Online complaining

Understanding the adoption process and the role of individual and situational characteristics

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Abstract

Purpose – The purpose of this paper is twofold. First, develop and test a conceptual model to understand customers' intention to adopt online complaining. Second, to assess two competing perspectives regarding elaboration likelihood for the moderating impact of individual differences.
Design/methodology/approach – A scenario-based survey was used to assess respondents' beliefs, attitude, and usage intentions toward online complaining. Furthermore, individual and situational characteristics were assessed. The data were analyzed using partial least squares path modeling.
Findings – Attitude toward online complaining is a function of both process and outcome beliefs. It is also influenced by individual characteristics, but remains unaffected by situational characteristics. In contrast, usage intentions are influenced by situational characteristics, but by personal differences. For the moderating impact of affect-based personality characteristics, the often used cognitive effort perspective to elaboration likelihood is not supported. Rather the consumption value perspective applies for these variables.
Research limitations/implications – The use of a single setting, as well as the use of scenarios, may negatively impact external validity. Future research is needed to further explain the contradictory perspectives regarding information processing.
Practical implications – The results provide insight into determinants of customer online complaining. This opens up new possibilities to increase the number of complainants in case of service failures and for firms to take corrective action.
Originality/value – To the authors' best knowledge, this is a first empirical study aimed at understanding what drives online customer complaining.

Keywords Consumer behaviour, Internet, Complaints, Service research, Complaint management, Technology acceptance, Self-service technology

Paper type Research paper

Introduction

Effective complaint management is vital in order to secure customer satisfaction and loyalty, prevent negative word-of-mouth, and improve financial performance (Dong *et al.*, 2008; Tax *et al.*, 1998). A necessary condition for effective complaint management is that customers actually do voice their frustration and dissatisfaction to the firm. Unfortunately, the majority of dissatisfied customers fail to complain to the offending companies (Stephens and Gwinner, 1998). Research (e.g. Mattila and Wirtz, 2004; Voorhees *et al.*, 2006) suggests that offering customers the possibility to also complain

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online may increase the number of dissatisfied customers actually voicing their frustration directly to the firm. Put differently, enabling direct online customer complaining represents a marketing investment opportunity with a high rate of return.

Despite these obvious benefits, no research exists on what determines the customer's attitude and behavioral intentions toward online customer complaining. This gap in the service management literature leads to the two interrelated research objectives guiding the present study. Our first objective relates to the development and empirical assessment of a model aimed at better understanding customer adoption of online complaining. Our model examines the impact of several technology process and outcome beliefs on customer attitudes and behavioral intentions toward online customer complaining as well as the moderating effect of customer and situational characteristics on these relationships. Our second research objective relates to the theoretical perspective underlying the hypothesized moderating effects of customer characteristics. The literature offers two competing perspectives on elaboration likelihood (i.e. willingness/ability to exert cognitive effort and consumption value) for our hypotheses pertaining to the moderating effects of personality variables. From our research, one finding of significant importance stands out. The often used cognitive effort approach to information processing does not adequately predict the moderating influence of more affect-based customer personality characteristics in technology acceptance. Rather the consumption value perspective to information processing applies for these variables in this context. This finding will have impact on future research aimed at unraveling the moderating influence of customer characteristics in the context of technology adoption.

The paper is organized as follows. First, we focus on the importance of online customer complaining. Second, by combining existing marketing and information systems literature we propose a conceptual model aimed at understanding customers' intentions to use online complaining. Subsequently, we present the results of our empirical study. We conclude with a discussion of our findings and implications for future research.

Literature review

Online customer complaining

As evidenced by the literature, online customer complaining can refer to either seeking redress at the faulting firm as well as using the internet to publicly complain about firms (see for instance Grégoire *et al.*, 2009). Furthermore, it is important to point out that our study does not focus on SST failure, defined as customers' perception that one or more aspects of SST delivery did not meet expectations (Robertson *et al.*, 2012), *per se*. In the current study online customer complaining refers to the direct connection of the customer to the faulting firm using the internet regardless of whether the actual service was acquired in an online or offline context. Based on the classification scheme presented by Mattila and Wirtz (2004), online customer complaining should be considered as an extra channel to voice customers' frustration in addition to the traditional, more interactive ways to seek redress, i.e. face-to-face and phone.

Supplementing the channels by which customers can complain with a user-friendly online option, should increase the potential number of customers who actually complain for several reasons. First, customers' complaining motivations determine complaint channel choice (Mattila and Wirtz, 2004). Practically this implies that more shame prone customers are willing to complain when there are remote channels available such as online customer complaining. The chance that these customers do not

voice and simply defect would be substantially larger when only traditional channels would be available. Second, research by Voorhees *et al.* (2006) reveals that the most common reasons for not complaining are time and effort. As online complaining may increase the customer's perceived convenience of complaining this may stimulate actual complaint behavior (Berry *et al.*, 2002). From the firm's perspective, another advantage comes from the fact that a SST, such as online complaining system, is an economically feasible option as it is typically more effective and efficient than providing traditional customer service (cf. Cunningham *et al.*, 2009).

Conceptual model and hypotheses

In Figure 1, we summarize the conceptual model guiding our empirical study on customer adoption of an online customer complaining system.

