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The added value of web innovation for customer satisfaction: Experiences with a barbeque catering service

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Experiences with a barbeque catering service

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Abstract

Purpose – Recent studies have explored the effects of e-service quality on satisfaction and loyalty of online customers by extending and supplementing traditional service quality frameworks. This research proposes a combination of traditional service quality and e-service quality frameworks. The central question focuses on how to assess the added value of the web as a service innovation for a traditional service. The setting of the study is a traditional-style barbeque delivery service with a recently installed advanced web-initiated order entry facility now used by a majority of the customers.

Design/methodology/approach – An empirical, survey-based cross-sectional study on web-initiated customer experiences of an in-home catering service, involving barbeque food items and cooking equipment.

Findings – Findings indicate that adding an innovative e-channel to a traditional business process does not automatically translate to a higher customer satisfaction. Only limited significant effects were found from online ordering on overall satisfaction in contrast to the effect of traditional service dimensions.

Research limitations/implications – Further research is needed on the joint analysis of e-services and traditional services.

Practical implications – E-service dimensions appear to have a limited impact on overall satisfaction in a traditional business context.

Originality/value – This is one of the first empirical studies combining both traditional and e-service dimensions and relating them to customer satisfaction.

Keywords Retail service industries, Food products, Electronic commerce, Customer satisfaction, Service delivery

Paper type Research paper

Introduction

The use of information and communication technologies to facilitate service delivery has been the focus of a substantial amount of research (Aladwani, 2001; Bancel-Charensol, 1999; Cox and Dale, 2002; Fisk *et al.*, 1993; MacDonald and Smith, 2004; Meuter *et al.*, 2000; Santos, 2003). Typically, online purchasing involves books, cd's, computers,

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and travel tickets (Feinberg *et al.*, 2002; Iqbal *et al.*, 2003; Reibstein, 2002; Singh, 2002). The channel used appears to qualify these purchases as a new and innovative service. Increasingly, the utilization of the e-service channel has also found its way to mainstream services and high customer involvement offerings such as banking and telecommunication (Ibbotson and Moran, 2003; Methlie and Nysveen, 1999; Mihelis *et al.*, 2001; Selnes and Gønhaug, 2000). Most literature on e-service channels suggests that, if properly implemented, an additional electronic channel is beneficial to both service provider and customers (O'Cass and Fenech, 2003; Piccinelli *et al.*, 2001; Wu and Hisa, 2004). Levenburg (2005) shows that substantial pay-offs are generated by e-mail and online ordering.

A strong link has been observed between customer satisfaction and loyalty (Anderson and Sullivan, 1993; Oliver, 1999; Oliver and Swan, 1989; Spiteri and Dion, 2004; Szymanski and Henard, 2001). Loyal customers are considered essential to business survival, both in the traditional and in the electronic commerce context (Reichheld and Schefter, 2000). Recent studies have explored the effects of e-service quality on the loyalty of online customers in various settings (Semeijn *et al.*, 2005; Srinivasan *et al.*, 2002; Van Riel *et al.*, 2004) by extending and supplementing traditional service quality-consequence frameworks such as that of Zeithaml *et al.* (1996). Different types of complaint behaviour and price sensitivity of consumers have also been studied as consequences of consumer satisfaction (Holloway and Beaty, 2003; Zeithaml *et al.*, 1996).

One industry in which the effects of innovative service channels have been under-addressed is the food service industry. Studies involving food services mainly focus on service quality at the (fast food) restaurant, including waiting time, employee behaviour, and other factors mentioned in a SERVQUAL-related framework (Brady and Robertson, 2001; Davis and Vollmann, 1990; Gilbert *et al.*, 2004; Law *et al.*, 2004). Recently, Zhao and Stank (2003) analysed operational and relational capabilities as key drivers of customer satisfaction in the food service industry from a traditional interpersonal perspective. However, less research effort has been devoted to the relationship between satisfaction, relational capabilities and operational factors in light of innovative service channels such as the internet. The excellent overview of Johns and Pine (2002) indicated several gaps and weaknesses in the body of knowledge of consumer behaviour in the food industry business. Specifically, the potential of the internet in initiating service transactions seems to be an interesting topic for further investigation.

