

# INVOLVEMENT WITH SERVICES: AN EMPIRICAL REPLICATION AND EXTENSION OF ZAICHKOWSKY'S PERSONAL INVOLVEMENT INVENTORY

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## ABSTRACT

The involvement construct is a key theoretical entity within the general marketing as well as the consumer satisfaction, dissatisfaction, and complaining behavior literatures. Involvement with services is used in the conceptualization and measurement of satisfaction with services and complaining behavior regarding services. The following study investigates the efficacy of using Zaichkowsky's Personal Involvement Inventory (PII) as a basis for operationalizing the involvement construct within the context of service research. Zaichkowsky (1994) suggests that her original 20-item instrument can be efficiently reduced in marketing research to a ten-item scale representing both affective and cognitive dimensions. Stafford and Day (1995) empirically assess this proposition in two unique service settings, and report evidence providing some initial support for Zaichkowsky's (1994) assertions. The current research replicates and extends these two studies in a study conducted across four unique service settings located throughout the United States. The results of the current research provide strong support for a further reduced eight-item subset of Zaichkowsky's PII that appears as a relatively reliable and valid measure of the affective and cognitive dimensions of the involvement construct within the context of services. Further, the two-dimensional psychometric properties identified in the eight-item scale (i.e., cognitive and affective dimensions) appear robust across service settings thereby potentially minimizing the impact of service heterogeneity. Research and managerial implications of this study are presented and discussed.

## INTRODUCTION

Involvement has long held status as an important social psychology and, by extension, consumer behavior construct. While the construct

has received a good deal of attention in the consumer behavior/marketing literature, particularly in product contexts, comparatively little empirical attention has been devoted to involvement within service settings despite its potential usefulness.

Involvement is widely recognized as a significant explanator of consumer behavior. For example, involvement has been implicated in the hierarchy of communication effects (Ray, Sawyer, Rothschild, Strong, & Reed, 1973; Vaughn, 1980), attitude formation and change (Petty, Cacioppo, & Schumann, 1983) and information processing (Greenwald & Leavitt, 1984). Involvement has also been studied for its influence on information search (Bloch, Sherrell, & Ridgway, 1986), opinion leadership (Higie & Feick, 1989), postpurchase evaluation (Korgaonkar & Moschis, 1982; Oliver & Bearden, 1983), and brand commitment (Kapferer & Laurent, 1986). Not only has the involvement construct played an important role as an explanatory variable in consumer behavior, but it has also been examined as a segmentation variable in product (Kapferer & Laurent, 1986; Assael, 1992) and service contexts (Webster, 1988; Longfellow & Celuch, 1993). Involvement with services is used in the conceptualization and measurement of satisfaction with services and complaining behavior regarding services.

Zaichkowsky (1985) reported what has become a milestone effort in measuring the involvement construct in the consumer behavior literature. Zaichkowsky's (1985, p. 342) Personal Involvement Inventory (PII) was originally developed as a unidimensional measure of the motivational state of involvement relative to consumer products, advertisements, and purchase decisions which focuses on "...A person's perceived relevance of the object based on inherent needs, values, and interests." Operationally, the original PII is a set of twenty semantic differential scale items that were initially developed based in large measure on student data. In developing the

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measure, internal consistency, test-retest reliability, content validity, criterion validity, and construct validity were assessed and judged to be satisfactory. However, Zaichkowsky (1985) suggested that a limitation of the PII was the lack of tests of convergent and discriminant validity in the development of the scale.

Zaichkowsky (1994) revisited the PII and identified two significant limitations of her twenty-item index in light of subsequent research. First, she noted that some researchers have doubted the robustness and validity of the PII in capturing the distinctly affective or cognitive bases of advertisements. Second, evidence had been presented that the twenty-item scale exhibited redundancy, leading to calls for the use of subsets of the items to represent the involvement construct (c.f., Munsen & McQuarrie, 1987; Lichtenstein, Bloch, & Black, 1988).

Based on these criticisms of the PII, Zaichkowsky (1994) set out to reduce the twenty-item index to a smaller subset of items that captured both emotional and cognitive types of involvement in a reliable and valid manner. The result of her efforts was the identification of a subset of nine items from the original twenty-item PII plus an additional semantic differential item poled with "involving/uninvolving." Similar to her original PII, Zaichkowsky's (1994) reduced ten-item scale was developed based largely on student samples and related specifically to product and advertising contexts.

