

# On the importance of complaint handling design: a multi-level analysis of the impact in specific complaint situations

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**Abstract** Given the large investments required for high-quality complaint handling design, managers need practical guidance in understanding its actual importance for their particular company. However, while prior research emphasizes the general relevance of complaint handling design, it fails to provide a more differentiated perspective on this interesting issue. This study, which is based on an integrative multi-level framework and a dyadic dataset, addresses this important gap in research. Results indicate that the impact of a company's complaint handling design varies significantly depending on the characteristics of the complaining customers with which the firm has to deal. Further, this paper shows that, contingent on these characteristics, a company's complaint handling design can shape complainants' fairness perceptions either considerably or only slightly. Overall, findings suggest that companies should apply an adaptive approach to complaint handling to avoid misallocation of attention, energy, and resources.

**Keywords** Complaint management · Complaint handling · Complaint behavior

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Although most companies face customer complaints on a daily basis (Bitner et al. 1990; Grainer 2003), managers' attention to complaint handling design differs significantly among firms. While some firms invest heavily in implementing and adhering to customer-oriented guidelines, other firms place little emphasis on systematically resolving customer complaints (Andreassen 2001; Homburg and Fürst 2007).

This phenomenon can have different causes. First, the actual importance of high-quality complaint handling design may not be the same for every firm, but probably varies depending on the customer-related characteristics of the complaint situations that a firm typically faces. These characteristics may include customer perceptions of the problem and of the business relationship with the firm, as well as customers' psychographics and sociodemographics. For example, high-quality complaint handling could be significantly more important in the case of a serious problem with a product of high relevance to the customer than in the case of a minor problem with a product of low relevance. Second, managers' views may differ significantly regarding the actual impact (and thus importance) of high-quality complaint handling. Some managers may believe that a complaining customer's evaluation is almost fully under company control (i.e., shaped by a company's way of handling complaints), whereas other managers may view it as largely predetermined by the characteristics of the customer in the specific complaint situation.

Against this background, and given the large investments needed for implementing and adhering to customer-oriented guidelines for complaint handling (Brown 2000; Fornell et al. 2006), the important question arises as to how the impact of a firm's complaint handling design on complainants' evaluation is influenced by complainants' problem-related, relationship-related, psychographic, and

sociodemographic characteristics. An interesting related question is whether and when a complainant's evaluation is primarily affected by a company's complaint handling design (i.e., what a firm does to handle complaints) or is largely predetermined by the customer-related characteristics of the specific complaint situation (i.e., which customer complains about what). Answering these questions would provide valuable insight into whether and when a complaint-handling company can forge significantly its destiny rather than having to largely resign to its fate (i.e., the characteristics of its complainants), as well as into whether and when large investments in complaint handling may have a good chance to pay off. Thus, addressing these issues would also contribute to providing a rationale for the significant differences in managers' attention to complaint handling that can be observed in business practice.

However, previous research largely neglects these important issues. Specifically, despite ample evidence that a complainant's evaluation of fairness is a key determinant of satisfaction and loyalty after the complaint (McCullough et al. 2000; Blodgett et al. 1997), systematic research on its drivers is surprisingly scarce. The few existing studies form two streams. The first stream focuses on company-related drivers and includes studies on a company's activities with respect to customer complaints (Homburg and Fürst 2005; Johnston 2001; Tax and Brown 1998). Literature in this field generally agrees that high-quality complaint handling design is important. However, it does not consider situational factors, such as complainant characteristics, that may significantly increase or decrease the impact (and thus importance) of high-quality complaint handling design. The second stream encompasses studies that examine customer-related drivers of perceived fairness, such as age, gender, and the perceived severity of the problem (Mattila 2001; Palmer et al. 2000). However, these studies focus on a rather small subset of such drivers and fail to account for drivers that are primarily under the control of a company.

In sum, research efforts offer a dearth of studies analyzing both company- and customer-related drivers of a complainant's perception of fairness within a single integrative framework. Consequently, hardly any research to date examines potential moderating effects between both types of drivers. In particular, little is known about how the impact of a company's complaint handling design varies with the customer-related characteristics in a specific complaint situation. Also owing to the lack of an integrative framework, little is known about whether and when a complainant's perception of fairness arises primarily from a company's complaint handling design or is largely predetermined by the complainant's characteristics.

By filling these gaps in research, this study seeks to complement and specify undifferentiated notions about the practical relevance of complaint handling made by previous

research and to offer useful recommendations that help managers adjust complaint-related efforts to the characteristics of their company's complaining customers. Drawing on justice theory (e.g., Homans 1961), we develop a multi-level integrative framework that includes both complaint handling design (located at the company level) and a broad range of key complainant characteristics (located at the customer level). To analyze effects between constructs across these two hierarchical levels, we test hypotheses using a multi-level approach, also known as hierarchical linear modeling. To rule out a possible common method bias regarding the effect of a company's complaint handling design on a complainant's perception of fairness, which takes center stage in this study, we draw on a dyadic sample of data from companies and their complaining customers.

### Theoretical background and framework

Our study is primarily rooted in justice theory, a dominant theory for studying customer post-complaint reactions (Blodgett et al. 1997; Tax et al. 1998). In general, the theory focuses on the fairness of an exchange as perceived by the parties involved (Gilliland 1993; Homans 1961; Lind and Tyler 1988). It posits that one party's fairness perceptions result from comparing his/her outcome-to-input ratio with the outcome-to-input ratio of the other exchange party. A typical exchange for a complaining customer would include a negative experience with a company followed by a complaint to this firm. In this case, the complainant's outcome results from the financial and non-financial loss through the negative experience and the redress received from the firm in terms of compensation (e.g., correction, replacement, discount, or refund), complaint process (e.g., opportunity to express emotions), and interpersonal treatment (e.g., politeness and effort). The complainant's input relates primarily to the effort put into voicing the complaint to the firm.

The selection of variables of our multi-level integrative framework is based on these theoretical considerations, a thorough literature review, in-depth interviews, and conceptual considerations. Specifically, with regard to the last criterion, we decided to focus on company- and customer-related characteristics. Subsequently, based on a thorough literature review and in-depth interviews, we identified a larger number of company- and customer-related characteristics and, drawing on justice theory, selected those most likely to influence a complainant's perception of his/her outcome-to-input ratio or of the company's outcome-to-input ratio related to the exchange between complainant and company. The selection of these variables was further confirmed by previous work in other contexts that also examines these characteristics on the basis of justice theory

(e.g., Hunt and Kernan 1991; Raimondo et al. 2008; Sweeney and McFarlin 1997).

In our framework, the company-related characteristic—the quality of complaint handling design—is located at the company level. By contrast, the customer characteristics—which relate to a specific problem and business relationship as well as to psychographics and sociodemographics—are measured at the customer level. Perceived fairness of complaint handling, which is located at the customer level, is expected to be directly influenced by both types of constructs. More importantly, our framework includes moderating effects between both types of constructs and serves to analyze whether and when a complainant’s perception of fairness is primarily driven by a firm’s complaint handling design or is largely predetermined by customer-related characteristics. Thus, unlike prior research, we assume that complainant characteristics take on a dual role, as they may not only directly influence perceived fairness but also moderate the corresponding effect of complaint handling design. Hence, the impact of complaint handling design is expected to vary depending on the problem-related, relationship-related, psychographic, and sociodemographic customer characteristics of the specific complaint situation (Fig. 1).

Perceived fairness as dependent variable

*Perceived fairness of complaint handling* is widely acknowledged as a customer’s key direct response to complaint handling (Blodgett et al. 1993; Mattila 2001). It

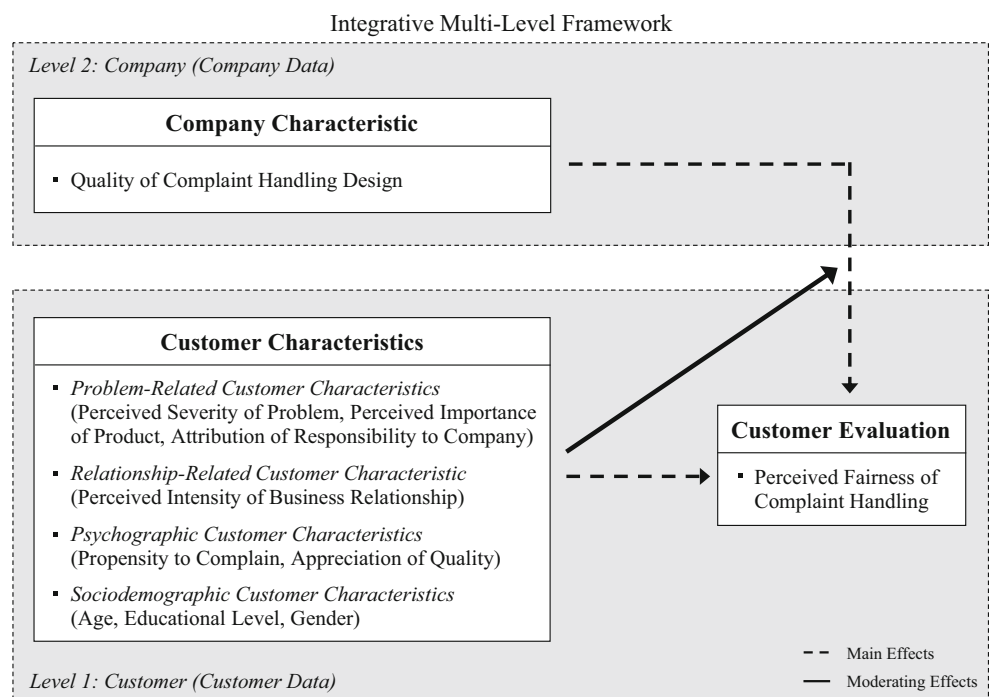
refers to the overall degree to which a customer feels fairly treated by a firm with respect to compensation, complaint process, and interpersonal treatment. In line with justice theory (Clemmer 1993; Greenberg and McCarty 1990) and prior research (Blodgett et al. 1997; Maxham and Netemeyer 2003), the degree of perceived distributive, procedural, and interactional fairness determines the construct.

