

# **A Preliminary Examination of Berry, Seiders and Grewal's (2002) Five Dimensional Measure of Convenience in a Service Setting**

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## **Abstract**

Convenience - the ability to reduce consumer's time and energy costs in purchasing or using goods and services - has become an important attribute for time poor consumers. Berry, Seiders and Grewal (2002) proposed that convenience can be measured as a five dimensional construct comprising decision, access, transaction, benefit, and post-benefit. This paper examines the empirical reliability and validity of Berry *et al*'s five dimensions within one service setting. The results of a survey with 443 service consumers found that the five measures were all reliable (i.e. an alpha of above .60) and discriminate validity held (correlations below .85). These items warrant additional empirical evaluation in other settings to determine their generalisability.

## **Introduction**

Consumers' time scarcity results in a 'time-buying' consumer who desires to purchase and use goods or services that assist in time and effort (Berry and Cooper, 1990). This demand for convenience has resulted in an increased number of businesses focusing on satisfying consumers' demands with goods and services which are able to reduce the time and energy spent during the consumer's buying process (Shaheed, 2004). Traditionally convenience has been defined as a single construct, one that is driven by time-saving considerations (Brown and McEnally, 1992). However some researchers have suggested that convenience is multidimensional (Berry and Cooper, 1990). Past research has focused almost exclusively on examining factors that increase the demand for convenience goods or services that reduce consumers' time expenditure (Brown and McEnally, 1992) rather than examining the role of convenience as attribute of goods and services (Berry *et al*, 2002; Brown, 1990, 1989; Yale and Venkatesh, 1986). More recently, Berry *et al* (2002) proposed a multidimensional measure that assesses convenience across time-saving and effort-saving domains. However, very little research exists, other than Seiders, Voss, Godfrey and Grewal (2007) exploring Berry *et al*'s five dimensions. This paper seeks to explore the reliability and validity of these measures in one service setting.

## **Literature Review**

In marketing literature, the first reference to the term 'convenience' was by Copeland (1923) who referred to the amount of time and effort expended in acquiring a consumer product. Brown and McEnally (1992) noted that early marketing definitions of the term 'convenience' primarily focused on providing consumer value by decreasing consumer time and effort costs, ignoring the other dimensions, such as the psychological, comfort-adding aspects of convenience. This has resulted in some recent researchers broadening the perspectives and considering convenience as

a product attribute that can reduce the non-monetary price of a product (i.e. Okada and Hoch, 2004; Seiders, Berry and Gresham, 2000).

The concept of convenience has been even further expanded with the suggestion that researchers should consider the need for convenience within the overall service delivery process, rather than only focusing on the service purchased (Berry *et al*, 2002; Brown and McEnally, 1992; Robinson and Nicosia, 1991; Seiders *et al*, 2000). For example, time-savings might involve less time spent in the consumption process (active time), or having the provider availability at a convenient time, i.e. consumer not having to wait (passive time) (Darian and Cohen, 1995). There is extensive research that consumers view waiting as ‘time lost’, which could have been used more productively (Carmon, Shanthikumar and Carmon, 1995; Hui and Tse, 1996; Leclerc, Shmitt and Dube, 1995; Maister 1985), as such reductions in waiting time could be an important component of convenience, impacting on consumer satisfaction (Hui and Tse, 1996; Kumar, Kalwani and Dada, 1997; Seiders and Berry, 1998).

Berry *et al*’s (2002) review of convenience-related literature suggested that past works have not adequately explored the complex interrelationships between time and effort in regards to the dynamic processes by which convenience is initiated and sustained. Berry *et al* (2002) put forward a conceptual model proposing a more comprehensive multi-dimensional measure of convenience within a services context. They proposed that service convenience refers to ‘consumers’ time and effort perceptions related to using or buying a service’ (p.5) and that it is a multidimensional construct comprising the dynamic processes of (p.6-8):

- Decision convenience is consumers need to decide how to obtain a particular service.
- Access convenience involves consumers initiating service delivery, i.e. actions required to request services and to receive them.
- Transaction convenience is consumers need to secure the service.
- Benefit convenience involves consumers to experience of the services.
- Post-benefit convenience is post service interactions with the provided.

### **Convenience as a Multidimensional Construct**

Within the literature much of the research has explored convenience using a single item measure relating to convenience-related costs of time and/or effort. The fact that these single item studies have conceptualized the construct differently is in fact the first evidence that convenience is multi-dimensional (Berry and Cooper, 1990; Berry *et al*, 2002).