Our point of departure for studying online complaining is the Technology Acceptance Model (TAM), originally developed for studying employees' adoption of work-related information technology (Davis, 1989; Davis *et al.*, 1989). In marketing, TAM has been applied to explain customers' adoption of SST in private services (Dabholkar, 1994; Dabholkar and Bagozzi, 2002) and government services (Lanseng and Andreassen, 2007). Based on a meta-analytic study, King and He (2006) conclude that TAM is a powerful and robust model in predicting people's acceptance and use of technology.

A review of the literature on technology acceptance discerns the following important antecedents to attitude, and thus indirectly to behavioral intent:

- Perceived ease of use: the degree to which a person believes that using a technology will be simple and easy (Venkatesh, 2000).

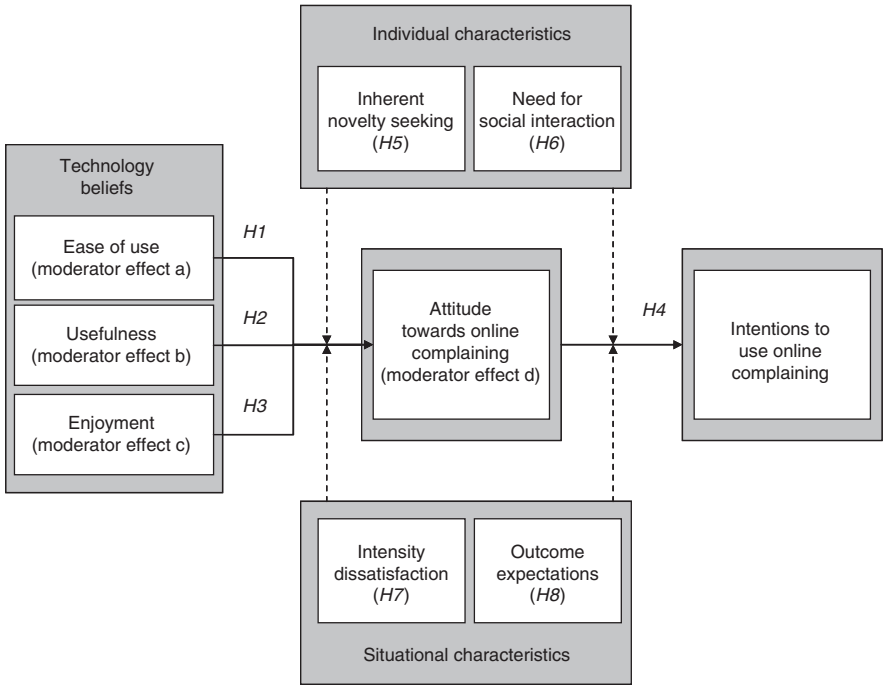

Figure 1.
Conceptual framework

- Perceived enjoyment: the extent to which the use of a particular technology is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated (Davis *et al.*, 1992).
- Perceived usefulness: following Dabholkar and Bagozzi (2002), who claim that the original definition of usefulness does not apply in SST contexts, perceived usefulness in an online complaint setting is defined in terms of the customers' perceptions regarding the technology-based services' levels of reliability and accuracy– or alternatively, the extent to which the technology did what it was supposed to do (Meuter *et al.*, 2000).

In line with the well-documented TAM model (for reviews on TAM see Venkatesh *et al.*, 2003; King and He, 2006; Schepers and Wetzels, 2007), the hypotheses comprising our core attitudinal model are:

H1. The perceived ease of use of online complaining will have a positive effect on attitude toward using it.

H2. The perceived usefulness of online complaining will have a positive effect on attitude toward using it.

H3. The perceived enjoyment in using online complaining will have a positive effect on attitude toward using it.

H4. The attitude toward online complaining will have a positive effect on the intention to use it.

The need for assessing moderating effects

Empirical evidence suggests that the predictive power of the TAM's basic form may be enhanced significantly by including moderating constructs (Agarwal and Prasad, 1998; Dabholkar and Bagozzi, 2002). In our study, two categories of moderating constructs (i.e. individual characteristics and situational factors) are incorporated to gain a more precise understanding of customers' adoption of online complaining. In explaining the acceptance of online complaining it is relevant to investigate individual characteristics as moderators because research on individuals' decision making suggests that individuals' choices are based on beliefs and utilities (Liska, 1984; Medsker *et al.*, 1994; Agarwal and Prasad, 1998). For example, two consumers may hold similar beliefs but the impact of these beliefs on the development of attitudes and behavioral intentions may vary because of differences in the consumers' utility functions. Likewise, situational factors have been shown to influence the magnitude and direction of the relationships constituting the technology adoption process (Dabholkar and Bagozzi, 2002; Lee *et al.*, 2005; Bhattacherjee and Sanford, 2006). Therefore, the identification of situational factors which moderate the technology adoption process is relevant because it allows us to identify conditions that can be anticipated.

Recent studies in the field of information systems research (see, e.g. Rodgers *et al.*, 2005; Park and Yang, 2006; Castañeda *et al.*, 2007) show that dual process models like the Elaboration Likelihood Model (ELM) offer a useful theoretical framework for

explaining the moderating effects of a wide variety of factors forming people's attitudes toward technology.

