

## Critical review of the e-loyalty literature: a purchase-centred framework

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**Abstract** Over the last few years, the concept of online loyalty has been examined extensively in the literature, and it remains a topic of constant inquiry for both academics and marketing managers. The tremendous development of the Internet for both marketing and e-commerce settings, in conjunction with the growing desire of consumers to purchase online, has promoted two main outcomes: (a) increasing numbers of Business-to-Customer companies running businesses online and (b) the development of a variety of different e-loyalty research models. However, current research lacks a systematic review of the literature that provides a general conceptual framework on e-loyalty, which would help managers understand their customers better, take advantage of industry-related factors, and improve their service quality. The present study is an attempt to critically synthesize results from multiple empirical studies on e-loyalty. Our findings illustrate that 62 instruments for measuring e-loyalty—with two or more items—are currently in use, influenced predominantly by Zeithaml et al. (*J. Marketing* 60(2):31–46, 1996) and Oliver (*Satisfaction: a behavioral perspective on the consumer*. New York: McGraw Hill, 1997). Additionally, we propose a new general conceptual framework, which leads to e-loyalty dividing antecedents into prepurchase, during-purchase and after-purchase factors, based on the act of purchase. To conclude, a number of managerial implementations are suggested

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in order to help marketing managers increase their customers' e-loyalty by making crucial changes in each purchase stage.

**Keywords** E-loyalty · E-satisfaction · E-trust · Customer behaviour · E-commerce · Critical review · Framework

## 1 Introduction: loyalty in the Internet era

The penetration of the Internet in marketing and e-commerce settings has influenced, to a great extent, the entire business world. From the customer's viewpoint, it has created new and possibly less costly ways of participating in commercial activities [182]. From the business perspective, market globalization, along with the decreasing effectiveness of offline marketing, has motivated organizations to shift their plans to include Internet marketing [120]. Hence, consumers have increasingly favored online shopping [166], gradually leading more Business-to-Customer (B2C) companies to establish an Internet presence in an effort to attract new and maintain existing customers for long-term profitability [203].

Building and maintaining brand loyalty has been a central theme of marketing theory and practice in traditional consumer marketing [71]. For this reason, businesses should be more interested in keeping long-lasting relationships with their customers than in accumulating occasional exchanges [17]. Presently, the notion of brand loyalty has been expanded to include online loyalty (also known as e-loyalty or website loyalty). The online shopping world has completely changed the relationship between customers and retailers. The minimal cost to a customer to switch brands (compared to the high costs for companies to acquire new e-customers) justifies the need for online businesses to create a loyal customer base, as well as to monitor the profitability of each segment in order to avoid unprofitable customer relationships during the initial years of online operation [7, 166, 167]. Moreover, Reichheld et al. [163, 164] and Day [51] have indicated that the notion of e-loyalty is the most important factor affecting online business performance.

E-loyalty is "the customer's favorable attitude towards an electronic business, resulting in repeat purchasing behaviour" [7]. It encompasses high quality customer support, on-time delivery, compelling product presentations, convenient and reasonably priced shipping and handling, and clear and trustworthy privacy policies [166]. As a result, the study of e-loyalty's antecedents has become essential [161]; satisfaction, trust, service quality, and perceived value among others are certain precursors.

Consequently, creating customer loyalty and satisfaction is the major objective for online companies to increase profitability and obtain and maintain competitive advantage. To do so, companies need to develop a thorough understanding of the antecedents of loyalty on the World Wide Web [120]. Shankar et al. [181, p. 154] note that "firms need to gain a better understanding of the relationship between satisfaction and loyalty in the online environment to allocate their online marketing efforts between satisfaction initiatives and loyalty programs". Reichheld and Sasser [165] suggested that increasing a business's number of loyal customers by 5 % can result in a 30 % to 85 % increase in profitability. However, the identification of factors that might affect e-loyalty has puzzled academic scholars over the last decade [189, 195].

## 2 Purpose

*No problem facing the individual scientist today is more defeating than the effort to cope with the flood of published scientific research, even within one's own narrow specialty.*

Bentley Glass [70, p. 583]

Up to this point, various studies have tried to explain the concepts of loyalty and satisfaction in online markets as well as the potential factors that influence them [37, 154, 197]. However, many online companies fail to cultivate e-loyalty because they are not aware of the mechanisms involved in generating customer loyalty on the Internet [169]. To the best of our knowledge, and despite the importance of e-loyalty for a business's success in the online market, there is a lack of comprehensive and systematic reviews on e-loyalty that incorporate empirical results from the last decade.

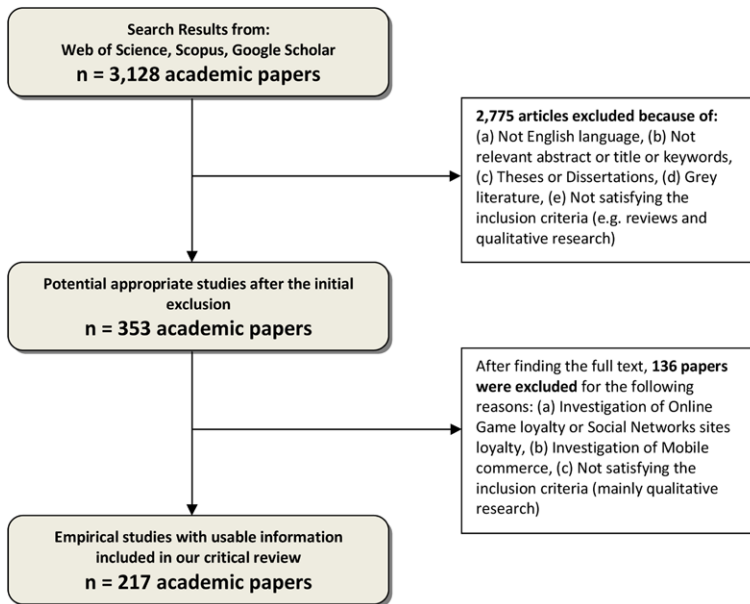
Hence, the purpose of this study is to concentrate all the available empirical literature on e-loyalty as studied in e-commerce settings and to answer the following questions:

- (1) What instruments are currently available to assess e-loyalty?
- (2) Is there a common definition of e-loyalty? What are considered to be its most widely accepted antecedents?
- (3) What are the limitations of current research in the e-loyalty literature?

## 3 Methodology

### 3.1 Literature search

The literature review was conducted sourcing the following electronic databases: Web of Science, Scopus, Business Source Premier, ABI Inform, and Google Scholar. Search terms included different combinations of “e-loyalty”, “web loyalty”, “online loyalty”, “web”, “e-commerce”, “intentions”, and “repurchase intentions”. Searches extended until July 2011 with no cut-off date for past studies. Only articles written in English were included. Articles could be from conference proceedings or journals, but only records with available abstracts were included. Dissertations, theses, and other material from the “grey literature” were excluded [170, 208]. We included studies that satisfied the following criteria: (a) They were sampling or experimental surveys and reported quantitative results and (b) They had e-loyalty as a dependent variable in the model the paper tested. Qualitative studies were excluded due to the present review's interest in instruments used for measuring e-loyalty and their psychometric properties. Methodologically, a critical review of qualitative studies assesses different concepts (e.g., sampling, coding, etc.) than one of quantitative studies, while qualitative studies are predominantly theory building and not theory testing essays [53]. Our aim is to offer an evidence-based approach for all research questions based on tested theories.



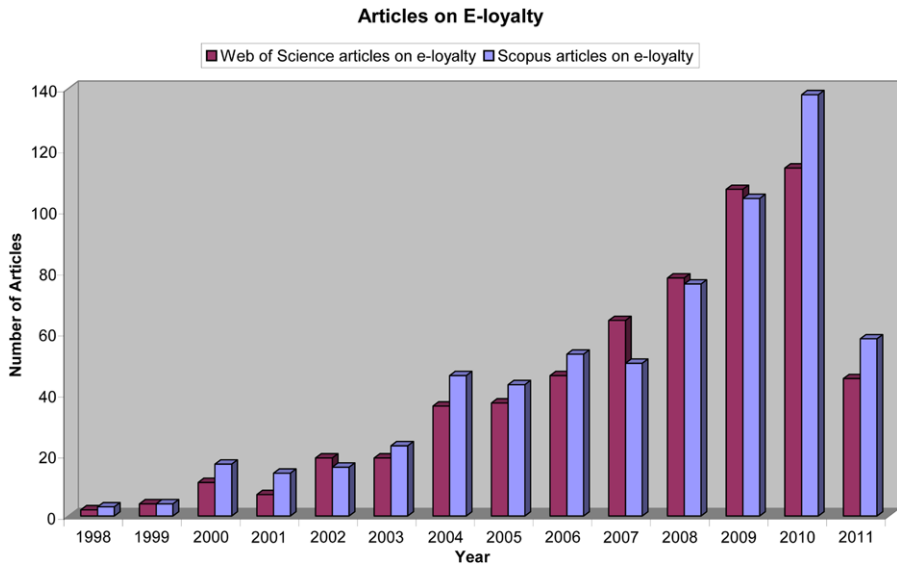
**Fig. 1** Literature search results

Our search method also resulted in papers that investigated loyalty in mobile commerce (m-commerce) settings, loyalty towards social networking sites and on-line gaming platforms, and certain attitudes towards websites. These papers were excluded, since papers studying loyalty behaviors in e-commerce and marketing settings were the primary interest.

