Determinants of Online Channel Use and Overall Satisfaction With a Relational, Multichannel Service Provider

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This study examines what drives customers' use of an online channel in a relational, multichannel environment. The authors propose a conceptual model of the determinants of online channel use and overall satisfaction with the service provider. They then conduct two large-scale studies in different service contexts to test the model. The results show that Web site design characteristics affect customer evaluations of online channel service quality and risk, which in turn drive online channel use. Customers' overall satisfaction with the service provider is determined by the service quality provided through both the online channel and the traditional channel. The results offer insights into the trade-offs that multichannel service providers face as they attempt to influence online channel use while maintaining or enhancing overall customer satisfaction.

Keywords: *online channel use; multichannel satisfaction*

The global electronic marketplace creates the potential for fundamental changes in the nature of competition. However, online activities cannot be considered in isolation, because they take place within the broader context of marketing activities conducted simultaneously in conventional marketing channels (Peterson, Balasubramanian, and Bronnenberg 1997). In a multichannel environment, service providers may reach customers using a mix of channel formats, including offices, online Web sites, direct mail, and kiosks. A multichannel service provider's objective is to distribute resources across the channel mix to satisfy customers and maximize profits. Therefore, understanding what drives customers' relative evaluations and use of alternative channels is an important first step in creating complementary synergies across the expanding range of channel formats.

Cross-channel synergies are particularly important in relational exchange contexts in which customers choose from different channel formats that belong to the same firm. Relational, multichannel exchange contexts are characteristic of many service industries, including financial services, insurance, health care, telecommunications, utilities, and education. In relational exchanges, the service provider has been chosen, and changes are rare in the short term; thus, the relational customer evaluates and chooses from the channel offerings of a single service provider.

In this study, we examine how alternative channel assessments influence online channel use and overall satisfaction in a relational, multichannel context. Our empirical studies examine two contexts—financial and university services—and explore two different levels of customer

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assessment—global and activity-specific evaluations. Global evaluations refer to customers' overall assessments of a service provider, whereas activity-specific evaluations refer to their assessments of a specific activity or interaction with the service provider. Customer perceptions may differ depending on the level of assessment. For example, in a banking context, customers may express their overall (dis)satisfaction with the service provider and, at the same time, their (dis)satisfaction with channels for specific activities, such as loan applications, balance inquiries, or transfers.

Our results indicate that customers' perceptions of the service quality provided by the online channel positively influence online channel use and perceptions of the service quality provided by the primary alternative channel negatively influence online channel use. Overall satisfaction is positively affected by the service quality perceptions for both channels. These findings offer insights into the tradeoffs that service providers face when they attempt to influence online channel use while maintaining or enhancing overall customer satisfaction.

CONCEPTUAL MODEL

Our conceptual model draws on technology adoption and diffusion theory to propose that the Internet is a channel innovation (see Figure 1). In a relational context, channel evaluation and choice are based on the relative assessment of a service provider's alternative channel formats. Web site design characteristics affect customer evaluations of online channel service quality and risk, which in turn drive online channel use and customers' overall satisfaction with the service provider. Drawing from diffusion theory, we expect that individual-difference characteristics associated with general Internet expertise also play a role in determining risk perceptions and online channel use.

The mediated model structure presented in Figure 1 is consistent with technology adoption research that has demonstrated the important mediating role of user evaluations and the role of system attributes as antecedents of customer evaluations (Davis 1989, 1993; Davis, Bagozzi, and Warshaw 1989). According to diffusion theory, the adoption and use of an innovation is influenced primarily by the characteristics of the innovation and the adopter (Gatignon and Robertson 1985; Rogers 1995). Adoption and use decisions are based on subjective evaluations of an innovation's relative advantage and the compatibility of that innovation with personal characteristics.

Because of our focus on the service context, we position service quality perceptions as the central mediating factor in our model. We define service quality perceptions as overall assessments of the perceived performance of the service provider. Modeling service quality as a mediator is consistent with prior research that has shown service quality perceptions are important indicators of customers' overall evaluations and market performance in service industries (Parasuraman and Grewal 2000; Parasuraman, Zeithaml, and Berry 1994; Zeithaml 1988; Zeithaml, Parasuraman, and Malhotra 2002).