This study aims at narrowing this gap in the literature, by providing not only an analysis of perceived physical operational service capabilities, but also the effects of web-initiated service delivery on service performance, customer satisfaction, and loyalty. In line with Rosenbloom (2003), who stresses the importance of focusing on the customer in e-commerce settings, this research proposes a comprehensive combination of traditional service quality and contemporary e-service quality frameworks for developing a better understanding of perceived quality-consequence relationships. The central question focuses on how to assess the added value of the web as a service innovation in a traditional business process such as the delivery of food services, from a customer perspective. The context of the research is a barbeque home delivery service, characterized by sophisticated web-initiated order entry facility combined with physical order delivery.

The paper is structured as follows. First, a conceptual framework is developed. Hypotheses are formulated on the combined effects of on- and offline service quality dimensions on customer satisfaction and customer loyalty. The empirical study and its results will be presented next. The paper will conclude with a discussion of managerial and theoretical implications.

Development of hypotheses and conceptual framework

In web-initiated service delivery, customers typically do not interact with individuals in first stages of the service encounter. The transaction starts with customers interacting with the seller organization through a user interface enabling them to initiate the desired transactions themselves. Previous research identified the user interface to be a key aspect of perceived online service quality (Grönroos *et al.*, 2000). In this respect, two factors seem to be important; web site aesthetics and web site navigation (Zeithaml *et al.*, 2000). The aesthetics and looks of a web site have been referred to as the "e-scape" (Gummerus *et al.*, 2004; Van Riel *et al.*, 2004), which is comparable to the servicescape referred to in the traditional face-to-face service delivery literature (Bitner, 1990, 1992). The e-scape mainly reflects how information is presented through the use of colours, layout, pictures, and font size and style. Effortless navigation of web sites allow users to consistently and easily find what they want, mainly via a dependable and well performing search engine that offers users fast and logical maneuverability (Jeong and Lambert, 2001; Liljander *et al.*, 2002; Zeithaml *et al.*, 2000). An attractive e-scape creates an online environment that is likely to facilitate web site navigation. Indeed, early research on text comprehension showed significant differences between font types (Povlton, 1969).

More recent studies in industrial ergonomics (Myung, 2003; Wang *et al.*, 2003) show effects of text-background colour combinations and line-spacing on web site comprehension and usability. Therefore, it is hypothesized that an attractive e-scape contributes to perceptions of web site navigation quality:

H1. A positive relationship exists between perceived quality of the web site e-scape and perceived quality of web site navigation.

In turn, web sites with adequate navigation functionality are likely to provide more value to customers than web sites that are difficult to navigate. Indeed, previous research indicates that navigational quality is a key facilitator of online customer satisfaction (Liljander *et al.*, 2002). It is hypothesized that web site navigation quality contributes to overall customer satisfaction with the customer-service provider interaction:

H2. There will be a positive relationship between perceived web site navigation quality and overall customer satisfaction.

The dimension of reliability in traditional service quality research is often considered to be uni-dimensional (Zeithaml *et al.*, 2000). Nevertheless, as suggested by Van Riel *et al.* (2001), it has been difficult to establish a single factor with sufficient discriminant validity due to the inherent ambiguity in the use of the term. In online settings, web site reliability is often referred to both as a functional quality dimension as well as the reliability of the information content provided on the site. Analogous to Semeijn *et al.* (2005), the problem of conceptual ambiguity can be resolved by covering functional

reliability of the web site by navigation. The reliability of the information provided on the web site is then operationalized as accuracy. Accurate web sites provide visitors with information that is considered useful and reliable, especially when the information is provided in an attractive manner. The relationship between text difficulty and perceived accuracy has been reported by Weaver and Bryant (1995). Similar to web site navigation, it is expected that the e-scape can also function as a facilitator of web site accuracy perceptions:

H3. A positive relationship exists between perceived quality of the web site e-scape and perceived web site accuracy.

Similar to the web site navigation, accurate online information is likely to provide value to customers and thus increase customer satisfaction. Consequently, it is hypothesized that:

H4. There will be a positive relationship between perceived web site accuracy and overall customer satisfaction.

