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# Exploring e-Loyalty Antecedents in B2C e-Commerce

## Empirical results from Italian grocery retailers

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### Abstract

**Purpose** – The purpose of this paper is to investigate the micro-linkages fostering consumers' e-loyalty in grocery retailers B2C e-commerce context. Specifically, the authors focused on the neglected role of security, privacy and website design. Grocery retailing has been selected as the context of research because grocery retailers too have been required to develop B2C e-commerce platforms to meet their consumers' evolving preferences.

**Design/methodology/approach** – A survey was distributed to several students from University of Florence (Italy). Structural equation modeling was used to compile the research, and its results reflect the impact on e-loyalty development on specific features of the e-commerce environment.

**Findings** – The main findings of this research are related with the importance of website characteristics as antecedents of e-loyalty in online grocery retailing.

**Originality/value** – Albeit the explored phenomenon has been subject to extensive study, some of its facets are yet to be fully explored. In particular, though the influence of e-trust, e-satisfaction and e-commitment on e-loyalty has been shown, little attention has been paid to the factors affecting these three antecedents of e-loyalty. In this regard, this research focuses on the importance of B2C e-commerce platform characteristics such as security, perceived relationship investment and website design. In addition, the phenomenon was scarcely explored in grocery retailers B2C e-commerce context.

**Keywords** E-commerce, E-loyalty, E-trust, Website design, Grocery retailing, Security and privacy

**Paper type** Research paper

### Introduction

Electronic commerce (aka. e-commerce) has been defined as the ensemble of activities to buy or sell a product, or to exchange valuable data, over an online platform (Kim and Niehm, 2009). Electronic marketplaces, e-commerce specialized websites, smartphone applications and online auctions are probably the most used kinds of online platforms. Books, digital music files and high-tech products have long represented the most available products worldwide in online platforms (Rafiq *et al.*, 2013). Over the last decade, it has emerged how it is possible to exchange almost any kind of product online, including food and spirits (Bresciani, Giacosa, Culasso and Broccardo, 2016; Bresciani, Ferraris, Santoro and Nilsen, 2016).

According to literature, B2C e-commerce involving the direct selling of a product from a business to many potential online consumers (Turban *et al.*, 2017) has been the most explored e-commerce form (Kim and Niehm, 2009). Several other forms of e-commerce exist, each one offering different exchange-related opportunities. As an example, B2B is an e-commerce based on data or products exchange (i.e. spare parts) between businesses using an online platform (Gordini and Veglio, 2017). C2C, instead, is the e-commerce form based on products exchange between individual consumers (Wu *et al.*, 2015). Next, C2B is the e-commerce where consumers make their products available online for companies to bid and purchase (Wang *et al.*, 2016). Finally, other forms of

e-commerce involving administrations are progressively emerging such as C2A and B2A. In spite of these several forms of e-commerce, B2C – which represents the focus of this research – is the most common form of e-commerce and economic volume of transactions and quantity of exchanged goods under B2C exceeds any other form of e-commerce (Turban *et al.*, 2017).

In recent times, the popularity of B2C e-commerce has grown steadily amongst all consumer cohorts due to availability of high-speed internet connections, smartphones and tablets and ever-more user-friendly e-commerce platforms (Pavlou *et al.*, 2007). Grocery retailers have also been affected by new consumer habits (Rafiq *et al.*, 2013). To maintain a competitive edge over emerging digital rivals, grocery retailers have started to pay attention toward e-business implementation, transforming some of their business units into e-tailers (Scuotto, Del Giudice, Bresciani and Meissner, 2017; Scuotto, Santoro, Bresciani and Del Giudice, 2017). In particular, to reap the potential benefits of B2C e-commerce, they have started to develop e-commerce platforms, designed to meet the needs of consumers who commonly purchase goods online (Kurnia *et al.*, 2015). This competitive response is also coherent with the fact that traditional grocery retail formats (e.g. department stores, hypermarkets and supermarkets) are rapidly approaching their maturity stage, within their life cycles.

Traditional grocery retailers have found their strategies for fostering consumer loyalty increasingly ineffective in the online environment and pertinent literature has pointed that grocery retailers must focus on fostering consumer e-loyalty (Christodoulides and Michaelidou, 2010). According to Anderson and Srinivasan (2003), this is “the customer’s favorable attitude toward an electronic business, resulting in repeat purchasing behavior (p. 125).” Strategies that can foster consumer e-loyalty may result in a better consumer relationship and, in turn, long-term profitability for grocery retailers (Rafiq *et al.*, 2013).

