The role of value in the delivery process of hospitality services

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Abstract

In the services marketing literature only scant attention has been paid to the concept of customer value as a basis for evaluative judgment. So far, value has been defined primarily in monetary terms ("value for money"). In this paper the role of customer value in the service delivery process is examined. On the basis of axiology, value is positioned as a three-dimensional concept: (a) emotional, (b) practical and (c) logical. In a restaurant setting it is examined how value evolves during the course of the service delivery process. This service delivery process was broken down into four distinct stages: (a) reception, (b) ordering, (c) meal and (d) check-out. Each of these stages was profiled in terms of the aforementioned value dimensions. In addition, stage satisfaction scores were gathered. It was examined whether and to what extent carry-over effects occurred with respect to the different stages of the restaurant visit. A considerable number of carry-over effects were found. Furthermore, the results of a subgroup analysis of the total sample of restaurant customers on the basis of the purpose of their visit yielded a number of differences concerning the three value dimensions which in turn might provide a basis for segmentation of restaurant customers. © 1998 Elsevier Science B.V. All rights reserved.

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1. Introduction

During the past decade, various competing models have been advanced to explain consumer evaluations of services (Iacobucci et al., 1996). Many of these models include service quality and satisfaction as their basic focal constructs, departing from a comparison between customer expectations and service provider performance (Iacobucci et al., 1994; Parasuraman et al., 1994). Recently, however, it has been argued that the concept of value is a 'key competitive factor defining the way services are bought and sold' (Zeithaml and Bitner, 1996, p. 32). It has even been argued that value can be considered as the basis for service quality (Garvin, 1987). Although the conceptualization of value in a services setting has received some attention (e.g., Holbrook, 1994), evidence is scarce with respect to the relationship between theoretical definitions and corresponding empirical measures. Likewise, the conceptual interrelationship between value and satisfaction as competitive evaluative judgments has not been dealt with in the services marketing literature (Rust and Oliver, 1994). These issues have been largely overlooked in the literature and merit further clarification. In his seminal article on the nature of customer value in services, Holbrook (1994) emphasizes that explanation of value in services would be well served by adopting a perspective that takes different types of services into account as differences in customer value can be expected to occur more between rather than within service categories.

Acknowledging Holbrook's call for a research perspective that cuts across various service industries, we have undertaken a number of empirical studies with regards to the role of customer value in service settings as hotels (De Ruyter et al., 1997a), museums (De Ruyter et al., 1997b) and restaurants. In this article we will report the results of our study in the restaurant setting. Within the overall customer value research project, this study was specifically aimed at developing and validating a set of operational measures for the customer value concept and using these measures as a basis for customer segmentation with respect to the service delivery process. This article is structured as follows. After reviewing previous conceptualizations of customer value we discuss a three-dimensional framework based on writings in axiology or the theory of value. Secondly, we will report the results of our study

in which the role of value during the restaurant visit was examined. In conclusion, we will address the theoretical as well as the managerial implications of a customer value-based approach to the service delivery process.

2. Conceptualizing customer value

Value has frequently been conceptualized as the outcome of a price/quality ratio or the comparison of what one receives with the cost of acquisition (Zeithaml, 1988; Anderson, 1995; Oliver, 1996). According to this point of view, service customers will attempt to maximize the level of quality in relation to the disutility of price. Price in this case may be interpreted also in terms of psychological price in terms of time and distance. It has been argued that service providers that maximize quality minus the disutility from prices will be favored by customers. Therefore, while the quality of a service may be conceived of as good, its net or marginal value may still be rated poor if the price of that service is perceived to be too high (Rust and Oliver, 1994). This conceptualization of value as a proxy for the quality price ratio may be labeled the value-for-money approach. This approach very much focuses our attention to value as a cognitive construct, as an explicit comparison between price and quality is made by consumers. However, it has been emphasized recently that affect should also be considered in determining postpurchase responses (Oliver, 1994, 1996). If value is perceived as a summary cognitive and affective response then an affective component should also be incorporated in a conceptualization of value.