The next step in the data collection process involved a type of snowball sampling technique: the references listed in the obtained studies were used to locate additional studies [80, 154]. Also, major review papers were screened for references to ensure that all suitable papers were included. Our search method resulted in 3,128 academic papers, which were downsampled to 217 according to the inclusion criteria. The screening procedure is shown in Fig. 1.

### 3.2 Academic papers

The papers included in our sample came mainly from the marketing and e-commerce settings of various industries (book selling websites, travel websites, general retailing websites, etc.). The total sample size, taken from all studies, was 103,858 people. The first papers discussing some aspect of e-commerce loyalty appeared in 1998 and, following a steady increase from 2003 to 2008, articles peaked at 120 to 140 in 2009 and 2010 (Fig. 2). Many papers from 2011 were still in publication, but given the present review's time limit and the fact that the number of papers up until that point equaled about half of 2010's total number, a figure of about 140 is expected for 2011. This shows the ongoing interest of academic researchers for studying e-loyalty in e-commerce settings. From the Web of Science sample of papers on e-loyalty (590),



**Fig. 2** Articles mentioning e-loyalty, web loyalty or online loyalty from Web of Science and Scopus

most papers published are authored by researchers from the USA (31.4 %), Taiwan (16.1 %), China (14.3 %), South Korea (6.1 %), and the UK (8.2 %); the remaining studies are from various other European, Asian, and American countries.

### 3.3 Synthesis of the literature

Several steps were followed in the process of synthesizing the concepts presented in various studies and the impact they have had on e-commerce literature [234]. A table of all studies was created, noting the following information for each study: authors and year of publication, main area of study, scope of the paper, sample size, loyalty instrument used, number of items and Likert points, the instrument's reliability, and results of its confirmatory factor analysis. For each study, we noted the other dimensions/concepts measured by authors and results of their hypotheses concerning e-loyalty. Finally, the number of citations each paper received from Google Scholar and an impact ratio (citations in Google Scholar/year) were included to assess the relative impact of each paper [37]. A detailed list of all papers identified is included in the Supplementary Appendix (Table A2). As a next step, we identified the instruments used for studying loyalty in e-commerce settings and constructed a unifying model of all of the studies' results.

## 4 Critical assessment of e-loyalty instruments

### 4.1 Overview of e-loyalty instruments

A useful starting point in assessing the e-loyalty literature is identifying general trends across existing e-loyalty instruments. These questionnaires consist of a series

of questions for the purpose of gathering information from respondents. Our search process resulted in noting 62 e-loyalty instruments with a number of items ranging from two to 16 (either on 5-point or 7-point Likert scales) and eight one-item instruments, outlined in Tables 1, 2, and 3, mentioning the information for each paper gathered from the literature search. Out of the 62 instruments, 23 were self-defined by authors and 39 were adaptations from previous loyalty or e-loyalty instruments.

The instruments are listed in chronological order in Tables 1, 2, and 3 with the instrument by Lynch et al. [123] being the earliest one-item instrument; that of Devaraj et al. [54] is the earliest self-defined instrument and Gefen and Straub's [69] is the earliest adapted loyalty instrument. A certain number of the instruments are used more frequently than others, but most of them are unknown (as indicated by the small number of citations). A possible explanation for this is that authors might find many similarities between the least-cited and most-cited instruments, thus selecting the more popular ones even when they consider parts of them irrelevant. The surveys were created by researchers in a variety of disciplines, including e-commerce, business, marketing, and information science, suggesting that e-loyalty is a complex field that has drawn attention from multiple disciplines. The number of items per instrument ranged from one to 16. More than 100 factors or dimensions were measured, depending on the hypotheses made by the authors in their studies, and more than 33 factors were found to have some significant association with e-loyalty.

The impact ratio (IR) of each paper was also examined; it ranged from 0 [128] to 95.5 [108], with mean IR = 4.1. The impact ratio controls for year so it clearly depicts the impact of each instrument independent of its year of publication [37]. According to their IR, the most important papers describing a new e-loyalty instrument are those by (a) Koufaris [108] (IR = 95.5) and Shankar et al. [181] (IR = 50.6) among the one-item instruments; (b) Yen and Gwinner [225] (IR = 10.4) and Vatanasombut et al. [206] (IR = 9.3) among the self-defined instruments; and (c) Srinivasan et al. [189] (instrument use by subsequent authors: 40 times) and Gefen and Straub [69] (instrument use by subsequent authors: 16 times) among the adapted instruments. From the adapted instruments, the study by Zeithaml et al. [233] appears to have significantly influenced e-loyalty literature, as 49 authors have adapted this instrument to measure e-loyalty. Second comes Oliver [143–145], whose customer satisfaction theories have been used as a basis to form an e-loyalty instrument in 11 studies.

#### 4.2 Starting points for e-loyalty instruments: Zeithaml et al. [233] and Oliver [143, 144]

It is worth analyzing the properties of the instruments with the greatest conceptual influence, namely those of Zeithaml et al. [233] and Oliver [143, 144]. Zeithaml et al. [233] offered a conceptual model of the impact of service quality on particular behaviors that signaled whether customers remain with or defect from a company (loyalty or disloyalty). Their methodological approach resulted in a configuration of five items for loyalty, which had high internal consistency (0.93 to 0.94 across companies). These loyalty items stressed the importance of recommending a company to others, through positive words, advice, and friendly encouragement, or through repetitive behaviors of continuing to patronize a business over the next years and

**Table 1** One-item e-loyalty instruments. Confirmatory factor analysis was not done on these measures and reliability cannot be measured for one-item instruments

No.	Reference	Sample size (N)	Likert points	Other dimensions measured	IR
1	Lynch et al. [123]	299	7	Trust, Affect, Site Quality	17.4
2	Koufaris [108]	280	7	Product Involvement, Web Skills, Value-Added Search Mechanisms, Challenges, Perceived Control, Shopping Enjoyment, Concentration, Perceived Usefulness, Perceived Ease of Use	95.5
3	Shankar et al. [181]	Data set 1: N = 144; Data set 2: (online sample) N = 190; Data set 3: (offline sample unmatched) N = 403	7	Online Medium, Service Encounter Satisfaction, Overall Satisfaction	50.6
4	Kim and Kim [104]	303	7	Demographics (gender, age, income, education, number of children), Transaction/Cost, Incentive Programs, Site Design, Interactivity	7.3
5	Jiang and Rosenbloom [95]	The study includes 416 e-tailers with over a quarter of a million individual consumer respondents	10	Customer Price Perception, Customer Satisfaction at Check-out, Customer Satisfaction after Delivery, Overall Customer Satisfaction	11.5
6	Mithas et al. [130]	More than 12,000 customers across 43 Web sites	10	Web site structure, Web site content, Web site functionality, Government vs. Commercial domain – Physical goods vs. services domain, Information richness domain, Transaction richness domain	13
7	Castañeda et al. [30]	103	5	Attitudes toward Internet use, Brand, Website, Satisfaction	3
8	Abdul-Muhmin [1]	436	7	Satisfaction with: Online Product Prices, Delivery Time, Delivery Cost, Online Product Quality, Online Customer Service, Required Online Payment Method, Online Payment Security, Overall Satisfaction with previous Online Purchase, Attitudes toward Online Purchase	0

Note: IR, Impact Ratio

**Table 2** Twenty three self-defined e-loyalty instruments

No.	Reference	N	No. of Items (Likert points)	Reliability	Fit Indices (if CFA Performed)	Other dimensions measured	IR
1	Devaraj et al. [54]	134	4(7)	NR	NR	Efficiency (Time, Ease-of-use, Effort), Value (Price, Quality), Interaction (Information, Safety, Load Time, Navigation), Purchase Decision	3.4
2	Yen and Gwinner [225]	459	2(7)	Reliability coefficient: 0.85	CFA not done	Perceived Control, Performance, Convenience, Efficiency, Confidence Benefits, Special Treatment Benefits, Satisfaction	10.4
3	Thatcher and George [200]	441	2(NR)	Complete reliability (ICR): 0.930	CFA not done. EFA was executed	Positive Affect (Aesthetics, Entertainment), Commitment (Learning Costs, Transaction Costs, Artificial Costs), Customer Satisfaction (Pricing, Convenience, Selection), Trust - Social Involvement Commitment Interaction	4.3
4	Lim and Dubinsky [116]	237	2(7)	Cronbach's $\alpha$ : 0.90	Acceptable model fit: $\chi^2 = 236.07$ , $df = 188$ , $RMSEA = 0.029$	Self-efficiency, Facilitation of ability, Family, Friends, Merchandise, Reliability, Navigation, Perceived Behavioral Control, Subjective Norm, Attitude toward online shopping	4.2
5	Olson and Boyer [148]	242	2(7): Web site attractiveness 5(7): Internet improvement	Web site attractiveness: 0.57 Internet improvement: 0.86	CFA not done	Patron Factors (Patron Strategy and Website Interaction), Technological Factors (Website Functionality)	1.5
6	Hackman et al. [78]	171	3(7)	Composite reliability: 0.874	CFA not done	Sacrifice, Online Service Quality, Online Service Value, Online Service Satisfaction	3.2
7	Park and Kim [153]	213	3(5)	Cronbach's $\alpha$ : 0.83	CFA not done	Perceived time risk, Perceived consumption delay, Attitude toward the Web site	1



Table 2 (Continued)