Assurance, or the level to which an organization is able to instigate trust in the customer, is an important SERVQUAL dimension in offline environments. Online, assurance has been found to be a relevant factor as well (Zeithaml *et al.*, 2000), perhaps even more important than offline; online customers are less able to scrutinize employees or the physical facilities of the organization with which they do business (Reichheld and Schefter, 2000). Consequently, assurance must be established in other ways, for example, through guarantees and statements of privacy protection (Auh *et al.*, 2003). Perceived web site assurance can be expected to contribute to overall customer satisfaction:

H5. There will be a positive relationship between perceived web site assurance and overall customer satisfaction.

During the interaction with an online organization, it is crucial that users receive adequate and timely support in case of any questions or problems. This corresponds to the traditional SERVQUAL dimension of responsiveness as identified by Zeithaml *et al.* (1996). It is expected that responsiveness to potential requests or problems will positively influence overall customer satisfaction levels:

H6. There will be a positive relationship between perceived e-responsiveness and overall customer satisfaction.

After the initial online contact via a web site the fulfilment of web-initiated service encounters typically occurs in the offline world in a more traditional service encounter. For a comprehensive insight into what determines overall customer satisfaction it seems necessary to also consider the service quality dimensions extensively studied in previous offline service research. First, most web-initiated services have a physical component being delivered to the customer after the online order took place. This is referred to as "tangibles" in the original SERVQUAL-instrument (Parasuraman *et al.*, 1988, 1991). Typically this dimension pertains to physical facilities, equipment, and appearance of personnel (Parasuraman *et al.*, 1988). It is hypothesized that the quality of the physical products delivered contributes to overall customer satisfaction:

H7. There will be a positive relationship between perceived tangibles and overall customer satisfaction.

In addition to the tangible component of offline service delivery an intangible component is present as well. This intangible component is managed by one or more service employees and has been conceptualized as the remaining four dimensions of the SERVQUAL-instrument developed by Parasuraman *et al.* (1988, 1991). Specifically, these dimensions are assurance, reliability, empathy, and responsiveness. Assurance reflects the knowledge and courtesy of employees and their ability to inspire trust and confidence towards customers. Reliability focuses on the ability to perform the promised service dependably and accurately. Empathy pertains to the caring and individualized attention the employee provides to customers. Finally, responsiveness reflects the willingness to help customers and provide prompt service. All four dimensions focus on the "how" of the service delivery process and are reflected by the functional service quality category as opposed to the technical quality, which reflects the outcome of a service (Grönroos, 1984, 1990). In line with previous findings in service quality-consequence research (Iacobucci *et al.*, 1996; Wetzels *et al.*, 1998) it is expected that the perceived quality of these dimensions is positively related to overall customer satisfaction:

H8. There will be a positive relationship between perceived assurance and overall customer satisfaction.

H9. There will be a positive relationship between perceived reliability and overall customer satisfaction.

H10. There will be a positive relationship between perceived empathy and overall customer satisfaction.

H11. There will be a positive relationship between perceived responsiveness and overall customer satisfaction.

The behavioural consequences of service quality and customer satisfaction have been topic of investigation in numerous studies. This has resulted in a substantive body of evidence about the direct and significant effects of customer satisfaction on behavioural intentions in general (Cronin *et al.*, 2000) and customer loyalty or long-term relationship orientation specifically (Lam *et al.*, 2004; Mittal and Kamakura, 2001; Ganesan, 1994; Mittal *et al.*, 1998). The seminal study on behavioural consequences by Zeithaml *et al.* (1996) identified several behavioural intentions that customers may have after having experienced a satisfactory service encounter. The intention to return to the service provider in the future and recommend it to others can be referred to as customer loyalty. Customer satisfaction is expected to be positively related to customer loyalty (Liljander and Strandvik, 1995; Zeithaml *et al.*, 1996):

H12. There will be a positive relationship between overall customer satisfaction and customer loyalty.

Besides making repetitive use of a service provider in the future and recommending it to others it is worthwhile to consider other contextual behaviours. Specifically, customer reactions to price changes as well as problems that may arise during the

service transaction are particularly interesting. Concerning the first, it can be expected that satisfied customers are more willing to accept price changes and will be less price sensitive (Zeithaml *et al.*, 1996). This is expressed in the following hypothesis:

H13. There will be a negative relationship between customer satisfaction and price sensitivity.