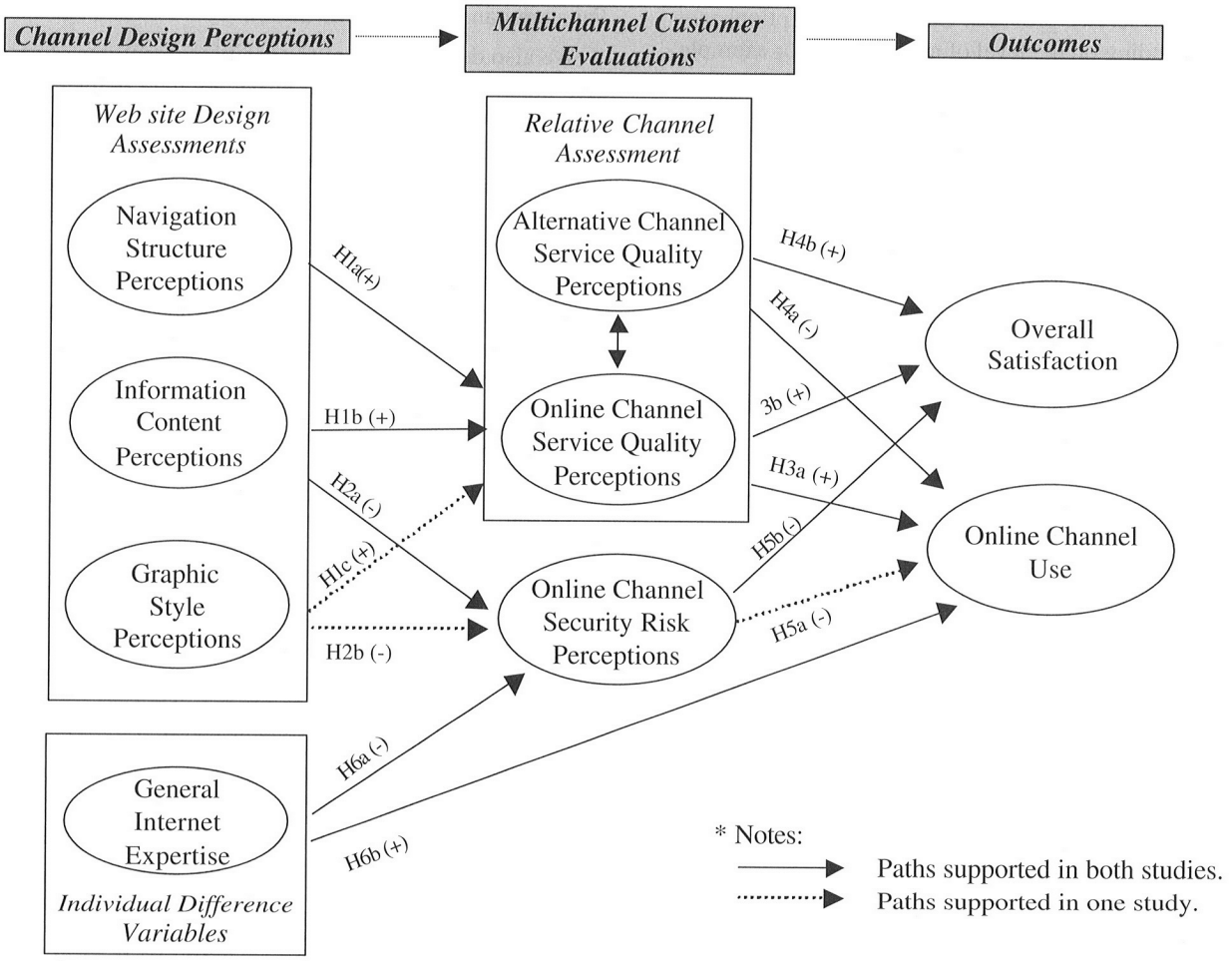
We also delineate channel-specific perceptions of service quality because service providers may deliver (and customers may perceive) different levels of service quality in different channels. Because users of technological products such as the Internet have poorly formed service expectations (Mick and Fournier 1998; Zeithaml et al. 2002), the primary alternative channel likely acts as a reference point for the online channel assessment and use decision. We briefly define each construct in our conceptual framework and offer specific research hypotheses.

Antecedents to Online Service Quality

Online marketers exercise considerable latitude in designing their online offerings and Web site interface to enable or subvert customer search and exchange activities (Alba et al. 1997; Hoque and Lohse 1999). The ultimate success of electronic marketing depends on understanding the way in which customers' interactions with a Web site interface influences their evaluations and behaviors. Prior research on technology adoption shows that user perceptions of usefulness and ease of use determine their adoption of a new information system (Davis 1989, 1993; Davis et al. 1989; Venkatesh and Davis 2000). Consistent with information search theory and human-computer interaction research (Alba et al. 1997; Card, Moran, and Newell 1983; Hoque and Lohse 1999), we propose that customers' assessments of three specific Web site design characteristics—navigation structure, information content, and graphic style—influence their subsequent evaluations of online channel service quality.