On the basis of writings in the realm of axiology, Hartman (1967, 1973) has proposed a generic and formal model of value that takes both affective and cognitive aspects into account. This model consists of three dimensions; (a) extrinsic, (b) intrinsic and (c) systemic. We will briefly explain and translate these dimensions. The distinction between extrinsic and intrinsic is one of the few undisputed issues in the area of axiology. The extrinsic value dimension reflects that the use of a particular service can be regarded as a means to a specific end. This dimension has also been termed the utilitarian or instrumental component of the value construct (Holbrook, 1994). Intrinsic value on the other hand, represents the emotional evaluation of a service. It reflects the affective part of the consumer response to a service offering or the service delivery as end in itself (Hirschman and Holbrook, 1982). Finally, systemic value pertains to the inherent relationship between concepts in their systematic interaction, e.g., the relationship between what one gives and what one

gets. It points to rational or logical aspects of a service episode. Hartman's three-dimensional model reflects the basic three-partite conceptualization that is often made in axiology (e.g., Lewis, 1946; Taylor, 1961; Olson, 1967), although different terminology is frequently used. Similarly, Mattsson (1991) who was the first to use Hartman's model in a services marketing context, introduced new labels: emotional (E), practical (P) and logical (L), with $E > P > L$ in terms of richness of content. By using these three dimensions, Hartman attempts to establish a matching of concrete and abstract properties of a concept. The emotional dimension refers to the 'Gestalt experience' of an encounter. The practical dimension refers to concrete objects in the physical world which can be grasped. The logical dimension encompasses the formal world, the rationality of a sequence of events. In relation to the service delivery process, the emotional dimension reflects the hedonic experience of the service episode, the practical dimension represents its functional elements and the logical elements pertain to the rational aspects. Hartman's model was used by Danaher and Mattsson (1994) in order to explain satisfaction with the hotel visit. Hence, service satisfaction is treated as the superordinate construct. Consumer value judgments, therefore, contribute to satisfaction which has been viewed as a summary cognitive and affective response to all elements of the service delivery process (Rust and Oliver, 1994). Holbrook (1994), p. 27 defines value as an *interactive relativistic consumption preference experience*. This posits value not only as an evaluative customer judgment regarding the service object, but also focuses our attention to the subject-object interaction in the process of service delivery. Thus, value – by definition – is associated with the service delivery process. Therefore, we will deal with the role of customer value during the services delivery process in more detail in the next section.

3. Customer value in the service delivery process

A central characteristic of services is that value is formed primarily during the (service) experience or process, not solely by its consequential object, the service output. This is often referred to as the inseparability of the service from its production setting. Unlike goods, many services are consumed in the process of production. Lewis (1946), p. 539 states that 'value is some potentiality of the object for realizations of satisfaction in experience'. The service delivery experience has not been studied extensively so far. Some authors have argued that the service process is more important than the service

outcome (Lehtinen and Lehtinen, 1982; Brown and Swartz, 1989). Moreover, it has been advanced that there may be distinct stages in the service delivery process that customers use to base their evaluative judgment on (Singh, 1991; Danaher and Mattsson, 1994). This suggests that a service delivery process can be modeled in terms of a number of distinct stages depending on the nature of the service under investigation (Singh, 1991; Armstrong, 1992).

Some of the stages of a restaurant visit, for instance, are characterized by personal interaction (reception by restaurant personnel), others are described in non-personal terms (e.g., a wide selection of food). During the visit to a restaurant, a customer experiences a number of sequential stages. In the case of the restaurant service delivery process this would begin by checking in at the reception of the restaurant and end with presenting the check to the customer and saying good-bye (checking-out). In addition, the customer will evaluate the table, the menu card, the ordering, the food and the service by restaurant personnel. At the same time, the different stages can be described in terms of the three value dimensions that were introduced above (emotional, practical and logical). The practical dimension focuses on physical and concrete objects in the service process (e.g., food), while the logical dimension pertains to an abstract and rational sequence of events, procedures (helping customers in an efficient manner). The emotional value dimension reflects the feelings of the respondent in relation to the stage in the service delivery process. While an operationalization of the practical dimension will often focus on objects and hence use nouns, the logical and emotional dimensions will frequently describe the experience, using verbs. For instance, a restaurant guest expects to be welcomed in an efficient manner (a logical sequence of events), to be welcomed in a pleasant manner (an affective evaluation of an experience) and to be assigned to a table (an object). Each value dimension may have both a negative and a positive inclination through the use of adjectives and adverbs (e.g., a good table). In the operationalization of the dimensions we use short key words rather than sentences to denote the difference between object, sequence and gestalt of the experience.