Stafford and Day (1995) argued that a meaningful extension of involvement research would be related to the development of appropriate measures of the involvement construct for service contexts (as opposed to considering primarily product contexts). This call appears appropriate given that the growing importance of services to the economy of the United States has been well documented in the literature (Heskett, Sasser, & Hart, 1990; Quinn, 1992; Zeithaml and Bitner 2000). Further, as noted by Zeithaml, Parasuraman, and (1985), several important distinctions can be drawn between products and services. For example, services are more *intangible* than products. Further, services may be produced and consumed at the same time; thus, production and consumption can be *inseparable*. Relative to products, there tends to be much *less*

*standardization* in the performance of services. And, lastly, since services cannot be stored and are more susceptible to fluctuating demand than are products, services are more *perishable*. As such, the PII needs to be carefully evaluated in a service context as distinctions between products and services (i.e., less standardization, intangibility, and inseparability) may influence consumer responses to some items in ways that influence the reliability and validity of the measure as well as the identification of affective and cognitive dimensions within the PII.

Therefore, a worthwhile avenue of services marketing research would be the identification of the role of involvement in services marketing phenomena. However, in order to achieve this objective, a reliable and valid scale of the involvement construct *within the context of services* will be necessary. The purpose of the current research is to identify whether such a measure can be derived from the work of Zaichkowsky (1985; 1994).

Support for the stated purpose of the current research can be found in the work of Stafford and Day (1995), which provides a meaningful extension of the work of Zaichkowsky (1994) in a number of ways. First, these authors identify that Zaichkowsky's (1994) assertion that the PII is context-free makes the PII an appropriate base for exploratory attempts to operationalize the involvement construct in service contexts. Second, they suggest the argument that involvement with either products or services most likely contains both affective and cognitive components is consistent with value-expressive and utilitarian benefits often associated with services. In fact, emerging services research suggests that both cognitive and affective determinants exist for numerous constructs in services, including satisfaction (Oliver, 1993) and value (Holbrook, 1994). Third, they disregard the addition by Zaichkowsky (1994) of an "involving/uninvolving" semantic differential scale item in their analyses. We support this position, as the purpose of both Zaichkowsky's (1994) and Stafford and Day's (1995) studies was to identify a reduced set of reliable and valid measures *of the original PII* for marketers. Thus, if a reliable and valid subset of the original twenty-items of the PII scale can be identified, then the addition of a new item appears

unnecessary, even redundant. Finally, Stafford and Day (1995) conduct their empirical assessment using a nonstudent sample in two service settings, which arguably increases the confidence with which marketers can comfortably generalize the reported research to service settings.

However, the results of Stafford and Day's (1995) study provide only relatively weak empirical evidence supporting a nine-item reduced set proposed by Zaichkowsky (1994). While their study does demonstrate that the two-factor conceptualization of the involvement construct appears to represent an improvement over the unidimensional index perspective, the indices for model fit reported by Stafford and Day (1995) suggest room for improvement. Thus, the primary purpose of the current research is to replicate these studies in a larger number of service settings to ascertain whether a subset of Zaichkowsky's (1985) PII can in fact be considered a reliable and valid measure of the involvement construct across alternative service settings. Specifically, we achieve this end by investigating the psychometric properties of (1) Zaichkowsky's (1985) original twenty-item PII as a one factor scale versus (2) Zaichkowsky's (1994) nine-item two factor scale reduction as suggested by Stafford and Day (1995). The next sections present the methods and results of the current research.

## METHOD

### Sample

The data for the current research derives from four hundred and twenty-six completed surveys that were collected from consumers of services in six cities located throughout the United States. The method of data collection employed personal interviews of consumers captured via mall intercepts. The personal interviews concerned four service industries (i.e., airline transportation services [n=99], amusement park recreation services [n=102], telecommunication services [n=108], and health care services [n=116]) with consumers being asked to assess one of two firms within the industry they were evaluating. The service organizations identified in the research are well known national brands familiar to most individuals in the United States based on

aggressive advertising practices. The airlines included Delta and Continental Airlines, the amusement parks included Busch Gardens and Disney World (both in Florida), the fast food outlets were McDonald's and Wendy's, the telecommunication firms were AT&T and Sprint, and the hospitals were one of two in each city best known to consumers based on convenience samples of consumer responses prior to data collection. Individuals were queried to ensure that they had personally used the service within the last forty-five days prior to participation in the study.

Since the data for the study are collected from many separate locations throughout the United States, it is important to determine whether the data can be said to be from the same general population. Specific comparisons were made between the study's sample versus national statistics for the U.S. population based on the demographic characteristics of age, gender, education, and income. No differences were observed between the samples and national indices based on the identified demographic characteristics.