Navigation structure is defined as the organization and hierarchical layout of the content and pages in a Web site. This feature governs a user's forward, backward, and lateral movement through a Web site and can be characterized as the number of clicks it takes to get into and through the site. Prior research has shown that navigation structure affects the amount of shopping effort required to use a retail site (Baty and Lee 1995; Hoque and Lohse 1999). Uncomplicated Web sites that are intuitive and readily navigable can be characterized as easy to understand and use (Hoque and Lohse 1999; Lohse and Spiller 1999; Nielsen 2000). Prior research on technology adoption shows that perceived ease of use is associated with positive evaluations of new systems (Davis 1989, 1993; Davis et al. 1989). Therefore, we expect that navigation structures perceived as easier to use will contribute to positive perceptions of online channel service quality.

FIGURE 1
Modeling the Determinants of Online Channel Use and Overall Satisfaction With a Relational, Multichannel Service Provider



Hypothesis 1a: Perceived ease of use of the Web site's navigation structure will be positively associated with perceived online channel service quality.

Web site *information content* is defined as the communicated material that appears on a Web site. Information content can include a range of material, such as details related to the service offering, order status or tracking, corporate policies, or public relations. A review of prior research on the dimensionality of information (e.g., Deshpande and Zaltman 1982, 1987) suggests that three broad characteristics describe the quality of information content in an online context: (1) information utility, the extent to which content is perceived as useful and necessary for a customer to perform the task at hand; (2) information accuracy, the perceived correctness or integrity of the content; and (3) information timeliness, the degree to which the content is perceived as fresh and up-to-date. Consistent with prior research, we propose that perceived quality of the information content has a positive effect on perceived online channel service quality (Alba et al. 1997; Swaminathan, Lepkowska-White, and Rao 1999).

Hypothesis 1b: Perceived quality of the Web site's information content will be positively associated with perceived online channel service quality.

Graphic style is defined as the tangible aspect of the online environment that reflects the "look and feel" or perceived attractiveness of a Web site. We conceptualize graphic style as the virtual equivalent of traditional retail store atmospherics (Lohse and Spiller 1999). In this sense, an aesthetically pleasing Web site design may attract customers if it generates pleasurable feelings that are associ-

ated with the online experience. Prior research has found that poor graphic design elements and presentation style can create confusion and contribute to negative affective reactions that interfere with customers' willingness to browse or buy through the online channel (Hoque and Lohse 1999; Lohse 1993; Nielsen 2000). Thus, the perceived attractiveness of the Web site should be positively associated with online channel service quality perceptions.

Hypothesis 1c: Perceived attractiveness of the Web site's graphic style will be positively associated with perceived online channel service quality.

Antecedents to Online Channel Risk Perceptions

We define *online channel risk* as the uncertainty, as well as the potentially adverse consequences, if a customer engages in online activities with a particular service provider (Dowling and Staelin 1994). Prior research suggests that Web site content can contribute to a customer's sense of security and comfort with a Web site (Jarvenpaa, Tractinsky, and Saarinen 1999; Urban, Sultan, and Qualls 2000). In an online environment, Web site design and content replace the salesperson and physical surroundings of a traditional marketplace (Lohse and Spiller 1999), leaving the Web site to facilitate the interaction between the customer and the organization. In an effort to reassure customers and provide them with a sense of confidence in the site, some online service providers publish stories, customer testimonials, and policies about their security or privacy practices (Jarvenpaa et al. 1999; Urban et al. 2000). This suggests that information content may help reduce the uncertainty and perceived riskiness associated with the online channel and ultimately increase the likelihood of use. Therefore, we expect that perceptions of information content quality will be negatively associated with perceptions of online channel risk.

Hypothesis 2a: Perceived quality of the Web site's information content will be negatively associated with perceived online channel risk.

For the online channel, the atmosphere is digital rather than physical and is created through the genre and details of the graphic style (Lohse and Spiller 1999). Considerable research has examined attributes of the retail store environment that are associated with customers' feelings of comfort (e.g., Baker, Grewal, & Parasuraman 2002; Bitner 1992). An important aspect of the graphic style of a Web site is the use of imagery and iconography to promote customer confidence in the professionalism of the organization as well as in the security of the site and all transactions. Prior research suggests that the graphic interface should be consistent throughout the site and complement the site content to provide an intuitive, pleasant, and secure-feeling environment for customer use (Lohse and Spiller 1999; Nielsen 2000; Urban et al. 2000). We expect that the attractiveness of a Web site will attenuate perceived risk associated with using the online channel.