The three dimensions can be related to satisfaction. Moreover, as the customer experiences the various stages in a particular sequential order, customer's satisfaction would also be influenced by the stages preceding the present stage. Alternatively, satisfaction at the ith stage (S_i) denotes satisfaction with the service delivery during the ith stage. S_i would be determined by the three value dimensions E_i, P_i and L_i. In addition, S_i is determined also by E_{i-1}, P_{i-1} and L_{i-1}, etc. Thus, a carry-over effect across stages may be expected. According to such a micro-perspective, the dynamics of consumer

evaluations during the service delivery process can be modeled. The development of cumulative satisfaction during the process can be monitored and strong and weak links in the satisfaction generating chain can be identified. Customer-perceived value ultimately determines satisfaction with the service delivery process.

Finally, satisfaction of customers with the restaurant visit may vary according to the specific purpose of that visit. Romm (1989) has argued that the interaction between people in a restaurant is in fact the core business in up-market restaurants. Similarly Andersson (1992) argues that the satisfaction of social and intellectual needs during a restaurant service delivery process is equally important as the satisfaction of physiological needs. However, a difference in emphasis between the different value dimensions might be expected contingent on the purpose of visiting the restaurant (e.g., a business lunch, a romantic celebration). This in turn might also influence customers' perception of the service delivery process. In order to examine the role of value as a determinant of satisfaction with the service delivery process, to assess the impact of carry-over effects across the various stages and to investigate possible differences between customer segments in terms of their value profiles an empirical study was undertaken. In the next section we will report on the results of this study.

4. An empirical study

4.1. Research setting and questionnaire design

In order to test the approach an empirical study was carried out among guests of restaurants. We selected two high-priced restaurants in a mid-sized city in the Netherlands and asked their guests to participate in the study. As stated earlier, during the typical service delivery process the customer experiences a number of sequential stages. On the basis of two interviews with restaurant management we identified four service stages: (a) reception (b) ordering, (c) meal, (d) check-out. In each of these stages of the service delivery process we measured value and satisfaction. We designed a questionnaire in which we clearly identified the four stages by different page colors. Besides, each part of the questionnaire was printed on a separate page. Guests were approached directly after they entered the restaurant and received the questionnaire booklet from the waiter. Next, they were asked to fill out each part of the questionnaire immediately after they completed the corresponding ser-

vice stage. This way of collecting data secures evaluations directly after experiencing each service stage.

4.2. Measures

Each part of the questionnaire contained three questions regarding three generic value dimensions (E_i, P_i, L_i) as defined by Hartman (1967, 1973), followed by a fourth item asking for how satisfied the guest is with respect to the stage he/she just experienced (S_i). Emotional aspects were operationalized by a short statement on the feelings guests sensed when experiencing a service stage. The practical dimension was covered by stressing the functional and physical aspects of the service. Finally, the logical aspect was reflected by the rational and abstract characteristics of the service stage, i.e. right or wrong, correct or incorrect, etc. A practical problem that occurred was that the questionnaire had to be completed while experiencing the "dining experience" leaving limited time for answering the questionnaire. We chose for presenting as short as possible items and easy-to-read questions in a simple small booklet. All items were measured on a 11-point Likert-type scale (ranging from "completely disagree" to "completely agree"). Table 1 contains part

Table 1
Measures of the value dimensions

Stage	Description	Value dimension	Actual phrase used
1.	Reception	Emotional (E_1)	Pleasant welcome
		Practical (P_1)	Good seating
		Logical (L_1)	Efficient procedure
		Stage satisfaction (S_1)	
2.	Ordering	Emotional (E_2)	Caring waiter
		Practical (P_2)	Good menu
		Logical (L_2)	Efficient ordering
		Stage satisfaction (S_2)	
3.	Meal	Emotional (E_3)	Attractive food
		Practical (P_3)	Good food
		Logical (L_3)	Value-for-money
		Stage satisfaction (S_3)	
4.	Check-out	Emotional (E_4)	Pleasant goodbye
		Practical (P_4)	Easy check out
		Logical (L_4)	Correct bill
		Stage satisfaction (S_4)	

of the questionnaire in order to convey an impression of the format that was presented to the guests. For each stage *(i)*, E_i, P_i, L_i refer respectively to the emotional, practical and logical value dimension. Stage satisfaction was measured as a single-item measure on a 11-point scale (ranging from "very dissatisfied" to "very satisfied".) As stated earlier, the satisfaction score is likely to be determined by the preceding stage experience as well as the previous stages experienced by the guests. At the end of the questionnaire the repurchase intention of guests was included for reasons of validation. We used a 4-point symmetric response scale ranging from "I will certainly not return to this restaurant" to "I will certainly return to this restaurant".