## RESULTS

### Performance of Zaichkowsky's (1985) Original PII Index

The Appendix presents Zaichkowsky's (1985) original PII that was used for purposes of the current research. As stated previously, Zaichkowsky (1985) originally envisioned the PII as a twenty-item unidimensional measure of the involvement construct. The first step in our investigation was to conduct an exploratory factor analysis (EFA) to determine if a single factor appeared to adequately describe the collected data across the four identified service settings. The criteria for the EFA analyses were designed to reflect Zaichkowsky's original analyses and included factor extraction using principal components with a standard of eigenvalues greater than 1.00, and varimax factor rotation. The results of the EFA suggested that the factor structure of the original twenty-item PII varies across service settings: telecommunication services (three factors), transportation services (4 factors), recreational services (two factors), and health care

**Table 1**  
**Confirmatory Factor Analyses for Unidimensionality of Zaichkowsky's (1985) Original PII**

Measure of Fit	Telecommunications Services			Transportation Services			Recreational Services			Health Care Services		
	Congeneric Model	Tau-Equivalent Model	Parallel Forms Model	Congeneric Model	Tau-Equivalent Model	Parallel Forms Model	Congeneric Model	Tau-Equivalent Model	Parallel Forms Model	Congeneric Model	Tau-Equivalent Model	Parallel Forms Model
$\chi^2$	560.92	609.92	676.77	550.25	577.22	619.17	Input matrix not positive definite.	Input matrix not positive definite.	619.17	656.06	742.52	833.34
df	170	189	208	170	189	208			208	170	189	208
p	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
RMSR	.10	.15	.14	.095	.14	.13			.13	.11	.17	.15
GFI	.61	.58	.51	.61	.60	.56			.56	.61	.55	.49
AGFI	.52	.54	.51	.52	.55	.56			.56	.52	.50	.49
NFI	.67	.64	.60	.65	.63	.60			.60	.65	.60	.55
CFI	.74	.72	.69	.72	.72	.70			.70	.71	.67	.63
RMSEA	.15	.15	.15	.15	.15	.14			.14	.16	.16	.16

df = degrees of freedom

p = significance level of  $\chi^2$  statistic

GFI = Goodness of Fit Index

RMSR = Root Mean Square Residual

AGFI = Adjusted Goodness of Fit Index

NFI = Normed Fit Index

CFI = Comparative Fit Index

RMSEA = Root Mean Square Error of Approximation

services (three factors). Readers should be aware that Varimax factor rotation failed to converge in 25 iterations in the case of transportation services. Therefore, the less restrictive OBLIMIN factor rotation was employed in this specific case.

We next employed confirmatory factor analysis (CFA) using LISREL 8 to determine if in fact the unidimensional conceptualization of Zaichkowsky's (1985) PII adequately represents data in the service contexts we assessed. Joreskog and Sorbom (1989, p. 114) state, "The most common type of measurement model is the one-factor congeneric measurement model;..." Joreskog and Sorbom define congeneric measures as measures (i.e.,  $x_1, x_2, \dots, x_{20}$  in the current case) that have pairwise correlations equal to unity. However, these authors further identify two more measurement models used in confirmatory factor analysis to ascertain unidimensionality that we also considered in the current research. The parallel measurement model hypothesizes that the

measures have both equal true score variances and equal error variances. The tau-equivalent measurement model hypothesizes that the measures have equal true score variances, however, possibly different error variances. Table 1 presents the results of confirmatory factor analysis using all three measurement models across the four service settings investigated in the current research.

Joreskog and Sorbom (1993) suggest that the goodness of fit of structural equation models, such as employed in the current investigation's confirmatory factor analyses, can be judged by several measures of overall fit: the chi-square ( $\chi^2$ ) statistic, Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), and the Root Mean Square Residual (RMSR). The use of multiple measures of overall model fit in assessing the performance of structural equation models is generally supported in the literature. For example, Joreskog (1969) expressed early concerns for over-interpreting the chi-square statistic when using

**Table 2**  
**Exploratory Factor Analysis of the Nine-Item Reduced Scale<sup>1</sup>**

Variable	Telecommunication Services		Transportation Services		Recreational Services	Health Care Services	
Important	.77		.82		.78		.80
Relevant	.73		.81	.33	.87		.67
Means A Lot	.67		.80		.88		.86
Valuable	.79		.73		.89		.67
Interesting	.71	.46	.66	.53	.86		.70
Exciting		.88		.86	.84		.88
Appealing		.79		.77	.80		.84
Fascinating		.88		.86	.84		.85
Needed	.73		.67		.86		.62
Eigenvalue	4.86	1.29	4.69	1.42	6.46		3.99 1.63
% of Variation	54.0	14.3	52.1	15.8	71.8		44.3 18.2
Coefficient $\alpha$	.8915		.8799		.9495	.8228	

1 = Factor scores of  $< .3$  are omitted to aid in readability of the table.