Despite the importance of e-loyalty, literature traditionally focuses on only some of its factors, principally trust, relationship satisfaction and affective commitment (Gefen, 2002; Fang *et al.*, 2014). In fact, the latter are all relational variables, resulting from consumer attitudes toward B2C e-commerce, which derive from consumer perceptions (Lee *et al.*, 2015). The literature attributes little attention to other significant elements of the online context, such as perceived security (Wolfinbarger and Gilly, 2003), perceived privacy (Pavlou *et al.*, 2007) and website design (Schimmenti *et al.*, 2014; Lee *et al.*, 2015). The relevance of consumer perception of a B2C e-commerce platform, when fostering e-loyalty still needs to be examined (Rafiq *et al.*, 2013). Furthermore, studies to date have been limited to Anglo-Saxon geographical areas, predominantly the USA and the UK (Anderson and Srinivasan, 2003). Therefore, within an under-represented geographical context such as Italy, where strong growth has been seen in the B2C e-commerce arena (Santoro *et al.*, 2017), it is crucial to investigate the new variables, and their relationships with e-loyalty to create and maintain long-term consumer relations. In addition, scarce attention has been paid to the antecedents of e-loyalty in grocery retailing (Jin *et al.*, 2017). Indeed, the majority of researches on the topic focused on exploring the factors related with product quality (Baourakis *et al.*, 2002).

To bridge the gap, this exploratory research will present a conceptual model, empirically tested through structural equation modeling (SEM) techniques. For this, 155 survey responses have been collected. The motivation for examining this sector was primarily a desire to observe the relevance of loyalty in online sales channels, with such loyalty having been proven fundamental in the physical channels (Rafiq *et al.*, 2013). In the virtual environment, sales barriers are there due to lack of vendor-consumer communication and a risk of privacy violation. These barriers can hinder a consumer’s decision to purchase online.

This research is structured as follows. First, it will explore existing literature on e-loyalty within the grocery retail market. Second, it proposes the hypotheses underlying the structural model. Next, the model has been tested, and the results presented. Finally, it discusses the results, and offers some significant commercial considerations.

## Theoretical background

### *B2C e-commerce and grocery retailers*

The emergence of B2C e-commerce has radically revolutionized market dynamics within grocery retail (Kurnia *et al.*, 2015). Traditional grocery retailers' business models required involvement of the consumers during the purchase decision (Giacosa *et al.*, 2017). This is particularly true if we consider how consumers usually personally evaluate food and related products' quality and image in the store (Bresciani, Giacosa, Culasso and Broccardo, 2016; Giampietri *et al.*, 2016). Hence, as use of B2C e-commerce platforms increases over time, the evolution of distribution channels may provide grocery retailers with access to many more consumer segments (Ferraris *et al.*, 2016). B2C e-commerce offers consumers a purchase decision whenever, and wherever, they access the internet. Furthermore, because of the bi-directionality of most e-commerce platforms, consumer search costs may also be reduced (Rialti, Zollo, Laudano and Ciappei, 2018; Rialti *et al.*, 2016; Galati *et al.*, 2017). B2C e-commerce platforms allow grocery retailers to provide potential customers with product information more effectively, and to offer personalized promotions (Kurnia *et al.*, 2015). As such, the digital era is causing grocery retailers to progressively evolve their business models, in a hybrid manner (Bresciani, 2016, 2017). On the one hand, grocery retailers are somehow still growing by traditional means, such as opening new stores, mergers and acquisitions. On the other hand, they are also investing in e-business implementation by creating *ad hoc* business units for B2C e-commerce that effectively act as e-tailers[1] (Fang *et al.*, 2014). In this regard, as previously discussed, grocery retailers can simultaneously pursue traditional consumers and online consumers.

Notwithstanding its advantages, B2C e-commerce also has its disadvantages. The diffusion of B2C e-commerce platforms allows consumers to easily identify low-cost alternatives. Thus, in the competitive arena of e-commerce, consumers may no longer be loyal to just one, or a few, grocery retailers. Their preferences may switch according to product pricing, or the characteristics of B2C e-commerce platforms (Kim *et al.*, 2009). This is particularly relevant in this context, as grocery retailers often sell un-branded products and the cost of switching may be very low for consumers. Pertinent literature highlights the fostering of consumer e-loyalty as the next great challenge for grocery retailers in the digital era (Ahn *et al.*, 2007). Yet, apart from few seminal researches on consumers' e-loyalty in grocery retailing B2C e-commerce, few attention has been paid on the factors affecting the importance of platform-related characteristics.