Satisfaction of guests with the restaurant may vary according to the specific purpose of that visit. On the basis of the interviews with restaurant management, we discriminated between visiting the restaurant for business purposes, celebration purposes and as a substitute for a regular meal, in cases where the guest had no time to prepare a meal. Interestingly, this categorization could be related to the three value dimensions that were introduced above. It could be argued that visiting the restaurant for business purposes is related primarily to the logical aspects of the service delivery process. It could also be maintained that customers visiting the restaurant for celebration purposes will stress the emotional aspects, while visiting the restaurant for reasons of lack of time to prepare a meal reflects the practical value dimension.

4.3. Data collection and sample characteristics

While entering the restaurant each third guest was asked to fill in the questionnaire. Data collection took place during 14 consecutive days. In total, 300 guests (150 in each restaurant) were approached personally with a brief explanation of the research. Eight guests indicated that they were not willing to participate. Of the remaining 292 questionnaires, 38 were not handed in or not completely filled out. Hence, 254 of the questionnaires could be used for further analysis.

The sample consisted of an almost equal number of male (49%) and female (51%) respondents. The majority of the respondents was over 30 years old (<20 yr, 4.7%; 21–30 yr, 34.0%; 31–50 yr, 40.7% and >50 yr, 20.6%.) Furthermore, more than half of the respondents dined out 3 or more times a month. On average, the dinner took 97.5 min (SD = 33.0) and the party consisted of 3.2 persons (SD = 2.4). From Table 2 it can be concluded that guests are slightly more satisfied at the beginning and end of the service delivery process.

Table 2
Means, standard deviations and intercorrelations

Variable	M	SD	Intercorrelations [a,b]					
			1	2	3	4	5	6
1. Satisfaction reception	9.19	1.68	1.00					
2. Satisfaction ordering	8.74	1.57	0.69	1.00				
3. Satisfaction meal	8.96	1.41	0.68	0.75	1.00			
4. Satisfaction check-out	9.18	1.49	0.59	0.62	0.67	1.00		
5. Overall satisfaction	9.01	1.37	0.58	0.72	0.69	0.70	1.00	
6. Repurchase intention	3.51	0.55	0.21	0.21	0.32	0.23	0.31	1.00

[a] Two-tailed test.
[b] All correlation coefficients are significant at $\alpha = 0.01$.

5. Results

5.1. Construct validation

Construct validity is a necessary condition for theory development and testing, particularly when newly developed constructs are used (Bagozzi, 1980; Cronbach and Meehl, 1955; Peter, 1981). Traditionally, techniques, such as item-total correlation, exploratory factor analysis and coefficient alpha have been employed to assess construct validity (Churchill, 1979; DeVellis, 1991; Ghiselli et al., 1981; Nunnally and Bernstein, 1994). More recently, however, the use of confirmatory factor analysis has been recommended for construct validation (Bagozzi et al., 1991; Bollen, 1989; Gerbing and Anderson, 1988; Steenkamp and Trijp, 1991).

In this study we will use second-order confirmatory factor analysis, since the stage satisfaction constructs are embedded as indicators of overall satisfaction, a higher order construct (Bagozzi et al., 1991; Bollen, 1989; Gerbing and Anderson, 1988; Marsh and Hocevar, 1985). The path model for the second-order confirmatory factor analysis is depicted in Fig. 1.

