

Using a Product/Service Evaluation Frame: An Experiment on the Economic Equivalence of Product versus Service Alternatives for Message Retrieval Systems

David R. Fortin

UNIVERSITY OF RHODE ISLAND

Timothy B. Greenlee

UNIVERSITY OF RHODE ISLAND

Product/service alternatives represent a newly emerging competitive environment where, as a result of advancements in technology, competition between products and services capable of yielding the same functional benefits has increased. The purpose of this research effort is to determine whether the evaluation measures of perceived quality, perceived value, and willingness to buy vary when the options under investigation represent the cross-category comparison of a product and a service. In addition, the impact of temporal price frames, defined as economically equivalent means of stating price information, on product/service evaluations is investigated. One hundred twenty subjects were randomly assigned to a 3 × 2 between-subjects factorial design in which two temporal price frames and three product/service combinations were evaluated for their impact on product/service evaluations. Results indicate that consumers provide different evaluations for economically equivalent product/service temporal price frames. J BUSN RES 1998. 41.205-214 © 1998 Elsevier Science Inc.

In the information technology arena, advancements in technology have made it possible for services to compete against products with both yielding the same benefits. For example, answering machines used in the residential market are now being challenged by voice-mail services offered by telecommunication providers; conversely, high-performance satellite dishes are now available in the residential TV broadcasting market competing against regular cable service providers. Similarly, database information is now available as a product on CD-ROM or as a service from on-line providers

(Prodigy, America On-line, etc.). Because services and products are not usually charged on the same basis, how do consumers incorporate extrinsic price cues into the decision-making process involving such cross-category comparisons?

Economic theory suggests that price information may exhibit both negative and positive cues. Consumers may react negatively to higher prices in the market, because those affect the level of income available to purchase goods. As such, price could be considered as a negative cue; however, it can also serve as an indicator of product quality based on the belief that higher production costs must entail a higher retail price (Scitovsky, 1945). Further studies pioneered by Leavitt (1954) and others (fully reviewed by Monroe and Krishnan, 1985) have demonstrated that a positive price-quality relationship does appear to exist.

Monroe and Krishnan (1985) presented a conceptual model relating price, perceived quality, perceived sacrifice, perceived value, and willingness to buy. In this model, price is considered an objective external characteristic of a product/service that consumers perceive as a stimulus. Prices that are considered as acceptable to the consumer lead to the development of perceived value; whereas, prices that are considered unacceptable lead to the development of little or no perceived value. Dodds, Monroe, and Grewal (1991) augmented the Monroe and Krishnan (1985) model by incorporating the effects of brand and store name on product evaluations.

It is generally agreed that consumers are imperfect information processors; thus, their reliance on extrinsic cues such as price, as opposed to intrinsic cues, which require a certain level of expertise to be evaluated, is useful in simplifying the decision process. However, the processing of these extrinsic

Address correspondence to David R. Fortin, Senior Lecturer, University of Canterbury, Department of Management, Private Bag, Christchurch, New Zealand.

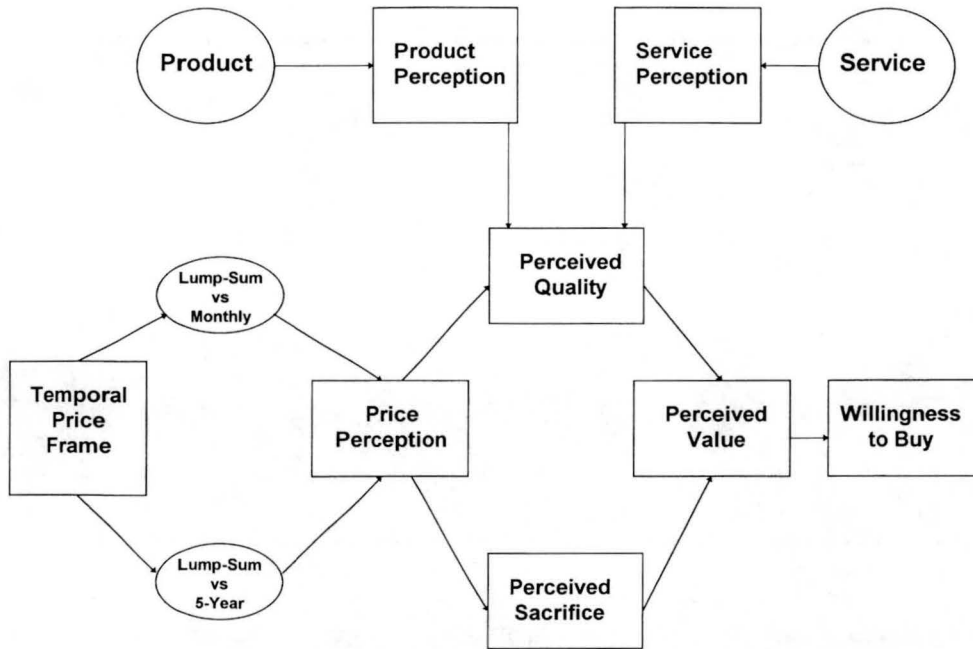


Figure 1. Conceptual model of the effects of temporal price frames on product/service evaluations. *Source:* Adapted from Monroe and Krishnan, 1985; Dodds, Monroe, and Grewal, 1991.