No.	Reference	N	No. of Items (Likert points)	Reliability	Fit Indices (if CFA Performed)	Other dimensions measured	IR
8	Wang and Head [210]	177	2(7)	Cronbach's $\alpha$ : 0.63	Acceptable model fit: <i>Exogenous constructs</i> : $\chi^2 = 45.2$ , $df = 38$ , $\chi^2/df = 1.2$ , $p = 0.20$ , GFI = 0.96, AGFI = 0.92, CFI = 0.99, RMSEA = 0.03 <i>Endogenous constructs</i> : $\chi^2 = 32.2$ , $df = 21$ , $\chi^2/df = 1.5$ , $p = 0.06$ , GFI = 0.96, AGFI = 0.92, CFI = 0.99, RMSEA = 0.06	Exogenous constructs (Perceived Consumer Power, Perceived Relationship Investment, Perceived Interaction, Perceived Shopping Risks), Endogenous constructs (Perceived Switching Costs, Satisfaction, Trust)	7.75
9	Huang [89]	269	18(5)	Cronbach's $\alpha$ : 0.81	Acceptable model fit: $\chi^2/df = 1.18$ , $p = 0.09$ , GFI = 0.95, AGFI = 0.92, IFI = 1, CFI = 1, NFI = 0.98, RMR = 0.04, RMSEA = 0.03	E-quality (price benefits, useful information, customization, interactivity, accessible business process, responsiveness), Trust (promise fulfillment, company reputation, transaction confidentiality, professional ability belief, benevolence belief)	2.3
10	Lin et al. [118]	590	3(7)	Construct reliability: 0.779	Acceptable model fit	Incentive, Confirmation, Satisfaction, Trust	0

Table 2 (Continued)

No.	Reference	N	No. of Items (Likert points)	Reliability	Fit Indices (if CFA Performed)	Other dimensions measured	IR
11	Ma et al. [124]	266	NR(6)	Cronbach's $\alpha$ : 0.60–0.88	Acceptable model fit: <i>Model 1</i> : $\chi^2 = 718.55$ , $\chi^2/\text{df} = 2.37$ , NNFI = 0.91, CFI = 0.92, RMSEA = 0.075 <i>Model 2</i> : $\chi^2 = 662.63$ , $\chi^2/\text{df} = 2.37$ , NNFI = 0.91, CFI = 0.93, RMSEA = 0.073	Content, Convenience Communication, Concern, Credibility, Character, Customization	0
12	Vatanasombut et al. [206]	1004	3(NR)	Reliability coefficient: 0.92	CFA not done	Relationship Termination Cost, Relationship benefit, User (perceived) employment, Shared Value, Communication, Perceived security, Relationship Commitment, Trust	9.3
13	Wang and Xu [212]	726	NR(7)	Cronbach's $\alpha$ : >0.800	CFA not done	Online perceived value, Online customer satisfaction, Online customer trust, Online switching	0
14	Chang et al. [32]	2415	NR(5)	Reliability coefficient: 0.869	Factor analysis was executed	Compensation, Communication, Explanation, Response, System, Distributive, International, Procedural Justice	0
15	Huang et al. [90]	147	3(5)	Cronbach's $\alpha$ : 0.909	Acceptable model fit: $\chi^2/\text{df} = 30.1/39$ , GFI = 1, AGFI = 0.93, NFI = 0.99, RMSR = 0.081	Logistics Service Quality (Information Quality, Ordering Procedures, Timeliness, Order Condition, Order Discrepancy), Satisfaction	0

Table 2 (Continued)

No.	Reference	N	No. of Items (Likert points)	Reliability	Fit Indices (if CFA Performed)	Other dimensions measured	IR
16	Karahanna et al. [102]	4,838	3(10)	Composite reliability: >0.91	CFA not done	Information Quality, System Quality, Perceived Usefulness, Perceived Value, Trust, E-Satisfaction	0
17	Muthaly and Ha [136]	402	2(7)	Cronbach's $\alpha$ : 0.7-0.9	Acceptable model fit	Customized information, Web interactivity, Positive Emotional Bond, Positive attitude,	0
18	Chen et al. [36]	230	NR(10)	NR	CFA not done	Online Shop Image, Online Shopping Expectations, Purchasing experience, Perceived Value, Customer Satisfaction	0
19	Chiagouris and Ray [38]	251	2(7)	Cronbach's: 0.757	Acceptable model fit: $\chi^2 = 691.562$ , $df = 188$ , $NFI = 0.93$ , $NNFI = 0.94$ , $CFI = 0.95$ , $IFI = 0.95$ , $RMSEA = 0.08$	Advertising Likeability, Reputation, Perceived Site Security, Hedonic Value, Utilitarian Value	0
20	Goumaris et al. [73]	240	4(5): Word of mouth (WOM) 3(5): Site revisit 3(5): Purchase intentions	Cronbach's $\alpha$ : 0.80 (WOM), 0.78 (Site revisit), 0.79 (Purchase intentions)	Acceptable model fit: $GFI = 0.94$ , $CFI = 0.96$ , $RMSEA = 0.07$	E-Service Quality (User friendliness, Information, Adaptation, Aesthetics), E-Satisfaction (Process, Encounter)	2
21	Liu and Hung [121]	204	3(5)	Composite reliability: 0.84	CFA not done	Ability, Integrity, Benevolence, Environmental perception	1
22	Xue [220]	212	3(5)	Cronbach's $\alpha$ : 0.657	CFA not done	Personal Factors (Skills), Network Factors (Interactive Speed, Usefulness, Entertainment), Task Factors (Importance, Challenging, Time-Bound, Heart Flow	0

**Table 2** (Continued)

No.	Reference	N	No. of Items (Likert points)	Reliability	Fit Indices (if CFA Performed)	Other dimensions measured	IR
23	Kim et al. [105]	340	4(5)	Composite reliability: 0.860	Acceptable model fit: $\chi^2 = 244.98$ , $df = 137$ , $p < 0.0001$ , GFI = 0.929, AGFI = 0.902, CFI = 0.959, RMSR = 0.023	Navigation Functionality, Perceived Security, Transaction Cost, Trust, Satisfaction	7

Notes: NR, Not Reported; IR, Impact Ratio; CFA, Confirmatory Factor Analysis; df, Degrees of Freedom; GFI, Goodness of Fit Index; AGFI, Adjusted Goodness of Fit Index; NFI, Normed Fit Index; NNFI, Non-Normed Fit Index; CFI, Comparative Fit Index; IFI, Incremental Fit Index; RMR, Root Mean Residual; RMSR, Root Mean Square Residual; RMSEA, Root Mean Square Error of Approximation

**Table 3** Thirty nine e-loyalty instruments adapted from previous loyalty or e-loyalty instruments

No.	References	N	Adapted Loyalty Instrument	No. of items (Likert points)	Reliability	Fit indices (if CFA performed)	Other dimensions measured (items)	IR
1	Gefen and Straub [69]	202	Davis et al. [49, 50]	3(7)	Cronbach's $\alpha$ : 0.79	CFA not done	Perceived Ease of Use, Perceived Usefulness, Intended Inquiry	56.7
2	Lee et al. [111]	289	Anderson [5]	2(NR)	Cronbach's $\alpha$ : 0.729	CFA not done	Comprehensive information, Shared Value, Communication, Uncertainty, Number of competitors, Specificity, Trust, Transaction Cost	10.9
3	Limayem et al. [117]	705	Parker et al. [155]; Taylor and Todd [196]	3(5)	NR	CFA not done	Subjective Norms, Attitude, Perceived Consequences, Behavioral Control, Personal Innovativeness, Internet Shopping	17.6
4	Bhattacharjee [19]	172	Mathieson [127]	3(7)	Cronbach's $\alpha$ : 0.887	CFA was done	Confirmation (Sales, Service, Marketing), Satisfaction, Perceived usefulness, Loyalty incentives	30
5	Gefen and Devine [68]	176	Zeithaml et al. [233]	3(5)	Cronbach's $\alpha$ : >0.80	CFA not done. EFA was executed. Good factorial validity	Service Quality (Tangibles, Empathy, Reliability, Responsiveness, Assurance), Perceived risk with vendor, Perceived switching costs, Perceived relative price of books, Lack of annoying banners, Beneficial search engines, Site security, Quick response time, Customer recognition	2.7

Table 3 (Continued)

No.	References	N	Adapted Loyalty Instrument	No. of items (Likert points)	Reliability	Fit indices (if CFA performed)	Other dimensions measured (items)	IR
6	Gefen [67]	160	Zeithaml et al. [233]	4(7)	Composite reliability: 0.922	CFA done. Acceptable model fit	Service Quality (Tangibles, Empathy, Reliability, Responsiveness, Assurance), Customer Trust, Perceived risk with vendor, Cost to switch vendor	33.4
7	Srinivasan et al. [189] <i>Note:</i> This study is similar with Anderson and Srinivasan [7], but the potential dimensions that affect e-loyalty differ	1211	Zeithaml et al. [233]; Gremler [74]	7(7)	Cronbach's $\alpha$ : 0.920	CFA done	Customization, Contact interactivity, Care, community, Convenience, Cultivation, Choice, Character, Search, Word-of-mouth, Willingness to pay more	59.8
8	Luarn and Lin [122]	180	Chaudhuri and Holbrook [33]	2(7)	Cronbach's $\alpha$ : 0.89	CFA not done	Trust, Customer Satisfaction, Perceived Value, Commitment	10.3
9	Taylor and Hunter [198]	244	Oliver [143, 145]; Pritchard et al. [160]	4(9)	Reliability coefficient: 0.834	Acceptable model fit: $\chi^2 = 182.83$ , df = 105, GFI = 0.92, CFI = 0.99, NFI = 0.99, LFI = 0.99, RMSEA = 0.055, SRMR = 0.025	Trust, Affect, Resistance to Change, Value Brand Attitude, Satisfaction	3.5