Hypothesis 2b: Perceived attractiveness of the Web site's graphic style will be negatively associated with perceived online channel risk.

Relating Online Service Quality to Online Channel Use and Overall Provider Satisfaction

In a relational, multichannel service context, service providers implement a range of strategies across the channel mix. Some service providers may offer different or limited services, service levels, or price points across the channel mix, whereas others may try to replicate their offerings and programs exactly across channels. In addition, the search, transaction, and fulfillment processes may vary across channels for a given firm.

For the customer, we predict that multiple channels have both competitive and complementary effects: competitive in that higher perceived service quality of one channel over another will lead to channel preference; complementary in that higher perceived service quality of all channels will lead to higher overall customer satisfaction. When the online channel is perceived to offer high service quality, we expect that customers will use the online channel more frequently and that overall satisfaction with the service provider will be higher.

Hypothesis 3: Perceived online channel service quality will be positively associated with (a) online channel use and (b) overall satisfaction with the service provider.

The Role of Alternative Channel Service Quality

In a relational, multichannel context, customers likely have experience with multiple channels. They may rotate channel use among a set of acceptable channels, so that as the number of channel options grows, channel switching will occur to the extent that each channel creates specific customer value and contributes to overall satisfaction. In a multichannel context, we contend that online channel service quality is assessed relative to a benchmark alternative channel because users of technological products such as the Internet have poorly formed service expectations (Mick and Fournier 1998; Zeithaml, Parasuraman, and Malhotra 2002). In the absence of channel-specific performance expectations, the service provider's alternative channel constitutes the reference point for customers'

evaluations. Consistent with adaptation level theory (Helson 1964) and brand and store choice literature (e.g., Ailawadi, Neslin, and Gedenk 2001; Richardson, Jain, and Dick 1996), we predict that higher perceptions of alternative channel service quality will lead to less use of the online channel.

The alternative channel may be viewed as competitive when the focus is on customers' evaluations or comparisons of channel service quality and channel choice, but customer satisfaction research suggests that customers' evaluations of competing alternatives (including rejected alternatives) remain salient in postchoice satisfaction processing (Dröge, Halstead, and Mackoy 1997). Thus, even when the alternative channel is not chosen, positive evaluations of alternative channel service quality should positively affect overall customer satisfaction.

Hypothesis 4: Perceived service quality for the primary alternative channel will be (a) negatively associated with online channel use and (b) positively associated with overall satisfaction with the service provider.

Relating Online Channel Risk Perceptions to Online Channel Use and Overall Satisfaction

Customer confidence in transaction security and privacy are linked to online behavior (Jarvenpaa et al. 1999; Swaminathan et al. 1999). Although perceptions of online security should evolve over time as customers become more technically proficient and comfortable with Internet security, we expect that customers who associate the online channel with higher levels of perceived risk are less likely to use it. Although risk perceptions associated with any channel likely affect overall satisfaction with the service provider, we focus here on the relationship between satisfaction and online channel risk.

Hypothesis 5: Perceived online channel risk will be negatively associated with (a) online channel use and (b) overall satisfaction with the service provider.

The Role of Individual-Difference Characteristics

Consumer diffusion research shows that earlier adopters of innovations tend to be heavier users of products in a product category, perhaps because of their greater knowledge and ability to evaluate new information (Gatignon and Robertson 1985; Rogers 1995). Thus, greater knowledge of, and experience with, the Internet, or general Internet expertise, may create a greater sense of comfort with a service provider's online channel and reduce the perceived uncertainty or risk associated with it. Prior research suggests that customers' patterns of Internet use may affect their evaluation and use of a particular online channel (Ernst & Young Special Report 2000; Goldman Sachs 2000; Novak, Hoffman, and Peralta 1999). Results from various studies and industry reports suggest that security concerns about online transactions are lower for consumers with more education and more experience using the Internet (Ernst & Young Special Report 2000; Goldman Sachs 2000; WWW User Survey 1998). This trend indicates that higher Internet expertise positively influences the use of an online channel, but this effect may be partially mediated by customers' risk perceptions.

Hypothesis 6: Higher levels of general Internet expertise will be (a) negatively associated with online channel risk perceptions and (b) positively associated with online channel use.

METHOD

To test the conceptual model, we implemented online surveys in two distinct contexts: a financial services institution and a university. Both contexts represent relational service exchanges. In the financial services survey, we focused on global customer evaluations of the service provider. In the university survey, we focused on activity-specific customer evaluations of the course registration process.