We used LISREL 7 to obtain maximum likelihood estimates for the parameters in the second-order confirmatory factor analysis model. (Jöreskog and Sörbom, 1989). From Table 3 it can be seen that the fit of the model is good: $\chi^2(50) = 51.87$ ($p = 0.40$), CFI $= 0.98$, RMSR $= 0.05$, and TLI $= 0.99$. The values of CFI and TLI well exceed the recommended cut-off value of 0.9 (Bagozzi and Yi, 1988). Furthermore, the value of RMSR indicates a good fit of the data to the hypothesized second-order factor analysis model (Bagozzi and Yi, 1988; Hoelter, 1983). We also inspected the normalized residuals and found
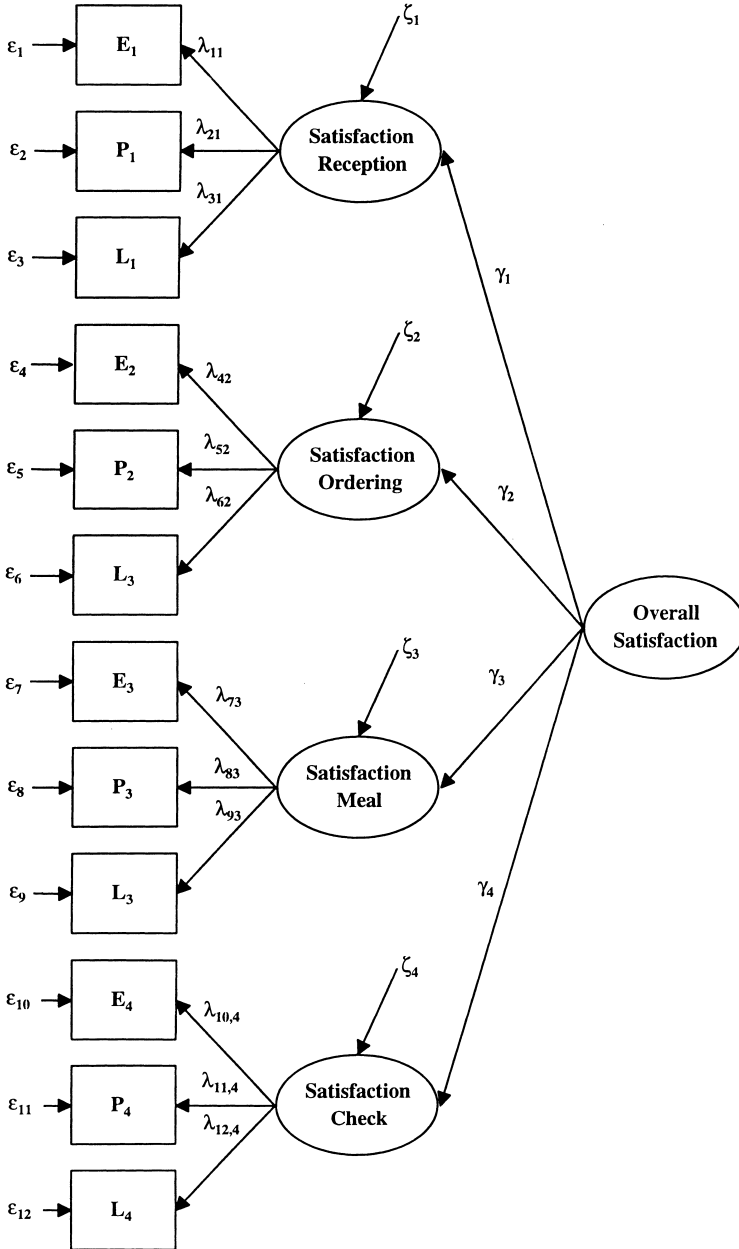
Fig. 1. Path model for second-order confirmatory factor analysis.

Table 3
Results of second-order confirmatory factor analysis

First-order factor loadings (λ_{ij})

Items	Satisfaction reception	Satisfaction ordering	Satisfaction meal	Satisfaction check-out
1. E_1	0.83 [a]			
2. P_1	0.70 (7.15) [b]			
3. L_1	0.83 (8.79)			
4. E_2		0.79 [a]		
5. P_2		0.75 (7.45)		
6. L_2		0.87 (8.90)		
7. E_3			0.82 [a]	
8. P_3			0.84 (9.04)	
9. L_3			0.83 (8.90)	
10. E_4				0.91 [a]
11. P_4				0.83 (10.31)
12. L_4				0.77 (9.00)
Reliability	0.83	0.85	0.87	0.88

Second-order factor loadings (γ_j)

Items	Overall satisfaction
1. S_1	0.89 [a]
2. S_2	0.91 (6.77)
3. S_3	0.91 (7.01)
4. S_4	0.84 (7.20)

Goodness-of-fit measures

χ^2	51.87
	$(p = 0.40)$
df	50
CFI	0.98
RMSR	0.05
TLI [c]	0.99
Total R^2	0.94

[a] Constrained parameter.
[b] t-values between parentheses.
[c] The null model assumes no underlying factors.

that none of these substantially exceeded 2.58, the cut-off value suggested by Jöreskog and Sörbom (1989). Finally, we examined the Q-plot of the normalized residuals. The Q-plot clearly showed a linear trend through the plotted values with a slope greater than 45° indicating a good fit (Bagozzi and Yi, 1988; Jöreskog and Sörbom, 1989). As can be observed from Table 3, the first-order and second-order factor loadings are large and significant.