**Table 3** (Continued)

No. References	N	Adapted Loyalty Instrument	No. of items (Likert points)	Reliability	Fit indices (if CFA performed)	Other dimensions measured (items)	IR
10 Bauer and Hammer-schmidt [16]	492	Cronin and Taylor [44, 45]	3(7)	Cronbach's $\alpha$ : 0.81	Acceptable model fit: $\chi^2/df = 3.5$ , GFI = 0.97, AGFI = 0.96, RMSEA = 0.07, RMR = 0.07	Service Quality (content, communication, commerce, challenge, configuration, customer care), Switching Barriers, Customer Satisfaction	1.6
11 Chiou [40]	209	Muncy [135]; Selin et al. [179]	3(5)	Cronbach's $\alpha$ : 0.890	Acceptable model fit: $\chi^2 = 389.6$ , df = 194, $p < 0.0001$ , CFI = 0.93, NNFI = 0.92, RMSEA = 0.07	Future Internet Service Provider expectancy, Attributive Service Satisfaction, Perceived Trust, Perceived Value, Overall Satisfaction	14
12 Gummerus et al. [75]	421	Zeithaml et al. [233]	6(7)	NR	Acceptable model fit: <i>Endogenous variables:</i> $\chi^2 = 15.96$ , df = 6, GFI = 0.99, AGFI = 0.96, RMSEA = 0.063 <i>Exogenous variables:</i> $\chi^2 = 32.32$ , df = 25, GFI = 0.98, AGFI = 0.97, RMSEA = 0.026	Service Quality (User Interface, Responsiveness, Need fulfilment, Security), Trust, Satisfaction	10.9

Table 3 (Continued)

No. References	N	Adapted Loyalty Instrument	No. of items (Likert points)	Reliability	Fit indices (if CFA performed)	Other dimensions measured (items)	IR
13 Ha [76]	243	Anderson and Weitz [6]	3(5)	Cronbach's $\alpha$ : 0.88	CFA was done	Perceived benefits, Relationship length, Perceived risk, Complaint, Customized information, Web interactivity, High involvement, Brand trust	1.14
14 Harris and Goode [79]	498	Oliver [143, 145]	16 (7)	Cronbach's $\alpha$ : 0.69–0.88 (4 scales of loyalty)	Each indicator loaded significantly on its designated factor ( $p < 0.01$ ). Overall, CFA produced $\chi^2/df$ well below the criterion of Marsh and Hocevar with AGFI significantly better than a one factor model	Service Quality, Satisfaction, Perceived Value, trust	38
15 Hsieh et al. [87]	332	Morgan and Hunt [134]; Garbarino and Johnson [66]	4(7)	NR	Acceptable model fit: $\chi^2 = 516$ , $df = 186$ , $p < 0.05$ , GFI = 0.90, CFI = 0.93, SRMR = 0.04	Financial – Social – Structural Bonds	10.3



**Table 3** (Continued)

No.	References	N	Adapted Loyalty Instrument	No. of items (Likert points)	Reliability	Fit indices (if CFA performed)	Other dimensions measured (items)	IR
16	Parasuraman et al. [152]	549 Internet users; 653 Amazon.com costumers; 205 Walmart.com customers	Zeithaml et al. [233]	5(5)	Cronbach's $\alpha$ : 0.93 (Amazon), 0.96 (Walmart)	Acceptable model fit for E-S-QUAL: <a href="#">Amazon.com</a> : $\chi^2 = 1278.21$ , $df = 203$ , CFI = 0.98, NFI = 0.98, RFI = 0.97, TLI = 0.98, RMSEA = 0.09 <a href="#">Walmart.com</a> : $\chi^2 = 739.86$ , $df = 203$ , CFI = 0.97, NFI = 0.96, RFI = 0.95, TLI = 0.96, RMSEA = 0.11	E-S-QUAL (efficiency, fulfillment, system availability, privacy), E-RecS-QUAL (Responsiveness, Compensation, Contact), Perceived Value	80.2
17	Rodgers et al. [172]	836	DeLone and McLean [52]; Pitt et al. [156]	4(5)	Cronbach's $\alpha$ : 0.84	Acceptable model fit: $\chi^2 = 1246$ , $df = 365$ , GFI = 0.90, AGFI = 0.88, NFI = 0.91, RMR = 0.04	Informativeness, Entertainment, Interactivity, Access, Tangibility, Reliability, Responsiveness, Assurance, Empathy, Information Quality, System Quality, Service Quality, On-Line Satisfaction	9.8

Table 3 (Continued)

No. References	N	Adapted Loyalty Instrument	No. of items (Likert points)	Reliability	Fit indices (if CFA performed)	Other dimensions measured (items)	IR
18 Zhang and Prybutok [236]	418	Bagozzi et al. [10]	3(7)	Cronbach's $\alpha$ : 0.870	CFA not done	Individual PC Skill Differences, e-Service Convenience, Web Site Service Quality, E-Satisfaction, Perceived Risk	8.5
19 Balabamis et al. [11]	192	Reynolds and Beatty [168]	4(7)	Cronbach's $\alpha$ : 0.810	CFA showed that one item (I don't plan to shop at that e-store in the future) did not have a good fit. After the omission of that item, the fit of the model was acceptable	Convenience, Economic, Emotional, Speed, Familiarity, Unawareness, Parity	12.8
20 Flavián et al. [61]	351	Rowley and Dawes [175]; Yoon and Kim [230]; Flavián et al. [62]	3(7)	Cronbach's $\alpha$ : 0.767 (Loyalty to website), 0.819 (Loyalty to competitor website)	Goodness-of-fit test found that all the confirmatory models were acceptable	Perceived usability, Trust, Satisfaction	47
21 Floh and Treiblmaier [63]	2075	Homburg and Giering [84]	2(6)	Reliability coefficient: 0.700	CFA was done	Web site Quality, Service Quality, Overall Satisfaction, Trust	9.8

**Table 3** (Continued)

No. References	N	Adapted Loyalty Instrument	No. of items (Likert points)	Reliability	Fit indices (if CFA performed)	Other dimensions measured (items)	IR
22 Koo [106]	353	Bloemer [21]; Macintosh and Lockshin [126]	4(7): Re-patronize intention 2(7): Store commitment consisted	Cronbach's $\alpha$ : 0.955 (re-patronize intention), 0.842 (store commitment)	Acceptable model fit: $\chi^2 = 21.91$ , $df = 4$ , $p < 0.001$ , GFI = 0.98, AGFI = 0.91, NFI = 0.99, NNFI = 0.97, CFI = 0.99, RMR = 0.025, SRMR = 0.012	End States of Existence, Personal Values (Matured Society, Safe World, Happiness, Esteem Life), Online Store Associations (Web Site Design, Visual Appeal, Hyperlinks, Product Assortment, Information, Security Feature, After-sale Services), Behavior	4
23 Overby and Lee [149]	817	Unger and Kerman [205]	5(7)	Reliability coefficient: 0.90	Acceptable model fit: $\chi^2 = 634.313$ , $df = 100$ , $p < 0.0001$ , GFI = 0.909, CFI = 0.934	Utilitarian Value, Hedonic Value, Preference	10.2
24 Tsai et al. [202] <i>Note:</i> Similar with the paper written by Tsai and Huang [201]	526	Burnham et al. [23]; Bansal et al. [12–14]	3(7)	Composite reliability: 0.95	CFA was done	Expected Value Sharing, Perceived Switching Costs, Community Building, Perceived Service Quality, Perceived Trust, Switching Barriers, Overall Satisfaction, Relational Orientation	7.6

Table 3 (Continued)

No. References	N	Adapted Loyalty Instrument	No. of items (Likert points)	Reliability	Fit indices (if CFA performed)	Other dimensions measured (items)	IR
25 Zhang et al. [235]	704	Igbaria et al. [91]	4(7)	Cronbach's $\alpha$ : 0.87	CFA not done. EFA was executed	Site Characteristics, Perceived Security, User Computer Skills and Internet Experiences, Perceived Convenience, User Satisfaction	2
26 Lin [119]	434	Gefen and Straub [67, 69]; Self-defined instrument	4(5)	Cronbach's $\alpha$ : 0.78 (Stickiness), 0.79 (Intention to transact)	Acceptable model fit: $\chi^2/df = 2.263$ , GFI = 0.91, AGFI = 0.89, CFI = 0.94, NFI = 0.93, RMSEA = 0.047	Content, Context, Infrastructure, Positive attitude, Trust	4.75
27 Wood and van Heerden [219]	108	Reichheld [162]	3(11)	Cronbach's $\alpha$ : NR (e-Loyalty), 0.926 (e-Service Quality), 0.937 (e-Satisfaction), 0.936 (e-Value)	CFA not done	Online e-Service Quality (User interface, Security, Responsiveness, Customization, Value-added services), e-Satisfaction, e-Value	0.25
28 Yun and Good [231]	203	Sirgy et al. [186]	3(7)	NR. Overall Cronbach's $\alpha$ : 0.73–0.92	Acceptable model fit: $\chi^2 = 196.53$ , $df = 126$ , CFI = 0.97, NFI = 0.92, GFI = 0.90, RMSEA = 0.05	E-merchandise, E-service, E-shopping atmosphere, E-tail store image, E-patronage intentions	4.25