LISREL. Consequently, a variety of measures of fit in structural equation models have evolved in recent years to augment the interpretation of the chi-square statistic (see Bollen, 1989 or Tanaka, 1993 for a discussion of these issues). Bagozzi and Baumgartner (1994, p. 400) recently review these alternatives, concluding that: "Among the relative fit indices, the comparative fit index (CFI) proposed by Bentler (1990) seems to hold the greatest promise for assessments of overall model fit..." We also note that the Bentler and Bonett's (1980) normed fit index (NFI) has appeared popular in the literature. Finally, we recognize that Browne and Cudeck (1993) suggest using the (Root Mean Square Error of Approximation (RMSEA), with values of 0.08 or less representing reasonable errors of approximation in a population. Thus, we assess goodness of fit of confirmatory factor models using LISREL-based structural

equation analyses in the current research by evaluating the performance of these six accepted measures of model fit: the chi-square statistic, GFI, AGFI, RMSR, NFI, CFI, and RMSEA.

The results in Table 1 demonstrate that Zaichkowsky's (1985) original PII index fails to perform adequately in any of the four services we investigated. That is, in no case did any of the measures of fit we assessed in confirmatory factor analysis demonstrate what might commonly be considered acceptable performance. We interpret these results as suggesting that Zaichkowsky's (1985) full twenty-item PII does not appear an appropriate measure of consumers' involvement with services.

**Table 3**  
**Confirmatory Factor Analyses for Unidimensionality of Zaichkowsky's (1995) Nine-Item Reduced Scale**

Measure of Fit	Telecommunications Services			Transportation Services			Recreational Services			Health Care Services		
	Congeneric Model	Tau-Equivalent Model	Parallel Forms Model	Congeneric Model	Tau-Equivalent Model	Parallel Forms Model	Congeneric Model	Tau-Equivalent Model	Parallel Forms Model	Congeneric Model	Tau-Equivalent Model	Parallel Forms Model
$\chi^2$	110.37	121.40	137.57	114.82	134.81	151.03	79.38	83.46	97.49	Input matrix not positive definite.	Input matrix not positive definite.	Input matrix not positive definite.
df	27	35	43	27	35	43	27	35	43			
p	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
RMSR	.092	.13	.12	.10	.14	.13	.045	.068	.061			
GFI	.78	.77	.74	.77	.74	.70	.84	.84	.81			
AGFI	.64	.70	.72	.62	.66	.69	.73	.79	.80			
NFI	.78	.76	.73	.76	.72	.68	.90	.90	.88			
CFI	.82	.82	.80	.80	.77	.75	.93	.94	.93			
RMSEA	.17	.15	.15	.18	.17	.16	.14	.12	.11			

df	=	degrees of freedom	AGFI	=	Adjusted Goodness of Fit Index
p	=	significance level of $\chi^2$ statistic	NFI	=	Normed Fit Index
GFI	=	Goodness of Fit Index	CFI	=	Comparative Fit Index
RMSR	=	Root Mean Square Residual	RMSEA	=	Root Mean Square Error of Approximation

### Performance of Zaichkowsky's (1994) Two-Factor Reduced Scale

The failure of Zaichkowsky's (1985) original PII to adequately measure consumers' involvement with services does not necessarily mean that the PII lacks value for service marketers. The second phase of the current research was to determine whether a reduced set of these items might capture hypothesized cognitive and affective dimensions in a more reliable and valid fashion. In order to assess this question we replicated the tests conducted on the full twenty-item PII as discussed above, only now on the reduced set of items consistent with those identified by Zaichkowsky (1994) and Stafford and Day (1995).

Table 2 presents the results of the *exploratory* factor analysis of the nine-item conceptualization.