Perceived distributive fairness refers to a complainant’s perception that the compensation received from the company is just. It encompasses the facets of equity, equality, and need consistency (Smith et al. 1999; Tax et al. 1998). Perceived procedural fairness describes a complainant’s perception of justice concerning the complaint process. It captures perceived timeliness and whether the complainant feels he/she has had process control, or the opportunity to express emotions and to provide information relevant to the firm’s decision (Goodwin and Ross 1992; Smith et al. 1999). Perceived interactional fairness reflects a complainant’s perception that employee behavior during the complaint handling was just. It comprises customer perceptions of employee empathy, politeness, and effort (Goodwin and Ross 1989; Smith et al. 1999; Tax et al. 1998).

Company characteristic (complaint handling design)

The *quality of a company’s complaint handling design* hinges on the overall degree to which a firm has clear, simple, and customer-oriented guidelines for dealing with complaints to ensure appropriate actions by employees.

**Figure 1** Integrative multi-level framework.



Justice theory suggests that a complainant bases his/her evaluation on perceptions of the compensation, complaint process, and interpersonal treatment. Consequently, our conceptualization considers three distinct types of guidelines—outcome, process, and behavioral—that relate to these three aspects (Homburg and Fürst 2005; Hart et al. 1990; Tax and Brown 1998). Thus, the degree to which a firm has implemented each type of guidelines determines the construct.

The quality of outcome guidelines reflects the degree to which a firm has a formal organizational policy for providing compensation to complainants that is consistent with complainants' needs. It covers issues such as employee authority to grant redress (Hart et al. 1990) and the degree to which these guidelines allow for a customer-oriented compensation (Fornell and Wernerfelt 1987). The quality of process guidelines refers to the degree to which a firm has a formal organizational procedure for registering and processing complaints that fits customers' needs. For instance, it deals with time standards for ensuring a fast complaint handling process (TARP 1986) and captures instructions to timely inform customers about the status of their complaint (Andreassen 2000). Finally, the quality of behavioral guidelines reflects the degree to which a firm has an explicit organizational policy for employees' behavior toward complainants that corresponds with complainants' needs. It encompasses instructions for employees to be polite, helpful, and understanding as well as to demonstrate concern and assume responsibility for customer problems (Tax and Brown 1998).

#### Customer characteristics

*Problem-related customer characteristics* This category includes customer perceptions of the severity of the problem and the importance of the product involved, as well as attributions of whom to blame for the problem. The *perceived severity of the problem* relates to the degree to which the customer believes that the problem is serious and involves a significant financial or non-financial loss (Mattila 2001; Bearden and Oliver 1985). The *perceived importance of the product* involved in the problem is defined as the product's relevance and cost for the customer (Blodgett et al. 1993). Finally, *attribution of responsibility to the company* refers to the degree to which the customer believes that the cause of a problem is located in the company instead of in him/herself, and that the company is therefore accountable for his/her dissatisfaction. Although pre-study customer interviews, studies of customer reactions to a dissatisfying experience (Krishnan and Valle 1979; Richins 1983), and research on relationship marketing (e.g., Tsiros et al. 2004) all indicate the potential relevance of this construct, we are not aware of any study

that has analyzed its impact on customer post-complaint reactions.

*Relationship-related customer characteristic* The key characteristic of this category is the *perceived intensity of the business relationship* between customer and company. Because in our study, the number of previous interactions with the company is particularly important, we focus on the duration of this relationship and on the customer's purchase frequency in this relationship (Dagger et al. 2009; Palmer et al. 2000; Ward and Dagger 2007).

*Psychographic customer characteristics* This category encompasses the customer's propensity to complain and his/her appreciation of quality. The *propensity to complain* is conceptualized as a summary construct and includes personality, attitudinal, and lifestyle variables that influence whether a customer tends to complain when dissatisfied (Bearden and Oliver 1985; Chebat et al. 2005). It is defined as the degree to which, in the event of a negative experience, the customer complains to the company in question. A second potentially important psychographic characteristic is a customer's *appreciation of quality*. Previous research has not examined this construct as an antecedent of perceived fairness of complaint handling, but we identified it through pre-study customer interviews. It represents a customer's focus on quality compared to price when selecting a product (Diehl et al. 2003; Rao and Bergen 1992).

*Sociodemographic customer characteristics* This category includes three key sociodemographics of a customer: *age*, *educational level*, and *gender* (Palmer et al. 2000).

#### Hypotheses development

Our framework includes both main and moderating effects. A considerable part of the *main effects* have been studied previously. Therefore, we do not develop explicit hypotheses for them, but instead provide a brief rationale for their expected direction.

Justice theory suggests that complaint handling design and customer-related characteristics are likely to influence a complainant's perception of his/her outcome from and input into the exchange, or of the company's outcome from and input into the exchange. These effects then influence the complainant's perception of his/her outcome-to-input ratio, both absolute and relative to the perceived company's outcome-to-input ratio, which subsequently drives his/her perceived fairness of complaint handling (e.g., Homans 1961; Walster et al. 1973).



Specifically, the higher the quality of a company's complaint handling design, the higher is the role clarity and coordination of customer contact employees, and thus the more likely these employees provide the complainant with an adequate compensation, complaint process, and interpersonal treatment (e.g., Homburg and Fürst 2005; Simon 1997). This increases the likelihood that the complainant receives an outcome of the exchange that he/she views as appropriate when compared to his/her input into the exchange. *Ceteris paribus*, this results in a more favorable perceived outcome-to-input ratio for the complainant (both absolute and relative to the perceived company's outcome-to-input ratio) and in turn to higher levels of perceived fairness.

Moreover, the perceived severity of the problem and the perceived importance of the product decrease the complainant's perceived outcome and outcome-to-input ratio (both absolute and relative to the company's outcome-to-input ratio), leading to lower levels of perceived fairness (e.g., Gilliland 1993). Also, the attribution of responsibility for the problem to the company diminishes the input of the company in the perception of the complainant (e.g., Folkes 1984). This enhances the perceived outcome-to-input ratio of the company (both absolute and relative to the perceived complainant's outcome-to-input ratio) and thus results in lower levels of perceived fairness.

Further, with increasing intensity of a business relationship, a customer views the relationship with the company and the company's behavior more favorably (e.g., Reinartz and Kumar 2003). This increases the perceived company input into and complainant outcome of the exchange. Hence, the complainant perceives his/her outcome-to-input ratio as more favorable, resulting in higher perceived fairness. Also, the higher a customer's propensity to complain, the greater is his/her complaint-related knowledge and comfort (e.g., Brown and Beltramini 1989). This decreases his/her perceived effort (i.e., input) into complaint voicing, thus enhancing perceived outcome-to-input ratio and fairness. In addition, the higher a customer's appreciation of quality, the lower is his/her perceived outcome and outcome-to-input ratio, thus decreasing perceived fairness (e.g., Rao and Bergen 1992).

Finally, justice theory and results of empirical studies suggest that a customer's age and educational level positively influence perceived fairness and that a female customer tends to have higher fairness perceptions than a male customer (e.g., Palmer et al. 2000).

Drawing on these considerations, Table 1 shows an outline of the expected main effects, including assumed direction and basic reasoning for each effect.

We now turn to the hypotheses on the *moderating effects*, which are the main focus of our study. In line with contingency theory, we subsequently argue that the impact

(and thus importance) of a company's complaint handling design is contingent on the customer-related characteristics of the specific complaint situation (Friedman and Churchill 1987; Weitz 1981; Zeithaml et al. 1988). As mentioned, justice theory offers support that customer-related characteristics are likely to affect a complainant's perception of his/her outcome from and input into the exchange or of the company's outcome from and input into the exchange (Homans 1961; Walster et al. 1973). This in turn determines considerably the danger that the company provides redress that insufficiently increases the complainant's perceived outcome from the exchange so that he/she views his/her outcome-to-input ratio of the exchange as imbalanced (both absolute and relative to the company's outcome-to-input ratio) and thus complaint handling as unfair. Role theory (Bush and Busch 1981; Cummings et al. 1989), the behavioral theory of the firm (March and Simon 1993; Simon 1997), and empirical research (Chebat and Kollias 2000; Hartline and Ferrell 1996) all provide ample evidence that high-quality complaint handling design informs employees how to deal with a complaint and guides them to act in a customer-oriented way. This guidance significantly reduces the danger of insufficient redress and thus of unfair complaint handling. In sum, we argue that customer-related characteristics are likely to increase or decrease the danger of insufficient redress (as perceived by the complainant) and thus increase or decrease a company's need to ensure a fair complainant treatment by means of high-quality complaint handling design.

The Elaboration Likelihood Model (Petty and Cacioppo 1986) and related psychological work on information processing (Anderson 1981; Petty et al. 1980) offer additional support for our notion that customer-related characteristics moderate the impact of complaint handling design on perceived fairness. Specifically, these characteristics are likely to determine a complainant's motivation or ability to thoroughly and adequately evaluate his/her outcome-to-input ratio of the exchange. The higher the complainant's corresponding motivation or ability, the more likely he/she will detect any deviation from a fair outcome-to-input ratio of the exchange, thus increasing the company's need to ensure fair complainant treatment through high-quality complaint handling design. In addition to this general theory-based reasoning, we now provide a more detailed rationale for the moderating effect of each customer-related characteristic.

