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ORIGINAL EMPIRICAL RESEARCH

SERVCON: development and validation of a multidimensional service convenience scale

Kathleen Seiders · Glenn B. Voss · Andrea L. Godfrey · Dhruv Grewal

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Abstract As customers have demanded greater convenience in service exchanges, researchers have responded by incorporating the convenience construct into their conceptual models and empirical studies, but a comprehensive, formally validated measure of convenience remains lacking. This study conceptualizes service convenience as a second-order, five-dimensional construct that reflects consumers' perceived time and effort in purchasing or using a service. Service convenience dimensions are salient at different stages of the purchase decision process. Given this conceptualization, the study presents the development and validation of the SERVCON scale, a comprehensive instrument for measuring service convenience. The five dimensions are independent within a nomological network that illustrates distinct antecedent and consequent effects, and the results reinforce the multidimensional representation, offering insight into the distinctive relationships between each service convenience dimension and its antecedents, such as competitive intensity, and consequences, such as repurchase behavior. The findings help researchers and managers understand a fully conceptualized convenience construct and facilitate the measurement of convenience in future empirical studies.

Keywords Service convenience · Scale development · Services marketing · Retailing · Customer satisfaction · Service quality

Marketers acknowledge a steady rise in consumer demand for convenience and attribute this trend to a variety of economic and sociocultural factors. In practice, firms devote greater resources to provide convenience as part of a strategic shift to more effective customer management. Researchers also are increasingly interested in understanding the effects of convenience on consumer behavior, and recent empirical studies indicate that convenience influences critical marketing consequences, including customer evaluation and purchase behavior (Rust, Lemon, & Zeithaml, 2004; Seiders, Voss, Grewal, & Godfrey, 2005). Although convenience may not be sufficient to ensure customer loyalty, it appears a necessary threshold condition for maintaining customer relationships (Keaveney, 1995).

Despite its acknowledged importance, convenience has received relatively little attention in marketing literature, and efforts to develop a valid and comprehensive measure of it have been limited. For example, previous studies examine consumer demographic and lifestyle characteristics linked to the purchase of convenience-related goods and services (e.g., Nickols & Fox, 1983) but do not conceptualize a convenience construct. Some research explores a multidimensional convenience construct without empirically validating it (e.g., Darian, 1987), whereas still other studies measure multiple aspects of convenience

K. Seiders
Carroll School of Management, Boston College,
Chestnut Hill, MA, USA
e-mail: seiders@bc.edu

G. B. Voss (✉)
Business Management, North Carolina State University,
CB 7229, Raleigh, NC 27695-7229, USA
e-mail: gvoss@ncsu.edu

A. L. Godfrey
McCombs School of Business, University of Texas at Austin,
Austin, TX, USA
e-mail: andrea.godfrey@phd.mccombs.utexas.edu

D. Grewal
E-Commerce and Electronic Business, Babson College,
Babson Park, MA, USA
e-mail: dgrewal@babson.edu

without a formal conceptualization (e.g., Andaleeb & Basu, 1994; Szymanski & Hise, 2000). Because none of these studies attempts to validate a comprehensive convenience construct, it has not been treated consistently, and in the absence of systematic measurement, empirical tests of convenience effects lack precision.

Consistent representation and measurement is especially germane in service contexts, where convenience is difficult to standardize and deliver. Berry, Seiders, and Grewal (2002) present a multidimensional definition of service convenience and propose antecedents and consequences but do not empirically validate the construct. Seiders et al. (2005) empirically assess the influence of overall convenience on repurchase behavior using a multidimensional measure but do not validate the individual dimensions. Therefore, our research addresses three main objectives, the first of which is to present a comprehensive conceptualization of service convenience. We propose that service convenience is a second-order, formative construct composed of five first-order constructs (or dimensions) that are salient at different stages of the consumption process and reflect different types of consumer effort.

Our second objective is to develop and validate subscales for the five distinct service convenience dimensions to offer a fully validated instrument—the SERVCON scale—that can offer comprehensive measures of perceived service convenience. Our third and final objective is to support the multidimensional conceptualization of service convenience by examining its nomological validity in a network that establishes distinct antecedent and consequent effects, such that consumers differentially evaluate and respond to each service convenience dimension.

Conceptualizing service convenience

We propose that two primary facets—consumers' time and effort costs—underlie the various convenience conceptualizations explicitly and implicitly proposed by prior research. For example, frameworks of convenience incorporate time savings, time flexibility, polychromic time use, energy, location, ease of transaction, and task allocation (e.g., Anderson & Shugan, 1991). We also propose that service convenience is best conceptualized in terms of the specific consumer activities required to purchase or use a service, because convenience evaluations become salient during key stages of the service experience (Berry et al., 2002).

Specifically, we propose that customers perceive time and effort costs associated with service purchase or use decisions (decision convenience), initiating service delivery (access convenience), experiencing the core benefits of the offering (benefit convenience), finalizing the transaction (transaction convenience), and reestablishing subsequent contact with the firm (postbenefit convenience). This conceptualization reflects a multistage, experiential consumption process in which evaluations of convenience vary at each stage (for other sequential stage models, see Hui, Thakor, & Gill, 1998; Taylor, 1994).