The results of these analyses suggest that in every case except recreational services, a relatively consistent separation of cognitive and affective dimensions may be captured by the identified items. Further, the only item that appears to confound the affective and cognitive dimensions is the "interesting" item, and then only in the cases of the telecommunication and transportation services settings. Stafford and Day (1995) appear to have found similar results related to the "interesting" item, and suggested that the item may best reflect the cognitive dimension of involvement, in contrast to Zaichkowsky's (1994) argument that "interesting" may best reflect the affective dimension. Stafford and Day support this assertion by suggesting that since services required active participation in the production/creation of the service, consumers may direct greater attention

**Table 4**  
**Confirmatory Factor Analyses for Unidimensionality of an Eight-Item Reduced Scale from the PII**

Measure of Fit	Telecommunications Services			Transportation Services			Recreational Services			Health Care Services		
	Congeneric Model	Tau-Equivalent Model	Parallel Forms Model	Congeneric Model	Tau-Equivalent Model	Parallel Forms Model	Congeneric Model	Tau-Equivalent Model	Parallel Forms Model	Congeneric Model	Tau-Equivalent Model	Parallel Forms Model
$\chi^2$	98.68	107.54	119.27	90.81	101.65	107.60	60.17	64.75	78.33	156.50	174.12	178.49
df	20	27	34	20	27	34	20	27	34	20	27	34
p	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RMSR	.096	.13	.12	.11	.13	.12	.044	.069	.060	.16	.15	.14
GFI	.77	.77	.75	.79	.75	.73	.87	.86	.83	.73	.70	.70
AGFI	.59	.69	.74	.63	.67	.71	.77	.82	.82	.51	.59	.69
NFI	.76	.74	.71	.74	.71	.70	.91	.91	.89	.61	.56	.55
CFI	.80	.79	.78	.78	.77	.77	.94	.94	.93	.63	.60	.61
RMSEA	.19	.17	.15	.19	.17	.15	.14	.12	.11	.24	.22	.19

df	=	degrees of freedom	AGFI	=	Adjusted Goodness of Fit Index
p	=	significance level of $\chi^2$ statistic	NFI	=	Normed Fit Index
GFI	=	Goodness of Fit Index	CFI	=	Comparative Fit Index
RMSR	=	Root Mean Square Residual	RMSEA	=	Root Mean Square Error of Approximation

to services than products when entering into exchange relationships. In summary, the exploratory factor analyses of the nine-item, two-factor conceptualization of involvement suggests initial support for such a conceptualization.

Based on this initial evidence, we next conducted confirmatory factor analysis on the nine item, two factor model (see Table 3). The results in Table 3 suggest that the nine-item, two-factor conceptualization appears better supported than is the twenty-item full PII in the telecommunications, transportation, and recreational service settings. Thus, we interpret the results as providing some support for the assertion by Zaichkowsky (1994) and Stafford and Day (1995) that a reduced set of items from the PII appears better able to capture both cognitive and affective dimensions of consumers' involvement with services. However, like the results reported by Stafford and Day (1995), the measures of model fit reported in Table 3 of the current research suggest room for improvement.

#### Performance of an Eight-Item, Two-Factor Reduced Scale

The results of exploratory factor analyses reported in Table 2 suggest that the performance of the measurement model may be improved by deleting the "interesting" item, thereby yielding an eight-item reduced scale as opposed to the nine-item reduced scale advocated by Zaichkowsky (1994) and Stafford and Day (1995). Given that at least three scale items exist for both cognitive and affective dimensions even after eliminating the "interesting" item, we are confident that the potential tradeoff between overall model performance versus the elimination of an ill-performing redundant scale item appears worthy of consideration. Based on this argument, we conducted confirmatory factor analyses of both the unidimensional and two-factor conceptualization using only the identified eight scale items.

Table 4 presents the results of confirmatory factor analyses of the unidimensional

**Table 5**  
**Confirmatory Factor Analyses for Eight-Item Versus Nine-Item Reduced Scale from the PII**

Measure of Fit	Telecommunications Services		Transportation Services		Recreational Services		Health Care Services	
	Eight-Item Model	Nine-Item Model	Eight-Item Model	Nine-Item Model	Eight-Item Model	Nine-Item Model	Eight-Item Model	Nine-Item Model
$\chi^2$	22.19	38.06	25.68	57.92	40.21	61.76	29.46	53.76
df	19	26	19	26	19	26	19	26
p	.27	.06	.14	.0003	.0031	.0001	.059	.0011
RMSR	.05	.053	.049	.063	.034	.041	.071	.071
GFI	.95	.93	.93	.88	.92	.88	.93	.89
AGFI	.91	.88	.88	.80	.85	.80	.87	.81
NFI	.95	.93	.93	.88	.94	.93	.93	.88
CFI	.99	.97	.98	.93	.97	.95	.97	.94
RMSEA	.04	.066	.06	.11	.11	.12	.069	.096