Study 1 Description

In Study 1, customers provided overall evaluations of a *Fortune* 500 financial service provider. Because our interest is in the determinants of customers' use of the online channel, the target population for our study included all customers actively using or trying the online channel. To reach this population, we posted an online survey with a link from the financial institution's Web site. The use of an online sample and online survey methodology matches our research objectives of assessing the antecedents of online channel use.

We first conducted a pretest with 600 respondents to assess the reliability and validity of our measures. The financial institution then implemented a major Web site redesign. Four weeks later, we again posted an online survey with a link from the Web site. To alleviate concerns of potential question order bias, we implemented three versions of the survey, with the ordering of questions varied across versions. A new sample of 1,137 respondents completed the online survey for the main study. The average respondent was 41 years of age, with an average income of $71,783. According to the financial institution's estimates, the average online banker at the time of our study was 37 years age with a household income of $62,887.

Study 1 Measures

Customers provided evaluations of the service quality delivered by the online channel and branch offices, as well as assessments of the Web site design, online channel security risks, and overall satisfaction. In Table 1, we present the scale items, along with results from a confirmatory factor analysis (CFA) to assess the reliability and validity of the multiple-item latent scales.

The multi-item scale for perceived information content was based on prior research on the dimensionality of information (e.g., Deshpande and Zaltman 1982, 1987). The navigation structure measures were based on the notion of ease of use in the technology adoption literature (Davis 1989, 1993; Venkatesh and Davis 2000), and graphic style measures were drawn from prior empirical research on retail environment design (Baker, Grewal, and Parasurmaman 1994). To measure service quality, we created one generalizable item for each of the SERVQUAL dimensions (e.g., Voss, Parasuraman, and Grewal 1998); however, consistent with the findings of Zeithaml et al. (2002), some of the employee quality dimensions (e.g., empathy) were not relevant to the online context. In addition, convenience (one of the original 10 dimensions of service quality reported by Parasuraman et al. [1994]) was especially relevant to the online context. We adapted security perception measures from research on customer confidence in online shopping (Jarvenpaa et al. 1999; Swaminathan et al. 1999).

We drew from technology adoption research on computer self-efficacy (Venkatesh and Davis 2000) to develop two items that measure individual experience and expertise as an Internet user. We measured overall customer satisfaction with one item adapted from Parasuraman et al.'s (1994) notion that customers' global evaluations stem from an aggregation of transaction experiences. The item asked respondents to consider all their experiences as customers and rate their level of overall satisfaction with the service provided by the financial institution on a 6-point scale anchored by *completely satisfied* and *completely dissatisfied*. We operationalized online channel use as the self-reported relative frequency of online versus offline channel use. The five response options were *never, once a month or less, several times per month, several times per week*, and *daily*. We coded these responses as 0, 1, 2, 3, and 4, respectively, and then summed across channels for an overall frequency score. We calculated relative online frequency by dividing online frequency by overall frequency. We report the reliabilities for the latent constructs and correlation estimates for the constructs in Table 2.

Study 1 Results

We tested the hypothesized relationships using complete information and maximum-likelihood simultaneous estimation (LISREL-VIII; Jöreskog and Sörbom 1996). The standardized estimates for the hypothesized paths, along with fit statistics, are presented in Table 3. The results indicate that the structural model fit the Study 1 data well. As shown in Table 3, 12 of the 13 hypothesized relationships were statistically significant in the hypothesized direction. Contrary to our expectations, graphic style did not have a significant effect on perceptions of online channel service quality (Hypothesis 1c not supported).

Study 2 Description

To examine the external validity of the conceptual model, we conducted a second study in a different setting: registration for courses at a major southeastern U.S. university. At this university, both telephone and online channels for registration are available and widely used. University registration represents a relational exchange context in which the customer has a channel choice (online or by telephone) of registration activities. The level of customer assessment in Study 2 is activity specific (registration only).

For Study 2, we collected data from 493 students who were offered course credit as an incentive to participate. Sophomore-, junior-, senior-, and graduate-level class members were invited to participate to ensure variation in the level of experience with the registration process. Scale items were modified to fit the different context. For example, the wording of the satisfaction item focused on satisfaction with the registration process rather than overall satisfaction with the service provider. Otherwise, the data collection and analysis procedures were identical to the protocol followed in Study 1. The CFA results are reported in Tables 1 and 2.