The formation of attitude toward technology

The ELM (see Petty and Wegener, 1999 for an excellent review) suggests that beliefs toward an object are integrated in the attitude formation process via one of two distinct processes, the central route or the peripheral route. Under the central route, attitudes are shaped based on a rational process involving critical thinking regarding beliefs. Alternatively, under the peripheral route attitudes are shaped with little (or no) conscious thought about beliefs; rather, they are primarily shaped by the application of so-called heuristics as a means to reduce effort in decision making. The central and the peripheral route differ in the decision weights that are attached to the various beliefs in attitude formation. Utilitarian cues or beliefs are the focal point (i.e. weighted more heavily) under the central route, heuristic cues, or beliefs are the focal point under the peripheral route.

In terms of the technology beliefs put forward in our conceptual model, perceived usefulness is considered a non-heuristic or utilitarian belief. In contrast, ease of use and enjoyment are considered as more peripheral beliefs (Rodgers *et al.*, 2005; Park and Yang, 2006; Castañeda *et al.*, 2007). Thus, in line with the ELM, we posit that an individuals whose attitude is formed via the central route, the relationship between usefulness and attitude toward online complaining will be stronger than for someone whose attitudes is formed via the peripheral route (this is reflected in part (b) of our *H5-H8*). Because ease of use and enjoyment are more heuristic beliefs, we believe that these elements will have a stronger influence on attitude formation via the peripheral route than via the central route (this is reflected in parts (a) and (c) of our *H5-H8*). Furthermore, it is important to stress that, according to Petty and Wegener (1999), the central route/peripheral route also leads to more stronger/weaker relationship between attitude and behavioral intent (this is reflected in part (e) of our *H5-H8*).

Whether information processing occurs via the central route as opposed to the peripheral route can be explained from several perspectives. One theoretical view states that the likelihood of processing information via the central route is positively related to an individual's level of willingness and ability to exert cognitive effort (Petty and Wegener, 1999). Put differently, situational and individual differences that are associated with a higher level of the willingness and ability to exert cognitive effort for the information-processing task at hand are therefore positively related to the chance of processing information via the central route. In the remainder of this paper this view will be referred to as "willingness/ability to exert cognitive effort" and the accompanying hypotheses are indicated with the abbreviation "CE."

An alternative theoretical perspective departs from one's consumption value in explaining the information processing route a customer is likely to pursue (Shiv and Fedorikhin, 1999). According to the consumption value literature consumers' usage decisions are driven by hedonic and utilitarian components. The utilitarian consumption value can be described as rational, as it involves deliberate striving for efficient task completion. A hedonic orientation is more subjective and personal than a utilitarian one because it focusses more on potential entertainment and emotional worth than on task completion (Babin *et al.*, 1994). Hedonic and utilitarian consumption orientation also plays a role in technology adoption as indicated by Venkatesh and

Brown (2001), Childers *et al.* (2001), and Hartman *et al.* (2006). In relation to information processing, research has shown that a hedonic consumption motive is related to the peripheral route of information processing whereas a utilitarian consumption motive is related to the central route put forward in the ELM (Shiv and Fedorikhin, 1999; Isbell and Wyer, 1999; Sivaramakrishnan *et al.*, 2007). Following this line of reasoning, situational and individual differences that are associated with a higher level of the hedonic consumption value are positively related to the chance of processing information via the peripheral route. On the other hand, situational and individual differences that are associated with a higher level of the utilitarian consumption value are positively related to the chance of processing information via the central route. The paragraphs related to the hypothesis development based on the consumption value literature are indicated by headings containing "consumption value." The corresponding hypotheses can be recognized by the abbreviation "CV."

Individual characteristics: inherent novelty seeking. In a technology context inherent novelty seeking reflects an individual's willingness to try new technology (Agarwal and Prasad, 1998; Robinson *et al.*, 2005). Inherent novelty seeking can be considered as a personality trait that is a relatively stable descriptor of individuals; it is found to be invariant across situational considerations (Robinson *et al.*, 2005).

Inherent novelty seeking and willingness/ability to exert cognitive effort. Highly innovative individuals usually engage in more extensive and elaborate information searches (Agarwal and Prasad, 1998; Robinson *et al.*, 2005). Furthermore, individuals possessing this personality trait are usually experts in the domain (Lafferty *et al.*, 2005). Following Rodgers *et al.* (2005), a higher level of inherent novelty seeking is therefore believed to be associated with information processing via the central route. This leads to *H5-CE*:

H5-CE. Because individuals characterized by higher levels of inherent novelty seeking are more likely to form attitudes toward online complaining usage via the central route:

(a) the relationship between perceived ease of use and attitude toward online complaining will be attenuated;
(b) the relationship between perceived usefulness and attitude toward online complaining will be strengthened;
(c) the relationship between perceived enjoyment and attitude toward online complaining will be attenuated; and
(d) the relationship between attitude toward online complaining and the intention to use online complaining will be strengthened.

Inherent novelty seeking and consumption value. Novelty seekers are intrinsically motivated to use a new technology. Their inherent enjoyment in trying new ways to deal with situations will lead them to adopt new online complaining systems regardless of its actual relative advantages (Dabholkar and Bagozzi, 2002). In line with novelty seekers' emphasis on entertainment and emotional attraction, we assume that with regard to online complaining a hedonic consumption value applies (Rodgers *et al.*, 2005). Thus, in line with Sivaramakrishnan *et al.* (2007) inherent novelty seekers are

hypothesized to form their attitude toward online complaining via the peripheral route (see also *H5-CV*):

H5-CV. Because individuals characterized by higher levels of inherent novelty seeking are more likely to form attitudes toward online complaining usage via the peripheral route:

(a) the relationship between perceived ease of use and attitude toward online complaining will be strengthened;
(b) the relationship between perceived usefulness and attitude toward online complaining will be attenuated;
(c) the relationship between perceived enjoyment and attitude toward online complaining will be strengthened; and
(d) the relationship between attitude toward online complaining and the intention to use online complaining will be attenuated.