**Table 3** (Continued)

No. References	N	Adapted Loyalty Instrument	No. of items (Likert points)	Reliability	Fit indices (if CFA performed)	Other dimensions measured (items)	IR
29 Casaló et al. [29]	142	Teo et al. [199]; Algesheimer et al. [3]	2(7)	Composite reliability: 0.700	Acceptable model fit: $\chi^2 = 156.340$ , $df = 84$ , $NFI = 0.879$ , $NNFI = 0.941$ , $CFI = 0.952$ , $IFI = 0.953$ , $RMSEA = 0.062$ (90 % CI 0.040–0.083)	Usability, Satisfaction	5
30 Chen et al. [35]	976	Gefen and Straub [69]	14(5)	Cronbach's $\alpha$ : >0.800	Partial Least Squares CFA executed	VEM elements (Sense, Interaction, Pleasure, Flow, Community), Shopping Orientations (economic-convenience orientation internet experience, Online Browsing Intention, Online Purchase Intention)	1
31 Ha and Janda [77]	386	Jacoby and Chestnut [93]; Uncles et al. [204]	3(7): Brand Loyalty, 2(7): Repurchase Intention	Cronbach's $\alpha$ : 0.90 (Brand Loyalty), 0.83 (Repurchase Intention)	Acceptable model fit: $\chi^2 = 109.20$ , $df = 60$ , $p < 0.001$ , $\chi^2/df = 1.82$ , $GFI = 0.966$ , $AGFI = 0.923$ , $NFI = 0.977$ , $CFI = 0.990$ , $RMSEA = 0.046$	Perceived Value, Disconfirmation, Attribution, Satisfaction	3.6

Table 3 (Continued)

No. References	N	Adapted Loyalty Instrument	No. of items (Likert points)	Reliability	Fit indices (if CFA performed)	Other dimensions measured (items)	IR
32 Wang [213]	240	Moon and Kim [133]; Hong et al. [85]	3(7)	Composite reliability: 0.89	Acceptable model fit: $\chi^2 = 218.16$ , $df = 174$ , AGFI = 0.89, NNFI = 0.96, CFI = 0.97, IFI = 0.97, RMSEA = 0.03	Information Quality, System Quality, Service Quality, Perceived Value, User Satisfaction	11
33 Yoon et al. [229]	303	NR	NR(7)	NR	The CFA of the full measurement model showed all of the indicators significantly loaded on their corresponding latent constructs ( $p < 0.01$ )	Perceived relationship investment (Active control, Synchronicity, Two-way communication, Direct mail, Treatments, Rewards), Relationship quality	5.3
34 Hsu et al. [88]	412	Stum and Thiry [193]	5(5)	Cronbach's $\alpha$ : 0.83	CFA was done	Product Information, Advertisement Information, Customer Service, Security, Price, Recommendation	0

**Table 3** (Continued)

No. References	N	Adapted Loyalty Instrument	No. of items (Likert points)	Reliability	Fit indices (if CFA performed)	Other dimensions measured (items)	IR
35	Jim [100]	Yoo et al. [228]	3(7)	Cronbach's $\alpha$ : 0.852	Acceptable model fit: $\chi^2 = 1271.588$ , $df = 428$ , $p < 0.0001$ , $\chi^2/df = 2.971$ , $GFI = 0.901$ , $AGFI = 0.872$ , $CFI = 0.946$ , $NFI = 0.942$ , $RMSEA = 0.069$	Website resource, Web design, Website service, Interactivity, Brand experience, Perceived quality, Brand attractiveness, Brand relations	0
36	Chen and Dibb [34]	Eroglu et al. [59]	4(5)	Cronbach's $\alpha$ : 0.88	CFA not done. EFA was executed	Web Site Quality (Web site usability, Security and privacy, Speed of download, Product information quality, Service information quality, Aesthetic aspects), Familiarity with the web site, Trust, Attitudes toward the site	2
37	Chung and Shin [43]	Molinari et al. [132]	3(7)	Cronbach's $\alpha$ : 0.868 Composite reliability: 0.982	Acceptable model fit: $\chi^2 = 418.147$ , $df = 307$ , $\chi^2/df = 1.362$ , $GFI = 0.882$ , $AGFI = 0.844$ , $NFI = 0.903$ , $IFI = 0.972$ , $TLI = 0.965$ , $CFI = 0.972$ , $RMSEA = 0.041$	Site Characteristics (Shopping Convenience, Site Design, Informativeness, Security, Communication), Customer Satisfaction, E-Trust, E-Commitment	0

**Table 3** (Continued)

No.	References	N	Adapted Loyalty Instrument	No. of items (Likert points)	Reliability	Fit indices (if CFA performed)	Other dimensions measured (items)	IR
38	Jiang et al. [96]	186	Li et al. [114]	4(7)	Cronbach's $\alpha$ : 0.96	CFA not done. EFA was executed	Active Control (High/Low), Reciprocal Communication (Present/Absent), Cognitive Involvement, Affective Involvement, Product Type (Functional/Expressive)	3
39	Jones and Kim [101]	200	Chiang and Dholakia [39]	3(5)	Reliability coefficient: 0.86	CFA not done	Brand Trust, Off-line patronage, Clothing involvement, Perceived website quality (usability and information quality, visual appeal and image, interactivity and innovativeness)	0

Notes: NR, Not Reported; IR, Impact Ratio; CFA, Confirmatory Factor Analysis; EFA, Exploratory Factor Analysis; df, Degrees of Freedom; GFI, Goodness of Fit Index; AGFI, Adjusted Goodness of Fit Index; NFI, Normed Fit Index; NNFI, Non-Normed Fit Index; CFI, Comparative Fit Index; IFI, Incremental Fit Index; RFI, Relative Fit Index; TLI, Tucker-Lewis Index; RMR, Root Mean Residual; SRMR, Standardized root mean square residual; RMSR, Root Mean Square Residual; RMSEA, Root Mean Square Error of Approximation



considering it a first choice for buying. Zeithaml et al. [233] considered these loyalty concepts more as behavioral intentions than active behaviors, introducing as well elements of word of mouth as a proxy for loyalty, since recommendations were a very important part of their instrument. Their analysis signified the crucial role of satisfaction as an antecedent of loyalty, as satisfaction is based on certain expectations for service quality that, when met, produce satisfaction and, eventually, loyalty.

Oliver [143–145] provides a detailed approach that considers satisfaction a variable that crucially affects loyalty, with satisfaction being just one antecedent of loyalty among others. He provides a series of six scenarios on the relationship of satisfaction to loyalty, which is not analyzed here. This framework provides practitioners with means to develop loyalty through satisfaction. In the development of loyalty, Oliver noted five phases, namely cognitions, affections, intentions (conative phase), actions, and fortitude. This approach emphasizes the customer's personal feelings and emotions rather than word-of-mouth practices, as suggested by Zeithaml [233]. Intentions are also present but *actions* and *emotions* are a paramount element of Oliver's loyalty. Oliver tries to limit the definition of loyalty to the customer's immediate universe, without extending it to include the consequences of loyalty, such as word of mouth. The advantage of Oliver's axiomatic conceptions is that they distinguish loyalty from consequential proxies of loyalty; this distinction provides opportunities for formation of loyalty instruments as well as identifying antecedents or consequences of loyalty in a multitude of situations.<sup>1</sup>

In conclusion, there are various e-loyalty instruments in the literature, including some that are never used and some that appear quite frequently across different works. Moreover, the number of items varied with each instrument, even in those adapted from the same source. It would be useful for future studies to include several items with either 5- or 7-point Likert scales. One reason for this is that an instrument with five to 10 items usually produces acceptable reliability, making its use appropriate for a research study or a commercial setting. Finally, there is clearly a need to create a standardized e-loyalty instrument in order to ensure comparability among various studies.

## 5 Definitions of e-loyalty

Customers' online loyalty has been discussed extensively in various scientific papers. The present review found that researchers often use concepts similar to e-loyalty, such as continuance intention [19, 20, 107], re-purchase intention [116, 123, 153, 202], re-patronize intention [106], commitment [76], stickiness [102, 119], and word of mouth [43, 103]. All of these approaches are measured by various items that depict the concepts approached. For example, if repurchase intention was stressed as loyalty behaviour, then the researcher would most probably ask, "How many times have you bought from this website since your first purchase?" On the other hand, if the author was interested in word of mouth as a loyalty proxy, the question asked might appear

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<sup>1</sup>Oliver [143, 144] has provided many exemplar phrases for the concepts in his texts, which, by simple alterations, can create new items for instruments.

as “Would you recommend this website to others?” Thus, loyalty seems to have many aspects that may be relevant to its study.

According to Oh and Parks [142], there are three approaches towards loyalty: behavioral, attitudinal, and integrated. The first examines customers’ tendency to repeat and continue their past purchases, while the second refers to the customers’ psychological involvement, favoritism, and sense of goodwill towards a particular product or service [31]. The integrated approach is a combination of both behavioral and attitudinal approaches, with the aim of creating a new concept of loyalty. There is a general belief that the examination of loyalty must be based on both behavioral and attitudinal features [112, 177].

Oliver’s [143] definition comprises both of these types of features: he presented a loyalty framework based on a cognition-affect-conation-action historical pattern. According to Oliver [143, 145], loyalty is “a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour.” Another conceptualization of loyalty used by e-loyalty researchers is that of Neal [138, p. 21], who defines customer loyalty as “the proportion of times a purchaser chooses the same product or service in a specific category compared to the total number of purchases made by the purchaser in that category, under the condition that other acceptable products or services are conveniently available in that category.”