Decision and access convenience are salient prior to the actual service exchange. In this stage, the availability and quality of information about the service provider and its competitors determine decision convenience; consumers normally have a higher convenience threshold when their purchase decisions involve services that are complex or difficult to evaluate (Zeithaml, Berry, & Parasuraman, 1996). Access convenience is determined by the physical location, operating hours, and availability online, by phone, or in person (Meuter, Ostrom, Roundtree, & Bitner, 2000; Seiders, Berry, & Gresham, 2000). Benefit and transaction convenience become salient once the service exchange process has been initiated. Benefit convenience, which encompasses the fundamental service experience, varies in importance across service categories and may be less relevant for services with high hedonic as opposed to utilitarian value (Holbrook & Lehmann, 1981). Transaction convenience perceptions reflect the time spent in physical or remote queues, which can be problematic for firms because wait times commonly are perceived as longer than they actually are and negatively influence overall service evaluations (Kumar, Kalwani, & Dada, 1997). Finally, postbenefit convenience becomes salient after the service exchange. Factors that determine postbenefit convenience often relate to service recovery efforts, in which exchanges frequently represent responses to defective products or services, transaction errors, or a customer's change of mind.

The sequential service convenience dimensions also reflect three different types of consumer effort: physical, cognitive or intellectual, and emotional (Mohr & Bitner, 1995). Decision and benefit convenience serve to diminish the cognitive effort required to evaluate a service provider; access convenience minimizes the physical effort associated with initiating an exchange; and transaction convenience reduces the emotional effort associated with executing the exchange. Furthermore, postbenefit convenience can reduce both emotional and physical efforts associated with correcting an exchange error.

On the basis of the preceding theory, we conceptualize service convenience as a second-order, formative construct composed of five first-order dimensions. We identify the service convenience construct as formative because changes in any of the five dimensions should alter the service convenience construct, regardless of whether other dimensions also change; moreover, eliminating any of the five dimensions would significantly affect the conceptual domain of the service convenience construct, and the five

dimensions need not covary with one another. In addition, because the five dimensions are measured at different stages of the service consumption process, the nomological network may differ, in that dimensions need not have the same antecedents and consequences. (For explications of the differences between formative and reflective constructs, see Bollen & Lennox, 1991; Diamantopoulos & Winklhofer, 2001; Edwards & Bagozzi, 2000; Jarvis, MacKenzie, Podsakoff, Mick, & Bearden, 2003.)

Scale development and purification

Our SERVCON conceptualization includes both second- and first-order latent constructs and both formative and reflective indicators. Therefore, we use formative index procedures to uncover the dimensionality of the service convenience construct and follow traditional scaling procedures to develop an instrument to measure customers' perceptions of the five service convenience dimensions. The overall process involves generating potential scale items, conducting exploratory and formal pretests, revising and purifying the scale, and implementing a field survey of customers of a national retail chain.

Domain specification

Consistent with Diamantopoulos and Winklhofer's (2001) recommendations for index construction with formative indicators, we review convenience and waiting time literature extensively and conduct exploratory interviews to specify the service convenience domain. To determine the dimensions (i.e., indicators) of service convenience, we begin with an exploratory study in which we collect open-ended responses from undergraduate and graduate business students. We asked subjects to define convenient and inconvenient service and provide examples from recent experiences, then content analyzed their open-ended responses. This procedure enables us to identify service elements that consumers consider in assessing convenience and delineate the construct in terms of its evaluation at different stages of the consumption process.

Item generation

Using convenience literature and the results of our content analysis, we specify potential scale items to measure the time and effort costs associated with each service convenience dimension. With an iterative process involving systematic reviews, we revise and refine the set of items to articulate items that would generalize to many service contexts (see Bearden, Hardesty, & Rose, 2001). This stage of scale development generated an initial pool of 39 items.

To assess the content validity of the items, we asked a panel of academics to review definitions of the five service convenience dimensions, assign each of the 39 items to a dimension, and indicate which items did not reflect any dimensions (Shimp & Sharma, 1987; Tian, Bearden, & Hunter, 2001). On the basis of the panel's categorizations and follow-up conversations, we modified several items and created a revised survey instrument with 38 items, in which multi-item measures capture each dimension.

Exploratory and formal pretests

To purify the decision, access, benefit, transaction, and postbenefit convenience scale items, we conducted an exploratory pretest. In line with prior scale development studies (e.g., Bearden et al., 2001; Kohli, Jaworski, & Kumar, 1993), we asked a panel of 20 professionals to complete a questionnaire that incorporated the initial 38 items in the context of an auto repair service. The questionnaire assesses the convenience provided by the service provider with a five-point Likert scale ranging from strongly agree (1) to strongly disagree (5). Using the pretest responses, we examined item-to-item correlations for the various convenience dimensions, then refined the scale to 17 items on the basis of item uniqueness and clarity; these 17 items appear in the formal pretest questionnaire.

At this stage of scale development, we undertook a formal pretest with the 17 items by asking undergraduate business students to respond to the questionnaire based on their shopping experiences at a national specialty retail chain whose characteristics are similar to those of the company in our field study. We use exploratory factor analysis of the 119 collected questionnaires to test the factor representation of items for the five service convenience dimensions and, on this basis, made minor modifications to the measures and questionnaire format to improve clarity and conciseness.

Field study

For our full-scale test, we include the subscales of the five service convenience dimensions in a survey of a national sample of customers of a specialty retail chain with approximately 100 stores located in all major geographic regions of the United States. The company, which sells upscale women's apparel and home furnishings under its own brand, provided contact information for 3,117 customers and offered a $20 coupon incentive to respondents. We randomly selected customer names from a list of all customers who had purchased merchandise from any store during the 12 weeks prior to the generation of the list.