Individual characteristics: need for social interaction. Need for social interaction refers to the importance of human interaction to the customer in service encounters (Dabholkar, 1996). Consumers' defined as high on need for social interaction will by definition preferred to interact with people rather than technical solutions. People scoring high on need for social interaction will see less face-to-face interaction as inferior to more.

Need for social interaction and willingness/ability to exert cognitive effort. From a psychological viewpoint, person-to-person contact with a service employee might be socially rewarding as it will lead to a dialogue and interaction. Since service employees help in defining the problem, some consumers may consider person-to-person communication to be the easiest way of complaining – it may be perceived as a way of being in control of the process. As such, it can be argued that people with a higher need for social interaction will be less motivated to engage in technology-based complaining because they are psychologically predisposed toward human contact. Consequently, the attitude toward using online complaining system for people characterized by a high need for social interaction are more likely to be shaped via the peripheral route as they are less motivated to exert cognitive effort (Bhattacherjee and Sanford, 2006). This leads to *H6-CE*:

H6-CE. Because individuals with a higher need for social interaction are more likely to form attitudes toward online complaining usage via the peripheral route:

(a) the relationship between perceived ease of use and attitude toward online complaining will be strengthened;
(b) the relationship between perceived usefulness and attitude toward online complaining will be attenuated;
(c) the relationship between perceived enjoyment and attitude toward online complaining will be strengthened; and
(d) the relationship between attitude toward online complaining and the intention to use online complaining will be attenuated.

Need for social interaction and consumption value. Due to their preference for personal contact over technology-mediated contact, consumers scoring high on need for social interaction will not gain consumption value from the experiential features associated

with online complaining systems. Consumption value for them will be a function of instrumental or utilitarian characteristics (Babin *et al.*, 1994). Thus, following Sivaramakrishnan *et al.* (2007) and Shiv and Fedorikhin (1999), we hypothesize that consumers with a high need for social interaction will use the central route in developing an attitude toward online complaining. *H6-CV* reflects this:

H6-CV. Because individuals with a higher need for social interaction are more likely to form attitudes toward online complaining usage via the central route:

(a) the relationship between perceived ease of use and attitude toward online complaining will be attenuated;
(b) the relationship between perceived usefulness and attitude toward online complaining will be strengthened;
(c) the relationship between perceived enjoyment and attitude toward online complaining will be strengthened; and
(d) the relationship between attitude toward online complaining and the intention to use online complaining will be strengthened.

Situational characteristics: intensity of dissatisfaction. According to Oliver (1997) dissatisfied consumers begin in a deficit, i.e. the sum of monetary outlays, psychological costs (e.g. frustration, anxiety, and tension) or loss of product or service utility. Greater intensity of dissatisfaction is associated with higher levels of perceived deficit and inequity/unfairness which is believed to be a strong motivator to restore justice. The essence of inequity is described in Homans' rule of justice: "[a person's] rewards in exchange with others should be proportional to his [her] investments" (Homans, 1961).

Intensity of dissatisfaction and willingness/ability to exert cognitive effort. In line with Monge *et al.* (1992) and Oliver (1997) we expect that the feeling of deficit and inequity motivates a customer to solve the tension as a result of service failure by for example using online complaining systems. Regarding the formation of attitude and behavioral intent, motivation is a key determinant of the amount of cognition a person is willing to exert. Alternatively, the level of motivation is positively associated with the likelihood of engaging in central processing.

Intensity of dissatisfaction and consumption value. As dissatisfaction intensifies, perceived deficit and inequity will increase. Echoing Goodwin and Ross (1992), the level of inequity is positively associated a task-related orientation to resolve it. In line with previous research (Shiv and Fedorikhin, 1999; Isbell and Wyer, 1999; Sivaramakrishnan *et al.*, 2007) this task-related or utilitarian orientation is positively associated with information processing along the central route.

In summary, according to both theoretical perspectives we conjecture that greater levels of dissatisfaction are associated with the central route in the ELM. This leads to *H7-CE/CV*:

H7-CE/CV. In situations characterized by a more intense level of dissatisfaction regarding the transaction, customers are more likely to form attitudes toward online complaining usage via the central route and therefore:

(a) the relationship between perceived ease of use and attitude toward online complaining will be attenuated;
(b) the relationship between perceived usefulness and attitude toward online complaining will be strengthened;

(c) the relationship between perceived enjoyment and attitude toward online complaining will be attenuated; and
(d) the relationship between attitude toward online complaining and the intention to use online complaining will be strengthened.

Situational characteristics: outcome expectations. The term "complaining outcome expectations" refers to the complainer's perception regarding the probability that complaining will lead to a successful outcome, i.e. the firm will remedy the problem (Prakash, 1991).

