Original Article

Identification of the four-factor structure of customers' perceived fairness

Received (in revised form): 26th May 2011

Kyootai Lee

is an assistant professor of Technology Management at UNIST (Ulsan National Institute of Science and Technology). He received PhD in Business Administration from University of Missouri-St.Louis. Dr Lee is serving as an editorial board member for *Journal of Global Information Technology Management*. His papers are published in *The Data Base for Advances in Information Systems*, *Journal of Organizational Computing and Electronic Commerce*, *International Journal of Information Management*, and *Journal of Global Information Technology Management*, among others. Dr Lee's research is currently focusing on individual and organizational innovativeness, and management of high-tech firms.

Kailash Joshi

is a professor of MIS at the University of Missouri, St. Louis. He received PhD in management information systems from Indiana University in 1986. Before joining academics, he worked in industry in the areas of purchasing, materials, production planning and systems for nine years. He also serves as Associate Editor for the *Journal of Information Technology Case and Application Research*. His papers have appeared in *MIS Quarterly*, *Decision Sciences*, *IEEE Engineering Management*, *Information Systems Journal*, *Information and Management*, *DataBase*, and other journals.

Young Kyun Kim

is an assistant professor of Marketing/MIS at the University of Incheon, South Korea. He received MBA and BS in Management from Indiana State University, 1991 and PhD in Marketing from Inha University, South Korea. Before joining academics, he worked in Johnson and Johnson, Kumho Asiana Group, USACCK, BSC Consulting for 16 years. He also serves as Associate Editor for the *Journal of the Korean Industrial Information Systems Research*. His papers have appeared in Academy of Management annual meeting, ACM conference, *Journal of the Korean Industrial Information Systems Research*, and other journals.

ABSTRACT Customers' perceived fairness has long been investigated. Despite its importance in the contemporary marketing psychology, a factor structure of perceived fairness has not been identified in entirety. The current study investigated the dimensionality of customers' perceived fairness and provides evidence of the construct validity of its four dimensions. The results confirmed a four-factor structure of customers' perceived fairness (distributive, procedural, interpersonal and informational fairness) and their distinct nature. In addition, these four dimensions were found to form a second-order factor of overall fairness, which strongly influences customers' satisfaction with and loyalty to retailers.

Journal of Targeting, Measurement and Analysis for Marketing (2011) 19, 113–126. doi:10.1057/jt.2011.12;
published online 4 July 2011

Keywords: distributive fairness; procedural fairness; interpersonal fairness; informational fairness; customer satisfaction; loyalty

INTRODUCTION

Individuals' perception of justice has been known to strongly affect how/what they think, feel and behave in many settings.¹ Especially, investigation of the role of customers' perceived fairness has been a critical thrust in understanding customers' attitudes in exchange relationships, buyer-seller conflict

Correspondence: Kyootai Lee
School of Technology Management, Ulsan National Institute of Science and Technology, 100 Banyeon-Ri, Ulju-Gun, Ulsan Metropolitan City 689-798, Republic of Korea
E-mail: kyootai@gmail.com

management and service recovery in the marketing contexts. Since Bagozzi's² seminal work on the role of equity in the relationship building process, numerous marketing studies^{3–6} have examined distributive, procedural and interactional fairness. The primary findings of these prior studies can be summarized by stating that customers' perceived fairness, *albeit manifested in its different dimensions identified by different scholars*, affect customers' post-purchase attitudes, emotions and behaviors.

What remains lacking in this stream of fairness research may be the identification of a factor structure of fairness. Fairness has been viewed as a multifaceted construct in the marketing context, consisting of three dimensions: distributive, procedural and interactional justice.^{3,4} Distributive, procedural and interactional aspects address the outcome of a transaction, the process of a transaction and the interpersonal treatment during a transaction, respectively. More recently psychologists have identified a fourth dimension of fairness, 'informational fairness', which focuses on the achievement of relevant information during a transaction.^{7–9} However, informational justice has been somewhat outside the purview of the marketing research. A four-factor structure of fairness that includes informational fairness (besides distributive, procedural and interpersonal fairness) and its construct validity has not been tested in entirety in the marketing context. Rather informational fairness has been considered as a part of interactional justice (a notable exception is Mattila and Cranage¹⁰). Based on the motivation, this study aims to investigate the four dimensions of fairness in the marketing context. This study will be of interest for researchers in understanding the dimensionality of overall fairness and its causal links. It is due to that researchers can have a better theoretical and empirical foundation for understanding the influence of overall fairness on customer behavior only if they have a better understanding of the aspects of overall fairness captured by these constructs. In addition, by crystallizing the structure of fairness construct, this study will be of importance for practitioners in identifying which behaviors are particularly necessary for enhancing customers' perception of overall fairness that influence post-purchasing evaluation of customers.

LITERATURE REVIEW AND HYPOTHESES

Dimensions of fairness in market exchange relationships

Research in justice theories in the social psychology discipline started with Adams's¹¹ seminal work on equity theory. In the initial theory, the focus was the *perceived fairness of outcomes*, also called *distributive fairness*. Adams stressed that people are likely to be concerned more about the fairness of their outcomes based on their inputs, rather than the absolute level of outcomes. Owing to its focus on outcomes, distributive justice has been found to be related mainly to cognitive, affective and behavioral reactions to particular outcomes.¹² Consistent with these results in psychology, a considerable body of literature^{13,14} in the marketing context has supported the impact of customers' perceived distributive fairness on customer satisfaction, perceived service quality and repurchase intentions.