cues might also lead to inaccurate conclusions such as in the high price–high quality relationship (Monroe, 1979).

Because this is the case, there is particular interest in determining how the price cue is processed under specific conditions and if it is processed at all in other conditions. Assuming that some form of price processing occurs, the price cue is evaluated against a price “template” called a reference price. This reference price is a median figure floating between lower and upper boundaries. A price cue is assimilated or contrasted based on whether or not it fits in the expected range. These boundaries, termed “anchors,” may be modified or reevaluated based on exposure to new stimuli and therefore may affect the value associated with the reference price.

Most of the studies relative to these issues have examined how consumers use price cues to make judgments on the three previously mentioned dimensions of perceived quality, perceived value, and willingness to buy; however, the products under investigation were always a part of the same product category and not reflective of cross-category comparisons. Because products and services generally do not follow similar pricing structures, the reference price for both options cannot be computed on the same basis. For instance, most services charge a monthly fee or a usage fee, whereas most products are bought as lump sum payments. The question to be answered is how do potential users of the product/service evaluate and compare price in their decision if indeed they use this dimension in the choice process. Specifically, how does the equivalent reference price get translated across service/product categories? Some researchers might argue that each price is registered in a different mental account (Thaler, 1985). Or perhaps consumers can convert the information if it is presented in a particular framing configuration as suggested by

prospect theory (Kahneman and Tversky, 1979). Specifically, this research effort proposes several modifications to the original Monroe and Krishnan (1985) model and the more recent Dodds, Monroe, and Grewal (1991) model. As displayed in Figure 1, the effects of two cross-category items, a product and service each capable of performing the same functions, and the concept of temporal price frames, the use of framing to present economically equivalent price information, are included in the model as a means of assessing their impact on perceived quality, perceived value, and willingness to buy. The literature provides no indication of research addressing these three product/service evaluation tools when a product and a service are available to provide the same functions. Therefore, we propose to apply the tenets of Kahneman and Tversky's (1979) prospect theory and Thaler's (1985) mental accounting along with Dholakia's (1994) decision structures and Johnson's (1984, 1988) evaluation alternatives to determine the effects of temporal price frames and reference prices on the previously mentioned product/service evaluation tools.

Literature Review

Prospect Theory

Over the previous 50 years, expected utility theory has come to be accepted as the major paradigm in the analysis of decision-making under risk (Schoemaker, 1982). As such, it has been generally accepted as a normative model of rational choice and widely applied as a descriptive model of economic behavior (Kahneman and Tversky, 1979). However, research has demonstrated that individuals often fail to behave as predicted by the rational tenets of expected utility theory (Kahneman and

Tversky, 1979). Kahneman and Tversky (1979) present prospect theory as an alternative view of individual decision-making under risk that combines the tenets of expected utility theory with the psychophysical influences of choice (Monroe, 1986). The prospect theory value function consists of deviations from a reference point, is generally concave for gains and convex for losses, and is generally steeper for losses than for gains. Prospect theory posits that individuals are risk seeking when faced with losses and risk adverse when faced with gains, rather than always being risk averse as predicted by expected utility theory. In addition, how individuals react to decision situations is greatly determined by the way the decision choices are framed.

Thaler's Mental Accounting

Building on Kahneman and Tversky's (1979) prospect theory, Thaler (1985) proposed a new model of consumer behavior combining cognitive psychology and microeconomics. The model included the mental coding of the combination of gains and losses using prospect theory's value function and introduced the concept of transaction utility as a means of evaluating purchase alternatives. Thaler's value function incorporated the same behavioral principles outlined by Kahneman and Tversky (1979). Thaler (1985) posits that consumers assign information to various mental accounts as a means of maintaining an overall cognitive balance. Thaler's (1985) frequently cited lost theater ticket versus lost money scenario illustrates the effects of mental accounting. Under the scenario where the consumer had previously purchased a ticket, 54% stated they would not repurchase a lost ticket whereas under the scenario where the consumer had not previously purchased a ticket, 88% stated they would purchase a ticket after discovering they had lost an amount of money equivalent to the purchase price. Buying a second ticket increases the balance in the "ticket" mental account to an unacceptable level. However, the cost associated with the lost money is not assigned to the "ticket" account but instead is assigned to another mental account. Whereas the net effects are the same, the consumer perceives an unbalanced set of mental accounts in the first scenario and a balanced set of accounts in the second scenario. Such findings provide support for the theory that consumers maintain and utilize various mental accounts.