Outcome expectations and willingness/ability to exert cognitive effort. In line with social cognitive theory (Bandura, 1986), a person's beliefs about the consequences of specific actions predict whether that person takes these actions. Monge *et al.* (1992) showed that outcome expectations are an important predictor of a person's level of involvement. Therefore, we believe that the more favorable the expected outcome associated with online complaining, the higher the customer's level of involvement. In turn, a high degree of involvement is associated with increased elaboration likelihood or central processing (Petty and Wegener, 1999).

Outcome expectations and consumption value. Wegener and Petty's (1994) hedonic contingency hypothesis states that individuals strive to achieve or maintain a pleasant mood. When one believes that in a negative situation (i.e. service failure) benefits can be expected as a consequence of task performance (i.e. online complaining) a utilitarian consumption motive and thus central processing is therefore expected. Put differently, we hypothesize that with more favorably perceived outcome expectations lead to more elaborate information processing (i.e. central route).

In summary, according to both theoretical perspectives we conjecture that more positive outcome expectations are positively related the ELM's central route. This is summarized below in *H8-CE/CV*:

H8-CE/CV. In situations where complaining is associated with high expectations regarding the possible benefits, individuals are more likely to form attitudes toward online complaining usage via the central route hence:

(a) the relationship between perceived ease of use and attitude toward online complaining will be attenuated;
(b) the relationship between perceived usefulness and attitude toward online complaining will be strengthened;
(c) the relationship between perceived enjoyment and attitude toward online complaining will be attenuated; and
(d) the relationship between attitude toward online complaining and the intention to use online complaining will be strengthened.

Methodology

Sample and survey

The sample consisted of about 220 respondents who were mainly graduate students participating in an elective course on qualitative research methods at a continental European university. In total, 209 questionnaires were returned, a response rate of 95 percent. This exceptionally high rate can be explained by the data-collection method. Every student had to find and personally interview several respondents, and have them fill out the questionnaire. The median age of the respondents was 22 and the

vast majority (88 percent) was between 18 and 28 years old. The sample displayed an almost balanced gender distribution with 55 percent men and 45 percent women.

To assess the constructs used in our conceptual framework we used scientifically validated scales. With the exception of the scale for outcome expectations, which was developed by Blodgett *et al.* (1993), all scales used in our study were adapted from Dabholkar and Bagozzi (2002). All items were administered on a seven-point Likert scale anchored by strongly disagree (1) – strongly agree (7). A two-scenario setting was created to manipulate the perceived degree of dissatisfaction. Scenario-based surveys are commonly used in service failure/recovery studies (Dubé and Maute, 1998; Smith *et al.*, 1999; McCollough *et al.*, 2000; Smith and Bolton, 2002) because they eliminate difficulties with the observation of service failure/recovery incidents, such as to low incident rates and the managerial undesirability to deliberately impose service failures on customers. Furthermore, the use of scenarios avoids response bias due to memory lapses and rationalization likely to be present in surveys that rely on recall.

We randomly assigned respondents to one of the two scenarios (see Appendix for more details). Realism checks pointed out that customers perceived both scenarios to be realistic (scenario 1: 5.66; scenario 2: 5.72). As expected, respondents rated scenario one as a more dissatisfying situation than scenario two (scenario 1: 8.34; scenario 2: 7.02 $p < 0.0001$). The intensity of dissatisfaction was measured on a ten-point scale, with ten indicating the highest level of dissatisfaction. Please see Table I for descriptive statistics regarding the scales used in our study.

Estimation procedure

Due to the relatively low sample size to parameter ratio and non-normality of the data, a least squares estimation approach is preferred over a maximum likelihood approach. Furthermore, the estimation of structural models containing interaction terms composed of metric variables is known to be problematic in software packages like LISREL and EQS (Li *et al.*, 1998; Cortina *et al.*, 2001).

To assess the quality of the measures employed, we used SMARTPLS to estimate two measurement models. The first measurement model contains the TAM constructs whereas the second measurement model contains the moderating constructs. As all scales are reflective, unidimensionality, internal consistency reliability, convergent validity, and discriminant validity are examined for each construct (MacKenzie *et al.*, 2005). Unidimensionality is evidenced by the fact that the first eigenvalue of the correlation matrix of the relevant items is >1, and the second eigenvalue is <1 (Tenenhaus *et al.*, 2005). For all constructs the internal consistency estimate exceeds the recommended cut-off level of 0.60 (Nunnally and Bernstein, 1994). The item loadings (smallest loading 0.49) and the average variance extracted values support the convergent validity of each scale. Finally, as the square roots of the average trait variance extracted values of the involved constructs exceed the correlation coefficient between the respective constructs, proof for discriminant validity is obtained (Fornell and Larcker, 1981). Table I summarizes the relevant statistics regarding the evaluation of the psychometric properties.