The sample population includes two sampling frames: customers who received marketing messages via traditional media, such as postal mail or store-based communications, and those who had registered to receive e-mail communications about merchandise and special promotions. The randomly drawn traditional media customer sample included 1,967 names from the company-generated list. From the effective sampling frame of 1,939 (28 returned as undeliverable), the first- and second-wave mailings produced a total of 705 usable responses, for a response rate of 36%. For the e-mail program customer sample, we sent online surveys to all 1,150 available e-mail addresses. From the effective sampling frame of 886 (264 e-mails returned as undeliverable), the first- and second-wave e-mail communications produced a total of 276 respondents, an effective response rate of 31%. Respondents were primarily women (99%) between the ages of 35 and 54 years (66%) with an average household income exceeding $58,000 and at least some college education (96%).

We recognize that respondents might not have experience with postbenefit convenience, so we designed the survey to allow "No experience" responses for the three postbenefit convenience items. Because we did not want to exclude these observations from the analyses, we explored various approaches to manage the missing data. The simplest approach replaces the missing value with the observed mean score (unconditional mean imputation); more sophisticated approaches such as multiple imputation use Bayesian methods to impute values for the missing observations (Fichman & Cummings, 2003). Because these approaches produce similar results, we report only the results of the multiple imputation approach.

Construct validation of SERVCON

The 17 items used to measure the service convenience dimensions appear in Table 1, along with measures for four conceptually related latent constructs. Including conceptually related latent constructs in the measurement model facilitates our full assessment of the unidimensionality of the service convenience dimensions (Anderson & Gerbing, 1982). We use confirmatory factor analysis (CFA) to assess the unidimensionality, convergent validity, and discriminant validity of the latent construct scales.

The results of the CFA indicate that the measurement model with five latent service convenience dimensions and four related latent constructs fits the data satisfactorily (see Table 1). Although the chi-square value is significant, the goodness-of-fit index (0.92), non-normed fit index (0.95), comparative fit index (0.95), and root mean square residual (0.05) all equal or surpass recommended levels, in support of the overall fit of the measurement model.

The results also support the reliability of each latent construct scale; the construct reliability for each scale is greater than 0.75, and the average variance extracted for each dimension is greater than 0.50, which exceed the recommended minimum scores (Bagozzi & Yi, 1988). Collectively, these results support the conceptualization of five service convenience dimensions, as well as each scale's reliability and internal consistency.

We determine whether the measurement model supports the convergent validity of the subscales by evaluating the lambda loadings of each item developed to measure each service convenience dimension. As we indicate in Table 1, all lambda loadings exceed 0.5 and are statistically significant at the 0.001 level, in support of the convergent validity of each scale.

We evaluate whether the measurement model satisfies two conditions that indicate discriminant validity: (1) the squared correlation between each pair of constructs is less than the variance extracted for each construct and (2) for every pair of factors, the χ^2 value of a measurement model that constrains their correlation to 1 is significantly greater than the χ^2 value of a model that does not impose such a constraint (e.g., Bearden et al., 2001). These tests support the discriminant validity of the constructs, so our scales measure distinct dimensions of service convenience. We provide descriptive statistics and the correlation matrix for these constructs in Table 2.

Finally, known-groups validity tests assess whether measures can distinguish among groups that should provide higher or lower mean scores (Tian, Bearden, & Hunter, 2001). We classify the sample into two known groups: (1) short-term customers who report a relationship with the retailer of 1 year or less (n=279) and (2) long-term customers whose relationship with the retailer has lasted at least 5 years (n=220). Because experience with a service provider positively influences customers' evaluations of a service (Bolton, 1998; Hui & Tse, 1996), we expect the length of the relationship will have a positive association with perceptions of service convenience on each dimension. T-tests indicate that perceived convenience is higher among long-term customers: Mean differences are significant at the 0.05 level for decision and benefit convenience and at the 0.10 level for access and postbenefit convenience. Differences in transaction convenience are not significant, probably because it is less relevant than other service convenience dimensions in this high-end specialty retail sector that emphasizes service intensity.

Thus, we find strong evidence that the subscales of the five dimensions of service convenience are reliable and valid. Henceforth, we refer to the subscales for the five dimensions as the SERVCON scale, a 17-item scale

Table 1 Item descriptions and measurement model results for latent constructs

Item descriptions*	Lambda loading	Construct reliability	Average variance extracted
Decision convenience		0.76	0.53
I can easily determine prior to shopping whether SR will offer what I need.*	0.82		
Deciding to shop at SR is quick and easy.	0.51		
I can quickly find information before I shop to decide if SR has what I'm looking for.	0.81		
Access convenience		0.83	0.55
I am able to get to SR quickly and easily.*	0.82		
SR offers convenient parking.	0.57		
SR offers convenient locations.	0.88		
SR offers convenient store hours.	0.66		
Benefit convenience		0.84	0.57
The merchandise I want at SR can be located quickly.*	0.84		
It is easy to find the products I am looking for at SR.	0.80		
I can easily get product advice at SR.	0.62		
It is easy to evaluate the merchandise at SR.	0.74		
Transaction convenience		0.89	0.73
SR makes it easy for me to conclude my transaction.*	0.93		
I am able to complete my purchase quickly at SR.	0.85		
It takes little time to pay for my purchase at SR.	0.78		
Post-benefit convenience		0.95	0.86
It is easy to take care of returns and exchanges at SR.*	0.96		
SR takes care of product exchanges and returns promptly.	0.93		
Any after-purchase problems I experience are quickly resolved at SR.	0.91		
Satisfaction		0.90	0.75
I am pleased with the overall service at SR.	0.84		
Shopping at SR is a delightful experience.	0.89		
I am completely satisfied with the SR shopping experience.	0.87		
Shopping enjoyment		0.90	0.76
Shopping at stores like SR makes me happy.	0.86		
I enjoy shopping at stores like SR.	0.87		
Shopping at stores like SR is fun.	0.89		
Product category involvement		0.90	0.76
I have a strong personal interest in stores like SR.	0.82		
Stores like SR are very important to me.	0.92		
The kinds of products SR sells are important to me.	0.86		
Behavioral intentions		0.89	0.68
How likely are you to recommend SR to someone who seeks your advice?	0.84		
How likely are you to say positive things about SR to other people?	0.90		
How likely are you to shop more often at SR in the future?	0.74		
How likely are you to continue shopping at SR?	0.81		
Fit statistics		Recommended level	
Chi-square with 369 degrees of freedom	1,314.73		
Goodness-of-fit index	0.92	0.90	
Non-normed fit index	0.95	0.90	
Comparative fit index	0.95	0.90	
Root mean square residual	0.05	0.05	