Comparable vs. Noncomparable Alternatives

Research into the consumer decision-making process has been extensive and has included insight into how consumers evaluate comparable and noncomparable alternatives. Johnson (1984) identified two strategies as a means of evaluation, a within-attribute strategy where alternatives are compared directly on attributes, and an across-attribute strategy, where alternatives are compared holistically. In general, the level of abstract product comparisons increases whereas the level of within-attribute comparisons decreases as alternatives become more noncomparable. Support also exists for the generalizabil-

ity of these predictions to scenarios incorporating multiple alternatives (Johnson, 1988). Whereas these findings provide insight into the consumer decision-making process involving noncomparable product alternatives, all comparisons utilized in these studies were representative of product/product comparisons and provide little insight into the decision-making process involving equally comparable product and service alternatives.

Information Restructuring

Coupey (1994) demonstrated how decision-makers restructure information to make it more amenable to analysis. Such restructuring can occur by editing out unneeded information, by rearranging information into a more meaningful format, or by inferring missing data into the information display. Systematic restructuring tendencies also appear to be predictable and contingent on the information provided. Thus, marketers should anticipate consumers' tendency to restructure and the subsequent effects on decision-making (Coupey, 1994).

Decision Structures

Dholakia (1994) identified two types of structures that may be incorporated into the decision-making process as consumers choose between comparable service and product offerings. The benefit dominant hierarchy encourages consumers to evaluate comparable products and services in terms of specific benefits before considering the form or category in which these benefits will be available. The category dominant hierarchy encourages consumers to consider first the form or category followed by consideration of the specific benefits. Dholakia (1994) also found support for the existence of product/service biases in which consumers tend to have a predisposition to prefer either a product or a service. Such a bias supports the use of a category dominant hierarchy in a consumer decision-making process involving comparable products and services. There appears to be evidence that consumers are more likely to select tangible products over intangible service offers (Dholakia 1992, 1994; Dholakia and Venkatraman, 1993); this might be referred to as a "product bias." However, acquisition and usage of information technologies such as message retrieval systems can also be constrained by other factors related to available resources of the user: constraints of money, time, space, and skill (Dholakia, Mundorf, and Dholakia, 1996).

Product vs. Service Frames

Based on the concepts of Kahneman and Tversky's (1979) prospect theory, Thaler's (1985) mental accounting, and Dholakia's (1994) decision structures, we propose that consumers have two well-defined frames or mental accounts, one for product evaluations and one for service evaluations as presented in Figure 2. When provided with either two products or two services, both capable of performing the same functions and different only in the wording of their economically equivalent price frames, consumers will be capable of completing

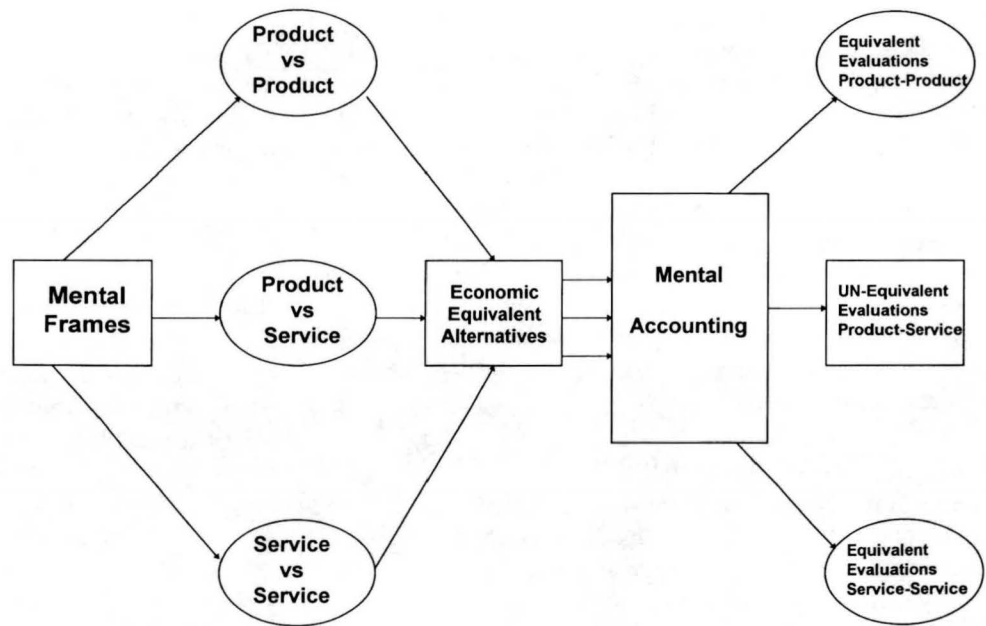


Figure 2. Model of product and service frames.