The existence of various definitions denotes that loyalty remains a research topic under constant inquiry and their elements provide an opportunity for researchers and practitioners to grasp the multiple aspects attributed to loyalty. E-loyalty draws its definitions from classical customer behaviour theory, but can any approach be particularly preferred in an e-commerce setting? For the marketing researcher/practitioner, it seems more general to accept an integrated approach, which combines both behavioral and attitudinal aspects of loyalty. This approach provides the conceptual basis for specific e-loyalty instrument formation, both in real and research settings. This definition of e-loyalty also coincides with the fact that many authors base their studies on Oliver’s approach to loyalty (discussed in the previous section), which is very close to an integrated one. Definitions that deal with loyalty based on word-of-mouth concepts risk the danger of lacking specificity, since word of mouth is allegedly a consequence of loyalty and satisfaction [143–145], rather than a proxy of them.

## 6 Conceptual framework for e-loyalty

E-loyalty instruments have taken into account many factors that could be loyalty’s antecedent in the e-commerce environment. In the present section, an attempt to relate all factors in a conceptual framework is made. We will argue that antecedent factors of e-loyalty can be broadly categorized into three categories centred on *purchase*, including pre-purchase, during-purchase and after-purchase factors. The act of purchase has been suggested to comprise a series of activities:

As a consumer, you (1) recognize that you have a need to satisfy; (2) search for alternatives that might satisfy the need; (3) evaluate the alternatives and

choose the best one; (4) purchase and use the chosen alternative; (5) evaluate how successfully your need has been satisfied; (6) provide feedback about your evaluation to others; and (7) end the consumer purchase process [216, p. 35].

Thus purchases are not isolated, one-time events that occur automatically [26], but involve a stepped process, based on gradual decision-making or simply situational/habitual conditions (e.g., necessity, cultural situations, recommendations, etc.) [147]. The purchase process establishes the need for a framework centred on it, since if sellers can influence this process (through certain factors), they will be able to convince buyers to make the desired purchase.

For e-loyalty, all studies included in the present review have demonstrated some association with pre-purchase, during-purchase, and after-purchase factors. Thus, it is valid to consider a theoretical model under which these are combined and can lead to e-loyalty. The framework is shown in Fig. 3, while references to each factor can be found in Table A1 of the Supplementary Appendix.<sup>2</sup>

The model is read from left to right: Pre-purchase factors are considered as initial factors that are to some degree interrelated and directly affect during-purchase factors, but can't directly affect loyalty. During-purchase factors are in general related attitudinal concepts that can affect loyalty both and through after-purchase factors. Finally, after-purchase factors are behavioral and attitudinal concepts that are directly related to e-loyalty, and their alteration can have pervasive effects on e-loyalty.

## 6.1 Pre-purchase factors

This first group of variables consists of two major sub-categories. First, there are general external factors that take into account the continuously changing views of the online market. These include the competitors' attitudes and reputations (labeled e-competitors' attitude and e-reputation, respectively). Second, there are customers' specific and unchangeable characteristics, which include customer characteristics variables and PC knowledge variables. All of the pre-purchase factors have been studied extensively by researchers who endeavor to understand e-loyalty and its determinants. As a result, these variables will be presented first.

### 6.1.1 *E-competitors' attitudes*

In every industry, the knowledge of one's competitors is crucial, and applying Porter's Five Forces in marketing settings is imperative for defining strategies to cope with this issue.<sup>3</sup> Switching costs, switching barriers, and price variations are variables

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<sup>2</sup>Researchers have used one or more concepts to express most factors. These have been included in the boxes under the main factor name. References to each concept are provided in the Supplementary Appendix and can be used for the specific definition of each concept.

<sup>3</sup>Porter's Five Forces model draws upon industrial organization economics to derive five forces that determine competitive intensity. They include three forces from 'horizontal' competition: threat of substitute products, threat of established rivals, and threat of new entrants; and two forces from 'vertical' competition: bargaining power of suppliers and bargaining power of customers [157, 187]. His models have been extended to the online commercial environment as well [158].

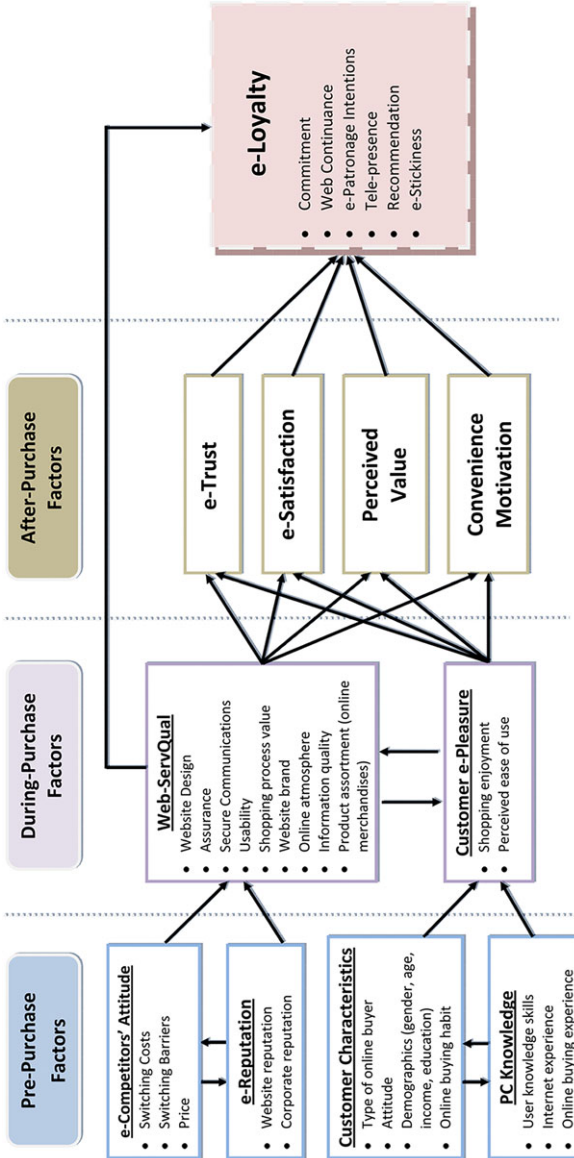


Fig. 3 Conceptual Framework of antecedents leading to e-loyalty. References for each factor are presented in Table A1 (Supplementary Appendix)

that involve competitors' knowledge; as such, many authors have examined them as ancillary antecedents of e-loyalty, as they might not directly lead to loyalty but rather affect service quality dimensions, which are discussed below. Fuentes-Blasco et al. [65] examined the moderating effect of switching costs on e-loyalty in a sample of 191 online customers and noted that the higher the website switching costs, the stronger the link between perceived value and e-loyalty. Yen [226, 227] also investigated the effect of switching costs on e-loyalty in two different samples of online shopping customers and noted a positive direct association between perceived value and e-loyalty in both samples [path coefficient  $\beta_{\text{during retention of the customer}} = 0.55$ ,  $p < 0.01$  from Yen [227]]. Balabanis et al. [11] and Tsai et al. [202] describe similar results for switching barriers.

Price, however, seems to affect e-loyalty in an unclear way, despite the many studies that have discussed it as a possible determinant of e-loyalty [39, 54, 68, 107]. For instance, Jiang and Rosenbloom [95] examined the role of price on customer retention and found a positive direct, albeit weak, association between favorable price perceptions and customer intention to return (path coefficient = 0.193,  $p < 0.05$ ). Swaid and Wigand [194] considered price an important internal parameter of loyalty behaviors and defined an aspect of it, which they named "price tolerance". They noted a positive association of price tolerance with certain service quality factors. Nevertheless, the study by Wang et al. [211] on 491 Chinese online customers uncovered a non-significant negative association of e-loyalty with price, contradicting the previous findings. They explained this observation as a consequence of the infant stage of Chinese B2C e-commerce development, since most consumers give greater importance to service quality dimensions than price.

### 6.1.2 E-reputation

Reputation is generally regarded as the current assessment of a firm's desirability, as seen by some external person or group of people [109, 191]. In classical strategic management, reputation sustains competitive advantages [86, 215], so e-reputation is closely connected to e-competitors' attitudes [72]. For online websites, reputation either stems from the website itself or from certain offline corporate activities, if existent. Caruana and Ewing [28, p. 1104] argue for the significance of corporate reputation for websites and note that "many customers have difficulty remembering even prominent websites and are reluctant to pay for products from online retailers they know little about. Thus, a strong corporate reputation can be a major asset to online retailers." Their hypothesis was confirmed by noting a strong positive association leading to e-loyalty from their own survey. Goode and Harris [72] examined the role of online reputation with regard to e-loyalty and found a positive direct path coefficient (0.37,  $p < 0.001$ ) from online reputation to behavioral intentions for an e-tailer website. Yee and Faziharudean [224] reported comparable results from the Malaysian online banking sector. Finally, rather than directly affecting loyalty, Yang and Jing [222] suggest that reputation leads to loyalty through the development of trust.