Later, another stream of research highlighted the perceived fairness of the process, *procedural justice*, which refers to *the way that the outcomes are achieved*.¹⁵ Leventhal¹⁶ emphasized consistency across people and time, provision of accurate information, and conformance with standards of ethics or morality to ensure procedural justice. In the marketing context, procedural justice has been employed mainly in the contexts of service encounters and complaint handling. Prior scholars have identified that perceived procedural justice positively influences customer satisfaction and service quality in service encounters¹⁷ and satisfaction with complaint handling.^{6,18}

These two factors of fairness, distributive and procedural, have been dominant in both psychology and marketing contexts for a couple of decades. However, the integrity of the two-factor structure of fairness was questioned when Bies and Moag⁷ introduced *interactional fairness*, which refers to *'interpersonal treatment people receive as procedures are enacted'*¹⁸ (p. 386). Although some scholars^{19, 20} have argued that interactional justice is a part of procedural justice, others including marketing scholars^{3,4,6} have

identified the independence of interactional justice from the other two types of justice in a research model, supporting their discriminant validity. Since interpersonal interaction between buyers and sellers is critical for the resolution of complaint situations²¹ and in service encounters,²² interactional justice has been found to influence satisfaction with complaint handling,^{6,18} customers' behavioral and emotional reactions,^{3,4} service quality evaluation,²² and satisfaction with service encounters.²³

In the recent psychology literature, interactional justice has been further divided into interpersonal and informational justice, indicating a four-factor-structure of fairness.⁸ This new model of fairness is based on Greenberg's²⁴ argument – the respect aspect of interactional justice may be considered as an interpersonal facet of distributive justice whereas the explanation aspect of interactional justice may be viewed as an interpersonal facet of procedural justice. In the psychological context, Colquitt⁸ following Bies and Moag⁷ identified *interpersonal justice* as *fairness regarding how one is treated during the implementation of procedures* and *informational justice* as *fairness regarding whether the explanations and information related to the procedures adopted are properly conveyed to the participants during the implementation of procedure*. The distinct nature of interpersonal and information justice has been supported by prior psychology studies. For example, Greenberg²⁵ empirically identified that four dimensions of interactional justice such as justification, truthfulness, respect and propriety are grouped into two aspects such as explanation (informational justice) and sensitivity (interpersonal justice). Most recently, Colquitt⁸ found that distributive, procedural, interpersonal and information justice are distinct dimensions in the organizational contexts. However, *this four-factor structure of fairness has not been tested in the marketing context*.

Instead, previous marketing studies have paid greater attention to interpersonal aspects of fairness in their conceptualization and measures of interactional fairness, and the 'explanation of information' has been addressed as an element of interactional justice in a few studies.⁶ For

example, Maxham and Netemeyer^{26,27} and Smith and Bolton²⁸ focused on interpersonal treatment in conceptualizing interactional justice, and measured interactional justice related to respect, courtesy, empathy and politeness. In other words, informational aspect of justice seems to be mainly outside the purview of interactional justice. However, prior psychology research^{15,29} has argued that individuals' fairness perceptions tend to be influenced by the opportunities to obtain relevant information for their decision-making. Similarly, Mattila and Cranage¹⁰ argued that providing informed choices to customers can enhance their perception of informational justice in the service recovery process. In other words, buyers expect information that helps them make better decisions. Without the full disclosure of it, buyers may perceive the transaction to be unfair.

In sum, we believe that the four types of fairness, that is distributive, procedural, interpersonal and information fairness are likely to tap on different aspects of fairness such as outcome, procedure, interpersonal treatment and relevant information during the market exchange, respectively, proposing a four-factor structure of fairness in the marketing context.

Hypothesis 1: *Customers' perceived fairness will have a four-factor structure such that distributive, procedural, interpersonal and information fairness are distinct from each other.*

In addition to the four-factor structure of justice, we suggest that the four dimensions of fairness may form a factor of overall fairness, as these four factors are likely to share the common concept of fairness. This argument is also in line with prior findings, which identified a high level of correlation among the fairness constructs. For example, Skarlicki and Latham³⁰ found a high level of correlation (0.78) between interactional and procedural justice. Mansour-Cole and Scott³¹ and Sweeny and McFarlin³² identified significant correlations (0.33 and 0.72, respectively) between distributive and procedural justice. In addition, in the three-factor structure model of fairness, del Río-Lanza *et al*⁴ and Beugre and Baron³³ found significant correlations among distributive,

procedural, and interactional justice with minimum correlation of 0.42 and 0.38, respectively. Furthermore, in the four-factor structure model of justice, Colquitt⁸ found that the four dimensions of justice are correlated with one another with a minimum correlation of 0.22 in a university setting, and with a minimum correlation of 0.14 in an organizational setting. Carr³⁴ also found that the four types of fairness are inter-correlated with one another (minimum correlation: 0.33). These prior studies hint that the four types of fairness may share a root of overall fairness. Thus, based on the above discussion, we propose the following hypothesis:

Hypothesis 2: *Customers' perceived overall fairness will have a second-order four-factor structure such that distributive, procedural, interpersonal and information fairness are interrelated with each other, forming a second-order factor of overall fairness.*

According to Giese and Cote,³⁵ researchers have used different definitions of satisfaction based on the combinations of the three elements of response type (emotional or cognitive), a focus of response (expectations, products, consumption experiences) and a particular time of response (after consumption, after choices, and so on). This study focuses on customer cognitive satisfaction in their consumption experiences with retailers after the purchase of products/services based on our research focus.

Customer satisfaction may be one of the most commonly investigated outcomes in justice research in the marketing area. Especially, numerous prior studies have identified that distributive fairness^{4,6,18,27,36} and procedural fairness^{6,18,27,36} are likely to influence customer satisfaction. In addition, interactional fairness has been found to influence customer satisfaction.^{4,23,27,36,37} Unlike the above three sub-dimensions of fairness, the influence of informational fairness on informational justice has been recently investigated in a few studies. For example, Carr³⁴ identified the significant relationship of informational justice with user satisfaction. Matilla and Cranage¹⁰ found that

informational fairness influences customer satisfaction during service recovery. Additionally, psychology studies^{8,9} have argued that informational justice can influence individuals' cognitive and emotional reactions to the treatment that they have experienced. Especially, in a market transaction context, customers seek information about products/services that they wish to buy at service encounters, and the information helps customers form a positive assessment of the retailer.³⁸ So, if customers have perceived provision of a fair amount of information about the products/services during the service encounter with a retailer, they might evaluate the retailer favorably.