*Problem-related customer characteristics* From a complainant's viewpoint, the perceived severity of the problem and the perceived importance of the product involved decrease his/her outcome (Homans 1961; Walster et al. 1973), whereas the attribution of responsibility for the problem to the company decreases the company's input (Folkes 1984;

**Table 1** Overview of main effects

Independent variables	Dependent variable: perceived fairness of complaint handling		
	Expected main effects	Basic rationale for hypotheses	Selected supporting literature
<b>Company characteristic</b>			
Quality of complaint handling design	positive	<ul style="list-style-type: none"> <li>- Enhances employee role clarity and coordination. This increases likelihood that customer receives outcome of the exchange that is appropriate to his/her input into the exchange, resulting in a more favorable outcome-to-input ratio</li> <li>- Theoretical support (justice theory, role theory, behavioral theory of the firm) and empirical support</li> </ul>	Cummings et al. 1989; Davidow 2003; Homburg and Fürst 2005; Simon 1997
<b>Customer characteristics</b>			
<i>Problem-related customer characteristics</i>			
Perceived severity of problem	negative	<ul style="list-style-type: none"> <li>- Reduces perceived customer outcome and thus outcome-to-input ratio of the exchange</li> <li>- Theoretical support (justice theory) and some empirical support</li> </ul>	Gilliland 1993; Mattila 2001
Perceived importance of product	negative	<ul style="list-style-type: none"> <li>- Reduces perceived customer outcome and thus outcome-to-input ratio of the exchange</li> <li>- Theoretical support (justice theory) and empirical support</li> </ul>	Blodgett et al. 1993; Gilliland 1993
Attribution of responsibility to company	negative	<ul style="list-style-type: none"> <li>- Reduces perceived customer company input into the exchange, thus enhancing the perceived outcome-to-input ratio of the company (absolute and relative to perceived customer outcome-to-input ratio)</li> <li>- Theoretical support (justice theory, attribution theory)</li> </ul>	Folkes 1984; Krishnan and Valle 1979
<i>Relationship-related customer characteristic</i>			
Perceived intensity of business relationship	positive	<ul style="list-style-type: none"> <li>- Enhances perceived company input into and customer outcome of the exchange, thus improving perceived customer outcome-to-input ratio</li> <li>- Theoretical support (justice theory)</li> </ul>	Handy 1994; Palmer et al. 2000; Reinartz and Kumar 2003
<i>Psychographic customer characteristics</i>			
Propensity to complain	positive	<ul style="list-style-type: none"> <li>- Reduces perceived customer effort (i.e., input) into voicing the complaint, thus enhancing perceived customer outcome-to-input ratio</li> <li>- Theoretical support (justice theory) and some empirical support</li> </ul>	Blodgett et al. 1993; Brown and Beltramini 1989
Appreciation of quality	negative	<ul style="list-style-type: none"> <li>- Reduces perceived customer outcome and thus outcome-to-input ratio</li> <li>- Theoretical support (justice theory)</li> </ul>	Diehl et al. 2003; Rao and Bergen 1992
<i>Sociodemographic customer characteristics</i>			
Age	positive	- Theoretical support (justice theory) and some empirical support	Palmer et al. 2000
Educational level	positive	- Theoretical support (justice theory) and some empirical support	Shuptrine and Wenglorz 1981
Gender	positive <sup>a</sup>	- Theoretical support (justice theory) and some empirical support	Palmer et al. 2000

<sup>a</sup> A woman is expected to have higher fairness perceptions than a man

Krishnan and Valle 1979). These effects enhance the danger that the complainant will view the company's redress as insufficient and thus the outcome-to-input ratio of the exchange as imbalanced, leading to a perception of unfair complaint handling.

Both theory and empirical evidence (Chebat and Kollias 2000; Cummings et al. 1989; Simon 1997) suggest that a high-quality complaint handling design significantly reduces this danger. Specifically, it increases the customer orientation of employees and thus the likelihood that a complainant receives sufficient redress, even in the event of

a large financial or non-financial loss caused by a highly severe problem and a highly important product or in a case in which the company is mainly to blame for the problem. By contrast, if a company has no appropriate guidelines for complaint handling, employees tend to act in a less customer-oriented way and thus a complainant is likely to receive sufficient redress only (if at all) when he/she perceives the financial or non-financial loss as small and himself/herself as partly or fully responsible for the problem. Therefore, the more severe a problem, the more important a product, and the greater the company's

responsibility for a problem (in the view of the complainant), the more important a high-quality complaint handling design is for ensuring sufficient redress and thus perceived fairness.

Additionally, with increasing severity of the problem, importance of the product, and attribution of responsibility to the company, the customer views the experience with the company as more crucial, resulting in a greater motivation to thoroughly evaluate his/her outcome-to-input ratio (Anderson 1981; Petty and Cacioppo 1986). This increases the relevance of ensuring a fair complainant treatment through complaint handling design. In sum, we predict:

*H<sub>1a</sub>: The higher a customer's perceived severity of a problem, the higher is the impact of the quality of complaint handling design on perceived fairness of complaint handling.*

*H<sub>1b</sub>: The higher a customer's perceived importance of a product involved in a problem, the higher is the impact of the quality of complaint handling design on perceived fairness of complaint handling.*

*H<sub>1c</sub>: The higher a customer's attribution of responsibility for a problem to the company, the higher is the impact of the quality of complaint handling design on perceived fairness of complaint handling.*

*Relationship-related customer characteristic* As the perceived intensity of the business relationship increases, the complainant tends to view the relationship with the company and the company's behavior more favorably (Handy 1994; Reinartz and Kumar 2003). This positively affects the complainant's perception of the company's input and of his/her outcome (Homans 1961; Walster et al. 1973). Combined with a company's greater knowledge about a customer in a high-intensity business relationship (Webster 1978), this decreases the danger that the company will offer redress that the customer considers inappropriate and thus unfair. Hence, the greater the intensity of a business relationship, the less adequate guidelines are needed to reduce the danger of unfair complaint handling (Chebat and Kollias 2000; Cummings et al. 1989; Simon 1997).

Moreover, as relationship intensity increases, a customer's familiarity with and trust in a firm also increase (Ganesan 1994; Kumar et al. 1995; Narayandas and Kasturi 2004). The customer holds stronger beliefs that the firm effectively performs its tasks and that it has beneficial intentions when new issues arise (Ganesan 1994; Hess et al. 2003). Consequently, the customer's evaluation of his/her outcome-to-input ratio becomes positively biased (Zajonc 1984) and less thorough (Anderson 1981; Petty and Cacioppo 1986). In addition, the higher the relationship

intensity, the greater is the customer's experience with the firm, increasing the likelihood that the customer's evaluation is not only shaped by the firm's behavior in this exchange but also by its behavior in prior exchanges (Bolton 1998; Olsen and Johnson 2003). In sum, with increasing relationship intensity, a complainant's evaluation tends to be less strongly influenced by his/her outcome-to-input ratio and thus by the company's handling of his/her complaint. Hence, we hypothesize:

*H<sub>2</sub>: The higher a customer's perceived intensity of the business relationship, the lower is the impact of the quality of complaint handling design on perceived fairness of complaint handling.*

*Psychographic customer characteristics* The higher a customer's propensity to complain, the greater the customer's complaint-related knowledge and comfort, which reduces the perceived effort (i.e., input) into voicing the complaint (Blodgett et al. 1993; Brown and Beltramini 1989). This lessens the danger of insufficient redress which would lead the customer to view his/her outcome-to-input ratio and thus the handling of the complaint as unfair.

Moreover, the higher a customer's appreciation of quality, the greater the perceived loss through the negative experience with the company, leading to a smaller perceived outcome (Diehl et al. 2003; Rao and Bergen 1992). The result is greater danger that the company will not provide sufficient redress, which would lower the complainant's perceived outcome-to-input ratio and thus his/her perceived fairness of complaint handling. Thus, the need for high-quality guidelines to diminish the danger of unfair complaint handling decreases with increasing customer propensity to complain and becomes stronger with increasing customer appreciation of quality (Cummings et al. 1989; Hartline and Ferrell 1996; Simon 1997).

Further, the higher a customer's propensity to complain, the greater is his/her complaint experience with the company. This experience decreases the motivation to thoroughly analyze the outcome-to-input ratio of each additional complaint to that company (Anderson 1981; Petty and Cacioppo 1986) and increases the likelihood that the customer's fairness perception is not only influenced by the company's behavior in this complaint situation, but also by experiences with the company in previous complaint situations (Bolton 1998; Singh 1990).

With respect to appreciation of quality, research on customer behavior suggests that a customer who attaches high importance to quality issues when making buying decisions is also strongly influenced by quality issues in other exchange situations, such as when seeking redress from the company (Ailawadi et al. 2001; Lichtenstein et al. 1993). Thus, consistent with work on information process-

ing (Anderson 1981; Petty and Cacioppo 1986), this customer's judgment of complaint handling fairness may be based more heavily on the outcome (e.g., the compensation, complaint process, and interpersonal treatment received from the company) and resulting outcome-to-input ratio than the judgment of a primarily price-focused customer. In summary, we predict:

*H<sub>3a</sub>: The higher a customer's propensity to complain, the lower is the impact of the quality of complaint handling design on perceived fairness of complaint handling.*

*H<sub>3b</sub>: The higher a customer's appreciation of quality, the higher is the impact of the quality of complaint handling design on perceived fairness of complaint handling.*

**Sociodemographic customer characteristics** Justice theory suggests that sociodemographic characteristics such as age, educational level, and gender play an important role in a customer's evaluation of the fairness of an exchange (Homans 1961; Folger and Greenberg 1985; Walster et al. 1973). For example, a customer's socialization process advances with age so that social norms and standards become increasingly internalized, fostering the development of fairness perceptions (Jasso 1980; Maxwell 1999). Also, with age a customer gains experience with buying problems and complaint situations (Phillips and Sternthal 1977). Hence, over time, a customer is likely to develop a more realistic reference level for a firm's customer service performance in general and complaint handling performance in particular. As a result, a customer has an improved ability to evaluate the outcome-to-input ratio. Thus, in line with work on information processing (Anderson 1981; Petty and Cacioppo 1986), we argue that the higher a customer's age, the greater is a firm's need to ensure a fair treatment of the complaint through a high-quality complaint handling design.