SR specialty retailer's brand name
*Items used to create the five-item, reduced-scale, overall service convenience measure.

Table 2 Construct correlations

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Decision	1.00													
2	Access convenience	0.28	1.00												
3	Benefit convenience	0.51	0.32	1.00											
4	Transaction convenience	0.34	0.32	0.54	1.00										
5	Post-benefit convenience	0.22	0.20	0.37	0.29	1.00									
6	Shopping enjoyment	0.33	0.12	0.39	0.29	0.20	1.00								
7	Product category involvement	0.28	0.08	0.33	0.20	0.10	0.71	1.00							
8	Number of recent interactions	0.11	0.05	0.08	−0.01	0.10	0.06	0.10	1.00						
9	Product return experience	0.01	0.00	−0.07	−0.11	0.04	−0.01	0.08	0.19	1.00					
10	Competitive intensity	−0.08	0.07	−0.02	0.02	−0.01	−0.04	−0.04	−0.03	0.02	1.00				
11	Satisfaction	0.41	0.29	0.67	0.54	0.44	0.45	0.27	0.06	−0.15	−0.01	1.00			
12	Behavioral intentions	0.41	0.20	0.54	0.37	0.31	0.59	0.52	0.11	−0.02	−0.03	0.59	1.00		
13	Repurchase visits (log)	0.14	0.06	0.10	0.02	0.10	0.11	0.17	0.48	0.20	0.01	0.08	0.15	1.00	
14	Repurchase spending (log)	0.12	0.05	0.13	0.04	0.06	0.12	0.16	0.43	0.10	−0.03	0.09	0.17	0.80	1.00
	Mean	3.65	3.71	4.05	4.14	3.95	4.22	4.03	4.30	0.47	7.46	4.34	4.38	0.88	5.76
	Standard deviation	0.75	0.81	0.66	0.71	0.98	0.62	0.73	6.95	0.82	10.44	0.72	0.63	0.87	0.67

Note: Correlations greater than |0.06| are significant at $p<0.05$ (two-tailed test).

designed to serve as a comprehensive measure of the multidimensional service convenience construct.

Nomological validation of SERVCON

Nomological validity testing to confirm hypothesized relationships within a formal theoretical framework is critical to establish the external validity of formative constructs (Diamantopoulos & Winklhofer, 2001; Netemeyer, Bearden, & Sharma, 2003). We test the nomological validity of the SERVCON scale by examining relationships between each dimension and its hypothesized antecedent and consequent effects (see Tian et al., 2001). In line with the theory behind our proposed conceptualization, we expect the nomological network (see Fig. 1) for the five service convenience dimensions to differ.

Service convenience antecedents

The hypothesized antecedents of the service convenience dimensions in our nomological network, according to prior research, are causally related to customers' convenience perceptions. These antecedent variables reflect customer, firm, and marketplace characteristics that explain differences in customers' perceptions of service convenience. At the customer level, we examine individual difference variables pertaining to shopping enjoyment and product category involvement. At the firm level, we capture the number of customers' recent interactions and product return experience with a specific company. At the marketplace level, we assess the competitive intensity of the marketplace in which the firm operates.

Shopping Enjoyment Shopping enjoyment refers to a consumer's positive affect toward shopping for items in specific product or service categories, such as apparel or travel services. Hedonic consumers consider shopping an enjoyable and rewarding experience (Arnold & Reynolds, 2003; Holbrook & Lehmann, 1981) and therefore perceive lower time and effort costs than consumers who view shopping as unpleasant. Because shopping enjoyment is an affective state that encompasses the shopping experience and involves positive emotions toward the overall process, we expect it to be positively related to each of the five service convenience dimensions.

H1 Shopping enjoyment is positively related to (a) decision, (b) access, (c) benefit, (d) transaction, and (e) postbenefit convenience.

Product Category Involvement Involvement reflects the importance of the purchase category to the consumer on the basis of his or her inherent needs, values, and interests. Because highly involved customers allocate more time and effort to their search (Beatty & Smith, 1987; Maheswaran & Meyers-Levy, 1990), they should be more knowledgeable and efficient in their cognitive assessments of product or service provider alternatives. Compared with less involved customers, these customers rate decision and benefit convenience, which are related to choice decisions and the core service experience, more favorably. We do not expect involvement to be significantly related to access, transaction, or postbenefit convenience, because they relate more to the logistics of shopping and physical and emotional, rather than cognitive, effort.