The above discussions, which identified the positive relationships of fairness sub-dimensions with customer satisfaction, support that overall perception of fairness (composed of the above four sub-dimensions) may influence customer satisfaction. This notion is further supported by Carr's³⁴ results that systemic fairness, which is considered as an evaluation of overall fairness, has significant correlations with its four dimensions and influences satisfaction with a service provider. Smith *et al*³⁶ similarly argued that though the dimensions of fairness may be presented as independent events in economic interactions (exchanges) between buyers and sellers, many of the interactions are likely to occur simultaneously. Thus, overall perception of fairness, which is a second-order construct of the four dimensions, may influence customer satisfaction.

Hypothesis 3: *Customers' perceived overall fairness, a second-order factor, will positively influence satisfaction with the retailer.*

Customer loyalty, which refers to an attitude toward a particular seller accompanied with a strong patronizing intention,^{39,40} has also been a key dependent variable in fairness studies in the marketing area. Prior studies^{6,18} have identified that fairness is an antecedent of satisfaction and/or trust, which is in turn an antecedent of commitment and/or loyalty. However, though relatively fewer marketing studies have identified

the direct influence of fairness on customer loyalty, previous studies have found the impact of fairness on commitment and (re)purchase intention, which are associated with customer loyalty. These studies can indirectly support the possible relationships of the four types of fairness with loyalty.

Customers' perception of distributive fairness during their transactions with sellers may include various issues such as paid price, saved time and product quality. If customers perceive fairness in these issues, they may form repurchase intention and commitment,^{27,41} which can be related to loyalty. Procedural justice has been known to be important in exchange relationships since it can enhance the probability of maintaining long-term relationships between customers and retailers based on mutual agreements.^{6,42} In addition, commitment which is required for developing loyalty⁴³ has been addressed as a main outcome of procedural fairness in previous psychology studies.^{8,9}

Customers' perception of interpersonal fairness while interacting with retailers can lead to how they form attitudes towards the retailers. These notions have been indirectly supported in relationship quality and service quality studies. For example, customer loyalty is likely to be influenced by assurance (for example, courtesy) of a salesperson,²² a salesperson's attitude toward relationship building⁴⁴ and behavioral guidelines related to politeness,¹⁸ all of which can be considered as a part of interpersonal fairness. Further, Chebat and Slusarczyk⁴⁵ found that loyalty is affected by interactional justice, measured by honesty and politeness (considered the dimensions of interpersonal justice in this article).

Informational fairness highlights customers' perception of the attainment of relevant information about products/services during a transaction. Although the relationship between informational fairness and loyalty has not been examined in prior studies, the evidence reported in prior studies seems to indirectly support the relationship. For example, Schwenk⁴⁶ argued that individuals' commitment can be escalated by enhancing their confidence through

representativeness heuristics, which are also influenced by the quality of information provided. In addition, loyalty was proposed as developing in four phases: cognitive, affective, conative and action phase.^{40,47} Of the four phases, since the cognitive phase is based on the information about brands, products and services in an initial phase, customers may increase their level of loyalty, if they obtain a fair amount of high-quality information about the products and services. For example, customers who buy car insurance may increase their perception of informational fairness and subsequently loyalty to the insurance agent, when they are provided complete information about the benefits of the policy and opportunities to save on the premium based on different discounts.

Based on the above arguments related to the relationship between the four types of fairness and loyalty, it may be reasonable that customers' perception of overall fairness that is composed of the four dimensions may increase their loyalty. Thus the following hypothesis is proposed.

Hypothesis 4: *Customers' perceived overall fairness, a second-order factor, will positively influence their loyalty to the retailer.*

In addition to customers' perceived overall fairness, customer satisfaction with the retailers is likely to enhance future purchase intentions.⁴⁸ More specifically, Swan and Trawick⁴⁹ averred that customer satisfaction decides intentions to patronize retailers in the near future. Based on the above reasoning, prior studies^{50,51} found a positive influence of customer satisfaction on loyalty. In addition, considering the direct effect of overall fairness on satisfaction (Hypothesis 3) and loyalty (Hypothesis 4), satisfaction derived from overall fairness perception may further enhance loyalty. Hence, the following hypothesis is suggested.

Hypothesis 5: *Satisfaction will positively influence loyalty to the retailer, and thus it will positively mediate the relationship between customers' perception of overall fairness and loyalty.*

Sample and procedure

Small-sized retailers and their customers in Korea were the context of this study. Customers, who purchased products at the stores in September 2009, participated in the survey. This would ensure temporal consistency in the time span of responses among the customers who shopped at the participating retailers. We conducted a survey with the assistance of a market research firm and a small to medium retailers' association in Korea. In the first step, an official participation request was sent through the market research firm, outlining research objectives and procedures, to the retailers listed with the association. A total of 61 firms agreed to participate in the research. Of the retailers, 28 deal in clothing, 8 in electronics, 7 in cosmetics and 18 in other items. Second, with the cooperation of the retailers, the market research firm obtained names, cellular phone numbers and email addresses of 20 customers from each retailer who purchased a product within the past 2 weeks. The research firm sent an e-mail invitation to the customers of each store with a 5000 Korean *won* (approximately 4.5 *US dollar*) discount coupon for their next purchase at the store. The research firm sent the invitations to 1220 customers (20 customers per retailers). This process produced 253 usable responses, representing an overall response rate of 20.7 per cent. Respondents from each retailer ranged from 2 to 6. Among the respondents, 160 (63.2 per cent) were female and 93 (36.8 per cent) male. Information about respondents' age and monthly expense on personal items is summarized in Table 1.