### *E-loyalty – the cutting edge*

E-loyalty can be defined as a consumer's intention to revisit the website of a specific e-tailer, in order to repurchase their products (Anderson and Srinivasan, 2003). Therefore, e-loyalty can be viewed as a specific form of psychological attachment to an e-tailer (Liang *et al.*, 2008). In B2C, e-commerce platforms e-loyalty is extremely important. Consumers' e-loyalty represents a competitive advantage, as loyal consumers mean a consumer-base that may generate future revenues over time (Teo, 2005; O'Connor and Kelly, 2017; Carayannis *et al.*, 2017). Specifically, its principal outcomes are effective consumer behaviors, such as repurchasing a product, or fostering a positive electronic word-of-mouth (eWOM)

(Rialti, Zollo, Caliendo and Ciappei, 2018; Rialti *et al.*, 2017). Literature traditionally analyzes such concepts by assuming that their key determinants are e-trust, e-relationship satisfaction and e-affective commitment, which are all three variables of consumer attitudes toward an e-tailer. More specifically, e-trust is an attitude; it reflects the opinion of the consumer regarding their confidence making online purchases. As such, e-trust is linked to a consumer's perception of how protected their data are and the e-tailer's commitment to honest behavior and integrity in the foreseeable future (Gefen, 2002). E-relationship satisfaction is an affective state and attitude resulting from an overall evaluation of the relationship with the e-tailer, following a commercial transaction (De Wulf and Odekerken-Schröder, 2001). Finally, e-affective commitment is the attitude of the consumer toward a continued relationship with the e-tailer, and ongoing work to maintain it (Rafiq *et al.*, 2013). Although e-loyalty refers exclusively to the online context, it is apparent that its antecedents are comparable to those traditionally identified in loyalty to a vendor or service provider. Therefore, it is apparent, even in the B2C e-commerce context, how the variables of relationship quality are fundamentally antecedents to loyalty.

Notwithstanding this, considering only the three traditional variables is a somewhat limited approach (Ahn *et al.*, 2007) and it limits the scope of the research only to the evaluation of factors which influence consumers' acceptance of B2C e-commerce (Schimmenti *et al.*, 2014). Some variables relating to consumer perceptions of an online environment may influence e-loyalty too, albeit indirectly. It has been assessed how the availability of information, tied up with website's functionalities, may affect the relationship consumers have with the website itself (Bell and Tang, 1998). As an example, scholars have stressed how a website providing plentiful information and ensuring a pleasant use may trigger a positive consumption experience and consumers' intention to replicate the purchase (Galati *et al.*, 2016). Hence, while exploring the antecedents of e-loyalty, other factors also need to be explored. The importance of aesthetics and functionality of B2C e-commerce platforms has been greatly examined. In particular, a consumer's overall online purchasing experience is affected by both the aesthetic characteristics – such as design (Cyr *et al.*, 2009) – and the functionalities of the B2C e-commerce platform (Ellahi and Bokhari, 2013). Such elements, then, may positively influence consumer perception of a platform and of an e-tailer, and, in turn, may influence e-loyalty (Wells *et al.*, 2011). In fact, consumers that have a satisfactory experience on a specific online platform are more likely to use it again. Amongst the many characteristics of a B2C e-commerce platform, key roles are played by the indirect variables which are e-perceived relationship investment (Rafiq *et al.*, 2013), website design (Cyr *et al.*, 2009) and the security and privacy of the platform (Chiu *et al.*, 2014). Along with the three relational variables, they are all considered relevant to the online context of digital sales channels, and the creation of relationships in a virtual environment.

Specifically, e-perceived relationship investment includes a set of elements that contribute to the creation and maintenance of a relationship with online consumers. It results from consumer perception of the amount of resources, effort and attention the e-tailer gives to the maintenance, or extension, of their relationships with their regular customers (De Wulf and Odekerken-Schröder, 2001). This creates psychological ties that motivate both parties to maintain their relationship, while waiting for the other party to reciprocate. Website design is a concept which embraces various elements of interaction between the consumer and the website including navigation, order processing and the provision of detailed information (Wolfenbarger and Gilly, 2003). Finally, security and privacy are linked to initial research in the field of B2C e-commerce, as the risk of major information breaches, including those relating to payment information, pose a significant barrier to sales. For an e-business to become profitable, it must be willing and able to guarantee data protection during transactions (Pavlou *et al.*, 2007).

In light of above, this research will evaluate the influence of the three above-mentioned elements on the relational variables; this approach is chosen as it is considered essential to study the features of B2C e-commerce platforms, in order to understand the development of e-loyalty antecedents. As such, this study aims to explore how consumer perception of a B2C e-commerce platform affects the development of e-loyalty, in the context of grocery retailers.

This study, thus, attempts to answer the following research question:

*RQ1.* Do e-perceived relationship investment, website design and security and privacy affect e-trust, e-relationship satisfaction and e-affective commitment? In turn, do those variables influence e-loyalty toward grocery retailers?

To answer this question, this study will propose an empirical test and a structural model. The proposed model is based on the key assumption of the Theory of Planned Behavior (TPB; Ajzen, 1991). According to this theory, individual beliefs, perceptions or expectancies may influence individual's attitudes, individual's intentions and, consequently, his/her behavior. Hence, the theory holds the capability to explain the motivations of certain behaviors of individuals. In this context, the theory has been used to explore how consumer perceptions of a B2C e-commerce platform influence consumer attitudes toward an e-tailer and, in turn, the intention of e-loyalty. While the TPB traces its origins in the realm of psychology, over the last decade it has been widely adopted by marketing scholars (Rialti *et al.*, 2017) and it has been useful in deconstructing the relationship between micro-mechanisms occurring in the inner self and consumers' behaviors (Zollo, Faldetta, Pellegrini and Ciappei, 2017; Zollo, Yoon, Rialti and Ciappei, 2018). It has also widely been adopted in digital marketing research about B2C e-commerce as it is capable to tackle the understanding about how consumers react to website's characteristics or e-tailer's stimuli.