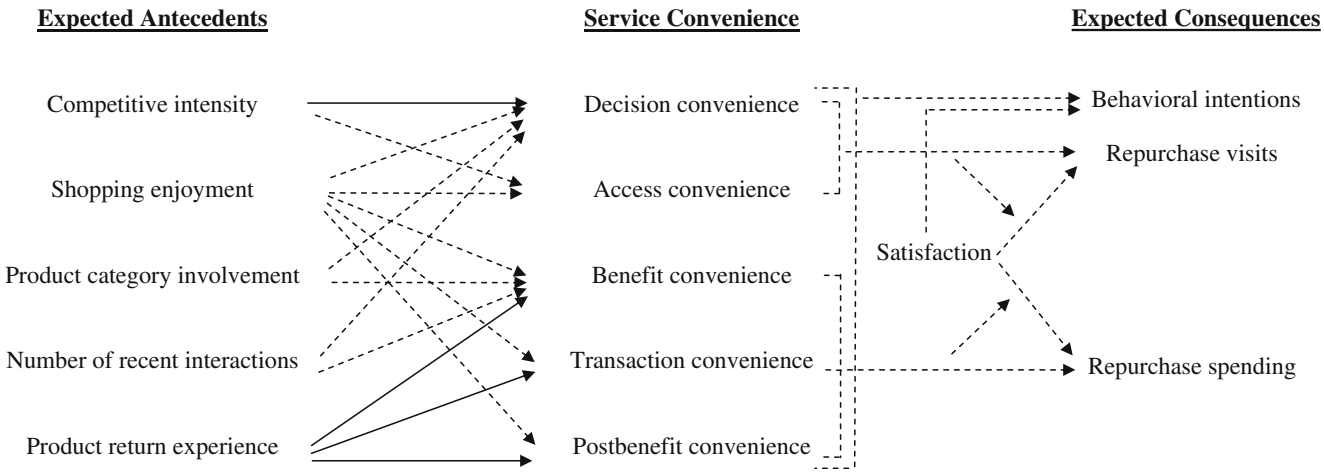

Figure 1 Nomological network for the five service convenience dimensions. Notes: Between antecedents and service convenience dimensions, *dotted lines* indicate relationships expected to be positive; *solid lines* indicate relationships expected to be negative.

H2 Product category involvement is positively related to (a) decision and (b) benefit convenience.

Number of Recent Interactions As customers intensify their relationship with a service provider by engaging in more service interactions, their increased experience positively influences their assessment of the service (Hui & Tse, 1996). Thus, we expect that the number of recent interactions with a firm will positively affect a customer's cognitive assessments of service convenience. Because more interactions should lead to more efficient consumer assessments of product or service provider alternatives, highly interactive customers should rate decision and benefit convenience more favorably than customers who experience fewer interactions. We do not expect the number of recent interactions to relate significantly to access, transaction, or postbenefit convenience, because these dimensions are more peripheral to key product or service category characteristics.

H3 A customer's number of recent interactions with a firm is positively related to (a) decision and (b) benefit convenience.

Product Return Experience Services research documents the influence of postpurchase experience on satisfaction and notes that it frequently involves product return, which is driven by factors ranging from product failure to a simple decision to return a gift. The service failure and recovery experience can decrease customers' cumulative satisfaction and repatronage intentions (Smith & Bolton, 2002), even when the response is satisfactory (Bolton, 1998). On the basis of previous findings and our recognition that postpurchase experiences demand additional customer effort, we expect product return experience to influence the service convenience dimensions that are directly salient in a return transaction negatively. Specifically, transaction and postbenefit convenience will be negatively affected by the increased effort required by return transactions, and benefit convenience will be negatively affected by the additional cognitive processing demanded by the return decision. We do not expect product return to affect decision or access convenience, because there is no link between these dimensions and postpurchase activities.

H4 Product return experience is negatively related to (a) benefit, (b) transaction, and (c) postbenefit convenience.

Competitive Intensity The degree of competition among service providers can influence consumers' service convenience perceptions, especially during the decision and access stages prior to an actual service exchange. As the number of competitors and service alternatives increase, consumers face progressively more complex decisions, which require additional time and effort and suggest a negative relationship between competitive intensity and decision convenience. In contrast, we expect a positive relationship between competitive intensity and access convenience; as the geographic clustering of competitors within a trading radius becomes more concentrated, consumers enjoy closer proximity and easier access to any individual firm and benefit from the shopping synergies that accompany the density of competitors in a single destination area (e.g., urban retail district, regional shopping mall). Because the benefit, transaction, and postbenefit convenience dimensions focus on exchange with a single firm, competitive intensity likely does not have a significant effect on them.

H5 Competitive intensity in the marketplace is (a) negatively related to decision convenience and (b) positively related to access convenience.

Service convenience consequences

Empirical studies indicate that convenience influences a variety of consequences, including consumers' behavioral intentions (Andaleeb & Basu, 1994; Szymanski & Hise, 2000), store choice (Messinger & Narasimhan, 1997), service purchase levels (Rust et al., 2004), switching among service providers (Keaveney, 1995), and non-store format purchasing (Donthu & Garcia, 1999). Seiders et al. (2005) report that overall convenience interacts with satisfaction to exert a positive influence on repurchase visits and spending, but no study has examined the influence of multiple convenience dimensions on actual repurchase behavior.

Behavioral Intentions On the basis of prior research, we expect service convenience to relate positively to behavioral intentions. Because self-reported intentions may not provide accurate measures of future behavior (Morwitz & Schmittlein, 1992), we do not hypothesize different directional effects for the independent convenient dimensions. Rather, we expect positive associations that differ in magnitude across dimensions.