Similarly, psychological studies (e.g., Gilbert and Warren 1995) and work on information processing (Anderson 1981; Petty and Cacioppo 1986) support the assumption that a customer with a higher educational level is able to assess a company's complaint handling performance and his/her resulting outcome-to-input ratio more rationally and objectively than a customer with a lower educational level. Thus, the better educated a complainant is, the more important is the ensuring of fair treatment through a high-quality complaint handling design.

Finally, research on gender differences shows that men and women differ in their buying behavior (e.g., Zeithaml 1985). For example, compared to a man, a woman tends to be more cognitively involved in purchasing activities (Slama and Tashchian 1985) and to care more about

customer service issues (McCull-Kennedy et al. 2003; Oliver 1997). Hence, a woman may more thoroughly evaluate her outcome-to-input ratio, which leads to a greater company need to ensure a fair complaint handling in the case of a female complainant than in the case of a male complainant (Anderson 1981; Petty and Cacioppo 1986). In sum, we predict:

*H<sub>4a</sub>: The higher a customer's age, the higher is the impact of the quality of complaint handling design on perceived fairness of complaint handling.*

*H<sub>4b</sub>: The higher a customer's educational level, the higher is the impact of the quality of complaint handling design on perceived fairness of complaint handling.*

*H<sub>4c</sub>: For a woman, the impact of the quality of complaint handling design on perceived fairness of complaint handling is higher than for a man.*

To sum up, Table 2 provides an overview of the expected moderating effects, including expected direction and basic reasoning for each effect.

### Multi-level empirical study and approach for data analysis

#### Data collection procedure and sample

Prior to our quantitative empirical study, we conducted semi-structured in-depth interviews with executives and customers using a pre-defined topic guide. Executive interviews were primarily aimed at gaining a better understanding of a company's complaint handling design. As we could ground the operationalization of this construct on prior studies, we interviewed only 12 managers (at least one from each of the industries sampled), with an average interview duration of more than two hours. Customer interviews were directed at verifying the choice and operationalization of the key customer-related characteristics derived from the extant literature, as well as identifying new customer-related characteristics not examined by previous research. We interviewed 25 customers, with an average interview duration of almost two hours.

Subsequently, corresponding to our integrative framework and to rule out a possible common method bias with regard to the effect of complaint handling design on perceived fairness, we collected dyadic data from companies and their complaining customers in three major steps. In the first step, using data from a commercial list broker, we obtained an initial sample of companies ( $n=1,786$ ) with at least 200 employees and annual revenues of at least \$50



**Table 2** Overview of moderating effects

Moderating variables: customer characteristics	Dependent variable: perceived fairness of complaint handling		
	Expected moderating effects	Basic rationale for hypotheses	Selected supporting literature
<i>Problem-related customer characteristics</i>			
Perceived severity of problem	positive (H <sub>1a</sub> )	- Reduces perceived customer outcome and enhances customer’s cognitive involvement, thus increasing the need for high-quality complaint handling design to ensure favorable outcome-to-input ratio - Theoretical support (e.g., justice theory, ELM)	Chebat and Kollias 2000; Petty and Cacioppo 1986; Walster et al. 1973
Perceived importance of product	positive (H <sub>1b</sub> )	- Similar to H <sub>1a</sub>	Similar to H <sub>1a</sub>
Attribution of responsibility to company	positive (H <sub>1c</sub> )	- Reduces perceived company input and enhances customer’s cognitive involvement, thus increasing the need for high-quality complaint handling design to ensure favorable outcome-to-input ratio - Theoretical support (e.g., justice theory, ELM)	Chebat and Kollias 2000; Folkes 1984; Petty and Cacioppo 1986
<i>Relationship-related customer characteristic</i>			
Perceived intensity of business relationship	negative (H <sub>2</sub> )	- Enhances perceived company input and customer outcome, as well as familiarity with, trust in, and experience with company, thus reducing the need for high-quality complaint handling design to ensure favorable outcome-to-input ratio - Theoretical support (e.g., justice theory, ELM)	Bolton 1998; Chebat and Kollias 2000; Handy 1994; Petty and Cacioppo 1986; Reinartz and Kumar 2003
<i>Psychographic customer characteristics</i>			
Propensity to complain	negative (H <sub>3a</sub> )	- Reduces perceived customer input into complaint voicing and enhances customer’s complaint experience with company, thus decreasing the need for high-quality complaint handling design to ensure favorable outcome-to-input ratio - Theoretical support (e.g., justice theory, ELM)	Bolton 1998; Brown and Beltramini 1989; Petty and Cacioppo 1986; Singh 1990
Appreciation of quality	positive (H <sub>3b</sub> )	- Enhances perceived customer outcome, thus increasing the need for high-quality complaint handling design to ensure favorable outcome-to-input ratio - Theoretical support (e.g., justice theory, ELM)	Ailawadi et al. 2001; Petty and Cacioppo 1986; Rao and Bergen 1992
<i>Sociodemographic customer characteristics</i>			
Age	positive (H <sub>4a</sub> )	- Fosters a more realistic reference level for a company’s complaint handling performance, thus increasing the need for high-quality complaint handling design to ensure favorable outcome-to-input ratio - Theoretical support (e.g., justice theory, ELM)	Jasso 1980; Maxwell 1999; Petty and Cacioppo 1986; Phillips and Sternthal 1977
Educational level	positive (H <sub>4a</sub> )	- Enhances customer’s ability to assess outcome-to-input-ratio, thus increasing the need for high-quality complaint handling design to ensure favorable outcome-to-input ratio Theoretical support (e.g., justice theory, ELM)	Anderson 1981; Gilbert and Warren 1995; Petty and Cacioppo 1986
Gender	positive <sup>a</sup> (H <sub>4a</sub> )	- Female customer is more cognitively involved in the exchange, leading to a more thorough evaluation of the outcome-to-input-ratio, thus increasing the need for high-quality complaint handling design to ensure favorable outcome-to-input ratio - Theoretical support (e.g., justice theory, ELM)	McColl-Kennedy et al. 2003; Oliver 1997; Salma and Tashchian 1985; Zeithaml 1985

<sup>a</sup> For a woman, the impact of the quality of complaint handling design is expected to be stronger than for a man

million. On the basis of their macroeconomic importance, we selected the following industries for our survey: machinery and metal works, electronic, chemicals and pharmaceuticals, banking and insurance, retailing, and transport. The sampling of companies from the total company population was carried out on a random basis, while ensuring that the sample was representative in terms of industry membership. Thus, the distribution of industries in the initial company sample parallels the distribution of industries in the total company population. For 1,707 firms, we successfully identified the manager who was primarily responsible for complaint management. We then sent a questionnaire to these individuals, and after three weeks, we followed up with telephone calls to encourage response. In total, we received 379 useable questionnaires for a response rate of 22.2%. We tested for non-response bias by comparing early and late respondents (Armstrong and Overton 1977) and by examining whether the firms we initially addressed and the responding firms differed in terms of size or industry. Both tests provided evidence that non-response bias is not a problem with these data.

In the second step, we contacted the responding 379 managers again and asked for a list of 10 customers who had complained to their firm within the past three months. To increase the objectivity of selection, we provided managers with specific criteria to be used in this process. Specifically, using a key informant approach, we asked managers to name customers who are typical for their company with respect to the reason for complaint, importance to the company, and type of customer. As an incentive to cooperate, we offered a report about customer feedback and free attendance at a complaint management conference. In total, 110 managers (29.0%) provided the requested information, for a final response rate of 6.4%. In view of the high confidentiality of customer information, this response can be considered satisfactory. Reasons for declining included legal issues and general firm policies. By assessing whether the responding firms differ from the firms we initially contacted in the second step, we again tested for non-response bias. This test related to size, industry, and the quality of complaint handling design and revealed no statistical differences, indicating that non-response bias is also not a problem in the second step of our data collection. Table 3 shows information on the composition of the company sample.

In the third and final step, we interviewed complainants by telephone. To motivate participation, we guaranteed to forward customer feedback in an anonymous form to the firm in question. In all, we obtained useable responses from 634 complainants (at least five complainants per firm). Thus, the final data set comprised data from 110 firms matched to 634 complaining customers.

## Measure development and assessment

Scales were developed from a literature review and in-depth interviews with executives and complainants. A list of the final items, including sources used in the process of scale development, appears in the Appendix. Whereas most variables in our model are first-order constructs, perceived fairness of complaint handling and quality of complaint handling design are multidimensional, thus representing second-order constructs with multiple first-order factors. According to Jarvis et al. (2003), second-order constructs can have first-order factors as reflective or formative indicators and the first-order factors themselves can have reflective or formative indicators, resulting in four possible approaches to model specification. The authors emphasize that conceptual reasons should primarily determine the choice of the approach to model specification.