In case customers experience a problem with a service provider they may respond in several ways (Day, 1980; Day and Landon, 1977; Bearden and Teel, 1983; Singh, 1988; Zeithaml *et al.*, 2006; Zeithaml *et al.*, 1996). They could be voicing their discontent directly to the organization by internally complaining to employees or they may turn themselves to external parties such as other customers or third-parties (Zeithaml *et al.*, 2006). It is expected that satisfied customers are more likely to address potential discontent to the service provider itself and that they are less likely to seek redress through others:

H14. There will be a positive relationship between customer satisfaction and internal response to potential problems.

H15. There will be a negative relationship between customer satisfaction and external response to potential problems.

The hypotheses are summarized in the conceptual framework shown in Figure 1. Further details on the empirical study conducted to validate the framework will be provided in the next section.

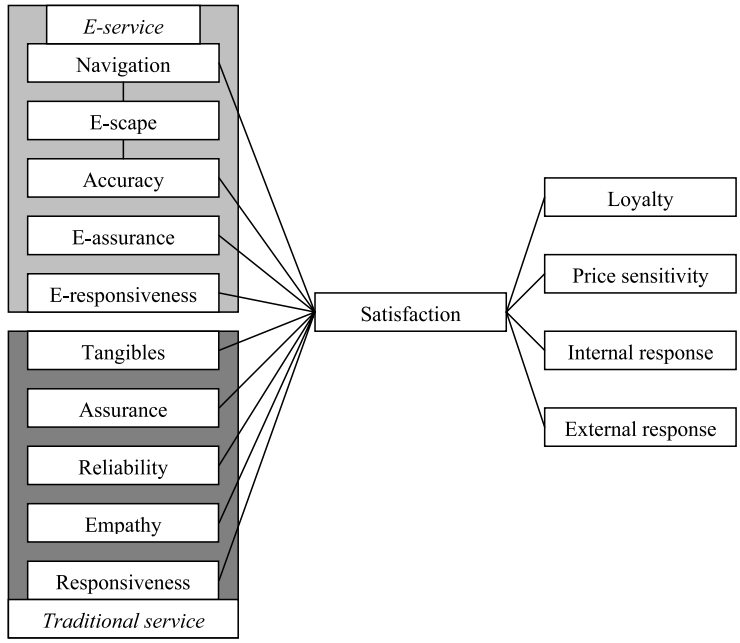

Figure 1.
Conceptual framework

Empirical study

Research setting and sample design

To validate the conceptual framework, cross-sectional data were collected through an online survey among customers of a Dutch barbeque caterer with a customer base of 13,000 paying consumers per year and around 250,000 persons enjoying the ensuing service. The company delivers in the East and South of the Netherlands and the service is mainly initiated through a web site. The interactive web site has been operational since 2001. The data were collected in the summer of 2003. Around 2,000 invitations to participate in the online survey were sent out. Respondents had ten days time to participate, generally considered to be a proper timeframe for generating enough useful responses (Ilieva *et al.*, 2002). In total, 1,056 usable responses were generated resulting in a response rate of over 50 per cent.

Questionnaire design

The items used to measure the constructs in the conceptual framework were based on previous research by Gummerus *et al.* (2004), Liljander *et al.* (2002), Parasaruman *et al.* (1991, 1988), Van Riel *et al.* (2004) and Zeithaml *et al.* (1996). For four constructs, single item measurements were used, analogous to the study by Gardner *et al.* (1998). The descriptive statistics and measurement items can be found in Table I.

Methodology and analytical results

Both the measurement model and the structural model were estimated by means of partial least squares (PLS) (Haenlein and Kaplan, 2004). PLS is considered to be the most appropriate analysis technique for the current study. First, PLS makes no distributional assumptions (Fornell and Cha, 1994). As can be concluded from Table I, the distributions of the data are characterized by significant deviations from normality and, therefore, PLS is preferred over Maximum Likelihood-based estimation methods which assume normally distributed data. Second, PLS is particularly suitable for situations where the parameter-to-sample size is relatively small (Cassel *et al.*, 2000). Third, PLS results have been shown to be very robust against multicollinearity (Cassel *et al.*, 2000). Our analysis and comparison of both traditional and e-service dimensions inherently involves multicollinearity issues as displayed in Table II. PLS can deal with bias in the estimation results.