the mental accounting necessary to determine whether or not the two products or two services are economically equivalent. As a result, both products or services receive equivalent evaluations. One possible explanation for the existence of these well-defined frames or mental accounts is the level of consumer experience in making such decisions. Often, consumers are required to evaluate multiple product offerings or multiple service offerings. As a result of these experiences, consumers develop the mental accounting abilities necessary to assess the economic equivalence of two alternatives.

On the other hand, consumers have very little experience in comparing a product/service combination in which both the product and the service are capable of performing the same functions and differ only in the wording of their economically equivalent price frames. As a result, when presented with such a comparison, consumers have no well-defined mental frame from which to base the mental accounting calculations necessary to determine whether or not the product/service combination presented are economically equivalent alternatives (refer to Figure 2). Therefore, consumers are not likely to do the necessary mental calculations and are likely to provide different evaluations for the product and service options.

Hypotheses

Given the previous discussion concerning the use of mental accounts for product/product, service/service, and product/service evaluations,

H1: The comparison of two items within the same category, H1A product/product and H1B service/service, each capable of performing the same functions and differing only in their economically equivalent tempo-

ral price frames, will result in equivalent product/product and service/service evaluations whereas the comparison of two cross-category items, H1C a product and a service, each capable of performing the same functions and differing only in their economically equivalent temporal price frames, will result in non-equivalent evaluations for the product and the service.

Dholakia (1994) notes that the systematic marketing of services is a relatively recent phenomenon. Major hurdles in this process have included the inability to standardize and inventory services. However, because of the ability of products to overcome these hurdles, the channels of distribution for products are longer, more extensive, and are likely to encompass a larger number of manufacturers, models, vendors, and distribution points. Such market dominance facilitates a customer orientation favoring a product as opposed to a service bias and favors the development of a category-dominated hierarchy of decision-making where the decision process is split first by the form, product/service, and then evaluated by the specific benefits.

Assuming that consumers are unable to perform the mental accounting activities necessary to confirm economically equivalent product/service alternatives, product/service evaluations should be more positive for the option that is viewed as the *perceived* best package configuration. Service offerings are generally quoted on a per month basis and product offerings are generally quoted as a lump sum payment. In addition, the per month fee is likely to be lower than the lump sum payment. Given these events,

H2: Evaluations for a service framed as a per month fee will be significantly more positive than evaluations for

Table 1. Design #1: Means of D-Score^a Dependent Measures by Treatment Answering Machines versus Voice-Mail Services

Experimental Design (3 × 2)	Temporal Frame 1	Temporal Frame 2	Total Sample (n = 120)
	Lump Sum vs Monthly Fee	Lump Sum vs 5-year Fee	
Product "A" vs Product "B"			
1-DQUAL	-0.22	-0.16	-0.19
2-DVAL	0.76	0.80	0.78
3-DBUY	0.62	0.37	0.49
Product "A" vs Service "A"			
1-DQUAL	-0.40	-0.46	-0.43
2-DVAL	-0.17	1.03	0.43
3-DBUY	-0.05	1.27	0.61
Service "A" vs Service "B"			
1-DQUAL	0.19	-0.27	-0.04
2-DVAL	0.73	0.67	0.70
3-DBUY	-0.04	0.48	0.22
Total Sample (n = 120)			
1-DQUAL	-0.14	-0.30	-0.22
2-DVAL	0.44	0.83	0.64
3-DBUY	0.18	0.71	0.44

^a Each "D-score" is equal to measure A – measure B and varies between -4 to +4.

a product framed as a lump sum payment, whereas evaluations for a product framed as a lump sum payment will be significantly more positive than evaluations for a service framed as a per month fee accumulated over a 5-year period.

Further insight into the extent that consumers utilize the principles of mental accounting can be derived through specific analysis of two of the pricing options, the monthly payment and the monthly payment extended over the 5-year useful life. The monthly payment option, pricing option 1, provides a price of \$4.95/month and an estimated useful life of 5 years. The extended-life payment option, pricing option 2, extends the information presented in pricing option 1 by including an additional piece of information, an extended-life price of \$297. Pricing option 1 leaves the mental accounting computations up to the consumer, whereas pricing option 2 includes the results of the mental accounting computations. If, as previously hypothesized, consumers do not undertake the mental accounting computations necessary to determine the true extended-life price, pricing option 1 appears to be less costly than pricing option 2 and should result in higher evaluations.