Additionally, we evaluated the reliability of the first-order constructs using composite reliability (Fornell and Larcker, 1981). From Table 2 it can be observed that the four first-order constructs exhibit a high degree of reliability in terms of composite reliability (all values exceed 0.7). Thus, we may conclude that our conceptualization of overall satisfaction as a second-order construct is supported by our findings. Finally, validity of the measures was further assessed using correlation analysis. As can be seen in Table 2, satisfaction with the individual stages is positively and significantly correlated with overall satisfaction ($0.58 \leqslant r \leqslant 0.70$) and to a lesser extent with repurchase intention ($0.21 \leqslant r \leqslant 0.32$).

5.2. Hierarchical regression analysis

The first objective of our research was to study the formation of satisfaction during the service delivery process. Therefore, we measured satisfaction with each stage and used a hierarchical approach to examine step-by-step the dynamic effects. The first step examines the influence of the ith service stage's value dimensions (E_i, P_i and L_i) on the satisfaction level per stage (S_i). The subsequent step incorporates the influence of the satisfaction with the preceding stages (S_{i-k}, $k = 3,2,1$) on satisfaction per stage (S_i). Hierarchical regression analysis was applied to examine the effects of the sets of independent variables on the satisfaction level per stage (S_i) (Cohen and Cohen, 1983). That results in the following two equations:

$$S_{ij} = \alpha_i + \beta_{i1}E_{ij} + \beta_{i2}P_{ij} + \beta_{i3}L_{ij} + \varepsilon_{ij}, \tag{1}$$

$$S_{ij} = \alpha_i + \beta_{i1}E_{ij} + \beta_{i2}P_{ij} + \beta_{i3}L_{ij} + \sum_{k=1}^{K}\beta_{i(k+3)}S_{i-k} + \varepsilon_{ij}. \tag{2}$$

The term ($\sum_{k=1}^{K}\beta_{i(k+3)}S_{i-k}$) in equation essentially reflects the carry-over effects of the satisfaction with the previous stage(s) for stages 2–4. As suggested by Cohen and Cohen (1983), we used an incremental F-test to test whether the variance accounted for by the carry-over effects significantly contributes to the explained variance (i.e., the H_0:$\Delta R^2 = 0$ is rejected.)

In this study we used the magnitude of the standardized regression coefficients (or beta's) for assessing the importance of the value dimensions in the different stages. If multicollinearity is present, however, the interpretation of the standardized regression coefficient as an importance measure of an individual independent variable might not be warranted (Darlington, 1990; Neter et al., 1990). To evaluate the degree of multicollinearity we calculated the

variance inflation factor (VIF) for each independent variables. The VIF is the reciprocal of tolerance (TOL). Tolerance can be defined as one minus the multiple correlation in the crosswise regression predicting the independent variable from the remaining independent variables (Darlington, 1990; Neter et al., 1990). Neter et al. (1990) recommend a cut-off value of 10 for the individual VIF. As in our study all VIF remain below this value, we can conclude that severe multicollinearity is absent in our study.

The second objective of our study was to investigate whether different customer segments can be characterized by distinct value profiles. As was mentioned above, people visit restaurants for different purposes and this may well influence the dynamics of satisfaction formation during the service delivery process. Therefore, we conducted a subgroup analysis based on the three main purposes for visiting a restaurant as indicated by our respondents: (i) business; (ii) celebration and (iii) no time to cook. In order to test whether these different purposes would affect dynamics of satisfaction formation, we conducted a Chow test which has frequently referred to as a standard procedure for inferring whether regressions may be pooled (Chow, 1960). Our analysis revealed that the three subgroups based on purpose of visit were not similar enough to be pooled (Reception: $F = 13.06$, $p < 0.001$; Ordering: $F = 4.37$, $p < 0.001$; Meal: $F = 9.96$, $p < 0.001$; Check-out: $F = 7.39$, $p < 0.001$). In Table 4 the results of hierarchical regression analyses of our sample are presented.