Although PLS estimates the measurement and structural model simultaneously, a PLS model is typically analysed and interpreted sequentially in two stages (Hulland, 1999; White *et al.*, 2003). First, the measurement or outer model is evaluated in terms of reliability and validity. Second, the structural or inner model is assessed. This sequence produces reliable and valid measures of constructs before drawing conclusions about inter-construct relationships (Plouffe *et al.*, 2001).

Results measurement model

Reliability

Inspection of the individual item loadings presented in Table I indicates that all items load higher than 0.50 on their respective construct, thereby providing support for a high degree of individual item reliability (Hulland, 1999; White *et al.*, 2003). Jöreskog's (1971) measure of composite reliability is used to assess the internal consistency of items hypothesized to measure a single construct (Fornell and Larcker, 1981). Table II

	Items	Mean	Std dev.	Loading	*t*-value	*z*-value[a] skewness	*z*-value[a] kurtosis
Navigation	Browsing is simple	6.37	0.88	0.90	89.26	2.21	7.65
	Web site structure is logical	6.33	0.89	0.89	79.98	2.02	6.50
	Division web site is logical	6.36	0.88	0.89	60.87	2.26	8.06
	Web site makes ordering easy	6.54	0.91	0.79	23.13	3.66	17.20
	Contact info is easy to find	6.52	0.83	0.85	44.94	2.93	12.75
	Could find item easily	6.45	0.87	0.83	36.83	2.53	9.20
	Quick & easy access to offers	6.48	0.84	0.88	51.30	2.55	9.95
E-scape	Info attractively displayed	6.02	1.02	0.89	149.98	1.17	1.51
	Web site looked original	5.26	1.33	0.83	46.93	0.47	0.12
	Appealing use of colors	5.20	1.32	0.78	41.38	0.42	0.18
Accuracy	Information is up-to-date	6.41	0.86	0.95	118.45	2.41	9.08
	Information is correct	6.50	0.81	0.95	103.06	3.00	14.40
E-Assurance	Trust web site information	6.44	0.83	–	–	2.44	9.52
E-responsiveness	Easy to find contact info	6.02	0.91	–	–	1.82	5.44
Tangibles	Delivered materials clean	6.68	0.83	0.74	17.07	4.24	22.28
	Barbeque works properly	6.41	1.19	0.56	12.77	2.64	7.28
	Manual barbeque is good	6.46	1.05	0.69	17.65	3.04	11.02
	Adequate choice selection	6.32	1.06	0.76	41.40	2.07	5.26
	Nice presentation of delivery	6.42	0.96	0.84	54.14	2.60	9.38
	Fresh products	6.59	0.81	0.89	60.50	3.45	17.33
	Tasty products	6.53	0.87	0.85	48.69	3.05	12.99
	Adequate quantity supplied	6.32	1.18	0.60	15.83	2.23	5.32
	Delivery person appeals	6.40	0.90	0.76	22.42	2.62	9.97
Assurance	Delivery person is friendly	6.57	0.67	0.66	12.69	4.78	33.03
	Behavior creates confidence	6.52	0.91	0.93	146.69	3.30	14.16
	Order delivery feels good	6.34	0.98	0.92	99.64	2.47	8.48
Reliability	Accurate delivery (on time)	6.38	1.29	0.66	18.11	2.77	7.62
	Order is complete	6.71	0.93	0.75	19.18	4.57	22.70
	Return process good	6.51	1.15	0.72	18.84	3.27	11.29
	Company is doing one's best	6.43	0.84	0.74	22.02	2.83	10.97
Empathy	Customer orientation company	6.43	0.86	0.83	38.19	2.40	8.61
	Acceptable contact company	6.37	0.79	0.79	17.90	3.16	14.30
	Personal attention is good	6.47	0.72	0.82	23.80	3.47	17.64
Responsiveness	Adequate contact performance	6.59	0.65	0.97	141.90	4.55	29.61
	Adequate response time	6.54	0.68	0.97	197.93	4.03	23.59
Satisfaction	Overall satisfaction	6.57	0.81	–	–	3.51	17.67
Loyalty	Positive word-of-mouth	6.60	0.84	0.92	83.65	3.77	19.12
	Recommend to others	6.60	0.84	0.93	124.25	3.63	17.68
	Encourage friends and family	6.39	1.02	0.85	44.90	2.30	6.59
	Company is first choice	5.95	1.25	0.71	31.33	1.61	2.84
	Will make more use of	6.39	1.00	0.85	49.80	2.46	8.09
	Will make less use of (re)	6.30	1.25	0.62	12.47	2.55	6.87