df	=	degrees of freedom	AGFI	=	Adjusted Goodness of Fit Index
p	=	significance level of $\chi^2$ statistic	NFI	=	Normed Fit Index
GFI	=	Goodness of Fit Index	CFI	=	Comparative Fit Index
RMSR	=	Root Mean Square Residual	RMSEA	=	Root Mean Square Error of Approximation

conceptualization using the eight-item reduced set of questions from Zaichkowsky's (1985) original PII. The results suggest that eliminating the "interesting" item and using the remaining eight items, as a single-factor index does not appear to improve the performance of the measurement model in the service settings investigated in the current research. We interpret these results as generally supporting Zaichkowsky's (1994) argument that the involvement construct is most likely not conceptually unidimensional in nature.

Based on these findings, we conducted confirmatory factor analyses on Stafford and Day's (1995) nine-item reduced scale as well as our own proposed eight-item reduced scale (see Table 5). The results reported in Table 5 suggest that both measurement models represent relatively superior

performance when compared to the performance of the full twenty-item PII (see Table 1), the nine-item measurement model as an index of involvement (see Table 3), and our own proposed eight-item version as a unidimensional index (see Table 4). However, the results in Table 5 further demonstrate that our two-dimensional eight-item measurement model appears superior to Stafford and Day's (1995) nine-item version across the measures of model fit employed in the current research. Given the original purpose of Zaichkowsky (1994), Stafford and Day (1995), and the present research was to attempt to identify the most parsimonious, reliable, and valid set of items for measuring consumers' involvement with services, the weight of the evidence appears to support the proposed eight-item reduced set of



**Table 6**  
**Test for Convergent Validity for Two-Factor Model**

Variable	Telecommunication Services	Transportation Services	Recreational Services	Health Care Services
<i>Affective Dimension</i>				
Exciting	.82 (9.80)	.79 (8.51)	.86 (10.59)	.88 (10.80)
Appealing	.75 (8.68)	.76 (8.04)	.82 (9.85)	.72 (8.40)
Fascinating	.92 (11.49)	.79 (8.52)	.83 (9.97)	.82 (9.84)
<i>Cognitive Dimension</i>				
Needed	.55 (5.77)	.68 (7.15)	.84 (10.30)	.45 (4.91)
Important	.78 (8.98)	.72 (7.73)	.79 (9.38)	.81 (9.93)
Relevant	.65 (7.09)	.85 (9.78)	.86 (10.78)	.56 (6.33)
Means A Lot	.78 (8.99)	.74 (8.06)	.87 (10.93)	.95 (12.68)
Valuable	.79 (9.27)	.71 (7.58)	.90 (11.57)	.56 (6.32)

Lambda-x Estimates (Maximum Likelihood)  
T-Values in parentheses

items as a relatively robust and parsimonious measure of the involvement construct in service settings. The next section further investigates the psychometric properties of the proposed scale.

#### **Reliability and Validity of the Eight-Item Reduced Scale**

Nunnally (1978) suggests that a set of items with an associated coefficient  $\alpha$  score of  $\geq .7$  can be considered internally consistent. Based on this standard, the items corresponding to the affective and cognitive dimensions from the proposed eight-item scale appear reliable in all four service settings investigated in the current research: telecommunication services (affective coefficient  $\alpha = .8600$ ; cognitive coefficient  $\alpha = .8309$ ), transportation services (affective coefficient  $\alpha = .8239$ ; cognitive coefficient  $\alpha = .8527$ ), recreational services (affective coefficient  $\alpha = .8766$ ; cognitive coefficient  $\alpha = .9289$ ), and health care services (affective coefficient  $\alpha =$

.8464; cognitive coefficient  $\alpha = .8008$ ).

The validity of the measurement model investigated in the current confirmatory factor analyses can be assessed by considering the convergent and discriminant validity properties of the scale. Anderson and Gerbing (1988, p. 416) note that: "Convergent validity can be assessed from the measurement model by determining whether each indicator's estimated pattern coefficient on its posited underlying construct factor is significant (greater than twice its standard error)." Table 6 presents the lambda-x coefficients and demonstrates that in all cases the parameters estimates appear statistically significant (i.e., t-values are greater than 2). Thus, evidence indicates that the measurement model related to the proposed eight-item, two-factor scale for involvement possesses convergent validity.