With regards to the presence of carry over effects, our results show that for all three groups satisfaction with reception stage (S_1) positively affects the satisfaction with the ordering stage (standardized regression coefficients are 0.24 (business), 0.14 (celebration) and 0.05 (no time). However, whereas these effects are in the expected direction, for the business group only the effect is statistically significant at $\alpha = 0.05$, using the incremental F-test ($F = 7.31$; $p = 0.01$). Furthermore, relatively small but significant carry-over effects can be witnessed for S_1 in the case of the celebration subgroup and S_2 in the case of the no-time subgroup ($F = 4.98$; $p < 0.001$ and $F = 5.93$, $p = 0.01$, respectively). Particularly in the case of business customers, clearly a significant carry-over effect from the previous stage can be noticed. In total six out of nine carry-over effects appeared to be statistically significant on the basis of the incremental F-tests, leading us to conclude that substantial carry-over effects exist in the data.

In relation to our second objective it appears from Table 4 that the value profiles for the consecutive stages in the service delivery process vary considerably across the three subgroups. For those customers that come to the

Table 4
Results of hierarchical regression analysis by subgroup for purpose

Stage	Value dimensions	β		
		Business ($n = 56$)	Celebration ($n = 106$)	No time ($n = 57$)
Reception	E_1	0.20 ($p = 0.09$)	0.62 ($p = 0.02$)	0.37 ($p = 0.11$)
	p_1	0.63 ($p < 0.001$)	0.02 ($p = 0.80$)	−0.13 ($p = 0.62$)
	L_1	0.29 ($p = 0.01$)	0.22 ($p = 0.40$)	0.73 ($p = 0.05$)
	Adj. R^2	0.82	0.71	0.86
	F	32.72 ($p < 0.001$)	47.34 ($p < 0.001$)	24.00 ($p < 0.001$)
Ordering	E_2	0.12 ($p = 0.36$)	0.27 ($p = 0.02$)	0.36 ($p = 0.08$)
	P_2	0.14 ($p = 0.18$)	0.00 ($p = 0.97$)	0.15 ($p = 0.32$)
	L_2	0.50 ($p < 0.001$)	0.32 ($p = 0.03$)	0.14 ($p = 0.46$)
	S_1	0.24 ($p = 0.01$)	0.14 ($p = 0.27$)	0.03 ($p = 0.82$)
	Adj. R^2	0.74	0.42	0.32
	F-test	40.34 ($p < 0.001$)	20.01 ($p < 0.001$)	7.40 ($p < 0.001$)
	Incremental F-test	7.31 ($p = 0.01$)	1.25 ($p = 0.27$)	0.05 ($p = 0.82$)
Meal	E_3	0.25 ($p < 0.001$)	0.04 ($p = 0.60$)	0.19 ($p = 0.03$)
	P_3	0.42 ($p < 0.001$)	0.33 ($p < 0.001$)	0.29 ($p < 0.001$)
	L_3	0.23 ($p < 0.001$)	0.43 ($p < 0.001$)	0.41 ($p < 0.001$)
	S_2	0.18 ($p = 0.06$)	0.05 ($p = 0.27$)	0.15 ($p = 0.01$)
	S_1	−0.07 ($p = 0.32$)	0.17 ($p = 0.01$)	0.09 ($p = 0.12$)
	Adj. R^2	0.88	0.83	0.88
	F-test	83.44 ($p < 0.001$)	105.40 ($p < 0.001$)	79.70 ($p < 0.001$)
	Incremental F-test	1.84 ($p = 0.17$)	4.98 ($p < 0.001$)	5.93 ($p = 0.01$)
Check-out	E_4	0.07 ($p = 0.53$)	0.73 ($p < 0.001$)	0.28 ($p < 0.001$)
	P_4	0.07 ($p = 0.63$)	−0.05 ($p = 0.74$)	0.42 ($p < 0.001$)
	L_4	0.31 ($p = 0.05$)	0.06 ($p = 0.61$)	0.08 ($p = 0.29$)
	S_3	0.42 ($p < 0.001$)	0.26 ($p = 0.02$)	0.22 ($p = 0.01$)
	S_2	0.18 ($p = 0.10$)	−0.05 ($p = 0.53$)	0.06 ($p = 0.27$)
	S_1	0.00 ($p = 0.95$)	−0.24 ($p = 0.06$)	−0.02 ($p = 0.74$)
	Adj. R^2	0.91	0.53	0.92
	F-test	66.74 ($p < 0.001$)	19.26 ($p < 0.001$)	99.39 ($p < 0.001$)
	Incremental F-test	18.26 ($p < 0.001$)	2.53 ($p = 0.05$)	3.08 ($p = 0.04$)