### Hypotheses development and proposed model

Traditionally, marketing scholars have placed significant emphasis on the relationships between trust and satisfaction, and satisfaction and loyalty (Flaviàn *et al.*, 2006; Cyr, 2008). The shared opinion is that trust antecedes satisfaction, even in the context of B2C e-commerce. Thus, trust is an essential pre-requisite for encouraging online users to make a purchase. As such, the more a consumer trusts a store in the online context, the more satisfactory the relationship will be (Flaviàn *et al.*, 2006). Moreover, trust is an antecedent to loyalty, or a consumer's will to engage with a B2C e-commerce business on an ongoing basis (Rialti *et al.*, 2017). If a consumer does not trust an e-tailer, it is unlikely that they will make a repeat purchase in the future, even if they had an entirely satisfactory experience (Anderson and Srinivasan, 2003). A higher level of trust implies a more positive attitude toward an online store. Thus, this study proposes that the following six hypotheses:

*H1.* E-trust has a direct influence on loyalty.

*H1a.* E-trust positively influences e-relationship satisfaction.

*H1b.* E-trust positively influences e-loyalty.

According to Anderson and Srinivasan (2003), e-relationship satisfaction has a positive correlation with e-loyalty and it has been noted as an influencing factor for the affective perceptions that a consumer develops toward a retailer (Gefen, 2002). This has also been noted in the online context, with the quality of a consumer's relationship with an e-tailer clearly influencing e-affective commitment. Thus, this study proposes that:

*H2.* E-relationship satisfaction has a direct influence on e-loyalty.

*H2a.* E-relationship satisfaction positively influences e-affective commitment.

*H2b.* E-relationship satisfaction positively influences e-loyalty.

As previously determined, emotional involvement is, to an extent, a reflection of loyalty to a business. It is likely that those who engage on an emotional level with their vendor, or online service provider, will later act as advocates for the organization, feeling an emotional attachment to, and identifying with, the company. The stronger this attachment, the more likely a client will be to overcome obstacles, and much more likely to repeat their purchase. Thus, this study proposes that:

*H3.* E-affective commitment positively influences e-loyalty.

Data privacy is one of the main consumer concerns relating to online purchases. Whether consumers feel at risk of being defrauded, or fear a potential data leak, they may be disinclined to complete their purchase on a B2C e-commerce platform (Pavlou *et al.*, 2007). On the contrary, when the security level meets the user's expectations, they will be inclined to provide their personal details, and to continue their purchase. According to this, we hypothesized that websites caring about consumers' data and providing information about data policy will be more trusted by consumers (Galati *et al.*, 2016, 2017). Thus, this study proposes that:

*H4.* Security and privacy positively influence e-trust.

On a B2C e-commerce site, relational investment can take the form of personalized web pages, tailored product suggestions, detailed information that adds transparency, customer assistance, social initiatives, communities and individually tailored services (Rialti *et al.*, 2017). These increase the consumer's trust in the vendor, as well as their satisfaction with the relationship. Furthermore, the emotional involvement of the consumer depends on their perception of the e-tailer's commitment to their relationship. Indeed, investments aiming at improving the quality of the website have been observed as related to website effectiveness in terms of consumers' experience improvements and, in turn, greater consumers' trust and satisfaction (Schimmenti *et al.*, 2014).

Thus, this study proposes that:

*H5.* E-perceived relationship investment positively influences relational variables.

*H5a.* E-perceived relationship investment positively influences e-trust.

*H5b.* E-perceived relationship investment positively influences relationship satisfaction.

*H5c.* E-perceived relationship investment positively influences e-affective commitment.

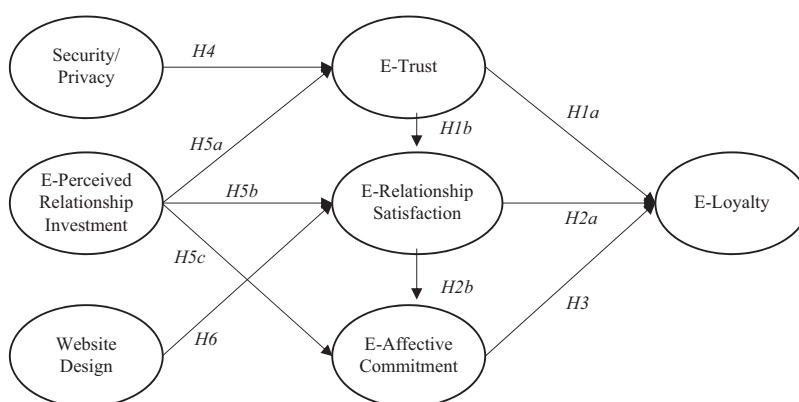
Ease of navigation creates a satisfying purchasing experience. The efficiency and effectivity of a website allows consumers to place orders quickly, resulting in higher satisfaction levels. It can therefore be expected that a better site design will have a positive impact on e-satisfaction, improving the commercial transaction (Cyr *et al.*, 2009). This is coherent again with the importance of website quality for B2C e-commerce website effectiveness (Bell and Tang, 1998):

*H6.* Website design positively influences e-relationship satisfaction.