Bagozzi and Phillips (1982) suggest that if convergent validity is apparent, it is appropriate to test for discriminant validity. Anderson and Gerbing (1988, p. 416) state that: "Discriminant

**Table 7**  
**Test for Discriminant Validity for Two-Factor Model**

Service Industry Setting	Model with Correlation Between Factors Constrained to Unity ( $\Phi=1$ )	Model with Correlation Between Factors Free	Chi-Square Difference Test
Telecommunications Services	$\chi^2$ (20 df) = 98.75, p=0.00	$\chi^2$ (19 df) = 22.19, p=0.27	$\chi^2$ (1 df) = 75.56, p<.005
Transportation Services	$\chi^2$ (20 df) = 90.81, p=0.00	$\chi^2$ (19 df) = 25.68, p=0.14	$\chi^2$ (1 df) = 65.13, p<.005
Recreational Services	$\chi^2$ (20 df) = 60.17, p=0.00	$\chi^2$ (19 df) = 40.21, p=0.003	$\chi^2$ (1 df) = 19.96, p<.005
Health Care Services	$\chi^2$ (20 df) = 156.50, p=0.00	$\chi^2$ (19 df) = 29.46, p=0.059	$\chi^2$ (1 df) = 127.04, p<.005

validity can be assessed for two estimated constructs by constraining the estimated correlation parameter ( $\phi_{ij}$ ) between them to 1.0 and then performing a chi-square difference test on the values obtained for the constrained and unconstrained models (Joreskog, 1971).” Bagozzi and Phillips (1982) suggest interpreting the chi-square difference test by looking for a significantly lower  $\chi^2$  for the model in which the trait correlations are not constrained to unity, thus indicating that the traits are not perfectly correlated and that discriminant validity is achieved.

Table 7 presents the results of the assessment of discriminant validity in the proposed eight-item measurement model. These results provide evidence of discriminant validity in all four of the service industries investigated in the current research.

### DISCUSSION

Results of the present study demonstrate strong support for a further reduced set of eight items from Zaichkowsky’s (1994) scale modification. The proposed scale reduction appears to capture both affective and cognitive dimensions of involvement in a reliable and valid manner within service contexts. We now focus on research and managerial implications of employing the measure in service settings.

First, while the Zaichkowsky (1994) items

examined in the present study performed well in the context of the services utilized, considering the nature of services relative to products (i.e., intangibility, inseparability, etc.), additional research of this nature is warranted across alternative services to more completely validate this measure. Further, as noted by Day, Stafford, and Camacho (1995), the Zaichkowsky (1994) measure is most appropriately classified as a measure of enduring involvement. As such, we must also echo the call of Day et al., (1995) for work in the development of measures which capture situational involvement particularly for the services domain.

These measurement issues notwithstanding, research incorporating the reduced Zaichkowsky measure examined in this study holds the potential for increasing our understanding of services marketing phenomena. As noted earlier, involvement has been implicated in prepurchase (e.g., the hierarchy of communication effects, attitude formation and change, information processing) and postpurchase (e.g., satisfaction, brand commitment) domains. An integration of the enduring involvement construct into these research areas applied to service settings would prove illuminating. For example, Oliver and Bearden (1983) found that involvement tended to raise evaluations prior to using an appetite suppressant and that these heightened expectations carried over to post-usage evaluations. In contrast

to the high involvement group, low involvement users did not tie their prior attitudes to expectations, but did use their prior attitudes to respond to disconfirmation and satisfaction measures. Clearly, incorporating level (high/low) of enduring involvement into service satisfaction research might offer similar insights into how prepurchase evaluations interact with postpurchase evaluations.

Additional research opportunities exist relative to the affective and cognitive dimensions of the reduced Zaichkowsky measure. Park and Young (1983) and Park and Mittal (1985) argue that empirical work related to the effects of involvement on consumer behavior have failed to consider cognitive and affective dimensions of involvement in addition to level (high/low) of involvement. They propose different motives, utilitarian and value-expressive, underlying cognitive and affective involvement, respectively. Park and Young (1983) relate the effects of cognitive and affective involvement to differential information processing and attitude formation. Under cognitive involvement an individual would be oriented more toward functional issues and would tend to engage in piece-meal, attribute/benefit-based (analytical) attitude formation. In contrast, under affective involvement, an individual would be oriented more toward emotions and self-image issues and would tend to engage in global, emotional/image exemplar matching (analogical) attitude formation. With the relatively reliable and valid measures of cognitive and affective involvement identified in the present study, service research can now begin to systematically explore the effects of these different motivational bases. Given the saliency of personal exchanges in service settings, affective involvement and associated processes would appear particularly relevant for exploration.