Against this background, in our study, perceived fairness of complaint handling, which is defined as the *overall* degree to which a complainant feels treated fairly by a company, is conceptualized as a second-order formative construct with three first-order reflective dimensions. Specifically, prior research shows that three distinct dimensions determine the overall degree of perceived fairness: distributive, procedural, and interactional fairness (Blodgett et al. 1997; Greenberg and McCarty 1990). These dimensions may compensate each other in such a way that a high degree of perceived fairness on one dimension (e.g., procedural fairness) can offset a low degree of perceived fairness on another dimension (e.g., distributive fairness). Thus, we followed the advice of various authors who strongly recommend the use of a formative measurement model when a construct is caused by its dimensions or indicators and thus represents a summary index of these dimensions or indicators (Fornell and Bookstein 1982; Jarvis et al. 2003). While the second-order factor (see Construct 11 in the Appendix) has three first-order factors as formative indicators, the three first-order factors themselves (see Factors 11a, 11b, and 11c in the Appendix) are measured with reflective indicators (four, three, and five, respectively) using a five-point rating scale with “strongly disagree” and “strongly agree” as anchors. This approach is consistent with prior research using reflective models for measuring distributive, procedural, and interactional fairness (Smith et al. 1999; Tax et al. 1998).

The quality of a company’s complaint handling design refers to the *overall* degree to which a firm has established adequate guidelines for complaint handling. Analogous to perceived fairness of complaint handling, this construct is also conceptualized as a second-order formative construct with three first-order reflective dimensions (Jarvis et al.

**Table 3** Company sample composition

<b>A: Industry</b>		<b>C: Annual revenues</b>	
Machinery/metal works	26%	< \$50 million	4%
Electronic	24%	\$50–\$99 million	16%
Banking/insurance	16%	\$100–\$199 million	26%
Retailing	15%	\$200–\$499 million	18%
Chemicals/pharmaceuticals	14%	\$500–\$999 million	16%
Transport	5%	\$1,000–\$2,000 million	6%
		> \$2,000 million	6%
		Missing	8%
<b>B: Position of respondents</b>		<b>D: Number of employees</b>	
Head of complaint management	23%	< 200	6%
Head of quality management	23%	200–499	17%
Head of customer service	16%	500–999	26%
VP marketing, VP sales	15%	1,000–2,499	22%
Managing director, CEO, Head of SBU	13%	2,500–5,000	16%
Others	9%	> 5,000	12%
Missing	1%	Missing	1%

2003). Specifically, the overall degree to which a firm has implemented complaint handling guidelines is determined by the degree to which each of the three distinct types of complaint handling guidelines (outcome, process, and behavioral) has been established in the firm. Thus, following recommendations in the literature (Fornell and Bookstein 1982; Jarvis et al. 2003), this second-order factor (see Construct 1 in the Appendix) has three first-order factors as formative indicators, while the three first-order factors themselves (see Factors 1a, 1b, and 1c in the Appendix) were each assessed by six reflective indicators using a seven-point rating scale with “strongly disagree” and “strongly agree” as anchors.

The perceived severity of the problem and the perceived importance of the product were measured with four and three reflective indicators, respectively, on a five-point rating scale with “strongly disagree” and “strongly agree” as anchors. The attribution of responsibility to the company was assessed by three reflective indicators, using a five-point rating scale with anchors of “strongly disagree” and “strongly agree” and “myself” and “the company,” respectively. Both a customer’s perceived intensity of the business relationship and propensity to complain were measured with two reflective indicators on a five-point rating scale with “strongly disagree” and “strongly agree” as anchors. To measure a customer’s appreciation of quality, we asked respondents to award up to 100 points, depending on the relative importance of quality compared to price during product purchase. A customer’s age, educational level, and gender were all made operative by a single item, using a ten-, five-, and two-category scale,

respectively. Table 4 presents summary statistics, including the mean and standard deviation of each construct.

To assess reliability and validity, we ran confirmatory factor analysis using LISREL 8.71. A detailed overview of the results appears in the Appendix. Overall, the results indicate good psychometric properties for all constructs. Specifically, with one exception, coefficient alpha values exceed the recommended threshold value of .7, providing evidence of high internal consistency among the corresponding indicators (Nunnally 1978). In addition, each construct indicates a composite reliability greater than .7 and (with one exception) an average variance extracted of more than .5 (Bagozzi and Yi 1988). Also, for each pair of constructs, we assessed discriminant validity following the procedure proposed by Fornell and Larcker (1981) (see Table 4) and using the chi-square difference test. Results reveal no problems with respect to discriminant validity. Finally, for each predictor, we computed the variance inflation factor (VIF) (Neter et al. 1996) and the condition index (Belsley et al. 1980). All VIF values were below the recommended threshold of 10 (with a maximum of 1.34) and all condition indices were below the suggested threshold of 30 (with a maximum of 1.83). These results indicate the absence of serious multicollinearity.

#### Multi-level approach for data analysis

In our model, the dependent variable is located at the lower hierarchical level, the complaining customer level, and is influenced by variables of the same level as well as by a

**Table 4** Summary statistics and test for discriminant validity

	Range	Mean (S.D.)	(AVE)	Squared correlations											
				1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	
				(.58)	(.50)	(.61)	(.71)	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	(.55)
1. Quality of complaint handling design	1–7	5.32 (1.31)	(.58)	–											
2. Perceived severity of problem	1–5	2.80 (1.00)	(.50)	.00	–										
3. Perceived importance of product	1–5	3.65 (1.09)	(.61)	.00	.19	–									
4. Attribution of responsibility to company	1–5	4.48 (.87)	(.71)	.02	.02	.01	–								
5. Perceived intensity of business relationship	1–5	4.44 (1.05)	– <sup>a</sup>	.00	.00	.01	.00	–							
6. Propensity to complain	1–5	4.16 (.94)	– <sup>a</sup>	.00	.03	.14	.01	.02	–						
7. Appreciation of quality	0–100	56.48 (16.41)	– <sup>a</sup>	.00	.03	.07	.02	.00	.02	–					
8. Age	1–10	6.39 (2.15)	– <sup>a</sup>	.00	.00	.00	.00	.00	.00	.00	–				
9. Educational level	1–5	2.59 (1.11)	– <sup>a</sup>	.01	.00	.01	.00	.00	.00	.00	.00	–			
10. Gender	0–1 <sup>b</sup>	.28 (.45)	– <sup>a</sup>	.01	.00	.02	.00	.00	.01	.00	.00	.00	.02	–	
11. Perceived fairness of complaint handling	1–5	3.68 (.95)	(.55)	.08	.02	.01	.01	.01	.01	.01	.01	.00	.00	.00	–

S.D. standard deviation; AVE average variance extracted

<sup>a</sup> Because this construct is measured with less than three items, average variance extracted cannot be computed

<sup>b</sup> Dummy variable with 0 = male and 1 = female

variable of a higher hierarchical level, the company level. To analyze such two-level effects, the use of a multi-level approach, also known as hierarchical linear modeling, is appropriate (Bryk and Raudenbush 2002). This approach allows simultaneous examination of effects between variables across different hierarchical levels of analysis. In light of the hierarchical nature of our data set (several customers are nested within one company), it also adequately accounts for dependencies between observations on the customer level.

We tested the hypotheses by multi-level regression analysis using MLwiN. All scales were averaged to form a composite. Variables located at the customer level were group-mean centered, whereas the variable located at the company level was grand-mean centered (Bryk and Raudenbush 2002).

**Results**

Results of hypotheses testing

To test hypotheses, we estimated the following multi-level model (see also Table 5):

$$FAIR_{ij} = \gamma_{00} + \gamma_{01}COHA_j + \gamma_{10}SEPL_{ij} + \gamma_{20}IMPD_{ij} + \gamma_{30}ATRE_{ij} + \gamma_{40}INRE_{ij} + \gamma_{50}PRCO_{ij} + \gamma_{60}APQU_{ij}$$

$$+ \gamma_{70}AGE_{ij} + \gamma_{80}EDUC_{ij} + \gamma_{90}GEND_{ij} + \gamma_{11}COHA_j \times SEPL_{ij} + \gamma_{21}COHA_j \times IMPD_{ij} + \gamma_{31}COHA_j \times ATRE_{ij} + \gamma_{41}COHA_j \times INRE_{ij} + \gamma_{51}COHA_j \times PRCO_{ij} + \gamma_{61}COHA_j \times APQU_{ij} + \gamma_{71}COHA_j \times AGE_{ij} + \gamma_{81}COHA_j \times EDUC_{ij} + \gamma_{91}COHA_j \times GEND_{ij} + u_{0j} + e_{ij}$$

where  $i$  ( $= 1, \dots, 634$ ) stands for individual complaining customers ( $=$  level 1) and  $j$  ( $= 1, \dots, 110$ ) for the companies ( $=$  level 2) in our sample. FAIR represents perceived fairness of complaint handling; COHA is the quality of a company’s complaint handling design; SEPL refers to perceived severity of the problem; IMPD represents perceived importance of the product; ATRE indicates attribution of responsibility to the company; INRE is the perceived intensity of the business relationship; PRCO and APQU reflect a customer’s propensity to complain and appreciation of quality, respectively; AGE and EDUC stand for a customer’s age and educational level, respectively. GEND refers to a customer’s gender. Applying a dummy variable approach, we coded male customers with 0 and female customers with 1. The random effect  $u_{0j}$  is multivariate normally distributed over companies with an expected value of zero and a variance of  $\tau_{00}$ . Further,  $u_{0j}$  is the unique deviation of company  $j$  from the overall effect on the intercept (while controlling for the company-