Table I.
Descriptive statistics on item level

(*continued*)

	Items	Mean	Std dev.	Loading	*t*-value	*z*-value[a] skewness	*z*-value[a] kurtosis
Price sensitivity	Use other if price is lower (re)	4.19	1.59	0.66	8.56	0.13	0.27
	Still order if prices were slightly higher than present	4.29	1.44	0.92	34.65	.013	0.16
	Prepared to pay higher prices	3.77	1.68	0.64	9.03	0.04	0.50
Internal response	Complaint to company	6.47	1.14	–	–	3.20	11.29
External response	Switch to other if problem	4.03	1.74	0.88	29.33	0.11	0.62
	Complaint to others	3.52	1.91	0.88	28.68	0.18	0.50

Notes: [a]Absolute *z*-values. Significant skewness/kurtosis if absolute *z*-value > 1.96. Re = recoded

Table I.

shows that the items measuring the constructs can be considered internally consistent, as in all instances all composite reliability values exceed the 0.70 guideline suggested by Nunnally and Bernstein (1994).

Validity

Within-method convergent validity of the constructs is provided by inspection of each construct's average variance extracted figure. As all average variance extracted values are above 0.50, it can be stated that the within-method convergent validity of the constructs used in this study is acceptable (Chin and Newsted, 1999). According to Gil-Garcia (2005), the constructs should be more strongly correlated with their own measures than with any other of the constructs to yield good convergent and discriminant validity.

Results structural model

The empirical results for the structural model are presented in Table III. The *t*-values accompanying the individual coefficients are obtained via a bootstrap procedure consisting of 500 runs (White *et al.*, 2003).

The results, based on the information of 1,056 respondents, are mixed. In all, 9 out of 15 relationships are statistically significant. Starting on the left hand side, the design of the e-scape appears to have a strong positive impact on both navigation ($\beta = 0.58$; $t = 26.92$) and accuracy ($\beta = 0.51$; $t = 19.67$). However, navigation, accuracy and e-assurance have no significant influence on satisfaction. Only e-responsiveness has a small but significant effect on satisfaction ($\beta = 0.01$; $t = 1.65$).

Satisfaction, in a traditional context, is determined by tangibles ($\beta = 0.58$; $t = 13.21$), empathy ($\beta = 0.20$; $t = 2.74$) and responsiveness ($\beta = -0.06$; $t = 2.01$). The negative sign of the coefficient of responsiveness can be attributed to agitated persons contacting the company by telephone not being satisfied with e-mail alone. Assurance and reliability do not appear to be statistically significant.

Satisfaction has significant relationships with all resulting dimensions. It has a direct influence on loyalty ($\beta = 0.83$; $t = 21.18$), price sensitivity ($\beta = 0.20$; $t = 3.65$), internal response ($\beta = 0.40$; $t = 4.42$) and external response ($\beta = -0.16$; $t = 5.33$).

Table II.
Descriptive statistics on factor level

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) Navigation	*0.84*														
(2) E-scape	0.58	*0.83*													
(3) Accuracy	0.81	0.51	*0.95*												
(4) E-assurance	0.77	0.50	0.85	–											
(5) E-responsiveness	0.45	0.35	0.40	0.39	–										
(6) Tangibles	0.55	0.35	0.51	0.52	0.26	*0.85*									
(7) Assurance	0.51	0.33	0.47	0.48	0.27	0.80	*0.85*								
(8) Reliability	0.53	0.33	0.50	0.48	0.30	0.76	0.72	*0.72*							
(9) Empathy	0.56	0.39	0.53	0.54	0.32	0.72	0.75	0.68	*0.81*						
(10) Responsiveness	0.35	0.27	0.35	0.34	0.23	0.49	0.62	0.48	0.73	*0.95*					
(11) Satisfaction	0.53	0.31	0.51	0.53	0.27	0.83	0.70	0.72	0.71	0.46	–				
(12) Loyalty	0.53	0.35	0.51	0.54	0.25	0.81	0.67	0.68	0.68	0.46	0.83	*0.82*			
(13) Price sensitivity	0.15	0.21	0.10	0.12	0.10	0.24	0.18	0.19	0.21	0.15	0.20	0.25	*0.75*		
(14) Internal response	0.31	0.12	0.29	0.27	0.12	0.42	0.41	0.41	0.38	0.29	0.40	0.41	0.01	*0.88*	
(15) External response	−0.15	−0.20	−0.13	−0.15	−0.10	−0.16	−0.14	−0.14	−0.15	−0.06	−0.16	−0.20	−0.31	0.04	–
Composite reliability	0.95	0.87	0.95	–	–	0.92	0.88	0.81	0.85	0.97	–	0.92	0.79	–	0.87
Average variance extracted	0.75	0.70	0.90	–	–	0.92	0.88	0.81	0.85	0.97	0.65	0.69	0.57	–	0.78