With respect to managerial implications, marketing scholars have indicated a need for service organizations to segment their markets as a means of developing more effective marketing strategies (Parasuraman, Zeithaml, & Berry, 1985; Cadotte, Woodruff, & Jenkins, 1987). With respect to profiling target segments, involvement research (Kapferer & Laurent, 1986; Longfellow & Celuch, 1993), suggests the potential utility of employing involvement measures in addition to the

oft-utilized demographic variables. While demographics provide information about *who* your service customers are (i.e., in terms of age, education, occupation, income, etc.), they give no indication of *how involved* customers are with your service (i.e., the likely motivational state of individuals in terms of their receptivity to certain forms of information from particular sources). Thus, information regarding service involvement can substantially enrich profiles of customer segments used in subsequent strategy development.

Assael (1992) among others has noted the appropriateness of using different communication strategies for low and high involvement consumers. For low involvement customers, relatively simple messages emphasizing product/service name identification and one or two benefits combined with the use of repetition oriented broadcast media is recommended. Further, the use of sales promotions in concert with advertising efforts is suggested for low involvement customers.

In contrast, for high involvement customers the use of more complex messages with detailed information related to several benefits is advocated. The use of more information oriented print media is also recommended. In contrast to low involvement consumers, repetition of the message is not as important for high involvement consumers. Lastly, communication strategies may want to recognize the significance of personal influence to high involvement segments.

Further, the cognitive and affective involvement dimensions may also hold communication implications. Some customers may be more cognitively involved in a service while others may be more affectively involved. Cognitively involved individuals may be more receptive to communications focusing on specific attribute/benefit information. In contrast, affectively involved individuals may be more receptive to communications emphasizing feeling states and/or self-image orientations.

Given findings that high involvement customers have been found to hold more favorable evaluations of product performance (Oliver & Bearden 1983) as well as evidence more attachment toward and loyalty to the service provider (Longfellow & Celuch 1993), it may be strategically beneficial to attempt to increase

**Appendix A**  
**Zaichkowsky's (1985) Full Twenty-Item PII**

<i>important</i>	---	---	---	---	---	---	---	<i>unimportant</i>
of no concern	---	---	---	---	---	---	---	of concern to me
<i>irrelevant</i>	---	---	---	---	---	---	---	<i>relevant</i>
<i>means a lot to me</i>	---	---	---	---	---	---	---	<i>means nothing to me</i>
useless	---	---	---	---	---	---	---	useful
<i>valuable</i>	---	---	---	---	---	---	---	<i>worthless</i>
trivial	---	---	---	---	---	---	---	fundamental
beneficial	---	---	---	---	---	---	---	not beneficial
matters to me	---	---	---	---	---	---	---	doesn't matter
uninterested	---	---	---	---	---	---	---	interested
significant	---	---	---	---	---	---	---	insignificant
vital	---	---	---	---	---	---	---	superfluous
<i>boring</i>	---	---	---	---	---	---	---	<i>interesting</i>
<i>unexciting</i>	---	---	---	---	---	---	---	<i>exciting</i>
<i>appealing</i>	---	---	---	---	---	---	---	<i>unappealing</i>
<i>mundane</i>	---	---	---	---	---	---	---	<i>fascinating</i>
essential	---	---	---	---	---	---	---	nonessential
undesirable	---	---	---	---	---	---	---	desirable
wanted	---	---	---	---	---	---	---	unwanted
<i>not needed</i>	---	---	---	---	---	---	---	<i>needed</i>

Items that are bold/italicized include the set of items ultimately recommended as providing the most reliable and valid measurement scale. The italicized item that is not bolded (i.e., interesting) is the additional item recommended by Zaichkowsky (1994) and Stafford and Day (1995) for inclusion in the reduced scale.

service customers' involvement rather than accepting the fact that low involvement customers do not perceive the service to be important/relevant. Approaches for increasing consumer involvement advocated by Assael (1992) include: linking the product/service to an important issue or situation; developing more involving communications by expressing salient customer values; and/or attempting to increase the importance consumers perceive in one or more product/service benefits.

In conclusion, the concept of involvement applied to services appears to warrant the attention of marketing researchers. At least in terms of enduring service involvement, we concur with Zaichkowsky (1990) who noted that another, "better" measure of involvement is not needed, what is needed are investigations of "... the different relationships between products, involvement, and people." (p.616) Involvement research holds the potential for increasing our understanding of consumer-service relationships as well as offering insights to service marketing practitioners.

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