Measures and analytical strategy

Measures of all the constructs were adapted from prior studies. Specifically, distributive fairness was

measured based on Leventhal's¹⁶ scale, procedural fairness based on Colquitt,⁸ informational fairness based on Carr,³⁴ interpersonal justice based on Bies and Moag,⁷ satisfaction with a retailer based on Maxham and Netemeyer²⁶ and loyalty based on Srinivasana *et al.*⁵² However, it should be noted that we modified the items to meet the context of this study since some items were used in other contexts. All the items used in this study were translated and back-translated into Korean in several times to reduce the threat from measurement equivalence. An original English version of the questionnaire is included in Appendix.

Based on the data, we conducted a series of analyses. First, we assessed measurement validation by conducting confirmatory factor analysis using structural equation modeling (SEM)⁵³ with MPLUS in order to identify the best fitting structure of perceived fairness. Then we examined the hypothesized relationships. In the confirmatory factor analysis, we utilized maximum likelihood estimation. Since we aimed to find the factor structure of fairness, we compared different factor models with one another. Once we found the best fitting factor structure, we combined the measurement model with a structural model, which contained the hypothesized relationships.

RESULTS

Measurement validation

Since a four-factor structure of fairness in the marketing context has not been investigated in its entirety, we compared five different factor structures to identify the best fit model for the fairness items listed in Appendix. The first model was a one-factor model with all the fairness items, which indicates one large fairness factor. The

Table 1: Information about customers

Age			Monthly expense (Unit: 10000 Korean Won)		
Category	Freq	%	Category	Freq	%
Under 20	2	0.8	Less than 30	29	11.5
21–25	73	28.9	31–50	64	25.3
26–30	63	24.9	51–70	32	12.6
31–35	22	8.7	71–90	26	10.3
36–40	46	18.2	91–100	38	15.0
over 41	47	18.6	more than 100	64	25.3

second model was a two-factor model, with four items of distributive fairness as one factor and the rest of the items of procedural fairness as another factor. This is based on the two-factor model which was dominant in psychology and marketing literature. The third model was a three-factor model, with four items of distributive fairness as one factor, another four items of procedural fairness as the second factor, and the rest of the items of interactional fairness as the third factor. This model is based on the recent literature that has considered interactional fairness as a single factor, consisting of interpersonal and informational fairness. These three rival models are compared to two hypothesized models. The fourth model was a four-factor model, with four items of distributive fairness as one factor, four items of procedural fairness as the second factor, four items of interpersonal fairness as the third factor and four items of informational fairness as the fourth factor. The fifth model was a second-order four-factor model, with a second-order factor of overall fairness which consists of distributive, procedural, interpersonal and informational justice. Fit indices for the above five models of factor structures are shown in Table 2. In evaluating the fitness of the models, we utilized χ^2/df , comparative fit index (CFI), Tucker-Lewis index (TLI), standardized root mean square residual (SRMR) and root mean square error of approximation (RMSEA). χ^2/df below 5 indicates a good fit based on Wheaton *et al.*'s.⁵⁴ Values of CFI and TLI above 0.90 are considered good.⁵⁵ SRMR ≤ 0.05 is considered a good fit, and a value ≤ 0.10 is acceptable.⁵⁶ In addition, RMSEA ≤ 0.08 is preferable, and a value between 0.08 and 0.10 is considered acceptable.⁵⁷

As shown in Table 2, the one-factor, the two-factor and the three-factor models were not found to have an acceptable fit. Unlike these three

models, the results of the four-factor model revealed an acceptable fit ($\chi^2/df=3.78$, CFI=0.94, TLI=0.92, RMSEA=0.10, SRMR=0.06). In addition, the second-order four-factor model had an acceptable fit ($\chi^2/df=3.38$, CFI=0.95, TLI=0.94, RMSEA=0.10, SRMR=0.06). Although 0.10 of RMSEA may be on the borderline for being considered acceptable, we employed multiple criteria as recommended by Schermelleh-Engell *et al.*,⁵⁶ since RMSEA is sensitive to overfit.⁵⁸ Based on these results, we concluded that the four-factor model and the second-order four-factor model are acceptable, and significantly better than other three models.

Having found that the second-order four-factor model as well as the four-factor model fit the data best, we examined the full model (measurement and structural models) along with other variables. Table 3 presents the correlations among the latent variables, reliabilities and descriptive statistics. We evaluated the reliabilities of the scales by means of Cronbach's alpha and AVE. The alphas of all the constructs were higher than 0.81, which indicates good reliability.⁵⁹ The minimum AVE was 0.85, which was higher than 0.50.⁶⁰

Next, we examined convergent validity by investigating the significance of the factor loadings. Figure 1 shows the resulting model based on the research model. All the items loaded significantly on their pre-designed constructs with minimum standardized loadings of 0.60. In addition, as shown in Table 3, the square root of the AVE is greater than all other cross-correlations, confirming discriminant validity.⁶⁰ Thus, we believed that the overall measurement validation was confirmed.

Respondents may have different levels of satisfaction, loyalty and overall fairness depending

Table 2: Comparison of fairness factor structures

Factor structure	χ^2	df	χ^2/df	CFI	TLI	SRMR	RMSEA
One-factor	1677.63	104	16.51	0.68	0.64	0.09	0.25
Two-factor	1179.51	103	11.45	0.78	0.75	0.08	0.20
Three-factor	987.30	101	9.78	0.82	0.79	0.10	0.19
Four-factor	370.25	98	3.78	0.94	0.92	0.06	0.10
Second-order four-factor	337.60	100	3.38	0.95	0.94	0.06	0.10

Table 3: Correlations, means, standard deviations and reliabilities

	1	2	3	4	5	6	7
1. Distributive fairness	0.98	—	—	—	—	—	—
2. Procedural fairness	0.72***	0.96	—	—	—	—	—
3. Interpersonal fairness	0.70***	0.70***	0.98	—	—	—	—
4. Informational fairness	0.70***	0.75***	0.69***	0.98	—	—	—
5. Overall fairness	0.87***	0.89***	0.87***	0.91***	—	—	—
6. Satisfaction	0.71***	0.61***	0.67***	0.64***	0.72***	0.92	—
7. Loyalty	0.74***	0.64***	0.61***	0.63***	0.73***	0.81***	0.97
Mean	4.31	4.15	4.15	3.81	4.10	4.56	4.11
Standard deviation	1.06	1.05	1.21	1.48	1.06	1.13	0.93
Cronbach's α	0.96	0.86	0.96	0.96	—	0.84	0.81
Average variance extracted	0.97	0.92	0.96	0.96	—	0.93	0.85

*** $P < 0.01$, ** $P < 0.05$, * $P < 0.1$.

Bolded italic diagonal elements are the square roots of AVE.