### 6.1.3 Customer characteristics

Customer characteristics comprise a type of rather constant variables in a customer's profile, in the sense that a commercial agent cannot alter them and simply takes them into account. Thus it is reasonable to consider them as pre-purchase factors that affect the purchase process but are distinctly different from the two previous factors, which are centred more on strategic variables than consumer characteristics. The literature review revealed many studies examining the effect of demographic variables on e-loyalty [115, 131, 171, 203, 237]. Demographics broadly include the type of online buyer and his or her personal attitude, online buying habits, and general demographic characteristics, such as gender, age, income, and education. Computer knowledge has also been studied as an antecedent of e-loyalty, but due to the particularity of the e-commerce environment—which requires computer skills—this is discussed as a separate pre-purchase factor below.

Kim and Kim [104] examined the effect of certain demographic variables (gender, age, income, education, and number of children) on online purchase intentions and showed that gender, income, and number of children had significant direct effects, while education had an indirect effect. The positive influence of a customer's age and gender on satisfaction and loyalty was also supported by O'Cass and Carlson [141], but their results were moderate and non-significant. Román [173] noted the moderating effects of customers' demographics (age, education, gender) on loyalty intentions in his sample online customers. Finally, from Saudi Arabia, Abdul-Muhmin et al. [2] found that the adoption of B2C e-commerce is higher among older, highly educated, high-income respondents [1, 57]. Many other studies reported demographic associations with customer behaviour concepts [82, 171, 188], but as they didn't fulfil the present review's inclusion criteria they are not described here.

### 6.1.4 PC knowledge

Highly connected to demographic factors are customers' computer and Internet literacy, knowledge, and skills (e.g., the described gender gap in computer/Internet Use) [58, 92, 159, 183]. These skills are necessary for carrying out online purchases and could increase satisfaction and/or loyalty. Studies measuring computer skills took into account customers' Internet and online buying experience along with knowledge and skills. According to Dinev and Hart [55], computer literacy is defined as the ability to use an Internet-connected computer and Internet applications to accomplish practical tasks. As stated by Taylor and Strutton [197], consumers with high levels of positive feelings about computers and online shopping have higher levels of computer affinity than consumers who "can do without their computer for several days and would not miss them if they were broken" [190, p. 139].

For instance, Zhang et al. [235] investigated the factors that affect e-service satisfaction by using a sample of 704 university students. Their results showed a direct influence of the user's computer skills and Internet experiences on his or her intention to use. Furthermore, Lee et al. [110] studied the influence of computer self-efficiency and computer anxiety on repurchase intention in a sample 274 online buyers. Their results indicated that the effect of website information satisfaction on efficiency is stronger for those with lower computer self-efficacy than for those with higher computer self-efficacy.

## 6.2 During-purchase factors

Moving on to factors affecting e-loyalty during purchase, web service quality and customer pleasure/enjoyment appear to be very important (Fig. 3). In the present model, they have been labeled as Web-ServQual and Customer e-Pleasure. These factors are asserted to have an interrelation, since e-pleasure can be affected by quality dimensions [47]. Pre-purchase factors, including e-competitors' attitude and e-reputation, at least partially define service quality [15], since the force of competition can cause differentiation strategies for service quality to give competitive advantage in an industry [158]. Customer e-pleasure, on the contrary, arguably depends on customers' characteristics or computer literacy, as psychological emotions are largely dependent on personal characteristics [27]. Thus, taking into account the associations noted in the literature, Web-ServQual includes website design, assurance, secure communications, usability, shopping process value, website brand, online atmosphere, information quality, and product assortment [137]. Customer e-pleasure includes shopping enjoyment and perceived ease of use.

### 6.2.1 *Web-ServQual*

Web-ServQual comprises many similar concepts that can lead to loyalty while the leading paths can vary (Fig. 3). It draws its dimensions from classical service quality models, but due to online settings there are additional factors to take into account [15, 234]. Web-ServQual can be defined as the extent to which a website facilitates efficient and effective shopping, purchasing, and delivery of products and service [234]. A range of academic articles from the present critical review found a positive direct or indirect—through satisfaction or trust—association between service quality dimensions and customer loyalty, with website design and associated usability factors being the most frequent features reported [28, 72, 97, 184, 218]. This association also depends on the sample examined, since website design, for instance, might not play a prominent role in affecting loyalty behaviors in novice e-commerce markets (e.g., in China, see Wang et al. [211]). The associated concepts of assurance, security on online websites, and privacy concerns are also very important variables for customers and are important components of Internet marketing strategies [197].

Regarding links with loyalty, Semeijn et al.'s [180] survey of 150 online customers, among others, resulted in a direct association between assurance and loyalty. Swaid and Wigand [194] found that assurance leads to loyalty through an indirect path, affecting initial price tolerance reliability. Finally, online atmosphere has also been advocated as an antecedent of e-loyalty, e.g., in the study of Verhagen and van Dolen [207], who found a direct positive link from online atmosphere to online purchase intentions.

Thus, web service quality can affect loyalty directly or through other factors. The direct effect of service quality on loyalty has been noted as early as Parasuraman's original studies on service quality [150, 151]. Customers have expectations for the service quality they receive and if the service performance exceeds their expectations, they become satisfied and then loyal [44, 45]. In addition, when their expectations are surpassed, their attitudes and intentions towards rebuying also increase, thus effecting loyalty directly [233]. The link, however, of service quality with loyalty might be weaker than that with satisfaction [44, 45].

### 6.2.2 Customer e-pleasure

Pleasure is thought to be a feeling of enjoyment and entertainment, contrasted with things done out of necessity [176]. For e-commerce, customer e-pleasure includes shopping enjoyment and perceived ease of use, concepts linked together with their common roots in enjoyment and lack of uneasiness [41]. These attitudes and emotions are closely related to service quality as a during-purchase factor, because if customers' expectations for quality are met and surpassed, an immediate reaction of *pleasure* occurs during the purchase process [46, 47]. Enjoyment as an emotion is dependent on demographic characteristics. In traditional commercial settings, Hart et al. [81] conducted a survey with a sample of 536 customers and found that shopping experience enjoyment has a significant positive influence upon customers' repatronage intentions. Their results showed that men have a stronger relationship of enjoyment with repatronage than women. As an attitude and emotion, pleasure strongly affects post-purchase factors. In online shopping, Chiu et al.'s research [42], among many other similar studies [24, 25, 46, 47, 108, 217, 221], showed that perceived ease of use, perceived usefulness, and enjoyment are significant positive predictors of customers' repurchase intentions. Thus, pleasure can conceivably be thought of as an antecedent of loyalty.

### 6.3 After-purchase factors

After-purchase factors essentially include those attitudes and perceptions that follow the purchase of a certain product from an online vendor. These involve trust, satisfaction, perceived value, and convenience motivation (Fig. 3). Many authors have reported these four factors as leading directly to e-loyalty, stressing the importance of these attitudinal factors in developing loyal behaviour [209, 214]. During-purchase factors previously described have been reported as affecting these factors [113], so direct links between Web-ServQual and Customer e-Pleasure and after-purchase factors have been added, explaining these associations.

#### 6.3.1 E-satisfaction

Satisfaction is considered to be the most discussed factor in the literature that leads to e-loyalty [37, 197]. Customers become satisfied after they evaluate the quality of their purchase—as defined in the during-purchase stage—and their experience from a particular online purchase [197, 234]. According to Oliver [143, 145], satisfaction is defined as “the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with a consumer's prior feeling about the customer experience.” Extending this definition, e-satisfaction can be considered to be “the contentment of the customer with respect to his/her prior purchasing experience with a given electronic commerce firm” [7]. In the present literature, Chang et al. [31, p. 427] defined customers' satisfaction as “the psychological reaction of the customer with respect to his or her prior experience with the comparison between expected and perceived performance.” The noteworthy findings of Fournier and Mick [64] showed that satisfaction is an active and dynamic process with a strong social dimension, integrating meaning and emotion as well as contextual factors.



The positive relationship between satisfaction and e-loyalty has been investigated by a large number of studies [4, 7, 16, 75, 98, 122]. Almost all of these studies found a significant positive link between loyalty and satisfaction, which is frequently very strong. A frequent finding is that satisfaction is positively related to loyalty, with the effect moderated by inertia, convenience motivation, and purchase size [7, 61]. These observations have been constant over various countries and cultures. However, other studies who have found weaker associations between satisfaction and loyalty [48, 198]. Dai et al. [48] observed that satisfaction had a weak impact on customer loyalty ( $\beta = 0.43$ ,  $p < 0.10$ ), but was significantly associated with word-of-mouth communication ( $\beta = 0.20$ ,  $p < 0.01$ ).

### 6.3.2 *E-trust*

Trust is another significant factor affecting a customer's intention to purchase or repurchase from the same online vendor [129, 185]. The majority of scientific papers from the fields of advertising, marketing, or e-commerce have established a positive and direct relationship between trust and e-loyalty [214]. Similar concepts in use include perceived risk, benevolence belief, and reliability [113]. Some marketing authors distinguish between trust, trusting beliefs, and trusting behaviors. Some argue that trusting beliefs are a necessary but not sufficient condition for the existence of trust, given that trusting beliefs do not always lead to trusting intentions [18, 178]. However, Morgan and Hunt [134] state that trusting beliefs are valid measures of trust, which they define as the "confidence in the exchange partner's reliability and integrity". Also, as noted by Doney and Cannon [56], trust is "the perceived credibility and benevolence of a target." In the e-loyalty literature, Gefen [67, p. 30] has defined trust as "the willingness to make oneself vulnerable to actions taken by the trusted party based on the feelings of confidence or assurance."