H6 Behavioral intentions are positively related to (a) decision, (b) access, (c) benefit, (d) transaction, and (e) postbenefit convenience.

Repurchase Visits We predict differential effects of the five service convenience dimensions on the number of actual repurchase visits. Decision and access convenience, which are salient to consumers when they initiate the service purchase, should have a positive impact on repurchase visits, whereas dimensions salient only after the decision to visit has been made should be unrelated to the number of repurchase visits. We address the question of whether the effects are direct or moderated by empirically examining both relationships.

H7 Repurchase visits are positively related to (a) decision and (b) access convenience.

Repurchase Spending As we hypothesized with regard to repurchase visits, we anticipate differential effects for the service convenience dimensions on the amount of actual repurchase spending. Transaction and benefit convenience, which are salient to consumers at the time of purchase, should have a positive impact on repurchase spending, as should postbenefit convenience, which reduces customers' perceptions of risk associated with a purchase decision. However, the other two dimensions should be unrelated to repurchase spending because they are salient prior to, rather than during, the actual exchange. We allow the question of whether the effects are direct or moderated to be empirically determined.

H8 Repurchase spending is positively related to (a) benefit, (b) transaction, and (c) postbenefit convenience.

Table 3 Standardized regression results examining antecedents of service convenience

	Decision convenience	Access convenience	Benefit convenience	Transaction convenience	Postbenefit convenience
Intercept	**1.95**	**2.99**	**2.26**	**2.72**	**2.68**
	(12.33)	**(16.59)**	**(16.63)**	**(17.82)**	**(8.55)**
Shopping enjoyment	**0.32**	**0.16**	**0.33**	**0.33**	**0.40**
	(6.11)	**(2.68)**	**(7.40)**	**(6.67)**	**(3.79)**
Product category involvement	**0.08**	−0.00	**0.10**	0.01	−0.12
	(1.78)	(−0.06)	**(2.60)**	(0.17)	(−1.70)
Number of recent interactions	**0.06**	0.04	**0.05**	−0.00	**0.12**
	(2.74)	(1.40)	**(2.30)**	(−0.15)	**(2.28)**
Product return experience	0.00	−0.01	**−0.07**	**−0.09**	0.03
	(0.10)	(−0.27)	**(−2.94)**	**(−3.29)**	(0.65)
Competitive intensity	**−0.04**	**0.06**	0.00	0.02	0.02
	(−1.84)	**(2.25)**	(0.14)	(1.09)	(0.57)
R^2	0.12	0.02	0.17	0.10	0.06

Note: Unstandardized beta coefficients with *t*-values in parentheses; coefficients in bold are significant at $p<0.05$ (one-tailed *t*-test for hypothesized effects; two-tailed test for non-hypothesized effects).

Measurement of antecedents and consequences

As we present in Table 1, the survey administered in the field test includes measures of shopping enjoyment, adapted from O'Guinn and Faber (1989); product category involvement, adapted from Beatty and Talpade (1994); satisfaction, adapted from Voss, Parasuraman, and Grewal (1998); and behavioral intentions, drawn from Parasuraman, Zeithaml, and Berry (1994). We measure product return experience as the number of times the respondent reported returning an item to the retailer in the previous year. Furthermore, we draw three measures from the specialty retailer's database: the number of recent interactions, which measures how many purchase visits each customer made during the 12 months prior to the survey, and the number of repurchase visits and amount of repurchase spending, which reflect objective purchase activity during the 6 months after the completion of the survey. We measure competitive intensity using Census Bureau zip code business patterns data, which include the number of establishments competing in each North American Industry Classification category.

Results of antecedent tests

To examine the effects of the proposed antecedents of the service convenience dimensions, we regress each dimension on shopping enjoyment, category involvement, number of recent interactions, product return experience, and competitive intensity. As we report in Table 3, we find full support for H1: Shopping enjoyment relates positively to all five dimensions of service convenience, as predicted by H1a–e. The relationships between product category involvement and decision and benefit convenience also are significantly positive, in support of H2a and H2b. As we expected, these relationships are insignificant for access, transaction, and postbenefit convenience. The number of recent interactions has positive relationships with decision and benefit convenience, in support of H3a and H3b, and insignificant relationships with access and transaction

Table 4 Standardized regression results examining consequences of service convenience

	Behavioral intentions		Repurchase visits		Repurchase spending	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Intercept	**4.38**	**4.38**	**0.63**	**0.59**	**5.57**	**5.55**
	(266.26)	**(246.44)**	**(21.76)**	**(18.76)**	**(265.09)**	**(241.77)**
Lagged dependent variable			**0.41**	**0.41**	**0.04**	**0.04**
			(16.43)	**(16.18)**	**(18.67)**	**(18.43)**
Decision convenience	**0.15**	**0.13**	**0.09**	**0.09**	0.00	0.00
	(5.54)	**(5.21)**	**(2.23)**	**(2.22)**	(0.12)	(0.16)
Access convenience	−0.02	−0.02	0.01	0.01	0.02	0.02
	(−0.74)	(−1.09)	(0.37)	(0.17)	(0.96)	(0.80)
Benefit convenience	**0.36**	**0.20**	0.03	0.00	**0.10**	**0.09**
	(10.68)	**(5.59)**	(0.61)	(0.07)	**(2.67)**	**(2.10)**
Transaction convenience	**0.07**	−0.01	−0.02	−0.03	−0.02	−0.02
	(2.48)	(−0.20)	(−0.49)	(−0.57)	(−0.53)	(−0.61)
Postbenefit convenience	**0.07**	0.02	0.02	0.02	−0.01	−0.02
	(2.97)	(1.03)	(0.42)	(0.36)	(−0.36)	(−0.51)
Satisfaction		**0.32**		0.09		0.05
		(8.86)		(1.62)		(1.22)
Satisfaction × decision convenience		−0.03		0.02		0.05
		(−0.96)		(0.30)		(1.36)
Satisfaction × access convenience		−0.00		**0.09**		0.03
		(−0.14)		**(2.20)**		(1.09)
Satisfaction × benefit convenience		0.01		0.02		0.01
		(0.35)		(0.31)		(0.29)
Satisfaction × transaction convenience		−0.02		0.03		0.02
		(−0.82)		(0.58)		(0.52)
Satisfaction × postbenefit convenience		0.01		0.03		−0.01
		(0.36)		(0.78)		(−0.48)
R^2	0.34	0.41	0.24	0.25	0.28	0.29