Figure 1: Overall results.

$\chi^2 = 540.31$ ($df = 202$), CFI = 0.94, TLI = 0.93, RMSEA = 0.08, SRMR = 0.06, ** $P < 0.01$, * $P < 0.05$.

on the retailer, introducing a bias in results. Before testing hypotheses, possible differences among the responses in terms of the research constructs were investigated. The results of ANOVA revealed that the responses are not significantly different based on the retailers, that is $P = 0.41$ for satisfaction, $P = 0.68$ for loyalty and $P = 0.90$ for overall fairness. Thus, respondents'

affiliation with a retailer does not appear to be a factor that influences the results in this study.

Hypotheses testing

Hypotheses 1 and 2 predicted a four-factor structure and a second-order four-factor structure of fairness, respectively. As shown in Table 2, both models outperformed one-factor, two-factor

and three-factor models. In addition, we confirmed the discriminant and convergent validity of four fairness factors as shown in Table 3 and Figure 1. Hence, we concluded that the four factors (namely distributive, procedural, informational and interpersonal fairness) are distinct with each other, and further forming a second-order factor overall fairness. Thus, *Hypotheses 1 and 2 were accepted.*

The research model in Figure 1 provided a good fit to the data: $\chi^2 = 540.31$, $df = 202$, CFI = 0.94, TLI = 0.93, RMSEA = 0.08 and SRMR = 0.06. Hypothesis 3 suggested the positive effect of overall fairness on customer satisfaction. As shown in Figure 1, overall fairness had a significant and positive path coefficient ($\beta = 0.69$, $P < 0.01$) to customer satisfaction, *thereby accepting Hypothesis 3.* Likewise, Hypothesis 4, which suggested the positive effect of overall fairness on customer loyalty, had a significant and positive path coefficient ($\beta = 0.48$, $P < 0.01$) to customer loyalty, *thereby accepting Hypothesis 4.*

Hypothesis 5 suggested a mediatory role of customer satisfaction in the relationship between

overall fairness and loyalty. The mediating role of customer satisfaction was investigated as recommended by MacKinnon and Dwyer.⁶⁰ First, the relationship between the independent variable (for example, overall fairness perception) and the mediator (for example, customer satisfaction) was investigated. Second, a relationship between the mediator and the dependent variable (for example, loyalty) was assessed. As reported, customers' perception of overall fairness positively influenced customer satisfaction, meeting the first condition. In addition, customer satisfaction had a significantly and positive path coefficient with loyalty ($\beta = 0.54$, $P < 0.01$), meeting the second condition. Thus, the indirect effect of overall fairness on loyalty via satisfaction was positive and significant ($\beta = 0.37$, $P < 0.01$), supporting Hypothesis 5. The total effect of overall fairness on loyalty was assessed to be 0.85, consisting of a direct effect of 0.48 and an indirect effect through satisfaction of 0.37.

In addition to the above analysis, a rival model (shown in Figure 2) that defines relationships of sub-dimensions of fairness with satisfaction and

Figure 2: Rival model.

$\chi^2 = 517.43$ ($df = 194$), CFI = 0.95, TLI = 0.94, RMSEA = 0.08, SRMR = 0.06, ** $P < 0.01$, * $P < 0.05$.

loyalty was also examined in order to identify nomological distinction of the sub-dimensions. The rival model had a good fit to the data: $\chi^2 = 517.43$, $df = 194$, CFI = 0.95, TLI = 0.94, RMSEA = 0.08 and SRMR = 0.06. The results revealed that distributive fairness influences customer satisfaction ($\beta = 0.50$, $P < 0.01$) and loyalty ($\beta = 0.31$, $P < 0.01$). While interpersonal fairness had a significant path coefficient ($\beta = 0.16$, $P < 0.01$), informational fairness did not. These results further buttress that interpersonal and informational fairness are distinct in addition to the discriminant validity discussed in the previous section. Although the rival model had a satisfactory fit to data, the research model had slightly higher R^2 for customer satisfaction and loyalty than the rival model. In other words, ΔR^2 (R^2 of the research model – R^2 of the rival model) was 1.2 per cent (= 47.5 per cent–46.3 per cent) for satisfaction and 0.5 per cent (88.2 per cent–87.7 per cent) for loyalty. These results buttress that the research model with the second-order factor has a unique portion in explaining customer satisfaction and loyalty.

DISCUSSIONS

As stated at the outset, previous marketing studies related to fairness have focused on a limited set of fairness dimensions based on their research interest. The results of this study theoretically contribute to the fairness research in the marketing context by revealing that fairness in the marketing contexts can be best conceptualized as four distinct factors: distributive, procedural, interpersonal and informational fairness. These results are consistent with current organizational psychology studies, which identified a four-factor structure of organizational justice.⁸ Especially, this study identifies that information and interpersonal fairness are two distinct constructs rather than a single construct of interactional fairness as discussed in the previous studies. This result buttresses Greenberg's²⁴ arguments that interpersonal fairness is considered as an interpersonal aspect of distributive fairness while informational justice may be viewed as interpersonal aspect of procedural fairness. Further, this study expands previous fairness

studies by supporting that these four factors of fairness can form a second-order factor of *overall fairness*. This result is in line with previous studies,^{4,8,34} which identified significant correlations among fairness dimensions. The second-order construct reflects the sales transactions with multiple activities,³⁴ which can influence customers' perception of overall fairness. Nomologically, as expected, the results revealed that customers' perception of overall fairness strongly influences customers' satisfaction with the retailer that in turn affects loyalty to the retailer. These results seem to support the findings of previous studies,^{2,5,36} which highlighted the importance of customers' perceived fairness in forming positive attitudes. Overall, fairness *in its entirety* should be critical for the enhancement of customers' positive attitudes.