In this perspective, Figure 1 shows the hypothesized model.

## Method

This research utilizes SEM to empirically test the proposed conceptual model (Laudano *et al.*, 2018; Zollo, Laudano, Ciappei and Zampi, 2017). The method consists of two phases.



**Figure 1.**  
Hypothesized model

First, a measurement model is built to assess the significance of path coefficients – called “factor loadings” – amongst multiple indicators (i.e. “observed” variables) and related constructs (i.e. “latent” variables). It allows researchers to verify the acceptable parsimony and validity of the model. Next, a structural model is built to assess the significance of statistical influences – or “regression weights” – that exist amongst the latent variables (Bentler, 1990), allowing empirical testing of the causal relationships between the constructs that were hypothesized in the conceptual model. For statistical analysis, AMOS 21 was used as the primary piece of statistical software (Arbuckle, 2013).

### Data collection

To test the proposed conceptual model, a survey was presented to students enrolled in the Business Administration and Management Master’s Degree courses at the University of Florence (Italy). Before these surveys, a pilot survey was conducted on a test sample of five subject matter experts, who were asked to make written comments on clarity of the questions and length of the survey. Because the survey was considered clear and easy to fill, no correction was made. Then, 250 surveys were distributed during May 2017. A total of 155 usable surveys were analyzed. This presented a response rate of 62 percent, coherent with Baruch’s (1999) threshold of 57.9 percent. This sample size fulfills the required ratio of at least 20 observations per latent variable present in the model to conduct a SEM analysis (Bollen, 1989). Albeit this sample may fall into the broader category of a convenience sample, it was hypothesized that the student body of the University of Florence could represent a suitable context for exploration of the phenomenon. First, students and young adults represent the largest group of consumers who actively use grocery retailers B2C e-commerce platforms. Next, Florence represents one of the few cities in Italy where three of the largest domestic grocery retailers (COOP, Esselunga, Carrefour) are present in both traditional (i.e. supermarkets) and digital channels. Additionally, as this research aims to explore preliminarily a scarcely explored phenomenon, a student sample may prove to be effective in providing the authors some insights about the research question and some conclusions that may represent the starting point of future research.

Regarding the characteristics of our sample, amongst the respondents, the majority were male (53 percent). In terms of age, the most represented age group were 23-year-olds (54 percent). Other than the two control variables, the survey contained 31 questions.



*Quantitative protocol*

To measure the variable of e-perceived relationship investment, the survey used three items from De Wulf and Odekerken-Schröder (2001), adapted from Rafiq *et al.* (2013). E-trust was assessed using a measurement scale comprising four items used by Anderson and Srinivasan (2003). E-relationship satisfaction was assessed using a measurement scale conducted Szymanski and Hise (2000). E-affective commitment was assessed using a measurement scale developed by Fullerton (2005). For e-loyalty, five items were used, derived from a modified version of the work of Zeithaml *et al.* (1996). The variables of website and security and privacy were assessed using measurement scales comprising three items used by Wolfinbarger and Gilly (2003). A seven-point Likert Scale was used to structure answers to the survey questions.

SPSS software was used for the statistical processing of data obtained from the survey (Zollo, Laudano, Boccardi and Ciappei, 2018). The reliability of the questions was assessed using Cronbach's  $\alpha$ , a statistical coefficient for evaluating the accuracy of a survey in measuring latent variables. Then, the observed variables could then be transformed into latent variables. The variables obtained were correlated, in order to analyze Pearson's  $r$ , both in terms of intensity and significance ( $p$ -value). The statistical influences between the latent variables were analyzed using AMOS. The structural equation model, with the previously-analyzed variables was inserted into the AMOS diagram. Using AMOS, it was found whether or not the statistical relationship between the variables is significant ( $p < 0.01$ ). Having identified four independent variables to be correlated with one another, and five dependent variables, the two SEM sub-models were implemented:

- (1) The measurement model, defining the relationships between the observed and latent variables. This model represents "confirmatory factor analysis (CFA)," which is used to evaluate the adequacy indices of the model (or model fit indices).
- (2) The structural model, defining the relationships between the latent variables, which specify the manner in which some latent variables directly or indirectly influence others.