To reduce the impact of multicollinearity due to the interaction terms, and to maintain a more favorable ratio of parameter to sample size, the structural model aimed at explaining attitude toward online complaining is estimated separately for the situational and the individual moderators. As the variables for the individual characteristics and the situational characteristics are not significantly correlated, this decision will not affect the results (Greene, 1997). To include the interaction effects in

Table I.
Descriptive statistics and scale evaluation

		Mean	SD.	λ_1	λ_2	α	AVE	1	2	3	4	5	6	7	8	9
1	Ease of use	6.09	0.77	2.36	0.34	0.87	0.70	0.84								
2	Usefulness	4.63	1.18	1.70	0.83	0.67	0.41	0.26	0.64							
3	Enjoyment	3.05	1.43	2.24	0.53	0.86	0.67	−0.02	0.13	0.82						
4	Attitude	4.75	1.30	2.51	0.28	0.94	0.84	0.30	0.55	0.32	0.91					
5	Intentions	5.50	1.33	1.68	0.32	0.91	0.83	0.33	0.43	0.26	0.66	0.91				
6	Novelty seeking	4.78	1.10	1.64	0.36	0.93	0.87	0.28	0.05	−0.04	0.08	0.16	0.93			
7	Need social interaction	5.04	1.35	2.17	0.55	0.83	0.67	−0.13	−0.38	−0.23	−0.52	−0.34	0.07	0.82		
8	Intensity dissatisfaction	7.78	1.59	na	na	na	na	0.06	0.03	−0.03	0.05	−0.04	0.03	0.05	na	
9	Outcome expectations	4.25	1.20	1.72	0.78	0.69	0.53	0.02	0.09	0.10	0.07	0.18	−0.09	0.02	−0.08	0.73

our model we followed the PLS-PS approach suggested by Goodhue *et al.* (2007). Bias-corrected percentile bootstrap confidence intervals ($J = 5{,}000$) are constructed to assess the significance of the parameters (Preacher and Hayes, 2008). The empirical results pertaining to our study are presented in Table II.

Analytical results

Overall, our results indicate that the TAM framework is valuable in explaining consumers' attitudes and intentions to engage in online complaining (minimum $R^2 = 41$ percent). As anticipated, all hypotheses relating to the general structure of TAM (*H1-H4*) are supported by the data.

Regarding with the hypothesized moderator effects of novelty seeking (*H5*), we find that regarding customers' attitude toward online complaining the moderating effect of novelty seeking is supported by the data for all beliefs. Inspection of the signs of the significant moderator effects show that the effects are in line with direction hypothesized using the consumption value perspective rather than with the willingness/ability to exert cognitive effort perspective. More specifically, customers who score high

Dependent variable	Independent variable	Coefficient	Confidence interval
Attitude	Ease of use (Ease)	0.17	[0.06; 0.27]
($R^2 = 0.533$)	Usefulness (Use)	0.37	[0.23; 0.49]
	Enjoyment (Enj)	0.18	[0.09; 0.29]
	Novelty seeking (Nov)	ns	ns
	Social interaction (Soc)	−0.32	[−0.46; −0.17]
	Ease × Nov	0.13	[0.18; 0.23]
	Ease × Soc	ns	ns
	Use × Nov	−0.14	[−0.27; −0.01]
	Use × Soc	0.14	[0.02; 0.27]
	Enj × Nov	0.10	[0.01; 0.20]
	Enj × Soc	ns	ns
Attitude	Ease of use	0.18	[0.07; 0.29]
($R^2 = 0.410$)	Usefulness	0.28	[0.31; 0.59]
	Enjoyment	0.46	[0.12; 0.44]
	Intensity dissatisfaction	ns	ns
	Outcome expectations	ns	ns
	Ease × Int	ns	ns
	Ease × Out	ns	ns
	Use × Int	ns	ns
	Use × Out	ns	ns
	Enj × Int	ns	ns
	Enj × Out	ns	ns
Intentions	Attitude	0.65	[0.04; 0.77]
($R^2 = 0.497$)	Novelty seeking	0.11	[0.06; 0.21]
	Social interaction	ns	ns
	Intensity dissatisfaction	ns	ns
	Outcome expectations	0.15	[0.02; 0.27]
	Att × Nov	ns	ns
	Att × Soc	ns	ns
	Att × Int	0.12	[0.02; 0.27]
	Att × Out	−0.10	[−0.21; −0.02]

Table II.
Parameter estimates structural model

on novelty seeking attach significantly more weight to ease of use ($\beta = 0.13$; 95 percent CI [0.18; 0.23]) and enjoyment ($\beta = 0.10$; 95 percent CI [0.01; 0.20]), and significantly less weight to perceived usefulness ($\beta = -0.14$; 95 percent CI [−0.27; −0.01]) in forming an attitude toward online complaining. Regarding the relationship between attitude and behavioral intent we do not find a significant moderator effect for inherent novelty seeking. In summary, *H5-CVa*, *H5-CVb*, and *H5-CVc* are supported in favor of their rivals *H5-CEa*, *H5-CEb*, and *H5-CEc*. Moreover, *H5-CVd* nor *H5-CEd* is supported.

Regarding the moderator effects of customers' need for social interaction (*H6*), we find that only the relationship between usefulness and attitude toward online complaining is moderated by an individual's need for social interaction ($\beta = 0.14$; 95 percent CI [0.02; 0.27]). Again, we find that the sign of this effect is in line with the consumption value perspective and not with the willingness/ability to exert cognitive effort perspective. The relationship between attitude and, respectively, ease of use and enjoyment is not moderated by the need for social interaction. Also the relationship between attitude and online complaining intentions is not moderated by the customer's need for social interaction. Summarizing the results related to customer need for social interaction we can thus conclude that *H6-CVb* is supported in favor of its rival *H6-CEb* and that for the other relationships in our core attitudinal model the corresponding *H6a*, *H6c*, and *H6d* are not supported.

