1, consistency indicates the proportion of a causal condition that the outcome covers. In some sense, consistency is similar to the coefficient of correlation, and constitutes a test of the solution's sufficiency (Woodside, 2013). Coverage is thus similar to the coefficient of determination (R^2).

A solution or path is informative when its consistency is above 0.75–0.80, and its coverage is between 0.25 and 0.65, although small variations are also acceptable. The final step is to calculate the raw coverage (indicating which share of the outcome a certain alternative path explains) and unique coverage (indicating which share of the outcome a certain alternative path exclusively explains). Three types of solution exist in fsQCA: complex, parsimonious, and intermediate. The complex solution contains the most detail. This solution assumes that configurations that do not present real cases in the sample would not lead to the outcome.

4. Results

4.1. Structural model results

The evaluation of the structural model consisted of a bootstrapping procedure using three indicators: path coefficients (β), t statistics, and explained variance (R^2). All the paths except negative emotions trust and satisfaction with service recovery loyalty were significant, and therefore the evaluation only rules out H7 and H13 (Fig. 2). The rest of the hypotheses remain: Justice has negative/positive influence in negative/positive emotions; positive emotions have positive influence on satisfaction with service recovery, trust, and loyalty; negative emotions have a negative influence on satisfaction with service

Table 2
Descriptive statistics and correlation matrix.

	Composite reliability	Cronbach's Alpha	AVE	Mean (STD)	(1)	(2)	(3)	(4)	(5)	(6)
Justice (1)	–	–	–	4.02 (1.91)	–					
Positive_emotions (2)	0.96	0.96	0.89	3.64 (1.92)	0.68	0.93				
Negative_emotions (3)	0.97	0.95	0.91	3.97 (2.05)	0.56	0.6	0.95			
SSR (4)	0.98	0.97	0.89	4.05 (1.94)	0.8	0.79	0.63	0.94		
Trust (5)	0.96	0.91	0.92	4.39 (1.6)	0.6	0.6	0.47	0.65	0.96	
Loyalty (6)	0.92	0.87	0.8	4.07 (1.74)	0.61	0.62	0.5	0.68	0.64	0.89

Diagonal elements (bold) are the square root of the variance shared between the constructs and their measures (AVE). Off-diagonal elements are the correlations among constructs.

customers seem to value positively the company's efforts and procedures to re-establish the service as soon as possible. The special influence of negative emotions on loyalty may have its origin in the problems shoppers report with online purchases. Because logistical and payment problems often stem from provider companies that operate under their own trade name and do not deal directly with the B2C e-commerce platform, such problems may be situational and beyond the control of the B2C e-commerce vendor. Nevertheless, these problems evoke negative emotions in customers. In addition, understanding the role of positive emotions is important because emotions receive little attention in service recovery studies.

From the managerial perspective, results reveal the importance of training employees in how to manage customer emotions in a complaint situation through role playing and techniques to detect emotions during telephone conversations or e-mails. Simultaneously, managers should be aware of the difficulties this process entails in an online environment because of a lack of face-to-face interaction with the customer. Providing employees with appropriate training and technological resources (e.g., webcams for videoconferences) that enable them to recognize customers' emotions more accurately can improve the quality of interactions.

5.2. Limitations

The study has some limitations. Future studies should explore additional antecedents of loyalty (e.g., perceived value or quality following a complaint) and investigate emotions in a more specific manner by incorporating a larger battery of emotional responses and studying their influence on loyalty. Such research would provide a more comprehensive explanation in service recovery contexts. Finally, an alternative approach to improving the current model would be considering the affective and cognitive components of trust.

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