Many e-commerce studies have shown a positive association between e-trust and e-loyalty [8, 40, 61, 63, 122]. For example, Lee et al. [111], in a sample of 289 online customers, identified the key design factors for customer loyalty, and they found a strong impact of trust on customer loyalty (path coefficient = 0.781,  $p < 0.01$ ). Also, Gefen [67] investigated the influence of service quality on trust and loyalty, and the findings again showed a similar positive direct relationship between trust and loyalty.

However, some researchers have found slight or even no association between trust and loyalty. For instance, Taylor and Hunter [198] investigated the antecedents of satisfaction, brand attitude, and loyalty within the B2B e-Customer Relationship Management (e-CRM) industry in a sample of 244 customers, and they found that trust does not lead to loyalty. Similarly, Herington and Weaven [83] and Jin et al. [99] found no direct or significant link with loyalty. The reasons for this lack of association could be the different approaches used regarding trust, as many consider trust to be the credibility of services or reputation or even whether a customer trusts the corporation in general. Also, the customer's experience with online shopping affects the level of trust, illustrating that trust is a complex concept and demands caution when being studying.

Ribbink et al. [169] investigated the effects of trust, quality, and satisfaction on loyalty in a sample of 184 online book and CD customers. They concluded that e-trust

leads less to e-loyalty than to satisfaction, which may imply that trust is not a major contributor to loyalty in the online environment [60]. Interestingly, Lynch et al. [123] found that the impact of trust on e-loyalty varies across regions of the world and across different product categories.

### 6.3.3 *Perceived value*

In marketing literature, the notion of perceived value has been extensively examined as an antecedent and mediator of e-loyalty. Perceived value has been examined through similar concepts such as perceived usefulness, benefits, and usability. Zeithaml [232, p. 14] defines value as “the consumer’s overall assessment of the utility of a product based on perceptions of what is received and what is given.” Almost concurrently, Oliver and DeSarbo [146] defined perceived value as the ratio of consumer’s outcome/input to that of the service provider’s outcome/input. They primarily stressed the root of perceived value in equity theory, which refers to the customer evaluation of what is fair, right, or deserved for the perceived cost of the offering [22]. In the present literature, the dominant definition of perceived value is similar to that of Zeithaml [232].

Perceived value contributes to loyalty towards an e-business by reducing an individual’s need to seek alternative service providers [31]. Characteristically, when customers feel that they are not getting the best value for their money, they will begin searching for alternatives, which means that their loyalty declines dramatically.

The association between perceived value and customers’ loyalty/intention to purchase or repurchase has been proven to be positive in many studies [48, 212, 213, 223]. Luarn and Lin [122] investigated the main antecedent influences on loyalty for the e-service context in a sample of 180 customers and found that perceived value is associated with loyalty both positively and directly ( $\beta = 0.230$ ,  $p < 0.001$ ). Also, Chiou [40] examined the antecedents of customers’ loyalty towards Internet Service Providers, and they similarly concluded that perceived value was linked directly and positively with e-loyalty ( $\beta = 0.67$ ,  $p < 0.05$ ). Moreover, Koufaris [108] measured the intention of 280 online customers to return to a specific web-based store, and he concluded that the perceived usefulness of an online store is associated positively and directly with the intention to return. A recent meta-analysis verified this association as well [197].

### 6.3.4 *Convenience motivation*

Convenience motivation is difficult to conceptualize, as it depends on customers’ motivations, which vary widely. Online customers are considered to be driven by a need for convenience as opposed to gathering information and saving money [7, 94]. Convenience motivation has been discussed broadly in marketing and e-commerce literature as it is regarded as a contributing factor that leads to their growth [174]. It can lead to loyalty either directly or indirectly. Anderson and Srinivasan [7] considered the mediating role of convenience motivation on loyalty. The parameter estimate for the main effect of convenience motivation on e-loyalty was insignificant, but the parameter estimate for the interaction aspect of e-satisfaction with convenience

motivation proved significant ( $p < 0.05$ ). This confirmed the hypothesis that convenience motivation does indeed positively moderate the impact of e-satisfaction on e-loyalty. Wang et al. [211] measured the dimension of convenience in their model, and they found that convenience is directly and positively associated with loyalty (path coefficient = 0.394,  $p < 0.05$ ). They suggested that retailers can take advantage of the customization and contact interactivity in order to enhance customers' convenience and satisfaction, which will drive the user to visit the site again in the future.

## 7 Conclusion

This is the first systematic critical review of the e-loyalty literature comprising a large number of sources based on quantitative analyses. Concerning the first research question on available e-loyalty instruments, there appears to be no consensus on the process of measurement, with about 60 instruments currently in use. There is, however, a dominant influence from two particular sources [143, 233], thus showing at least a common theoretical background. Another issue that surfaced is that authors studied e-loyalty under a different perspective, with some focusing on behavioral aspects, some on attitudinal, some on integrated approaches and some on consequences of loyalty such as word-of-mouth advertising and recommendations. This was also the case in the definition of e-loyalty, discussed below. Nevertheless, one important contribution that should be attempted by e-commerce researchers is to standardize a common instrument to measure loyalty, in a manner similar to that followed by the American Psychiatric Society, which has created the Diagnostic and Statistic Manual for Mental Disorders. The importance for this common measure of loyalty would be underscored by the ability to compare studies more reliably and create convenience in qualitative or quantitative synthesis of the literature. This instrument should not be limited to a few items for the sake of brevity, but it should be concise, accurate, diverse, accessible, and adjustable for multiple settings and cultures. Accredited international or national marketing professional bodies could attempt this.

Regarding the second research question of the definition of e-loyalty, there are various approaches to this (behavioral, attitudinal, integrated). In terms of generality, a more appropriate definition is an integrated one, which comprises both attitudinal and behavioral aspects. This definition can provide a reasonable basis for a succinct e-loyalty instrument, which is necessary for the suggested standardization. The antecedents of e-loyalty were structured in a purchase-centred framework and categorized into pre-purchase, during-purchase and after-purchase factors. Each category contains from two to four factors, which comprise multiple similar concepts from the literature. This is the first evidence-based unifying approach in e-loyalty literature that creates a classification of customer behaviour concepts in e-commerce. The original point of the present framework compared to existing models is that it is categorized around the concept of purchase, which is theorized as a *process* and not a one-time event. Existing theories have focused on the analysis of online consumer behaviour around e-service quality [15, 234] or e-commerce in general [113, 139, 214],

offering important classifications but neglecting to signify the importance of the ultimate consumer action [9], which is loyalty behaviour [145]. This new approach has immediate managerial implications, discussed below.

This approach first stresses the necessity of considering the role of pre-purchase customer and industry characteristics in the development of loyalty. A very common feature in existing models is to emphasize during- and after-purchase characteristics (e.g., service quality, satisfaction, perceived value), lacking the investigation of customer or industry characteristics; these are frequently considered as constants, which might not explain much of e-loyalty's variability. Next, this new necessity is extended to all factors around the purchase process by links intertwining them, which signify that factors of one category have certain antecedents, whose lack of description leads to an incomplete model of e-loyalty. Thus, only simultaneous research of factors from each category can give the opportunity to approach a model, which explains the majority of variation in e-loyalty.

Finally, regarding the third research question, on limitations of the existing research, these were mentioned above: a standard definition followed by a standardized instrument for e-loyalty does not currently exist, leading to various interpretations of different models. Moreover, authors' models appear to lack factors from all categories, thus inherently decreasing the possibility of giving a comprehensive model for e-loyalty. Methodological limitations of the studies in the present review include the possible presence of confirmation bias, which is a tendency to favor information that confirms authors' beliefs or hypotheses [125, 140]. This can be indicated by the fact that the majority of studies have been strongly influenced by several few sources, which appear to be cited repeatedly. A final methodological limitation concerns the lack of reporting or performing confirmatory factor analysis in certain studies' models ( $n = 88$ ), thus not assessing the models measurement fit. These limitations could affect the conclusions of the present systematic review, something that readers have to take into account.

This framework has certain progressive qualities that could influence managerial practice and strategy. First, pre-purchase factors are identified as relatively stable; thus, managers cannot tackle them immediately, and their alteration should be included in a long-term strategy. The optimal way to influence these factors is to obtain a deep knowledge of them. For example, extensive market and industry research will create a solid body of knowledge on customer characteristics and industry status. In this set of factors, the only aspect that can be altered is e-reputation. The corporation itself creates this, but it requires time and effort from the staff. Nevertheless, managing to influence these factors can assist companies in dealing with competition or even with threat of new entrances.

The second set of factors influencing e-loyalty is more easily altered by managers, as service quality and customer pleasure can be readily confronted by them [238, 239]. In an earlier review on web service quality, Zeithaml et al. [234] quoted Jeff Bezos, CEO of [Amazon.com](https://www.amazon.com),<sup>4</sup> who stressed the importance of focusing

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<sup>4</sup>Over the Internet, word of mouth has a far wider reach. In the offline world, 30 % of a company's resources are spent providing a good customer experience and 70 % goes to marketing. But online, he says, 70 % should be devoted to creating a great customer experience and 30 % should be spent "shouting" about it. Jeff Bezos, [Amazon.com](https://www.amazon.com) [192].

an Internet company's resources on providing a good online experience (i.e., good service quality). Customer pleasure can also be improved, although it has some dependence on each customer's personality and characteristics. Finally, after-purchase factors are, in a way, an image of the efforts of the online company to attract the customer. If the company has created successful during-purchase factors, it will create satisfaction, trust, a sense of perceived value, and convenience. Together, these will lead to e-loyalty.

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