Proceeding with the results pertaining to the hypothesized moderator effects of intensity of dissatisfaction (*H7*) and outcome expectations (*H8*), we find that situational characteristics do not moderate the relationships between attitude and the different beliefs. In contrast, the impact of attitude on customers' intentions to use online complaining is moderated by both intensity of dissatisfaction ($\beta = 0.12$; 95 percent CI [0.02; 0.27]) and outcome expectations ($\beta = -0.10$; 95 percent CI [−0.21; −0.02]).

Thus regarding the moderating effects of the situational characteristics our hypothesis testing results can be summarized as follows. *H7-CE/CVa* to *H7-CE/CVc* (intensity of dissatisfaction) and *H8-CE/CVa* to *H8-CE/CVc* (outcome expectation) are not supported. In contrast, *H7-CE/CVd* (intensity of dissatisfaction) is supported. Also *H8-CE/CVd* (outcome expectations) received support from the data albeit in the opposite direction.

Discussion

Starting with the relationships put forward in our TAM-based core attitudinal framework we can conclude that the attitude toward online complaining is positively related to the extent customers believe online complaining to be usefulness, easy to use, and enjoyable. Thus, attitude toward online complaining depends on both process and outcome elements. This is in line with the existing literature on traditional face-to-face service delivery that states that service evaluative judgments are both the result of the service process as well as the service outcome (Hui *et al.*, 2004).

Furthermore, our analysis reveals whether and how the impact of customer beliefs on attitude is moderated by individual and situational characteristics. Concerning the hypothesized moderating effect of individual characteristics we put forward two set of rivaling hypotheses (i.e. willingness/ability to exert cognitive effort and customer value). For both novelty seeking and need for social interaction all statistically significant moderator effects are in support of the effects that were expected based on the customer value perspective. The fact that our findings are in conflict with the pattern that would be expected when explaining elaboration likelihood from the

perspective of willingness and ability to exert cognitive is particularly noteworthy, as this perspective is the dominant approach on elaboration likelihood used in the technology acceptance literature so far (see for instance Bhattacherjee and Sanford, 2006; Castañeda *et al.*, 2007). Apparently, the literature-suggested association between a person's ability and motivation to process information and individual differences is more intricate than we thought concerning technology acceptance. Although previous research showed that the ability and willingness to exert cognitive effort were well capable of explaining the individual differences in attitude formation toward technology it should be noted that the individual difference variables in those studies involved demographics and psychographics rather than affect-based personality traits as were used in the current study.

Examining the moderating impact of the individual difference variables across the different beliefs the following patterns emerge. For customers that score high on novelty seeking, a characteristic that is associated with a higher preference for trying new things, we see that process elements gain importance whereas outcome become less important in the attitude formation process. For customers that are in need of higher levels of social interaction, we see that outcome elements are more important in creating a favorable attitude toward online complaining. For the latter group the impact of process elements on attitude remains unaffected.

In contrast to the significant moderating impact of individual characteristics, we conclude that the attitude development process remains unaffected by situational characteristics. The fact that the latter finding contradicts Dabholkar and Bagozzi's (2002) finding may be due to context.

The previous two paragraphs indicate that he attitude formation process is a function of a consumer's personal characteristics, but remains stable across situations. The empirical results regarding the relationship between attitude and intention to engage in online complaining show the opposite pattern. The effect of attitude on behavioral intentions is moderated by situational factors but is independent from individual customer characteristics. Similar to traditional face-to-face customer complaining (see, e.g. Singh and Pandya, 1991), our results show that the intensity of a customer's dissatisfaction positively moderates the relationship between attitude and intention to engage in online complaining. Thus, more intense feelings of dissatisfaction increase the likelihood of having a positive mind set toward filing a complaint electronically. Contrary to our expectations, we find that the outcome expectations customers have regarding online complaining, negatively influence the magnitude of the relationship between attitude and behavioral intentions. A possible explanation for the negative moderator effect could be that factors besides attitude play a vital role in forming intentions to use online complaining. However, the negative moderator effect should be balanced against the significant direct effect of outcome expectations on usage intentions.

Finally, the significant main effects for the individual and situational characteristics show that affective processes also play a role in consumers' reactions to online complaining and can therefore be interpreted as additional evidence that attitude development results from both cognitive and affective components (Kulviwat *et al.*, 2007).

Implications

The fact that most dissatisfied customers do not complain makes it hard for service managers to reduce customer dissatisfaction and/or improve service operations.

Not only is the firm deprived the possibility to restore justice and retain the customer, but they also lose out on the possibility to correct the cause of the problem. We believe that firms must explore any measure that will make it easier for customers to complain. For firms, implementing online complaining is an argument for improving customers' cost-benefit ratio when dissatisfied customers decide to make a complaint or not. For service employees and their managers, online complaining is a promising tool in their efforts to avoid losing customers. Losing a customer due to dissatisfaction, can be very costly to the firm, something Hogan *et al.* (2003) documented in their award-winning study.

Online complaining offers an accessible channel for customer complaints thereby increasing the likelihood that customers actually voice their frustration. It is only when there is a complaint that companies and the front line employees can relate to it, learn from it, and hopefully rectify it. An improved incentive to make a complaint (e.g. improved cost-benefit ration) will provide the company with more opportunities to learn about and respond to dissatisfied customers, and thereby avoid losing them.