As previously stated, Dholakia (1994) provides evidence that a product bias is more likely to develop than a service bias. Under such conditions, consumers are more likely to favor product as opposed to service alternatives. Thus,

H3: Scores on the dependent measures for pricing option 1 will be significantly higher than for pricing option 2, whereas scores on the dependent measures for the product will be significantly higher than for the service.

Method

Subjects and Design

We randomly assigned 120 undergraduates to one of six experimental conditions generated by a 3 × 2 between-subjects factorial design (refer to Table 1 for design #1). The issue under investigation involved a purchase situation where both a product and a service were capable of performing the same function. Students tend to be both knowledgeable and heavy users of answering machines and/or voice-mail services; therefore, these equivalent product and service offerings were operationalized for the experiment.

Independent Variables

All subjects were exposed to a short description for two options of a product or a service describing the applicable features and uses of each. Consistent with Yadav and Monroe (1993), we propose two alternate means of temporal price framing that represent different ways of perceiving the same offer. The two conditions of the temporal price frame treatments were "monthly framing" (product @ \$125 and service @ \$4.95/month) and "expected life framing" (product @ \$125 and service @ \$4.95/month equal to \$297/5-year period). The two temporal price frames are considered to be economically equivalent given the following: (1) a product/service priced at \$125 and a product/service at \$4.95/month remains constant in both temporal price frames, with the only exception being that the results of the mental accounting are provided in the expected life frame, and (2) the product/service descriptions define the useful life of the product/service to be 5 years. After treatment exposure, subjects were asked to respond to

Table 2. Design #2: Means of Dependent Measures^a by Treatment (Category by Pricing Options) Answering Machines vs Voice-Mail Services

Experimental Design (2 × 2)	Pricing Option 1	Pricing Option 2	Total Sample (n = 120)
	Monthly fee (\$4.95)	Monthly fee (\$4.95) + extended 5-year	
"PRODUCT"			
1-PQUAL	3.91	3.71	3.81
2-PVAL	2.34	2.30	2.32
3-WBUY	1.89	2.07	1.98
"SERVICE"			
1-PQUAL	3.98	4.24	4.11
2-PVAL	3.37	2.61	2.99
3-WBUY	2.97	1.99	2.48
Total Sample (n = 120)			
1-PQUAL	3.94	3.97	3.96
2-PVAL	2.85	2.45	2.65
3-WBUY	2.43	2.03	2.23

^a Each dependent measure is measured on a 5-point scale ranging from low to high.

a set of scale items that were transformed into scores for the three dependent variables of perceived quality, perceived value, and willingness to buy. Because each participant is asked to evaluate two options without a forced choice constraint, the individual evaluations for each pair can be re-assigned to a second design (see Table 2 for design #2) that allows for further examination of main effects and interactions between two pricing options (monthly or extended-life payment) and two category options (product or service) options.

Procedure

Data were collected during regularly scheduled class periods. All treatments were randomly distributed within groups and subjects entered their responses on computer-readable answer sheets. As a means of controlling the restructuring task, each pair of product/product, service/service, and product/service descriptions was worded as similarly as possible. Information regarding the pricing options for each pair of alternatives followed a similar pattern, with the exception of the addition of the extended life pricing information to that specific temporal price frame.

Dependent Measures

Each of the three dependent variables (perceived quality-PQUAL, perceived value-PVAL, and willingness to buy-WBUY) consisted of a 5-item scale using either a semantic differential or a Likert-type measure of attitudes. These scales were replicated from Dodds, Monroe, and Grewal (1991) who reported acceptable reliability coefficients of 0.95, 0.93, and 0.97 respectively for perceived quality, perceived value, and willingness to buy.

Results

Data Examination

All variables were examined for normal distribution and outlier contamination. Although no data transformation was re-

quired, approximately 8% of cases reported missing values and those were replaced with the mean of each respective variable as recommended by Tabachnick and Fidell (1989).

Scale Reliability

Each of the scales used in the study was assessed for its internal consistency using the Cronbach alpha procedure. All scales reported acceptable alpha coefficients (PQUAL $\alpha = 0.80$, PVAL $\alpha = 0.89$ and WBUY $\alpha = 0.94$).

Design #1 Results

A difference-score (Nunally, 1978) was computed for each dependent variable, which consists of the (option "A" score - option "B" score). Three scores DQUAL, DVAL, and DWBUY were generated. Values of the D-score could range between +(4) and -(4). The means resulting from the D-Score operation are reported in Table 1. Three separate ANOVA analyses were performed on each of the dependent variables to assess significant group means of the D-scores across the factorial design.