Yale and Venkatesh (1986) realized that the increased importance of the service economy required the examination of consumer convenience in a new, systematic way. They argued that the variables ‘convenience goods’ and ‘time-saving durables’ were ‘fuzzily’ delineated in previous research as ‘operationalisations that measure the dependent variables in a very ambiguous, non-sensitive manner’ (p. 404). They proposed that that were in fact six components of convenience: time utilization, handiness, appropriateness, portability, accessibility and avoidance of unpleasantness, which influence consumer’s perceived convenience of product.

Brown (1989, p.55) argued that Yale and Venkatesh’s (1986) multidimensional measure of convenience was not driven by any particular theory, and ‘several of the components, such as “appropriateness”, are ambiguous and difficult to measure’. As such he sought to develop a five

component measure of convenience – time, place, acquisition, use and execution – which he proposed was based on economic utility theory (time, place, possession and form utilities) as well as having a cumulative measure as the fifth component of overall convenience (Brown, 1989). In addition, Yale and Venkatesh's (1986) 'accessibility' and 'portability' components overlap and do not represent discrete categories (Gehrt and Yale, 1993). However, Brown (1990, 1989) further claimed that 'time-saving' is not a separate dimension of convenience (p.16). For example, a person may purchase a product that has time, place, acquisition or use convenience, regardless of the product itself saving the buyer any time (Brown, 1989). Therefore, Brown suggested that the concept convenience should be clarified as applying to a characteristic of a product/service, rather than considering only the effort spent in using or purchasing a product /service.

Brown (1989) and Yale and Venkatesh (1986) used different words for the same components, for example, the 'avoidance of unpleasantness' component, deals with the consumer's ability to get someone else to perform an unpleasant task. Brown's 'execution' dimension would encompass this aspect of convenience while also including a situation when the consumer simply wants to free time or energy by contracting a task to someone else, even if the task is pleasant (Brown, 1990). Brown and McEnally (1992) further argued that Brown's (1990) proposed 'execution' dimension is not a dimension of convenience but represents the consumer's decision to 'contract out' someone or all of the time and energy requirements normally associated with an offering. In some sense, execution represents the ultimate convenience – letting someone else do some or all of something for you. Subsequently, Brown's (1990) dimensions and Yale and Venkatesh's (1986) classes can be linked by Berry *et al*'s (2002) more general dimensions. Specifically, the service convenience proposed by Berry *et al* underlie the various convenience conceptualisations proposed by prior research explicitly and implicitly (i.e. incorporating time savings, time flexibility, consumer waiting, effort savings, location, ease of transaction, and task allocation). Berry *et al* (2002) see these as best conceptualised in terms of the specific consumer activities required to purchase or use a service. This multi-dimensional approach of service convenience has been further tested in Seiders *et al*'s (2007) study of retailing. They conceptualised service convenience within retailing as a second-order, five-dimensional construct, using a 17 item scale. However, some of the items might not be suited for other service contexts. For example, their items used to explore benefit convenience were special designed for merchandise rather than service experience itself. It might also be suggested that the criteria that they developed would not necessarily be applicable to all service settings, especially those consumed at a distance, i.e. using the web or via phone.

## **Methodology**

The questionnaire was distributed on-site to consumers who attended three different health clubs in Taiwan, by health club employees. The response rate was 82% (i.e. 443 usable surveys were collected from the 540 questionnaires distributed). The questionnaire was developed in English then translated into Chinese by one person not involved in the research and then back translated by another to confirm item equivalency was achieved as recommended by Brislin (1986) and Mullen (1995). The questionnaire comprised part of a larger study; however, testing the reliability and validity of the five dimensions was an integral part of the broader project. If these

were not reliable and validity was not held then they measures could not be used in future research.

This research adapted the scales proposed by Berry *et al* (2002) related to their five types of convenience - decision, access, transaction, benefit, and post-benefit. The data was collected in 2006, prior to Seiders *et al*'s (2007) work appearing in the literature. Within their work Berry *et al* (2002) proposed that three items for each of the five constructs, that is, 15 items were developed. Seven point Likert scales were used (1 = Strongly Disagree, 7 = Strongly Agree), where respondents were asked about their perceptions of the provider based on existing experiences. The wording of questions was changed to fit the service convenience components for the specific service being examined, i.e. health clubs.