Study 2 Results

Study 2 provided the opportunity to examine the robustness of the model in a different research context. The fit statistics reported in Table 3 indicate that the structural model fit the data satisfactorily. Although the pattern of results for the individual paths is fairly consistent, there are some interesting discrepancies to note. Specifically, 10 of the 13 results from Study 1 are replicated and supported in Study 2. The three exceptions in Study 2 are as follows: (1) graphic style has a significant positive association with online channel service quality (Hypothesis 1c supported), (2) graphic style is not significantly associated with security risk perceptions (Hypothesis 2b not supported), and (3) security risk perceptions are not significantly associated with online channel use (Hypothesis 5a not supported).

The replication in a student registration context provides further support for some of the key components of the conceptual model, which thereby lends confidence to the external validity and generalizability of our model and

TABLE 1
Scale Items and Confirmatory Factor Analysis Results for Studies 1 and 2

Item Description (FI = Financial Institution)	*Lambda Loading*	
	Study 1	*Study 2*
Information content perceptions		
The FI site provides the information necessary to make informed decisions.	.81	.68
The FI.com site provides me with useful information.	.79	.76
Information on the FI.com site is accurate.	.80	.77
Information on the FI.com site is up-to-date.	.69	.76
Graphic style perceptions		
I like the look and feel of the FI.com site.	.85	.75
The FI.com site is an attractive Web site.	.88	.91
I like the graphics on the FI.com site.	.84	.84
Navigation structure perceptions		
It is easy to find what I am looking for on the FI.com site.	.86	.72
The FI.com site provides a clear directory of products and services.	.84	.68
It is easy to move around on the FI.com site.	.82	.78
The FI.com site offers a logical layout that is easy to follow.	.86	.82
Security risk perceptions		
How secure do you feel about applying for a loan or credit online?	.88	.85
How secure do you feel about doing online investment activities?	.85	.64
How secure do you feel about doing online banking (e.g., view account balance, transfer funds, make payments)?	.76	.59
Online channel service quality perceptions		
FI provides a high level of overall service through its FI.com site.	.88	.80
FI provides convenient service through its FI.com site.	.80	.68
FI provides reliable service through its FI.com site.	.83	.66
FI provides helpful assistance through its FI.com site.	.77	.52
Alternative channel service quality perceptions		
FI provides a high level of overall service through its branches.	.84	.78
FI provides convenient service through its branches.	.74	.70
FI provides reliable service through its branches.	.81	.67
FI provides helpful assistance through its branches.	.83	.60
General Internet expertise		
How would you characterize your Internet use? (*light-extremely heavy*)	.67	.73
How would you characterize your level of expertise with the Internet? (*no expertise-high expertise*)	.78	.67
Online channel use[b]		
Self-reported frequency of online channel use divided by the summed frequency of total use	1.0	1.0
Overall satisfaction[b]		
Considering all of your experiences as a FI customer, how satisfied are you with the level of service that FI provides? (*completely dissatisfied-completely satisfied*)	1.0	1.0
Fit statistics		
Degrees of freedom	265	265
χ^2	1,006.91	716.66
Goodness-of-Fit Index	.93	.90
Nonnormed Fit Index	.95	.89
Comparative Fit Index	.96	.91
Standardized root mean square residual	.04	.06

a. Item wording was modified to fit the university registration context.
b. These items are included in the measurement model as a way of communicating complete information. Their inclusion does not significantly change the results for the overall measurement model fit or individual fit statistics for the multi-item latent construct scales.

findings for different types of relational, multichannel research contexts. The differences across the two research settings provide the opportunity to interpret the subtle effects of research context on the model and results.

DISCUSSION

The purpose of this research was to develop and empirically test a conceptual model that would identify determinants of online channel use and overall satisfaction in a relational, multichannel service provider context. The empirical studies generally support the hypothesized model. The results suggest that an online service provider can influence its customers' use of an online channel and overall satisfaction through three Web site design factors (information content, navigation structure, and graphic style) and two sets of customer evaluations (service quality and risk perceptions).

TABLE 2
Construct Reliabilities and Construct Correlations for Studies 1 and 2[a]

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
1. Information content perceptions	**.86/.83**	***.41***	***.67***	***–.29***	***.61***	***.24***	***–.05***	***.05***	***.28***
2. Graphic style perceptions	.63[a]	**.89/.87**	*.54***	*–.11***	*.37***	*.21***	*.07*	*.01*	*.19***
3. Navigation structure perceptions	.70***	.74***	**.91/.84**	*–.26***	*.60***	*.19***	*.06*	*.07*	*.26***
4. Security risk perceptions	–.35***	–.31***	–.31***	**.87/.74**	*–.20***	*–.02*	*–.18***	*–.10***	*–.19***
5. Online channel service quality	.82***	.56***	.69***	–.31***	**.89/.76**	*.25***	*.04*	*.15***	*.44***
6. Alternative channel service quality	.37***	.32***	.32***	–.22***	.34***	**.88/.78**	*–.06*	*-.18***	*.30***
7. General Internet expertise	–.02	.01	.00	–.27***	–.01	–.09**	**.70/.66**	*.23***	*.12**
8. Online channel use	.07**	.00	.07**	–.14***	.14***	–.02	.14***	NA	*.06*
9. Overall satisfaction	.47***	.34***	.36***	–.23***	.52***	.51***	–.09**	.03	NA