**Table 5** Results of multi-level analysis

Dependent variable: perceived fairness of complaint handling		Model <sup>a</sup>
<b>Company characteristic</b>		
Quality of complaint handling design		.33***
<b>Customer characteristics</b>		
<i>Problem-related customer characteristics</i>		
Perceived severity of problem		-.12***
Perceived importance of product		-.10**
Attribution of responsibility to company		-.07**
<i>Relationship-related customer characteristic</i>		
Perceived intensity of business relationship		.07**
<i>Psychographic customer characteristics</i>		
Propensity to complain		.09**
Appreciation of quality		-.08**
<i>Sociodemographic customer characteristics</i>		
Age		.04
Educational Level		.00
Gender		.05
<b>Cross-level interactions</b>		
<i>Company characteristic x problem-related customer characteristics</i>		
Qu. of complaint handling design x perc. severity of problem	(H <sub>1a</sub> +)	.09**
Qu. of complaint handling design x perc. importance of product	(H <sub>1b</sub> +)	.09**
Qu. of complaint handling design x attribution of responsibility to company	(H <sub>1c</sub> +)	.10**
<i>Company characteristic x relationship-related customer characteristic</i>		
Qu. of complaint handling design x perc. intensity of business relationship	(H <sub>2</sub> -)	-.08**
<i>Company characteristic x psychographic customer characteristics</i>		
Qu. of complaint handling design x propensity to complain	(H <sub>3a</sub> -)	-.01
Qu. of complaint handling design x appreciation of quality	(H <sub>3b</sub> +)	.06*
<i>Company characteristic x sociodemographic customer characteristics</i>		
Qu. of complaint handling design x age	(H <sub>4a</sub> +)	.08**
Qu. of complaint handling design x educational level	(H <sub>4b</sub> +)	-.01
Qu. of complaint handling design x gender	(H <sub>4c</sub> +)	.07** <sup>b</sup>
Explained total variance (%)		21.1%
Explained company-level variance (%)		30.6%
Explained customer-level variance (%)		18.8%

<sup>a</sup> Standardized coefficients are shown

<sup>b</sup> For a woman, the impact of the quality of complaint handling design tends to be stronger  
\* $p < .10$ ; \*\* $p < .05$ ; \*\*\* $p < .01$

level predictor variable). The customer-level error term  $e_{ij}$  is normally distributed with a mean of zero and a variance of  $\sigma^2$ .

With respect to the *main effects*, for which we did not develop explicit hypotheses, results confirm the presumed positive impact of the quality of a company’s complaint handling design on perceived fairness (.33,  $p < .01$ ). Moreover, we also find support for the expected negative effect of perceived severity of the problem (-.12,  $p < .01$ ), perceived importance of the product (-.10,  $p < .05$ ), and attribution of responsibility to the company (-.07,  $p < .05$ ) on perceived fairness, as well as for the expected positive

effect of the perceived intensity of the business relationship on perceived fairness (.07,  $p < .05$ ). In addition, findings confirm the presumed positive effect of propensity to complain (.09,  $p < .05$ ) and the presumed negative effect of appreciation of quality (-.08,  $p < .05$ ). However, we find no support for the expected positive effect of age (.04,  $p > .10$ ) and educational level (.00,  $p > .10$ ), nor for the expected effect of gender (.05,  $p > .10$ ).<sup>1</sup>

<sup>1</sup> These findings remain stable when estimating a model that only includes main effects, but no cross-level interaction terms.

With regard to the hypothesized *moderating effects*, we find seven of the nine interaction terms to be significant. On a general level, this result provides evidence for our prediction that the impact (and thus importance) of complaint handling design depend on various customer-related characteristics. Specifically,  $H_{1a}$ ,  $H_{1b}$ , and  $H_{1c}$  predicted that the greater the perceived severity of the problem, the perceived importance of the product, and the perceived responsibility of the company, respectively, the stronger the impact of complaint handling design. Results show that the estimates for complaint handling design (.33) and the three problem-related customer characteristics (−.12, −.10, and −.07, respectively) have the intended direction. Also, as expected, the corresponding interaction terms are positive (.09, .09, and .10, respectively) and significant ( $p < .05$ ). Hence, we find support for all three hypotheses. The data also confirm  $H_2$ , which proposed that the higher the perceived intensity of the business relationship, the weaker the impact of complaint handling design. As expected, the estimates for complaint handling design (.33) and perceived intensity of the business relationship are positive (.07) and the related interaction term is negative (−.08) and significant ( $p < .05$ ).

$H_{3a}$  and  $H_{3b}$  predicted that the impact of complaint handling design is stronger the greater the customer's propensity to complain and appreciation of quality, respectively. The estimates of the focal predictors have the presumed direction (.09 and −.08, respectively). For  $H_{3a}$ , the interaction term is negative (−.01) and non-significant ( $p > .10$ ), offering no support for this hypothesis. By contrast, the interaction term for  $H_{3b}$  is positive (.06) and significant ( $p < .10$ ), providing (weak) support for  $H_{3b}$ .

$H_{4a}$ ,  $H_{4b}$ , and  $H_{4c}$  proposed respectively that the customer's age, educational level, and gender influence the impact of complaint handling design. Consistent with  $H_{4a}$  and  $H_{4c}$ , the estimates of the related predictors are positive (.04 and .05, respectively) and the corresponding interaction terms are positive (.08 and .07, respectively) and significant ( $p < .05$ ), confirming that the impact of complaint handling design is stronger for older and female customers. However, the interaction term related to  $H_{4b}$  is neither in the expected direction (−.01) nor significant ( $p > .10$ ). Thus, we find no support for a stronger impact of complaint handling design in the case of better-educated customers.

Finally, we calculated the difference in  $\chi^2$  (or  $-2 \log$  likelihood) between our model and a model that only includes corresponding main effects. We find that including cross-level interaction terms significantly improves model fit ( $\Delta\chi^2 = 40.61$ ,  $p < .01$ ), providing further support for our prediction that the impact (and thus importance) of

complaint handling design depend on customer-related characteristics. Following the approach suggested by Roberts (2004) and Roberts and Monaco (2006), we find that the model explains 21.1% of the total variance of perceived fairness. With regard to the percentage of variance explained at each level of analysis (Snijders and Bosker 1994), findings show that the model explains 30.6% of the company-level variance (between-company differences in perceived fairness) and 18.8% of the customer-level variance (within-company differences in perceived fairness).

#### Results of post-hoc analyses

In addition to hypotheses testing, we conducted post-hoc analyses for which we split our sample into two groups depending on the values of each customer-related characteristic previously found to significantly moderate the impact of complaint handling design. This approach is in line with recommendations in the methodology literature (Aiken and West 1993; Cohen et al. 2003) and is comparable to similar approaches, such as multi-group causal analysis, of previous marketing studies (e.g., Licata et al. 2003; Palmatier et al. 2007).

The analyses had two main goals. First, we aimed to gain additional insight into the impact of complaint handling design depending on the characteristics of the specific complaining customer (see subsequent results of between-group comparisons). The findings contribute to further filling the gap in research on moderating effects between company- and customer-related drivers of complainants' evaluation. Second, our post-hoc analyses also aimed to address another research gap that relates to the question of whether a complainant's evaluation is primarily shaped by a company's complaint handling design or is largely predetermined by the sum of customer-related characteristics. Our results of moderator analyses suggest that the answer to this question may depend on the complainant in the specific complaint situation. Thus, we analyze and compare the impact of company- and customer-related drivers within each of the two groups (see subsequent results of within-group comparisons).

For continuous characteristics, we split our sample on the basis of the median of the respective customer-related characteristic, resulting in a "low" and a "high" group. For gender, which is categorical in nature, we assigned female customers to one group and male customers to another group. Subsequently, for both groups of each characteristic, we estimated two additional multi-level models with perceived fairness as a dependent variable. As predictors, one of these models includes only the quality of a company's complaint

**Table 6** Results of post-hoc contingency analysis

Dependent variable: perceived fairness of complaint handling		Impact of drivers of perceived fairness of complaint handling (explained total variance) <sup>a</sup>		
		Complaint handling design		Customer characteristics <sup>b</sup>
<b>Customer characteristics<sup>c</sup></b>				
<i>Problem-related customer characteristics</i>				
Perceived severity of problem	low	2.2%	<	<b>8.5%</b>
	high	<b>22.3%</b>	>	14.0%
Perceived importance of product	low	4.1%	<	<b>7.7%</b>
	high	<b>14.8%</b>	>	10.1%
Attribution of responsibility to company	low	3.2%	<	<b>11.0%</b>
	high	<b>18.6%</b>	>	12.4%
<i>Relationship-related customer characteristic</i>				
Perceived intensity of business relationship	low	<b>19.8%</b>	>	15.9%
	high	6.8%	<	<b>7.4%</b>
<i>Psychographic customer characteristic</i>				
Appreciation of quality	low	8.1%	<	<b>12.7%</b>
	high	<b>12.9%</b>	>	10.9%
<i>Sociodemographic customer characteristics</i>				
Age	low	7.0%	<	<b>11.1%</b>
	high	<b>14.4%</b>	>	10.8%
Gender	male	6.2%	<	<b>9.6%</b>
	female	<b>27.4%</b>	>	18.6%

<sup>a</sup> Higher values appear in bold

<sup>b</sup> Refers to the sum of all problem-related, relationship-related, psychographic, and sociodemographic customer characteristics of the specific complaint situation

<sup>c</sup> Restricted to those that were found to significantly affect the impact of complaint handling design (see Table 5)

handling design, whereas the other model contains only the problem-related, relationship-related, psychographic, and sociodemographic customer characteristics. Table 6 displays the total variance explained by each of these models.

The *within*-group comparison of the total variance explained reveals that in the case of some customers, perceived fairness is primarily shaped by the complaint handling design and significantly less by the sum of customer-related characteristics. These customers are highly quality-focused, older, or female and perceive the problem to be highly severe, the product to be highly important, the company to be highly responsible for the problem, or the business relationship to be low in intensity. For example, if the customer perceives the problem to be highly severe, complaint handling design explains 22.3% of the total variance of perceived fairness, whereas the sum of customer-related characteristics explains only 14.0%.