To explore the reliability of the constructs we followed Churchill's (1979) suggestion of examining the reliability of constructs using coefficient alpha. Reliability is 'the extent to which research findings would be the same if the research was to be repeated at a later date or with a different sample of subjects' (Veal, 2006, p.41). As it has been suggested that a minimum value of the item-to-total correlation value should be greater than .40 (Gliem and Gliem, 2003), the item-to-total-correlation values of the items on each of the measures were reliable at the .05 level of significance. However, within literature a minimum alpha of .60 suggested being appropriate (Hair *et al*, 2006) and this is used as the minimum required reliability level within this paper. To explore construct validity, we examined confirmatory factor analysis using AMOS, where a model of the constructs was assessed using a combination of fit indicators including chi-square analysis (usually considered to be  $p < 0.01$ ), the comparative fit index (CFI – closed to 0.90), the non-normed fit index (NNFI - approximately equal to 0.90), and the root mean square of approximation error (RMSEA - less than 0.10) indicate good model fit (Aarons et al., 2007; Fornell and Larcker, 1981; Hu and Bentler, 1999). We also examined the correlation coefficients between items, to identify if they measure separate constructs. Kline (1994) suggested that discriminate validity holds if correlations are less than .85.

## **Analysis**

### **Reliability**

The item correlations and alpha values for items within the five components of convenience are all had a Cronbach's alpha value greater than the cut-off value .60, suggested by Hair *et al* (2006): 'decision convenience': alpha = .62, 'access convenience': alpha = .75, 'transaction convenience': alpha = .69, 'benefit convenience': alpha = .74, 'post-benefit convenience': alpha = .77). None of the alpha's were increase if any items were removed, although alpha's for three items are low (i.e. Grace 2005; Karatepe, Yavas and Babakus, 2005), possible due to the fact that there were only three items (Bloemer, de Ruyter and Wetzels, 1999). The results identify that the five dimensions are therefore reliable and describe the domain of convenience.

### **Validity**

Construct validity was undertaken to identify ‘how well the results obtained from the use of the measure fit the theories around which the test is designed’ (Cavana, Delahaye and Sekaran, 2001, p.213). Validity was assessed using: a) confirmatory factor analysis, and b) correlation analysis.

Using Amos, a maximum likelihood confirmatory factor analysis was performed to test five-dimension structure of service convenience. The results of the CFA indicate that the measurement items fit the five-construct structure. Chi-square value of the measurement model was  $483.83(\chi^2)(df=80, p<0.001)$ . Although RMSEA=0.107, other practical fit indices demonstrated that the measurement model fits the data reasonably well (CFI=0.87; NNFI=0.84). The goodness-of-fit index as shown is good (0.87), in support of the overall fit of the measurement model (Fornell and Larcker, 1981; Tabachnick and Fidell, 2007).

Bivariate Pearson product-moment correlation ( $r$ ) analysis to explore the inter-relationships among the five dimensions of service convenience, i.e. discriminate validity (Zickmund 2003, p.304). Table 1 presents the correlation coefficients among the five measures and all are below 0.85, which Klien (1994) suggested indicates that discriminate validity of the measures exists.

**Table 1: Bivariate Correlations among the Five Constructs**

<b>Variable</b>	Decision	Access	Transaction	Benefit	Post-benefit
Decision	1.00				
Access	.67**	1.00			
Transaction	.66**	.70**	1.00		
Benefit	.62**	.64**	.61**	1.00	
Post-benefit	.50**	.45**	.53**	.72**	1.00

\*\* Correlation is significant at the  $p<0.01$  level (2-tailed).

## Conclusion

Consumers are more constrained by time than ever before and the development of customer perceived convenience is therefore an important marketing strategy. However, to date, service marketers have not extensively examined the role of convenience as a service/product attribute (Berry *et al*, 2002; Brown, 1990, 1989; Yale and Venkatesh, 1986). This paper empirically tests Berry *et al*'s (2002) service convenience dimensions and finds that they hold in the service context explored. This provides a foundation for future studies into convenience. It does suggest that convenience needs to be considered as more than simply time or effort savings. Organisations that can build convenience into their overall offerings should be able to have sustained competitive advantage in the marketplace (Dube, Renaghan and Miller, 1994).

There are some limitations and future research opportunities. This study explored the five dimensions in one service context and other contexts needs to be explored to consider the generalisability of the constructs, i.e. such as retailing (i.e. Seiders *et al* 2007). More importantly the research did not examine how the component of service convenience affects consumers, in terms of satisfaction or preferences. The research also did not explore any antecedence to

consumers' perceptions of convenience, which might affect how they viewed the constructs. The research can also explore how integration these multiple measures of convenience will moderate other relationships within the service context.

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