NOTE: NA = not applicable.
a. Construct reliabilities for Study 1/Study 2 are presented in bold on the diagonal. Construct correlations (with standard errors) are presented in regular font below the diagonal for Study 1 and in italics above the diagonal for Study 2.
* Correlation significant at $p < .05$. ** Correlation significant at $p < .01$.

TABLE 3
Standardized Coefficients and Fit Statistics for Studies 1 and 2

Results

Hypothesized Path		*Expected Sign*	*Study 1*	*Study 2*
Hypothesis 1a	Navigation structure → Online channel service quality	+	.26***	.30***
Hypothesis 1b	Information content → Online channel service quality	+	.71***	.41***
Hypothesis 1c	Graphic style → Online channel service quality	+	–.04	.08*
Hypothesis 2a	Information content → Security risk perceptions	–	–.28***	–.32**
Hypothesis 2b	Graphic style → Security risk perceptions	–	–.13***	.03
Hypothesis 3a	Online channel service quality → Online channel use	+	.13***	.19***
Hypothesis 3b	Online channel service quality → Overall satisfaction	+	.38***	.36***
Hypothesis 4a	Alternative channel service quality → Online channel use	–	–.08***	–.22***
Hypothesis 4b	Alternative channel service quality → Overall satisfaction	+	.38***	.20***
Hypothesis 5a	Security risk perceptions → Online channel use	–	–.09***	–.03
Hypothesis 5b	Security risk perceptions → Overall satisfaction	–	–.04*	–.12***
Hypothesis 6a	General Internet expertise → Security risk perceptions	–	–.27***	–.18***
Hypothesis 6b	General Internet expertise → Online channel use	+	.11***	.21***
Fit statistics				
Degrees of freedom			280	280
χ^2			1,051.92	729.62
Goodness-of-Fit Index			.93	.90
Nonnormed Fit Index			.95	.89
Comparative Fit Index			.96	.91
Standardized root mean square residual			.04	.06

* Coefficient significant at $p < .10$. ** Coefficient significant at $p < .05$. *** Coefficient significant at $p < .01$.

The findings also enable us to explore the role of cross-channel synergies in a multichannel service environment. We find that multichannel service quality evaluations have complementary effects on customers' overall satisfaction with the service provider (e.g., both online *and* branch service quality perceptions have positive effects on overall customer satisfaction with the financial services provider). However, alternative channel service quality perceptions have competitive effects on customers' use of the online channel (e.g., branch service quality perceptions have a negative effect on online channel use for the financial services provider). These countervailing effects suggest that interesting cross-channel tensions and synergies can be managed to deliver service effectively to the customer.

Cross-Channel Effects

The competitive and complementary effects of multiple channels have several practical implications. The competitive cross-channel effects suggest that customer use of

TABLE 4
Indirect Effects of Web Site Design Perceptions on Online Channel Use and Overall Satisfaction[a]

	Study 1		*Study 2*	
Predictor Variables	*Online Channel Use*	*Overall Satisfaction*	*Online Channel Use*	*Overall Satisfaction*
Information content	.09***	.38***	.05**	.21***
	(4.08)	(14.19)	(2.21)	(5.51)
Graphic style	.01	–.01	.01	.03
	(1.17)	(–0.69)	(0.89)	(1.11)
Navigation structure	.02***	.14***	.03**	.13***
	(2.58)	(5.84)	(1.84)	(3.52)

NOTE: Standardized path estimates are reported with *t*-values in parentheses.
Coefficient significant at $p < .05$. * Coefficient significant at $p < .01$.

new channels can be influenced by the level of service provided by the benchmark alternative channels. For example, a financial services manager could shift customers from the alternative, traditional channel to its online channel by varying the service levels across channels (e.g., cutting back on branch services by offering fewer branches, fewer hours, or fewer service contact employees).

At the same time, it is important to consider how alternative channels may have complementary cross-channel effects for the service provider as a whole. Using multiple channels potentially broadens the customer's exposure and access to the service provider's offering. Although each channel may offer a unique value proposition, our findings suggest that cross-channel coordination can drive overall customer satisfaction in a relational, multichannel service environment. Thus, although varying service levels across channels is one way to encourage customer traffic in a particular direction, our findings suggest that such decisions must be balanced against their effects on overall customer satisfaction. Additional research is needed to explore the complex effects of cross-channel brand transference, cross-channel promotion, and flexible cross-channel fulfillment on customer satisfaction.