restaurant for business purposes the seating at a good table (standardized regression coefficient = 0.63) is the most important determinant of satisfaction with the reception stage. For customers that have come to celebrate, the emotional dimension or a pleasant welcome is relatively most important, while for those that visit the restaurant for reasons of convenience (no time to cook), efficient seating procedures are an important driver of satisfaction with the reception stage. The latter group also clearly requires prompt service with regards to ordering, while the business and celebration groups attach

more importance to fact whether their order is handled in a correct manner. With regards to the third stage, the meal, we may conclude that the quality of the food is especially important for business customers, while both the celebration and no-time subgroup attach relatively more importance to the logical value dimension, i.e., the fact whether they get value for money. Finally, we see that the celebration customers consider the emotional dimension most important in the check-out stage, while in the business and no-time subgroup respectively the logical and practical dimensions are considered the most important factors influencing stage satisfaction.

6. Conclusions and discussion

In this study a number of distinct stages in the restaurant service delivery process were identified. Three out of four stages comprise personal interaction with service employees. One stage is related to the meal itself. Each stage forms an object in the service delivery process. By investigating these objects we can trace how satisfaction judgments evolve during the service delivery process. The summation of all stages in the service delivery process plays a role in the formation of customer judgments, not just the interaction with the service provider or the concrete physical elements that are bought or consumed during the process. The three dimensional value conceptualization provides a succinct synopsis of each stage, focusing on cognitive, affective and functional elements of the stage. Further research is needed to determine the overlap between the value dimensions per stage. As we have learned from various service quality studies, there is evidence of intermingling of quality dimensions during a service experience (Lapierre and Filiatrault, 1996). The three value dimensions explain a large part of the variance of satisfaction in each stage of the service delivery process. Furthermore, the results of confirmatory factor analysis show close relationships between the three (emotional, practical, logical) value dimensions within each stage.

We have witnessed the presence of carry-over effects. These are substantial and provide evidence for treating satisfaction during the service delivery process as a cumulative concept. Satisfaction with earlier stages do have an impact on final satisfaction with the whole restaurant service. Acknowledging the presence of these carry-over effects is important also because the distribution of satisfaction scores per stage varies. Further research is needed also to investigate the presence of carry-over effects for the three value dimensions.

It also follows from our results that groups of customers can be identified with similar service perceptions and service evaluation patterns across stages. Individual differences are likely to exist with respect to intentions regarding the restaurant visit and subsequently the intensity of the carry-over effects and the importance of the contribution of individual service stages to overall satisfaction. These insights provide opportunities for management to focus on the right stages taking into account the differences that exist between market segments explicitly based on the similarity of service evaluation patterns and intentions to visit the restaurant.

7. Managerial implications

In general we can conclude that it is crucial that managers realize that the service delivery process can be broken down in stages. In an attempt to map these processes and subsequent stages it is highly recommendable to take the guest's perspective as a point of departure. If knowledge of the dynamics of the service process is provided to managers, they will be more capable of concentrating on the most effective quality improvements. In our study we revealed substantial carry-over effects in the satisfaction formation. Therefore, managers should not only pay attention to those stages that contribute substantially and directly to overall satisfaction. Attention should also be paid to other stages that via carry-over effects contribute indirectly to overall satisfaction.

For managers our findings imply that first the customer service process has to be described and identified. Service mapping, as advocated by Gummesson and Kingman-Brundage (1992), can be a helpful instrument to describe this process from a customer's point of view. Next, efforts to measure processes for each service stage is necessary in order to understand the way customers experience service encounters. A major finding of this research is that these stages are interrelated and that management should realize this. Finally, such studies would typically lead to identifying areas of improvement in which carry-over effects would also have to be explicitly taken into account. Combining this information leads to an information base that provides a useful starting point for service (process) improvements.

Moreover, acknowledgment of the fact that there are different groups of customers with different intentions regarding the restaurant visit can be very rewarding for management. Identifying market segments and at the same time using the information per stage allows for improving and guiding the

value in the right service stages and consequently increasing customers' over-all satisfaction. A prerequisite for such an approach is that personnel is trained to distinguish between different groups of customers, followed by the provision of specific information and actionable service styles and port-folio's that are geared to identified market segments. In general, with these specific outcomes of our study restaurant managers should carefully make the trade-off between the standardization of individual stages in the service process against an ''account management'' type of dealing with guests. The benefits of the latter approach have been clearly demonstrated in this study. Presumably, this recommendation is not only valid for the restaurant sector, but also for other hospitality services.

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