*Measurement model*

For each of the key dimensions – e-perceived relationship investment, website design, security and privacy, e-trust, e-relationship satisfaction, e-affective commitment and e-loyalty – a CFA was carried out using the SPSS module AMOS v. 22 (Arbuckle, 2013).

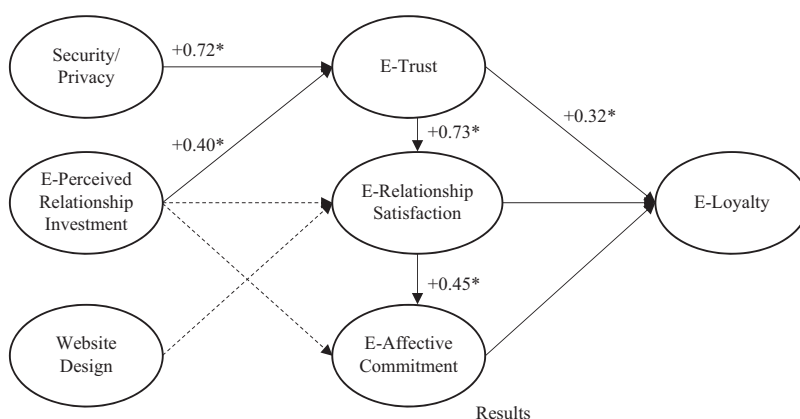
Goodness-of-fit measures were studied, to verify the acceptable parsimony of the analyzed model. Absolute fit indices were measured first, to assess the overall goodness-of-fit of the hypothesized model. The  $\chi^2$  statistics of the model were significant ( $\chi^2 = p < 0.01$ ) and the relative  $\chi^2$  suggested a good fit, with a  $t$ -test of  $\chi^2/\text{df} = 2.983$  (lower than 3, as required) (Bentler, 1990). The "goodness-of-fit index" (GFI) measures the fit between the hypothesized model and the covariance matrix of the observed variables, proposing values near to 0.90 as an acceptable model fit (Hu and Bentler, 1999). The GFI of the model (0.970), and the related "adjusted goodness-of-fit index" (AGFI) (0.846), suggested an acceptable model fit. The "root mean square error of approximation" (RMSEA), which measures the fit of the tested model with the population covariance matrix, suggested an adequate fit of 0.0113, below required 0.07. A second category of indices referred to the relative fit indices, which examine any discrepancy between the  $\chi^2$  values of the hypothesized model and a standard model were also analyzed. The most commonly used are the "comparative fit index" (CFI), the "incremental fit index" (IFI), and the "normed fit index" (NFI) (Bentler, 1990). According to Hu and Bentler (1999), CFI, IFI and NFI scores of above 0.95 are good. The hypothesized model indicated acceptable fit

indices of CFI=0.991, IFI=0.991 and NFI=0.987. Overall, the model's fit indices suggested a satisfactory model fit. Finally, the measurement model showed that all the path coefficients between the indicators and the latent variable – namely, the factor loadings – were significant as required ( $p < 0.01$ ). Hence, all the observed variables were retained in the analysis (Arbuckle, 2013). To assess the internal consistency of these indicators, we estimated the composite reliability (CR) for each latent construct. All variables – security (0.782), e-perceived relationship investment (0.634), website design (0.736), e-trust (0.688), e-relationship satisfaction (0.772), e-affective commitment (0.655) and e-loyalty (0.687) – show acceptable levels of CR, over 0.6 as required (Bagozzi and Yi, 1988). Convergent validity was assessed by the average of variance extracted index (AVE). AVE of Security (0.552), e-perceived relationship investment (0.534), website design (0.660), e-trust (0.592), e-relationship satisfaction (0.633), e-affective commitment (0.590) and e-loyalty (0.618) showed acceptable values being higher than 0.5, as required.

### Structural model

AMOS was used to estimate the hypothesized structural relationships between the analyzed variables – e-perceived relationship investment, website design, security and privacy, e-trust, e-relationship satisfaction, e-affective commitment and e-loyalty.

Examination of the path coefficients indicated that e-perceived relationship investment had a noteworthy influence on e-trust ( $\beta = +0.40$ ;  $p < 0.01$ ), thus statistically supporting *H1*. However, e-perceived relationship investment did not significantly influence e-relationship satisfaction ( $\beta = +0.13$ ;  $p > 0.05$ ), nor e-affective commitment ( $\beta = +0.30$ ;  $p > 0.05$ ). As such, *H5b* and *H5c* were not supported by the results. Security and privacy strongly influenced e-trust ( $\beta = +0.72$ ;  $p < 0.01$ ), thus supporting *H4*. However, website design showed no significant link to e-relationship satisfaction ( $\beta = +0.12$ ;  $p > 0.05$ ); thus, *H6* was not supported. E-trust proved to be significantly correlated with both e-relationship satisfaction ( $\beta = +0.73$ ;  $p < 0.01$ ) and e-loyalty ( $\beta = +0.32$ ;  $p < 0.01$ ), and thus provided statistical support for *H1a* and *H1b*, respectively. Similarly, e-relationship satisfaction significantly influenced both e-affective commitment ( $\beta = +0.45$ ;  $p < 0.01$ ) and e-loyalty ( $\beta = +0.34$ ;  $p < 0.01$ ), thus supporting *H2a* and *H2b*, respectively. Finally, e-affective commitment proved to be significantly correlated with e-loyalty ( $\beta = +0.36$ ;  $p < 0.01$ ), thus supporting *H3* (see Figure 2).