Because of the design's organization, the two rows with the product/product and service/service options were expected to show nonsignificant results and were investigated as control groups. Results of three separate ANOVAs for each dependent measure on the full design all yielded nonsignificant main and interaction effects (DQUAL [F (3,119) = 2.413, $p > .05$]; DVAL [F (3,119) = 1.056, $p > .05$]; DBUY [F (3,119) = 1.292, $p > .05$]). Given these results, three one-way ANOVAs were executed as analytical comparisons to isolate the effects of temporal price frames for the product/service condition. Results of the ANOVA with strength of association evidenced by partial ω^2 are shown in Table 3; effect sizes for ω^2 are reported as weak (0.01), moderate (0.06) or strong (0.15) by Keppel (1991). As expected, the two conditions where product/product and service/service were presented yielded nonsignificant mean differences for the D-score ($p > .05$). However, in the product/service situation, there is a significant

Table 3. Design #1: Results of One-Way ANOVA (Analytical Comparisons) for Product vs Service Condition only ($n = 40$)

Dependent Variable	Type of Effect	Treatment	df	F-test ^a	Partial ω^2
1-DQUAL	Main	Temporal Frame	(1,119)	0.344	0.02
2-DVAL	Main	Temporal Frame	(1,119)	8.838 ^a	0.16
3-DBUY	Main	Temporal Frame	(1,119)	4.716 ^a	0.08

^a $p < .05$.

observed difference for both DVAL (strong effect, $\omega^2 = 0.16$) and DBUY (moderate effect, $\omega^2 = 0.08$) at the $p < .05$ level but not for DQUAL; refer to Figure 3 for a graphical representation of the results.

Although there is no change in perceived quality across temporal frames, the significant preference for the product over the service when temporal framing is extended to 5 years suggests that subjects do not perform economic equivalent mental computations to ascertain the amount of money spent over time. Results would appear to support the hypothesis that framing effects are observed only when consumers have to evaluate options across categories and not when comparisons are made within the same category (i.e., product or service).

Design #2 Results

The previous design used the difference score based on a monthly fee/payment and a lump-sum payment to examine the occurrence of mental accounting based on two differently framed, economically equivalent options. This second design allows for the further comparison of two monthly options (monthly fee/payment -vs.- monthly fee/payment + extended 5-year cost) by category (product or service). In this design, the analysis is performed on the actual dependent variable measures and not the D-score. This structure allows for the

examination of main effects and interactions as well as the isolation of category effects. Table 2 displays the means observed for design #2.

To investigate the effects of both treatments on all three DVs, three separate ANOVAs were performed on design #2, and the results are reported in Table 4. Main effects of the two pricing options are significant for WBUY only [$F(1,79) = 5.019, p < 0.5$]. Figure 4 graphically displays the dependent measures by pricing option.

Significant main effects of category are also observed for PVAL only [$F(1,79) = 8.100, p < .05$] as shown in Figure 5. Finally, a significant disordinal interaction is observed between pricing options and category for WBUY only [$F(1,79) = 4.986, p < .05$] as demonstrated in Figure 6. As evidenced in the results of the analysis of design #1, when the product is presented as a lump sum temporal price frame, it generates higher purchase intentions than services only when the extended 5-year value of the service is displayed. However, when only monthly pricing options are considered as in design #2, services are preferred over products when the pricing option is a monthly fee/payment but not when the monthly fee/payment extended 5-year value is present. Again, this tends to confirm that consumers do not engage in the mental accounting for the long-term value of a service that is usually paid for on a monthly fee basis.

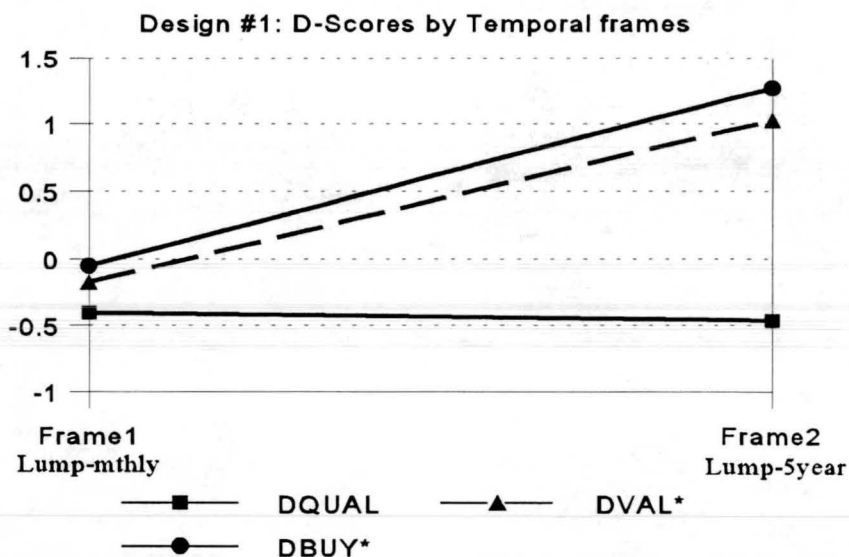
Figure 3. Product vs service ($*p < .05$).