Web Site Design Factors

Our findings indicate that Web site design perceptions are important antecedents to online channel service quality perceptions. The results also suggest that Web site design factors have significant indirect effects on online channel use and overall satisfaction (see Table 4). Across both studies, information content perceptions exerted consistently stronger standardized effects on online service quality perceptions, online channel use, and overall satisfaction than either navigation structure or graphic style perceptions. These findings support the notion that information is a key motivator for Web site use (Alba et al. 1997; Keeney 1999).

It is important to note that information content may be the dominant Web site design factor because the service in both studies (banking and university course registration) provides information, both on- and offline, as the primary offering. We expect that the relative importance of the three Web site design factors likely depends on the nature of the business and the target audience. This notion is consistent with prior services marketing research, which indicates that the strength of the determinants of service quality is not universal across all service settings (e.g., Carman 1990; Parasuraman, Berry, and Zeithaml 1991). Further research should explore the moderating conditions for the three Web site design factors in relational, multichannel contexts and assess the magnitude of effects in different research contexts.

Risk Perceptions and Individual Differences

The popular press reports that customer concerns about transaction security represent one of the biggest barriers to online channel use. Our results suggest that security risk perceptions differ by context. For the financial services context, perceptions of security risk have significant negative effects on online channel use, but the same effects are not significant in the university registration context. It may be that the security stakes involved in course registration are not sufficiently great to deter students' use of the online channel. Additional research is needed to examine whether security is important in other contexts and explore other dimensions of perceived risk that may be salient channel differentiators (e.g., privacy, fulfillment risks).

We find that customer perceptions of security risk partially mediate the effects of general Internet expertise on online channel use. Our findings suggest that individual differences in general Internet expertise can be potential impediments or incentives to online channel use. Persons who are more experienced Internet users may be earlier adopters of an online retail channel. This suggests a potentially useful market segmentation strategy for launching a new online channel. Further research is needed to examine additional individual characteristics and their value as

segmentation variables. Because users may evaluate the extent to which the online channel helps them better achieve their goals, studying goal orientation and specific usage situations (e.g., browsing versus buying) would be an interesting extension to explore.

Limitations

Our findings should be viewed as a first step toward understanding online channel use and overall satisfaction in a relational, multichannel service context. Further research is needed to extend the conceptual model to examine other potential determinant factors and overcome certain limitations. For example, although our multi-item service quality scale included convenience, the convenience of the online channel may be of such significance to some online customers that it deserves deeper treatment as a separate construct. Other factors that might be explored further include differential cross-channel pricing and the role of trust. Pricing was not a channel differentiator in either of our studies, but a multichannel service provider may vary price across the channel mix. We also did not explore the effect of trust on customer evaluations or behaviors. Additional research could examine how trust factors into customers' decision processes. Finally, research should examine the differences in the model across levels of customer assessment (global versus activity-specific) within a single context (e.g., banking).

Our empirical testing is limited by two measurement issues: our measure of channel use is self-reported, and we employ a single-item measure of overall satisfaction. Further research should explicitly measure actual usage behavior across channels to reduce potential common method variance problems. Also, future research should incorporate additional measures of overall satisfaction. Our sample also has two important limitations: the respondents self-selected into the surveys, and it is likely that our sample underrepresented certain segments of the target population, especially nonactive users and triers of the Web site. We did not collect data from non-Internet users because the focus of this study was online channel use. It may be an interesting extension, however, to explore the factors that motivate customers to move through the very early stages of the adoption process, such as awareness and interest. A fruitful direction for additional research would be to examine the earlier stages of the adoption process and incorporate additional data collection techniques to capture the responses of those persons who discontinued use of the online channel after evaluating and trying it.

Conclusion

Organizations such as the financial institution and university in this study are experimenting with ways to make alternative channels work together. Although there are many research questions to address, our study provides new insight into the question of what drives customer use of the online channel and how multichannel evaluations affect overall satisfaction when the customer has a choice of channels for a given service provider. Understanding how the channel provides value to customers is critical because service providers face difficult resource allocation decisions for the channel mix. Their challenge is to leverage and coordinate the strengths of on- and offline channels to increase the overall value of the service provider. We contend that the future evolution of multichannel marketing will focus on deriving synergies across channels and attracting customers to the channel that best satisfies their needs on any given occasion.

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