**Notes:** Dotted lines show non significant paths. \* $p < 0.01$

**Figure 2.**  
Tested structural  
model

## Results

The values obtained for Cronbach's  $\alpha$  were all close to 1 and indicate questions to be generally reliable. The high values of Pearson's correlation  $r$  indicate a positive association between the latent variables (see Table I).

For each of the measurement model's goodness indices, the relative tables from the AMOS software are shown below. In the case of this study, the CMIN value is below the threshold, justifying the suitability of analysis model. The values of GFI, NFI, IFI, CFI and RMSEA were found with in threshold range and adequate, as discussed above.

The structural model achieves the main purpose of SEM, represented in the analysis of the causal effects amongst latent variables. The standardized regression weights that indicate the influences between the model's latent variables are shown below.

## Discussion and commercial implications

This research contributes to existing literature by preliminary exploring factors that encourage e-loyalty in e-commerce (Cyr, 2008; Wells *et al.*, 2011; Ellahi and Bokhari, 2013). In particular, it addresses two specific gaps in literature even if our findings are not generalizable due to our sample size. First, the study enriches the aforementioned research by exploring the importance of the characteristics of e-commerce platforms in influencing the antecedents of e-loyalty, and e-loyalty itself. The finding that the role of website design and security and privacy are two factors that influence e-loyalty, supports the seminal research (Kim *et al.*, 2009). Next, the study adds to the e-loyalty development processes amongst Italian consumers as most other researches are focused on the US or UK consumers.

According to the results of our analysis, the contribution of e-trust to the development of e-satisfaction is very important, which corroborates with previous research (Flaviàn *et al.*, 2006; Cyr, 2008). This result is contrary to some of the literature which deems the relationship direction to travel from satisfaction to trust (Gefen, 2002). The relationship between e-trust and e-loyalty is found as positive, as in the literature. However, this contradicts UK studies, which suggest the relationship to be insignificant and suggest that trust only encourages loyalty if mediated through satisfaction.

The relationship between e-relationship satisfaction and e-affective commitment is also identified as significant, unlike in existing literature. Furthermore, the hypothesis of a positive relationship between e-affective commitment and e-loyalty is confirmed. For this, the greater the emotional involvement with the e-tailer, the more likely loyalty is shown to be, unlike in previous studies (Ellahi and Bokhari, 2013). Thus, e-perceived relationship investment is identified as having a positive influence on e-trust, the greater the perceived investment in the consumer's relationship with the company, the greater the trust they place in the e-commerce site and it is consistent with the results of studies conducted by

	1. Perc. relationship investment	2. E-trust	3. E-Relationship satisfaction	4. E-Aff. comm.	5. E-Loyalty	6. Website design	7. Security /Privacy	8. Perceived value
1	1							
2	0.741**	1						
3	0.789**	0.876**	1					
4	0.647**	0.644**	0.707**	1				
5	0.790**	0.849**	0.874**	0.796**	1			
6	0.812**	0.898**	0.816**	0.562**	0.775**	1		
7	0.753**	0.856**	0.832**	0.591**	0.800**	0.834**	1	
8	0.807**	0.862**	0.815**	0.637**	0.832**	0.833**	0.804**	1

Note: \*\* $p$ -value < 0.01

**Table I.**  
Pearson's  $R$

Rafiq *et al.* (2013). Finally, the relationship between e-perceived relationship investment and e-satisfaction and e-affective commitment was not verified, contrary to the study by Rafiq *et al.* (2013). In this regard, a greater perception of commitment is not necessarily shown to lead to a more satisfying relationship with the company.

From the results, website design is not seen to positively influence e-satisfaction, whereas the literature (Kim *et al.*, 2009) shows website design has an influence on client satisfaction. The second most intense relationship is between security and privacy and trust. This supports the pertinent literature, that the greater the guarantee of security and protection of personal data, the more confidence consumers will have in an e-commerce platform (Flaviàn *et al.*, 2006; Cyr, 2008).