Table 4. Design #2: Results of Analysis of Variance (ANOVA)

Dependent Variable	Type of Effect	Treatment	df	F-test ^a	Partial ω^2
1-PQUAL	None	—	—	—	—
2-PVAL	Main	Category	(1,79)	8.100 ^a	0.06
3-WBUY	Main	Pricing option	(1,79)	5.019 ^a	0.05
	Interaction	Category \times pricing	(1,79)	4.986 ^a	0.05

^a $p < .05$.

Review of Hypotheses and Findings

Given that produce/product and service/service options result in equivalent product/product and service/service evaluations, evidence is found to support both H1A and H1B. Consumers appear to be performing the mental accounting necessary to determine that two items within the same category are economically equivalent options. Evidence is found to partially support H1C. Product/service evaluations are significantly different for two of the three measures, perceived value, and willingness to buy. Nonsignificant results were found for perceived quality. This could be attributable to the fact that perceived quality is a function of more than just price and is not being adequately captured in this research design.

Evidence is found to support H2. Evaluations for a service priced on a per month basis are more positive than evaluations for a product priced as a lump sum payment, whereas evaluations for a product framed as a lump sum payment are more positive than evaluations for a service framed as a per month fee accumulated over the five-year useful life. Evidence is found to partially support H3. Scores for one of the three dependent measures, willingness to buy, were significantly higher for pricing option 1. Thus, additional support is pro-

vided for the hypothesis that consumers do not undertake the mental accounting computations necessary to determine the economic equivalence among options. Furthermore, the scores for one of the three dependent measures, perceived value, were significantly higher for the service as opposed to the product.

Conclusions

Managerial Implications

Based on these findings, several managerial implications can be drawn. Evidence was found to support the hypothesis that evaluations for a service framed as a per month fee are significantly more positive than evaluations for a product framed as a lump sum payment. As such, marketers of services should emphasize their low monthly fees as a "competitive advantage" over products with a lump sum payment. On the other hand, marketers of products should emphasize the overall lower cost of a lump sum payment as compared to a monthly service fee accumulated over the useful life of the product. In addition, the fact that subjects consistently rated the perceived quality of services higher than the perceived

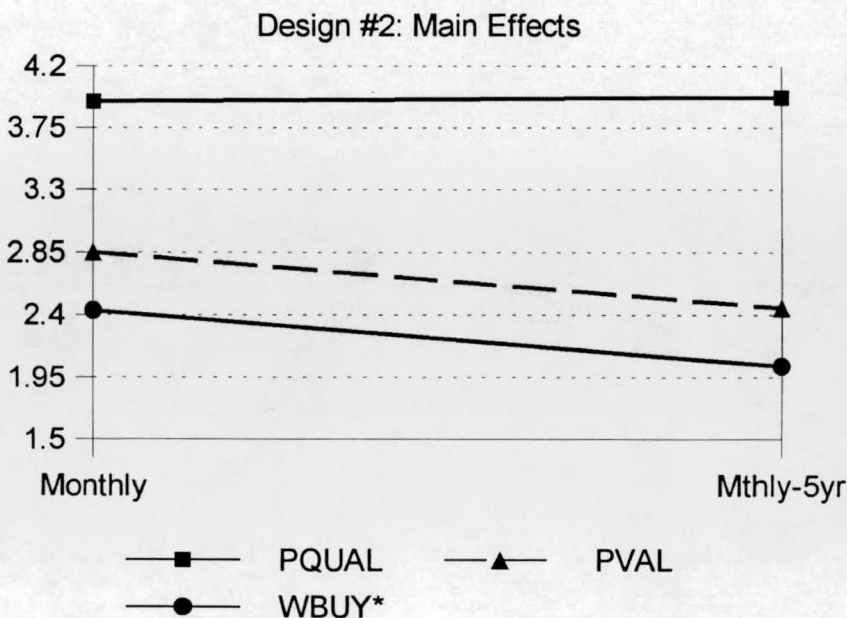
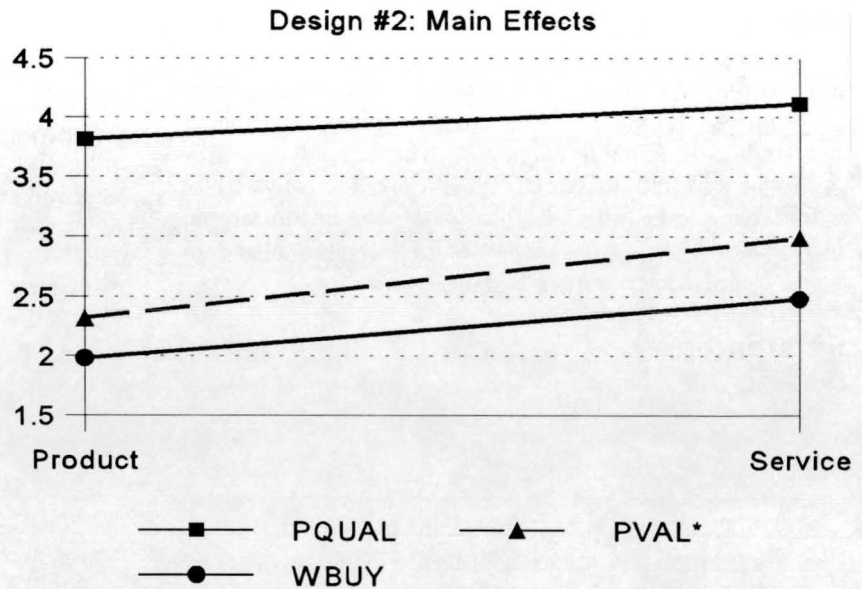
**Figure 4.** Monthly pricing options ($*p < .05$).