Note: Unstandardized beta coefficients with *t*-values in parentheses; coefficients in bold are significant at $p<0.05$.

convenience, as expected. However, the relationship between recent interactions and postbenefit convenience is unexpectedly positive.

We hypothesize that product return experience relates negatively to benefit, transaction, and postbenefit convenience and find support for the predicted relationships with transaction and benefit convenience but not for postbenefit convenience, for which the coefficient is insignificant. Thus, H4a and H4b are supported, but H4c is not. Conforming to our expectations, product return experience is not significantly related to decision or access convenience. Competitive intensity relates negatively to decision convenience and positively to access convenience, in support of H5a and H5b, and its relationships with the other three service convenience dimensions are insignificant, as we expected.

Results of consequent tests

To examine the effects of the service convenience dimensions on customer outcomes, we regress behavioral intentions, repurchase visits, and repurchase spending on each dimension (see Table 4). To control for unobserved heterogeneity, we include a lagged dependent variable in the repurchase visits and spending models. Following Seiders et al. (2005), who find that overall convenience is a significant moderator of the impact of satisfaction on repurchase, we estimate two models for each dependent variable: one that includes only direct effects for the convenience dimensions, and another that adds the direct effects of satisfaction and the satisfaction × convenience dimension interaction terms.

In H6, we predict that all five service convenience dimensions will be positively related to behavioral intentions. The results offer support for four of our five predictions. Specifically, decision, benefit, transaction, and postbenefit convenience have significantly positive coefficients in Model 1, whereas the coefficient for access convenience is not significant. Thus, H6a, c, d, and e are supported, but H6b is not. Model 2 results indicate that none of the satisfaction × convenience dimension interaction terms is significant, consistent with the results reported by Seiders et al. (2005).

In H7a and H7b, we predict that decision and access convenience relate positively to repurchase visits. The results indicate that decision convenience has a direct positive effect on repurchase visits, in support of H7a. Although access convenience does not have a direct effect, it interacts with satisfaction to influence repurchase visits positively, which suggests that satisfied customers make more repurchase visits when they perceive it convenient for them to initiate contact with the service provider. As we expected, none of the other convenience dimensions has significant effects on customers' repurchase visits.

Our hypotheses predict that benefit, transaction, and postbenefit convenience relate positively to repurchase spending. The results provide support for H8a but not for H8b or H8c: Benefit convenience has a direct positive effect on repurchase spending, but the other service convenience dimensions have no significant effects. In contrast with the effects of the service convenience dimensions on repurchase visits, none of the dimensions interacts with satisfaction to influence repurchase spending. Thus, we find direct effects for one of the five service convenience dimensions on customers' repurchase spending.

Discussion

We began this research with three main objectives: (1) present a comprehensive conceptualization of service convenience as a second-order construct composed of five independent dimensions, salient at different stages of the purchase decision process and involving different types of effort; (2) develop the SERVCON scale to facilitate assessments of service convenience and support its latent structure, reliability, and construct validity; and (3) build on our service convenience conceptualization within a nomological network to specify distinct antecedent and consequent effects for each dimension. Our tests of nomological validity clearly reveal different antecedent and consequent effects for the five service convenience dimensions and offer additional verification of our proposition that consumers perceive each dimension independently.

Overall, we find strong support for the hypothesized relationships among our customer-, firm-, and market-level antecedents and the five service convenience dimensions. Of the hypothesized effects, we determine support for 13 of the 14 hypotheses. Moreover, of the 11 antecedent relationships that we expected to be nonsignificant, all but one matched our prediction. However, our hypothesized relationships among the service convenience dimensions and consequences are supported to a lesser degree. Of the ten hypothesized relationships, seven receive support, though all five relationships we expected to be nonsignificant matched our prediction. That the consequent effects were less predictable than the antecedent effects is not surprising, given the lack of prior empirical research on actual behavioral outcomes on which to base our predictions. Overall, the robust support for the hypothesized antecedent and consequent effects validates our multidimensional, formative conceptualization of service convenience.

Implications of validation results

Collectively, the results of the nomological network analyses provide insights into the relationship between customers' perceptions of individual service convenience dimensions and their repurchase behavior. Decision convenience plays a key role in driving customers to revisit a retailer, and benefit convenience drives repurchase spending.