Interestingly, the results based on the rival model revealed that satisfaction is influenced only by distributive fairness and loyalty is affected by distributive and interpersonal fairness. Since many previous studies have identified the relationship of each dimension of fairness with customer satisfaction and loyalty, these results may seem to be contrary to them. However, the results of this study may be related to the specific marketing context in this study. Since the products purchased by the respondents are commodities (based on retailer profiles), the effect of customers' distributive fairness on their reaction (focusing on price) may be comparatively more salient. In addition, it should be noted that all of the dimensions of fairness had significant and high levels of correlations with each other as well as with satisfaction and loyalty. That is, when the path coefficients of individual fairness dimensions to satisfaction and loyalty are separately identified, they may be significant (*Indeed, they are*). These results are similar to Maxham and Netemeyer's²³ study, which found that distributive fairness had the strongest influence on customers' reactions such as satisfaction, loyalty and word-of-mouth, though other individual aspects of fairness such as procedural and interactional fairness were also found to be associated with customers' reactions.

Marketing researchers and practitioners have focused particularly on service failure and

recovery. The finding of this study can contribute to marketers' better understanding of overall fairness in the context of service failure by clarifying the structure of customers' perception of overall fairness relevant to outcomes, procedures, inter-personal relationships and information. Based on the results of this study, marketers can manipulate overall fairness in the service recovery process on the basis of the four factors. They can make specific guidelines for developing service recovery procedures that should include appropriate compensation, acknowledgement of failure, taking responsibility for it, apology to the consumer for the inconvenience and timely information about recovery processes, and so on, similar to Mattila and Cranage's¹⁰ recommendations.

LIMITATIONS AND FUTURE STUDIES

Similar to other positivistic studies, the current study also has limitations that invite criticisms and open avenues for future research. First, the current study has a limitation to show the nomological validity of the four sub-dimensions of overall fairness. Although the rival model employed in this study demonstrates the importance of distributive fairness for customers' satisfaction and loyalty, the model still has a limitation to address different outcomes of the four sub-dimensions of perceived fairness. Thus, it may be of great interest for researchers to investigate how four sub-dimensions of customers' perceived fairness can be related to different outcomes.

Second, this study was conducted in a Korean context. Although we took care to ensure measurement equivalence through multiple translations between Korean and English versions of the questionnaire, it could still influence the results of factor structure. In addition, the relationship of fairness dimensions with satisfaction and loyalty may be different when similar studies are conducted in other countries, based on different cultural influences. For example, the result that interpersonal fairness influences customer loyalty to the retailer along with distributive fairness may be derived from

the Korean culture, which emphasizes honor and decency in social interactions.⁶¹ Thus, it is required for future studies to identify the relationships of four types of fairness with customer attitudes in other cultural contexts.

Third, the results of this study should not be over-generalized though the results of factor structures should hold. As discussed earlier, this study was based on a marketing context that focuses primarily on commodity products. Thus, customers are likely to be more sensitive to price and time issues, compared to other aspects, in their consideration of transaction experiences with their retailer. However, in instances of service failure, a more complex situation emerges where close coordination may be needed with the consumer to identify alternative recovery options and implement them in line with a customer's preferences. It may be more critical to keep the consumer continually informed on the causes of failure as well as on the progress of the proposed and the completed recovery actions in a timely manner. Acknowledgement of the responsibility for the failure also needs to be communicated in an appropriate manner. Thus informational and interpersonal fairness may be even more important in the contexts of service failure and recovery. Hence, future researchers should investigate the relationships of the four fairness dimensions with customer attitudes in different market contexts. It may be worth investigating in future research if the relative importance of different fairness dimensions is same for consumers in the contexts with service failure and recovery compared to others without such failures.

REFERENCES

- 1 Tyler, T.R. and Smith, H.J. (1998) Social justice and social movements. In: D.T. Gilbert and S.T. Fiske (eds.) *The Handbook of Social Psychology*. New York, NY: McGraw-Hill, pp. 595–629.
- 2 Bagozzi, R.P. (1975) Marketing as exchange. *Journal of Marketing* 39(October): 77–81.
- 3 Blodgett, J.G., Hill, D.J. and Tax, S.S. (1997) The effects of distributive, procedural, and interactional justice on postcomplaint behavior. *Journal of Retailing* 73(2): 185–210.
- 4 del Río Lanza, A., Vazquez-Casielles, R. and Diaz-Martin, A. (2009) Satisfaction with service recovery: Perceived justice and emotional responses. *Journal of Business Research* 62(8): 775–781.
- 5 Oliver, R.L. and Swan, J.E. (1989) Consumer perceptions of interpersonal equity and satisfaction in transactions:

- A field survey approach. *Journal of Marketing* 53(April): 21–35.
- 6 Tax, S., Brown, S.W. and Chandrashekar, M. (1998) Customer evaluations of service complaint experiences: Implications for relationship marketing. *Journal of Marketing* 62(April): 60–76.
- 7 Bies, R.J. and Moag, J.F. (1986) Interactional justice: Communication criteria of fairness. In: R.J. Lewicki, B.H. Sheppard and M.H. Bazerman (eds.) *Research on Negotiations in Organizations*. Greenwich, CT: JAI Press, pp. 43–55.
- 8 Colquitt, J.A. (2001) Dimensionality of organizational justice: Construct validation of a measure. *Journal of Applied Psychology* 86(3): 386–400.
- 9 Kernan, M.C. and Hanges, P.J. (2002) Survivor reactions to reorganization: Antecedents and consequences of procedural, interpersonal and informational justice. *Journal of Applied Psychology* 87(5): 916–928.
- 10 Mattila, A.S. and Cranage, D. (2005) The impact of choice on fairness in the context of service recovery. *The Journal of Services Marketing* 19(5): 271–279.
- 11 Adams, J.S. (1963) Toward an understanding of inequity. *Journal of Abnormal Psychology* 67: 422–436.
- 12 Cohen-Charash, Y. and Spector, P.E. (2001) The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes* 86(2): 278–321.
- 13 Sinha, I. and Batra, R. (1999) The effect of consumer price consciousness on private label purchase. *International Journal of Research in Marketing* 16(3): 237–251.
- 14 Vaidyanathan, R. and Aggarwal, P. (2003) Who is the fairest of them all? An attributional approach to price fairness perceptions. *Journal of Business Research* 56(6): 453–463.
- 15 Thibault, J. and Walker, L. (1975) *Procedural Justice: A Psychological Analysis*. Hillsdale, NJ: Earlbaum.
- 16 Leventhal, G.S. (1980) What should be done with equity theory? New approaches to the study of fairness in social relationships. In: K. Gergen, M. Greenberg and R. Willis (eds.) *Social Exchange: Advances in Theory and Research*. New York, NY: Plenum Press, pp. 27–55.
- 17 Hui, M.K. and Bateson, J.E. (1991) Perceived control and consumer choice on the service experience. *Journal of Consumer Research* 18(September): 174–185.
- 18 Homburg, C. and Fürst, A. (2005) How organizational complaint handling drives customer loyalty: An analysis of the mechanistic and the organic approach. *Journal of Marketing* 69(July): 95–114.
- 19 Tyler, T.R. and Bies, R.J. (1990) Beyond formal procedures: The interpersonal context of procedural justice. In: J. Carroll (ed.) *Applied Social Psychology and Organizational Settings*. Hillsdale, NJ: Earlbaum, pp. 77–98.
- 20 Mooreman, R.H. (1991) Relationship between organizational justice and organizational citizenship behaviors: Do fairness perceptions influence employee citizenship? *Journal of Applied Psychology* 76: 845–855.
- 21 Jacoby, J. and Jaccard, J.L. (1981) The sources, meaning, and validity of consumer complaint behavior: A psychological analysis. *Journal of Retailing* 57(Fall): 4–24.
- 22 Parasuraman, A. and Grewal, D. (2000) The impact of technology on the quality-value-loyalty-chain: A research agenda. *Academy of Marketing Science* 28(1): 168–174.
- 23 Bitner, B., Booms, M. and Tetreault, M.S. (1990) The service encounter: Diagnosing favorable and unfavorable incidents. *Journal of Marketing* 54(January): 71–85.
- 24 Greenberg, J. (1993) The social side of fairness: Interpersonal and informational classes of organizational justice. In: R. Cropanzano (ed.) *Justice in the Workplace: Approaching Fairness in Human Resource Management*. Hillsdale, NJ: Lawrence Erlbaum Associates, pp. 79–103.
- 25 Greenberg, J. (1990) Employee theft as a reaction to underpayment inequity: The hidden cost of pay cuts. *Journal of Applied Psychology* 75: 561–568.
- 26 Maxham, J.G. and Netemeyer, R.G. (2002) Modeling customer perceptions of complaint handling over time: The effects of perceived justice on satisfaction and intent. *Journal of Retailing* 78(4): 239–252.
- 27 Maxham, J.G. and Netemeyer, R.G. (2003) Firms reap what they sow: The effects of shared values and perceived organizational justice on customers' evaluations of complaint handling. *Journal of Marketing* 67(January): 46–62.
- 28 Smith, A.K. and Bolton, R.N. (2002) The effect of customers' emotional responses to service failures on their recovery effort evaluations and satisfaction judgments. *Journal of the Academy of Marketing Science* 30(1): 5–23.
- 29 Folger, R. (1993) Reactions to mistreatment in work. In: J.K. Murnighan (ed.) *Social Psychology in Organizations: Advances in Theory and Research*. Englewood Cliff, NJ: Prentice-Hall, pp. 161–183.
- 30 Skarlicki, D.P. and Latham, G.P. (1997) Leadership training in organizational justice to increase citizenship behavior within a labor union: A replication. *Personnel Psychology* 50: 617–633.
- 31 Mansour-Cole, D.M. and Scott, S.G. (1998) Hearing it through the grapevine: The influence of source, leader-relations, and legitimacy on survivors' fairness perceptions. *Personnel Psychology* 51: 25–54.
- 32 Sweeny, P.D. and McFarlin, D.B. (1997) Process and outcome: Gender differences in the assessment of justice. *Journal of Organizational Behavior* 18: 83–98.
- 33 Beugre, C.D. and Baron, R.D. (2001) Perceptions of systemic justice: The effects of distributive, procedural, and interactional justice. *Journal of Applied Social Psychology* 31(2): 324–339.
- 34 Carr, C.L. (2007) The FAIRSERV model: Consumer reactions to services based on a multidimensional evaluation of service fairness. *Decision Sciences* 38(1): 107–130.
- 35 Giese, J.L. and Cote, J.A. (2000) Defining customer satisfaction. *Academy of Marketing Science Review* 1: 1–34.
- 36 Smith, A.K., Bolton, R.N. and Wagner, J. (1999) A model of customer satisfaction with services encounters involving failure and recovery. *Journal of Marketing Research* 36(August): 356–372.
- 37 Tyler, T.R. (1989) The psychology of procedural justice: A test of the group-value model. *Journal of Personality and Social Psychology* 57(5): 830–838.
- 38 Bolton, R.N. (1998) A dynamic model of the duration of the customer's relationship with a continuous service provider: The role of satisfaction. *Marketing Science* 17(1): 45–65.
- 39 Kumar, V. and Shah, D. (2004) Building and sustaining profitable customer loyalty in the 21st century. *Journal of Retailing* 80(4): 317–330.
- 40 Oliver, R.L. (1999) Whence consumer loyalty? *Journal of Marketing* 63: 33–44.
- 41 Kelley, S.W., Hoffman, D. and Davis, M.A. (1993) A typology of retail failures and recoveries. *Journal of Retailing* 69(4): 429–452.