Notes: All correlations are significant at the 0.05 level. Square root values of average variance extracted on the diagonal (not calculated for the single item constructs)

	Relationship	Coefficient	*t*-value	*p*-value	Conclusion	R^2
(1)	E-scape → navigation	0.58	26.92	< 0.0001	Fail to reject *H1*	0.34
(2)	E-scape → accuracy	0.51	19.67	< 0.0001	Fail to reject *H3*	0.26
(3)	Navigation → satisfaction	− 0.05	0.91	> 0.0500	Reject *H2*	0.73
	Accuracy → satisfaction	0.04	1.17	> 0.0500	Reject *H4*	
	E-assurance → satisfaction	0.06	1.40	> 0.0500	Reject *H5*	
	E-responsiveness → satisfaction	0.01	1.65	< 0.0500	Fail to reject *H6*	
	Tangibles → satisfaction	0.58	13.21	< 0.0001	Fail to reject *H7*	
	Assurance → satisfaction	− 0.01	0.09	> 0.0500	Reject *H8*	
	Reliability → satisfaction	0.15	0.28	> 0.0500	Reject *H9*	
	Empathy → satisfaction	0.20	2.74	< 0.0025	Fail to reject *H10*	
	Responsiveness → satisfaction	− 0.06	2.01	< 0.0250	Reject *H11*	
(4)	Satisfaction → loyalty	0.83	21.18	< 0.0001	Fail to reject *H12*	0.69
(5)	Satisfaction → price sensitivity	0.20	3.65	< 0.0001	Fail to reject *H13*	0.04
(6)	Satisfaction → internal response	0.40	4.42	< 0.0001	Fail to reject *H14*	0.16
(7)	Satisfaction → external response	− 0.16	5.33	< 0.0001	Fail to reject *H15*	0.03

Note: The hypothesis is rejected if $p > 0.05$

Table III.
Results structural model

Conclusion and implications

The objective of this study was to determine the added value of online ordering innovation for customer satisfaction in a traditional service process.

All constructs were found both (convergent and discriminant) valid and (composite) reliable. The proposed model combining online ordering and the traditional service explains 73 per cent of the variance in customer satisfaction. We expected to find more impact of innovative e-services on satisfaction. However, the traditional service process appears, on the basis of the number of significant relationships, much more important in determining overall satisfaction. Specifically, among the significant values found for the model, tangibles, empathy and responsiveness rank higher than e-responsiveness.

Looking at the consequence side of satisfaction, a significant relationship was found between overall customer satisfaction and loyalty (69 per cent of variance explained) and also for price sensitivity, and internal and external response, confirming earlier work of Liljander and Strandvik (1995) and Zeithaml *et al.* (1996). Overall, it appears that at best, e-ordering is viewed as a necessary facility, while not by itself guaranteeing satisfaction.

A comprehensive approach is needed to evaluate service innovations as part of the total (e-) experience. The distinction made between and the joint analysis of the web orientated process and the traditional service process seems a promising approach for future studies. More studies are needed to examine the combined effect of e-services and traditional services, especially in businesses that switched from traditional ordering to innovative, web-initiated ordering. Also, further studies could focus on incorporating other constructs, such as privacy and security (Parasuraman *et al.*, 2005) and fulfilment (Semeijn *et al.*, 2005) or other relevant indicators for analysing the total service experience.

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