From a practitioners-oriented perspective, according to the findings of this research, it is apparent that in Italy, the trust placed by a consumer in an e-commerce site should be considered as a top priority. In the context of food retailers (Kurnia *et al.*, 2015), trust is a characteristic element. As such, companies must make investments that comfort the consumer and encourage them to make their first purchase (Cyr *et al.*, 2009; Wells *et al.*, 2011). Investments aimed at increasing trust, in its broadest sense, should first concentrate of information transparency, concerning, both, the products and the management of the customer's relationship. In first instance, all consumer rights, limitations, terms of online promotions, distribution policies, payment procedures, delivery policies, loyalty card information, refund policies, site use policies and all other conditions of the relationship, should be made explicit. It would also be advantageous to link this information to tips for safe online purchases, as seen in a dedicated section of the Tesco website. One suggestion would be to ensure that food retailers pay appropriate attention to the use-by date of goods, when considering home delivery. All these aspects can be achieved by marketing managers by focusing and directing investment on communication and development of interactions with consumers in order to improve long-term trust and then loyalty.

Another consideration for companies looking to increase e-trust is the support they provide during the purchasing process, potentially through live chat. In fact, to reassure Italian customers, it is necessary to simulate reality, thus putting measures in place to replace human contact. Aftersales support should be in place, by telephone, by digital media and in store, to provide an integrated experience on all channels. This holistic approach appeared to be significant for Italian consumers. In addition to this, another potentially essential element which is often neglected is the presence of a website area where consumers can find and write reviews. Furthermore, by creating such a facility, companies can encourage eWOM (Rialti *et al.*, 2016, 2017). In terms of trust, consumer reviews can relate to both the product and the entire online activity of a company as they provide a type of undistorted information, free of commercial motivations, and provide a typically objective framework of reference.

Finally, e-tailers should be able to offer common payment options, such as PayPal. It could be useful to add a prepaid function to loyalty cards, rechargeable online or in store, providing easy and secure payment option to consumers, thus mitigating the need entering their bank account details every time and compromising their balance and payment history accessible to sites or apps (Wolfinbarger and Gilly, 2003; Pavlou *et al.*, 2007).

The purchase experience has to be monitored by the marketing manager in order to improve the consumer engagement with the e-tailers and provide an interactive and easy way to reduce the consumer risk perception that is particularly consistent in the Italian context (Leal-Millán *et al.*, 2016).

According to these results, website design, unlike in other, more developed, online contexts, does not contribute to a satisfying purchase experience. It is recommended that companies do not commit excessive resources on websites that would be useless in the absence of site reliability (Flaviàn *et al.*, 2006). Therefore, it is essential to allocate resources in a weighted and

simultaneous way on all variables of e-loyalty, according to the stage at which a consumer finds themselves within the loyalty process. This is important as each phase corresponds to a distinct determinant of e-loyalty, and contributes differently to its creation.

### Conclusions, limitations and suggestions for future research

The primary contribution of this exploratory research is the examination of elements that are useful in achieving loyalty in a virtual, digital and electronic context, such as the world of e-commerce. It also analyzes essential elements within a sector that remains poorly developed in geographical areas such as Italy and provides recommendations to food retailers on the strategic aspects they should leverage, to increase profitability. Following these results, online retailers and company marketing managers may improve the quality of their online offer and try to bridge the gap with the other countries in terms of online volume of sales. This is a clue strategy for a growing and developing market like Italy. The acquisition of loyal consumers at this stage of market development is a way to lay the foundations for a market share and a competitive position that can grow to a significant extent.

Nevertheless, the study had one key limitation, the sample size (Baruch, 1999). In fact, the results of this research may be considered valid only in context of the used sample as different sample may generate different results. Hence, results are context dependent and not generalizable. In future studies, to increase validity and generalization of the results presented, it would be useful to deepen the argument by means of a larger sample.

The study offers ideas for future research on additional relationships between variables. The first relationship that would be interesting to verify is that shared by website design and e-trust, whose Pearson's  $r$  was extremely high, and identified a strong relationship between the two. This does not, however, mean that the relationship is necessarily causal (Flaviàn *et al.*, 2006). It would be useful to investigate which function of the website is most valued, since it is irrelevant in terms of satisfaction (Chiu *et al.*, 2014).

Considering that the correlations between e-relationship investment, e-satisfaction and e-affective commitment have not been confirmed, it could be useful in the future to elaborate on which elements depend on satisfaction and emotional involvement. It would be necessary to understand how best to blend substantial investments in e-trust, to simultaneously guarantee a minimum level of e-satisfaction and e-affective commitment.

It would also be interesting to conduct the same research in different geographical areas and evaluate the differences. A country comparison of the model explaining e-loyalty effects will add more knowledge on the effect of culture in e-commerce consumer behaviors. Cultural diversity in e-loyalty behavior would be a reasonable starting point for future investigations.

Moreover, testing the model in other business context could highlight a sectoral matrix as a discriminating element of a different role of the investigated relationships on the generation of trust and online loyalty.

### Note

1. From this point, the expression e-tailer will be used to indicate the business units of grocery retailers that are delegated to the management of B2C e-commerce platforms or website.

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