The *between*-group comparison of the total variance explained by complaint handling design shows that in the case of these types of customers, perceived fairness is

driven far more strongly by complaint handling design than in the opposite case. For example, if the customer perceives the problem to be highly severe, complaint handling design accounts for 22.3% of the total variance, whereas in the opposite case, it accounts for only 2.2%. This further confirms that the importance of complaint handling design varies considerably, depending on the specific complainant.<sup>2</sup>

## Discussion

### Research issues

Our study’s main contribution to the marketing discipline relates to the adoption of a *contingency perspective* on complaint handling. Previous research has emphasized the general relevance of complaint handling.

<sup>2</sup> Moreover, additional analyses show that for both groups of each customer-related characteristic, the estimate for the effect of complaint handling design on perceived fairness is significant.

In contrast, as the first study to provide an integrative analysis of both types of drivers of complainants' evaluation (company- and customer-related characteristics), our research investigates how the relevance of a company's complaint handling design varies depending on the characteristics of the complaining customers with which a company has to deal.

Specifically, our study advances academic understanding by providing evidence that the impact of a company's complaint handling design depends on customer characteristics in the specific complaint situation.<sup>3</sup> As indicated in Table 5, the relevance of complaint handling design depends especially on several problem-related customer characteristics. This result and our finding of a significant moderating effect of a key relationship-related customer characteristic show that customer perceptions of events prior to the complaint have a particularly strong influence on the degree to which a company's complaint handling design can shape perceived fairness. Additionally, psychographic and socio-demographic characteristics of the customer also seem to play a significant role in this context. These findings complement and specify undifferentiated notions about the practical relevance of complaint handling made by previous research and help explain why companies differ considerably in their efforts to manage complaints in a systematic and customer-oriented way. These findings also strongly encourage researchers studying complaint handling and corresponding customer reactions to systematically consider moderating effects in their frameworks.

Although we find that the impact of a company's complaint handling design varies considerably depending on customer-related characteristics, post-hoc analyses (see Footnote 2) show that this impact is statistically significant across all complaining customers (e.g., no matter whether the customer perceives the problem as highly severe or not). Thus, irrespective of the specific complaining customers a company typically faces, a high-quality complaint handling design seems to always have a favorable effect. In light of this finding, the general claim of prior research remains true in principle: a company's complaint handling design is an important driver of complainants' evaluation.

<sup>3</sup> While our study focuses on the moderating effects of customer characteristics on the impact of a company's complaint handling design, it is worth mentioning that the interaction effects in our model (see Table 5) can also be interpreted in the opposite way. Specifically, our study also advances academic understanding by suggesting that a company's complaint handling design influences the impact of customer characteristics. For example, the higher the quality of company's complaint handling design, the lower is the negative effect of a customer's perceived severity of the problem, importance of the product, and attribution of responsibility, respectively, on perceived fairness. Thus, high-quality complaint handling may weaken the impact of customer perceptions of the problem. A similar reasoning can be applied to reinterpreting the other interaction effects.

However, our analyses show that the characteristics of the respective customer in the specific complaint situation may determine whether the evaluation is in fact primarily shaped by a company's complaint handling design (rather than being largely predetermined by the sum of customer-related characteristics). Specifically, we find that this is the case for situations in which the customer perceives the problem to be highly severe, the product involved to be highly important, the company to be highly responsible for the problem, or the business relationship to be low in intensity. This is also the case if the customer is highly quality-focused, older, or female. By contrast, in the opposite situations, complainants' evaluation is largely predetermined by the sum of customer-related characteristics. The finding that complainants' evaluation is not always primarily under the control of the company suggests that academics should not treat complaint handling as a "cure-all" for restoring complainants' satisfaction and loyalty, but should instead adopt a more differentiated view on the relevance of this practice. In other words, complaint handling is no more and no less than an instrument that can—to a greater or lesser extent—help mitigate customers' negative experiences with a company before, during, or after the purchase of a product.

Although the main effects of company- and customer-related drivers of complainants' evaluation were not the focus of our study, some results on these effects are nevertheless worth discussing. For example, our finding that both types of drivers generally explain a significant share of variance in perceived fairness that cannot be explained by the other type has implications for complaint research. It means that to avoid biased parameter estimates and resulting inappropriate recommendations to managers, future studies on complaint handling should cover both types of drivers, at least for statistical control purposes.

Moreover, our integrative analysis of both a company-related driver and a broad range of customer-related drivers allows us to test whether the results of the few prior studies, which all focus on a rather small subset of drivers, still hold true when controlling for a large number of other drivers. Corresponding results mostly confirm the results or predictions of prior studies (e.g., Blodgett et al. 1993; Mattila 2001). The only exception is our finding of a non-significant main effect of sociodemographic customer characteristics, which somewhat contradicts the findings of prior studies analyzing similar effects (Palmer et al. 2000; Shuptrine and Wenglorz 1981). One possible explanation is that these studies do not control for a broad range of other potential drivers of complainants' evaluation. Thus, the results of these studies might be artifacts of neglected other drivers. For example, better-educated customers are more likely to buy expensive and thus rather important products. If a study on complainants' evaluation includes a customer's educational level, but not the



perceived importance of a product (Shuptrine and Wenglorz 1981), the effect of the latter construct may be spuriously attributed to the former construct. In addition to these previously examined main effects, our study also examines some main effects that previous studies on customer post-complaint reactions have neglected. Specifically, we also contribute to complaint research by providing evidence that a customers' appreciation of quality and attribution of responsibility for the problem to the company both reduce complainants' fairness perceptions.

#### Limitations and avenues for future research

Our study has some limitations that offer possible avenues for future research. First, high-quality complaint handling guidelines may only lead to adequate compensation, complaint process, and interpersonal treatment of complainants when employees adhere to them and understand fully how these guidelines can influence customer judgements. However, as employees are heterogeneous and customers can be fickle, future studies could analyze this interesting issue in more detail. Second, with respect to attributions, we focus on the perceived locus of a cause. Future work might study other potentially relevant dimensions of attributions, such as the perceived controllability or stability of the problem. Third, we selected the perceived intensity of the business relationship as the key relationship-related characteristic relevant to our study. However, research could certainly also consider the perceived quality of the business relationship. Fourth, we measured appreciation of quality with a single item, whereas a multi-item measure might be more reliable. Fifth, our study focuses on complaints about negative customer experiences before, during, or after the purchase of a product. Thus, it is restricted to purchase-related exchanges between company and customer. Sixth, we concentrate on overall perceived fairness as the key dependent variable. This construct is conceptualized as a summary index of the three fairness dimensions (distributive, procedural, and interactional fairness). Future studies might investigate whether these dimensions are differentially influenced by the predictor variables, for example, whether distributive fairness is more strongly affected by the perceived severity of the problem than procedural fairness or interactional fairness. Seventh, our research implicitly assumes that all complainants should feel fairly treated by the company. However, the notion of customer prioritization suggests that achieving high perceived fairness in the minds of complainants with a high customer value for the company is particularly important. Finally, our framework is focused on company- and customer-related characteristics. However, in the context of complainants' evaluation of fairness, other variables such as the characteristics of the competitive

environment (e.g., the number of competitors or the attractiveness of competitor products) may also play a role. Thus, future studies analyzing this issue could contribute significantly to complaint research.

#### Managerial implications

The results of our study provide the basis for useful recommendations to managers. Our key recommendation is that companies should adjust their complaint-related efforts to the characteristics of their complaining customers, thus applying an adaptive approach to complaint handling. Such an approach incorporates complaint-related efforts on both the employee level (i.e., the operational level) and the company level (i.e., the strategic level) (see Table 7).

With regard to complaint-related efforts on the *employee* level, our findings on the main effects suggest that customer-contact staff should adapt the level of redress (i.e., compensation, complaint process, and interpersonal treatment) to the characteristics of the customer in the specific complaint situation (see Table 7). Our study identifies a broad range of such characteristics and provides guidance for their consideration. For example, the greater the severity of the problem and importance of the product to the respective customer, as well as the more the customer appears to perceive the company to be responsible for the problem, the more generous should be the employee's redress. In many cases, employees can relatively easily assess these characteristics, either by analyzing the customer's description of the problem or, if this not sufficient, through a tentative enquiry. In addition, a complaint by a highly quality-focused customer (who can often be identified by means of, for example, products bought or purchase history) should also be treated in a particularly obliging manner. To ensure a corresponding adaptation of the level of redress, managers should instruct customer-contact staff to pay attention to these characteristics and to consider them accordingly. We also advise managers to frequently monitor the carrying out of these instructions.

Our findings on the main effects might also give managers the idea to improve a complainant's perception of fairness by directly influencing some of the customer-related characteristics. For example, employees might attempt to reduce a complainant's perception of the severity of the problem or of the importance of the product involved by trying to persuade the customer that the problem is not that serious and the product is not that relevant. Also, employees might try to convince a complainant that the company is not responsible for the problem. However, if at all, these attempts should only be made very cautiously, as they may backfire by generating reactance in the complainant, thus further reducing the perception of fairness. A notable exception relates to a complainant's perceived intensity of

**Table 7** Recommendations regarding an adaptive approach to complaint handling

	Redress for specific complainant ( <i>employee</i> level, based on <i>main</i> effects of customer characteristics)	Total investments in complaint handling design ( <i>company</i> level, based on <i>moderating</i> effects of customer characteristics)
<i>Problem-related customer characteristics</i>		
Perceived severity of problem	greater	greater
Perceived importance of product	greater	greater
Attribution of responsibility to company	greater	greater
<i>Relationship-related customer characteristic</i>		
Perceived intensity of business relationship	less	less
<i>Psychographic customer characteristics</i>		
Propensity to complain	less	— <sup>a</sup>
Appreciation of quality	greater	greater <sup>b</sup>
<i>Sociodemographic customer characteristics</i>		
Age	— <sup>a</sup>	greater
Educational level	— <sup>a</sup>	— <sup>a</sup>
Gender	— <sup>a</sup>	greater

<sup>a</sup> As its corresponding effect is found to be non-significant, this customer characteristic can be neglected for the respective decision

<sup>b</sup> As the corresponding effect is found to be significant only on the .10 level, this recommendation is made with some caution

the business relationship with the company. By building close and long-lasting business relationships with customers, as well as by pointing to the high intensity of the relationship when handling a specific complaint, a company may create goodwill that leads customers to perceive the handling of their complaint more favorably.