Perceptions of decision and benefit convenience are significantly higher among customers who indicate greater product category involvement, more recent interactions, and greater shopping enjoyment. Because these characteristics drive service convenience assessments and repurchase behaviors in different ways, service providers must adopt different strategies for each customer segment to influence their convenience perceptions and subsequent repurchase behavior. For example, highly involved consumers, who likely engage in cognitive evaluations of competitive offerings, may become more loyal when service providers make visible, utilitarian improvements to enhance their decision and benefit convenience. In addition, the number of recent interactions provides a good proxy for relational commitment, which suggests an opportunity for firms to emphasize initiatives that foster decision and benefit convenience for established customers. Our findings forge a deeper understanding of the influential but underresearched decision and benefit service convenience dimensions and suggest that if service providers reduce time and effort costs throughout the purchase experience, customers will reward them with more visits and expenditures.

The access convenience dimension interacts with satisfaction to increase repurchase visits but has no significant effect on repurchase spending. Thus, the role of access convenience may be limited to a boundary condition, such that satisfied customers make more repurchase visits when they believe they can reach a service provider conveniently. Our finding that greater competitive intensity is related to higher perceived access convenience suggests that, for this specific fashion category that encourages search behavior, customers are drawn to denser retail areas that facilitate comparison shopping. These concentrated locations impart greater access convenience to all shoppers, and competing retailers benefit because satisfied customers make frequent repurchase visits, spreading their repurchase dollars across multiple competitors. Our finding that access convenience affects visits but not spending is especially interesting because previous studies often operationalize convenience to represent access convenience and therefore may report equivocal results, depending on the dependent variables used.

The results pertaining to antecedents of postbenefit convenience offer some unexpected insights. Postbenefit convenience is positively related to experience with the firm (i.e., number of recent interactions) but not to product return experience. Customers with more interaction experience report higher evaluations of postbenefit convenience, regardless of their level of product return experience. This finding may reveal a halo effect, in that customers in more interactive relationships may be more generous in their evaluations of postbenefit convenience because of their positive perceptions of the other service convenience dimensions. The results also demonstrate that customers with more product return experience have neither higher nor lower evaluations of postbenefit convenience, which suggests our focal retailer effectively manages product returns and exchanges.

Three of the five service convenience dimensions significantly affect actual repurchase behavior through main or moderating effects, but transaction and postbenefit convenience do not, which implies that these two dimensions of service convenience may act as failure preventers rather than success providers. For example, customers may abandon their purchase if transaction convenience is low or abandon a retailer that fails to provide postbenefit convenience, but higher levels of transaction and postbenefit convenience might not encourage higher levels of repurchase. Alternatively, transaction and postbenefit convenience may be less relevant in this specialty retailing context, in which average repurchase frequency is four times per year, than in contexts marked by higher repurchase rates, such as supermarkets or discount stores.

A reduced-item overall service convenience measure

Researchers and managers seeking to assess systematically different dimensions of a firm's offering relative to customer convenience requirements should implement the full SERVCON scale to capture the five dimensions of service convenience fully and determine how individual dimensions influence customers' perceptions and behavior. Although the 17-item SERVCON scale is relatively succinct, researchers may require a more parsimonious approach when service convenience plays a supporting rather than featured role (Netemeyer et al., 2003). To acknowledge the need for measurement efficiency in some contexts, we briefly examine the relative efficacy of a reduced 5-item overall service convenience measure, derived using one item from each dimension of the original SERVCON scale (see Table 1). To evaluate the efficacy of the 5-item measure, we compare it with another overall measure of service convenience, calculated as a single average score of all 17 SERVCON items. The correlation between the 5- and 17-item overall convenience measures equals .94.

We compare the alternative 5-item and 17-item measures of overall service convenience within the network of antecedents and consequences used to establish nomological validity. To compare antecedent effects, we regress the two measures on shopping enjoyment, category involvement, number of recent interactions, product return experience, and competitive intensity in separate equations. The results indicate consistency across the measures and with the results for the individual dimensions of the full SERVCON scale reported in Table 3. To examine the relative efficacy of the 5-item overall service convenience measure with respect to consequent effects, we regress behavioral intentions, repurchase visits, and repurchase spending on the two overall measures of service convenience in separate equations. The results generally indicate consistency between the 5- and 17-item measures. Although the moderating effects of the overall measures on repurchase spending are not consistent with the results for the individual dimensions in Table 4, the results are consistent with findings reported by Seiders et al. (2005).

Collectively, these results underscore the diagnostic superiority of the full SERVCON scale, which measures service convenience dimensions individually and provides greater insight into each dimension's relationship with various antecedents and consequences. However, our comparison of the overall measures also supports the efficacy of a reduced 5-item scale, whose results are generally consistent with the full SERVCON scale.

Directions for further research

The results of this research highlight the need to use a multidimensional approach in service convenience theory development and measurement. Although our five-dimensional scale for assessing customer perceptions of service convenience offers various forms of validity, additional investigations could determine the generalizability of the results to incorporate service convenience fully into existing conceptual frameworks. We apply our scale in the context of a specialty retailer that offers women's fashion apparel and home furnishings, but because shopping behavior for fashion-oriented products differs significantly from shopping behavior in other product categories, generalizations to other contexts should be guarded until further research can replicate or extend our results to other contexts. Moreover, certain dimensions of service convenience (e.g., access) may be more important in contexts that involve more frequent purchases (e.g., consumer packaged goods). Such contexts would be ideal for testing the generalizability of our service convenience scale.

In our nomological validity testing, we focus on the impact of perceived service convenience on consequences that reflect future repurchase behavior: behavioral intentions, repeat visits, and repeat spending. Further research might study the impact of perceived service convenience on other consequences, such as those that reflect customer switching behavior, and provide insight into the convenience effects that contribute to customer defection. In summary, we encourage the incorporation of the SERVCON scale into conceptual frameworks that promote the evolving understanding of the service convenience construct.

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