In comparison to traditional face-to-face customer complaining, stimulating the use of online complaining also offers other benefits to the firm that stem from the technological possibilities associated with online complaining. For instance, current technology may assist in resource allocation and decision making as it can automatically sort, prioritize complaints, and provide an automatic response thus saving time. Consider as an example Amazon.com uses artificial intelligence in handling customer complaints. Incoming electronic complaints are "read" by a system looking for key words in the text. By comparing key words to a database of similar cases, the system returns a "best" response to the complainer followed by a note informing the recipient that the note is an auto response. If the response is not 100 percent to the point, the system invites the recipient to return the e-mail which then will be handled manually. British Airways is another example that illustrates the potential benefits that can be gained by promoting online customer complaining. Their so-called CARESS (Customer Analysis and Retention System) contains each customer's case history as well as other customer information (e.g. frequent flyer status, recent flights, and existing reservations) and can be accessed by all customer-contact employees across functional areas. Whenever an employee interacted with or performed activities that affected the customer, the customer's profile is updated. Additionally, the system is used to retrieve information to see what solutions were offered in past in similar situations. The implementation of this system improved service-operations efficiency as well as customer satisfaction. A related important advantage of online customer complaining is that over time, managers can build a database allowing for root-cause analyses of why customers complain. Finally, as complaints are made electronically managers can more efficiently develop a root-cause analyses for why things go wrong and direct their attention to the appropriate operational issues which cause things to go wrong.

The results of our study may help service managers in promoting online complaining among their customers. In general, our results indicate that both expected outcome and process elements play a significant role in forming attitudes toward online complaining. Although the weights attached to the various beliefs are influenced by individual characteristics, customer evaluations regarding online complaining remain a function of both expected outcome elements, and process elements. Our results show that in trying to persuade customers to engage in online complaining, the

promotion message should be increasingly outcome oriented, the higher the inherent negative affect of individuals regarding technological service encounters.

The importance of our findings is also illustrated by the fact that customers' attitudes toward online complaining are the main factor driving intentions to actually use online complaining. Moreover, the transformation from attitude into actual usage intentions is not complicated by differences in customers, as indicated by the absence of moderating effects caused by customer trait variables.

From our study it is apparent that situational conditions influence online complaining usage intentions both directly and indirectly. The positive direct effect of outcome expectations on behavioral intent reveals that online complaining usage may be encouraged by making customers aware that using online complaining will benefits them.

Limitations and future research directions

As our study is limited to one setting we stress caution regarding generalizing from it. Future research should explore the issues introduced in our study over a broader set of services, as our study focussed on only the travel industry.

Second, our study relied on the use of scenario-based surveys. Although this approach has strong precedent and the realism of the used scenarios was confirmed by our data, different methods should be employed to confirm and possibly extend the conclusions of our study. Key drawbacks of using scenario-based surveys include the greater likelihood of demand effects and the possible inability of participants to project their feelings and to respond as if they actually would in a real situation (see also McCollough *et al.*, 2000).

Third, as online complaining offers a relatively new channel for customers to voice their frustration it would be valuable to analyze how customers' perceptions regarding recovery efforts vary across online and offline channels. For instance, more research is necessary on the effect of recovery strategies on transaction and cumulative satisfaction. Although considerable effort researching this issue in an off-line setting has been made (see, e.g. Tax *et al.*, 1998; Maxham and Netemeyer, 2002; Matos de *et al.*, 2007), the results of that research cannot be extrapolated directly to online settings (Holloway and Beatty, 2003).

Fourth, our study did not allow customers to choose among different channels. Extending our work to include customer choice among different channels is especially relevant as Mattila and Wirtz (2004) demonstrate that in case of service failure the channel customers chose to express their dissatisfaction varies as a function of their complaint motivation.

Finally, according to Oliver (1997) two dominant models predict customer complaint: the economic model and the behavioral model. The economic model concerns cost-benefit evaluations by customers when they decide whether to complain; the behavioral model concerns customers' ability and willingness to complain. From the behavioral model we may learn that despite a strong incentive or motivation to complain, the customer may lack the ability (knowledge of channels, access to channels, or communication skills) to complain.

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Appendix. Scenario

E-complaining to a tour operator

You have booked a package tour from a well-known tour operator through your local travel agency. During your vacation you are not satisfied with the services that were provided to you.

Scenario 1: The hotel room was full of cockroaches and you found hair in your bed.

Scenario 2: The hotel was of a lower quality than promised in the brochures you saw and there was no car rental arranged for you.

After your arrival back home you decide that you should complain. You know that your local travel agency is not responsible for the inconvenience since it was only the seller of the package holiday. Therefore, you decide to complain directly to the tour operator.

Since the tour operator sells holidays exclusively via third parties such as independent travel agencies, you can complain only via the company's web site, i.e. make use of e-complaining.

Please note that no direct face-to-face or telephone complaining is possible!

To complain via the web site, you simply have to click on "draft a complaint" in the section "customer services" that you can find on the welcome page. A sophisticated tool on the web site (like Microsoft Window's wizard for installing new software) then guides you through the process of complaining. It gives you clear instructions and assists you with designing an effective complaint message step-by-step. Furthermore, it ensures that you include all necessary information and provides you with ready-made problem descriptions and phrases so that you can create an objective, clear, and sound complaint message very quickly. You can print out the finished message for your own administration and transfer it to the company's customer service team by clicking on "send complaint." You will receive an e-mail confirming that the company received the complaint and will work on it.

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