With regard to complaint-related efforts on the *company* level, our findings on the moderating effects provide valuable guidance to managers on how to adjust their firm's total organizational investments in complaint handling design (see Table 7). For instance, according to our results, firms selling products such as pharmaceuticals, machinery, or automobiles, which have the potential to cause serious problems or which are particularly relevant to customers, should especially focus on establishing high-quality complaint handling guidelines. Moreover, firms typically serving older, female, or highly quality-focused customers, such as in the up-scale clothing, jewelry, and cosmetics industry, are also well advised to emphasize the appropriate design of complaint handling activities. Through complaint handling design, these firms can considerably shape complainants' fairness perceptions so that significant organizational investments may have a good chance to pay off. To these firms' managers who are responsible for complaint handling, this finding represents a valuable argument for internally justifying corresponding investments to top-level executives. Also, it suggests that these managers dedicate significant attention, energy, and resources to the

design of complaint-related activities and encourages rethinking by those managers who have so far downplayed the effectiveness and efficiency of organizational measures intended to ensure adequate complaint handling.

By contrast, the complaint handling design of other firms (e.g., those selling products that typically do not cause serious problems for the customer) may have only a relatively small, albeit statistically significant, impact. Rather than aiming to excel in complaint handling by investing heavily in implementing and adhering to corresponding guidelines for employees, these firms may be better off pursuing a somewhat less ambitious approach. Such an approach might include reliance on a customer-oriented organizational culture that ensures, at least to a certain extent, that complaining customers are treated appropriately.

Finally, our study underscores the relevance of customer-related knowledge for proper decision making on complaint handling. As this knowledge is typically more available in B2B markets than in B2C markets, especially companies operating in B2C markets must proactively ensure that decision makers on both the employee and company level possess sufficient customer-related information. On the employee level, some of this information—such as the perceived severity of the problem or attribution of responsibility—can only be obtained while interacting with the complainant. Hence, employees should be guided as to which information to collect and how best to collect it (e.g., which questions to ask the customer or which indicators to use).

**Appendix**

**Table 8** Scale items for construct measures

Constructs/factors	Items	CA/CR/AVE
(1) Quality of complaint handling design <sup>a</sup>	<p>(a) <i>Quality of outcome guidelines for complaint handling</i></p> <p>(b) <i>Quality of process guidelines for complaint handling</i></p> <p>(c) <i>Quality of behavioral guidelines for complaint handling</i></p>	formative
(a) <i>Quality of outcome guidelines for complaint handling</i> <sup>a</sup>	<p><i>To what extent do you agree with the following statements?</i></p> <p>In our company/business unit, guidelines for providing compensation to complaining customers ...</p> <p>... are clearly defined.</p> <p>... are relatively simple.</p> <p>... give employees who are responsible for complaint handling the decision authority which is necessary for a satisfactory problem resolution.</p> <p>... empower frontline employees to award redress up to a certain degree.</p> <p>... allow for a generous redress.</p> <p>... include instructions that the type of redress should be in line with complainants' needs.</p> <p><i>Selected item sources:</i> Hart et al. 1990; Homburg and Fürst 2005; Mattila 2001; Palmer et al. 2000.</p>	.85/.85/.49
(b) <i>Quality of process guidelines for complaint handling</i> <sup>a</sup>	<p><i>To what extent do you agree with the following statements?</i></p> <p>In our company/business unit, guidelines for registering and processing customer complaints ...</p> <p>... are clearly defined.</p> <p>... are relatively simple.</p> <p>... include time standards that define the normal or maximum duration of the entire process.</p> <p>... include instructions to inform customers about the current status of their complaint within a reasonable period of time.</p> <p>... include instructions to record complaint information in a fast, complete, and structured manner.</p> <p>... include instructions to forward complaint information to the person in charge in a fast, complete, and structured manner.</p> <p><i>Selected item sources:</i> Andreassen 2000; Berry 1995; Homburg and Fürst 2005; TARP 1986.</p>	.88/.88/.57
(c) <i>Quality of behavioral guidelines for complaint handling</i> <sup>a</sup>	<p><i>To what extent do you agree with the following statements?</i></p> <p>In our company/business unit, guidelines for employees' behavior toward complaining customer ...</p> <p>... are clearly defined.</p> <p>... are relatively simple.</p> <p>... include instructions to be polite and helpful.</p> <p>... include instructions to show concern and understanding.</p> <p>... include instructions to take responsibility for the problem.</p> <p>... include instructions to behave in a customer-oriented way.</p> <p><i>Selected item sources:</i> Homburg and Fürst 2005; Tax and Brown 1998.</p>	.91/.91/.65
(2) Perceived severity of problem <sup>b</sup>	<p><i>To what extent do you agree with the following statements?</i></p> <p>The problem with the company was very serious.</p>	.78/.79/.50

**Table 8** (continued)

Constructs/factors	Items	CA/CR/AVE
	I had to struggle with the consequences of the problem for a long time. The problem caused great damage to the purchased product. The problem caused great financial loss to me. <i>Selected item sources:</i> Bearden and Oliver 1985; Gilly and Gelb 1982; Mattila 2001.	
(3) Perceived importance of product <sup>b</sup>	<i>To what extent do you agree with the following statements?</i> Compared to other products I buy, this product is fairly important to me. I depend a great deal on this product. The purchase of this product is relatively expensive. <i>Selected item sources:</i> Blodgett et al. 1993; Conlon and Murray 1996.	.82/.82/.61
(4) Attribution of responsibility (for problem) to company <sup>c</sup>	<i>To what extent do you agree with the following statements?</i> The problem was completely the fault of the company. The problem was completely my fault (r). Who was responsible for the problem? <i>Selected item sources:</i> Krishnan and Valle 1979; Richins 1983.	.87/.88/.71
(5) Perceived intensity of business relationship <sup>b</sup>	<i>To what extent do you agree with the following statements?</i> I have been a customer of the company for a long time. In the past, I have frequently purchased products from the company. <i>Selected item sources:</i> Palmer et al. 2000; Ward and Dagger 2007.	.91 / <sup>i</sup>
(6) Propensity to complain <sup>b</sup>	<i>To what extent do you agree with the following statements?</i> In the past, when experiencing a problem, I have frequently complained to the company in question. In the future, when experiencing a problem, I am very likely to complain to the company in question. <i>Selected item sources:</i> Bearden and Oliver 1985; Singh 1990.	.65 / <sup>i</sup>
(7) Appreciation of quality <sup>d</sup>	<i>When purchasing this product, how important is the quality of the product (compared to the price of the product)?</i> <i>Please allocate 100 points in total according to the relative importance of these criteria.</i> Quality of this product: ____ points Price of this product: ____ points	h / <sup>i</sup>
(8) Age <sup>e</sup>	How old are you?	h / <sup>i</sup>
(9) Educational level <sup>f</sup>	What is your highest level of education achieved?	h / <sup>i</sup>
(10) Gender <sup>g</sup>	What is your gender?	h / <sup>i</sup>
(11) Perceived fairness of complaint handling <sup>b</sup>	(a) <i>Perceived distributive fairness of complaint handling</i> (b) <i>Perceived procedural fairness of complaint handling</i> (c) <i>Perceived interactional fairness of complaint handling</i>	formative
(a) <i>Perceived distributive fairness of complaint handling</i> <sup>b</sup>	<i>To what extent do you agree with the following statements?</i> I received an adequate compensation from the company.	.91/.91/.68



**Table 8** (continued)

Constructs/factors	Items	CA/CR/AVE
	I received about as much compensation from the company as in the context of previous complaints. In solving my problem, the company gave me exactly what I needed. Overall, the compensation I received from the company was fair. <i>Selected item sources:</i> Smith et al. 1999; Tax et al. 1998.	
(b) Perceived procedural fairness of complaint handling <sup>b</sup>	To what extent do you agree with the following statements? The company quickly reacted to my complaint. The company gave me the opportunity to explain my point of view of the problem. Overall, the company's complaint handling procedure was fair. <i>Selected item sources:</i> Smith et al. 1999; Tax et al. 1998.	.86/.86/.67
(c) Perceived interactional fairness of complaint handling <sup>b</sup>	To what extent do you agree with the following statements? The employees seemed to be very interested in my problem. The employees understood exactly my problem. I felt treated rudely by the employees. (r) The employees were very keen to solve my problem. Overall, the employees' behavior during complaint handling was fair. <i>Selected item sources:</i> McCollough et al. 2000; Smith et al. 1999.	.88/.89/.62

CA coefficient alpha; CR composite reliability; AVE average variance extracted; (r) reversed item

<sup>a</sup> Seven-point rating scale with “strongly disagree” and “strongly agree” as anchors

<sup>b</sup> Five-point rating scale with “strongly disagree” and “strongly agree” as anchors

<sup>c</sup> First and second item: Five-point rating scale with “strongly disagree” and “strongly agree” as anchors  
Third item: Five-point rating scale with “Myself” and “The Company” as anchors

<sup>d</sup> Answers for “Quality of this product” were entered into the data analysis

<sup>e</sup> Ten-category scale

<sup>f</sup> Five-category scale

<sup>g</sup> Two-category scale

<sup>h</sup> Owing to single-item operationalization, coefficient alpha cannot be computed

<sup>i</sup> Because a confirmatory model with three or less indicators has no degrees of freedom, composite reliability and average variance extracted cannot be computed

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