- 42 Seiders, K. and Berry, L.L. (1998) Service fairness: What it is and why it matters. *Academy of Management Executive* 12(2): 8–21.
- 43 Beatty, S.E., Kahle, L.R. and Homer, P. (1988) The involvement–commitment model: Theory and implications. *Journal of Business Research* 16: 149–167.
- 44 Beatty, S.E., Mayer, M., Coleman, J.E., Reynolds, K.E. and Lee, J. (1996) Customer–sales associate retail relationship. *Journal of Retailing* 72(3): 223–247.
- 45 Chebat, J.C. and Slusarczyk, W. (2005) How emotions mediate the effects of perceived justice on loyalty in service recovery situations: An empirical study. *Journal of Business Research* 58(5): 664–673.
- 46 Schwenk, C.R. (1986) Information, cognitive biases, and commitment to a course of action. *Academy of Management Review* 11(2): 298–310.
- 47 Yi, Y. and La, S. (2004) What influences the relationship between customer satisfaction and repurchase intention? Investigating the effects of adjusted expectations and customer loyalty. *Psychology and Marketing* 21(5): 351–373.
- 48 Cole, S.T. and Illum, S.F. (2006) Examining the mediating role of festival visitors' satisfaction in the relationship between service quality and behavioral intentions. *Journal of Vocational Marketing* 12: 160–173.
- 49 Swan, J.E. and Trawick, J.F. (1981) Disconfirmation of expectations and satisfaction with a retail service. *Journal of Retailing* 57: 40–67.
- 50 Lai, F., Griffin, M. and Babin, B.J. (2009) How quality, value, image, and satisfaction create loyalty at a Chinese telecom. *Journal of Business Research* 62: 980–986.
- 51 Lee, Y., Lee, C., Lee, S. and Bain, B.J. (2008) Festivalscapes and patrons' emotions, satisfaction, and loyalty. *Journal of Business Research* 61: 56–64.
- 52 Srinivasan, S.S., Anderson, R. and Ponnarolu, K. (2002) Customer loyalty in e-commerce: An exploration of its antecedents and consequences. *Journal of Retailing* 78: 41–50.
- 53 Jöreskog, K.G. and Sörbom, D. (1996) *LISREL 7: A Guide to the Program Applications*, 2nd edn. Chicago, IL: SPSS.
- 54 Wheaton, B., Bengt, M., Duane, A. and Gene, S. (1977) Assessing reliability and stability in panel models. In: D. Heise (ed.) *Sociological Methodology*. San Francisco, CA: Jossey-Bass, pp. 84–136.
- 55 Bentler, P.M. and Bonnet, D.G. (1980) Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin* 88: 588–606.
- 56 Schermelleh-Engell, K., Moosbrugger, H. and Müller, H. (2003) Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online* 8: 23–74.
- 57 Browne, M.W. and Cudeck, R. (1989) Single sample cross-validation indices for covariance structures. *British Journal of Mathematical and Statistical Psychology* 37: 62–83.
- 58 Rigdon, E.E. (1996) CFI versus RMSEA: A comparison of two fit indexes for structural equation modeling. *Structural Equation Model* 3: 369–379.
- 59 Nunnally, J.C. (1978) *Psychometric Theory*. New York, NY: McGraw-Hill.
- 60 Fornell, C. and Larcker, F.D. (1981) Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research* 18: 382–388.
- 61 Kim, D., Pan, G. and Park, H. (1998) High- versus low- context culture: A comparison of Chinese, Korean, and American culture. *Psychology and Marketing* 15(6): 507–521.

APPENDIX

Items Employed

Procedural Justice (Colquitt⁸)

- (1) The transactional procedures provided by FIRM NAME at the store were applied consistently.
- (2) I had influence over the transactional outcomes arrived at by FIRM NAME at the store.
- (3) FIRM NAME has fair policies and practices for my transactions at the store.
- (4) With respect to its policies and procedures, FIRM NAME handled my transaction in a fair manner at the store.

Informational Justice (Carr³⁴)

- (1) FIRM NAME at the store gave timely and specific explanations for my transaction.
- (2) FIRM NAME at the store provided reasonable explanations for my transaction.
- (3) FIRM NAME at the store gave thorough explanations for my transaction.
- (4) FIRM NAME at the store tailored the explanations to my needs for my transaction.

Distributive Justice (Leventhal¹⁶)

- (1) The transactional outcome from the FIRM NAME at the store was appropriate for the time and money that I spent.
- (2) The final outcome of the transaction that I received from FIRM NAME at the store was fair, given the time and money.
- (3) I think that the transactional outcome from FIRM NAME at the store reflects the time and money that I have put.
- (4) Considering the time and money that I spent, I got what I deserved from FIRM NAME at the store.

Interpersonal Justice (Bies and Moag⁷)

- (1) FIRM NAME treated you in a polite manner at the store.
- (2) FIRM NAME treated you with dignity at the store.
- (3) FIRM NAME treated you with respect at the store.

- (4) FIRM NAME treated you courteously at the store.

Overall Firm Satisfaction (Maxham and Netemeyer²⁶)

- (1) I am satisfied with my overall experience with FIRM NAME.
- (2) As a whole, I am not satisfied with FIRM NAME.
- (3) How satisfied are you overall with the quality of FIRM NAME's services?

Loyalty (Srinivasana *et al*⁵²)

- (1) I try to use FIRM NAME whenever I need to make a purchase.
- (2) When I need to make a purchase, this FIRM NAME is my first choice.
- (3) I like using FIRM NAME.
- (4) To me FIRM NAME is the best retailer to do business with.
- (5) I believe that FIRM NAME is my favorite retail store.