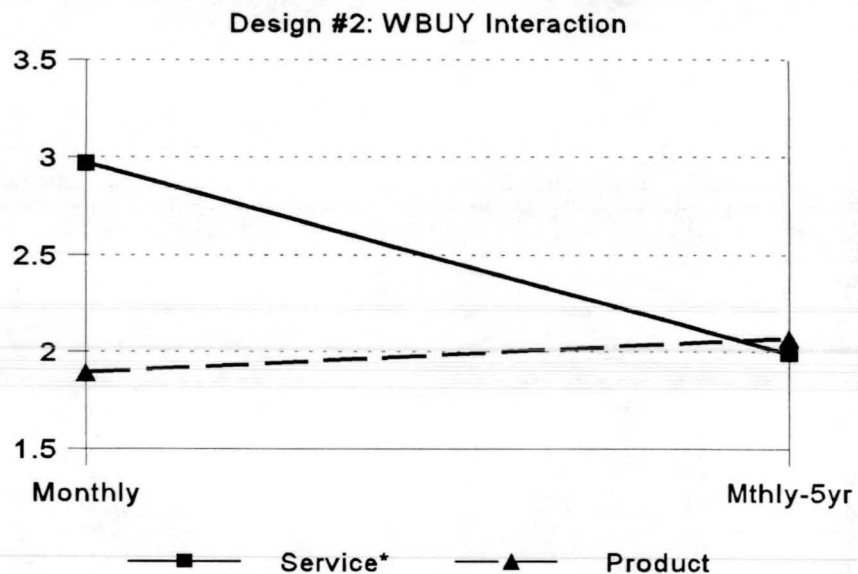
Figure 5. Categories (* $p < .05$).

quality of products provides further direction for both the marketers of services and products. Service marketers should capitalize on this higher level of perceived quality by incorporating into their communications information highlighting their superior perceived quality image. At the same time, product marketers should focus on turning the negative image associated with a lower perceived quality rating into a more positive image. Where applicable, product-related communications might emphasize the improvements in performance resulting from the use of electronic components, which allow for an improved set of features over previous offerings. In addition, emphasis could be placed on the existence of an overall quality-oriented manufacturing process consisting of specified quality standards for component parts and the employment of a technically trained labor force. The implications

drawn from these research findings are not designed to favor either service or product marketers. Instead, these implications are intended to serve as direction for both parties as the technological environment continues to foster the direct comparison of products and services capable of performing the same functions.

Limitations and Directions for Further Research

The sample used for this study was homogeneous and therefore limited as a representative sample of the market for the product/service examined. Also, the experiment did not account for potential effects of other cues such as brand, store image, etc., that have been proven in previous research to effect product evaluations. In the area of product/service research, future endeavors could possibly introduce these cues

Figure 6. Monthly pricing options (* $p < .05$).

as part of manipulated treatments because few studies have examined this particular issue. Although this study did not use a forced choice dependent measure as part of the design, the reality of the marketplace with few options available at this point in time might command that such a situation be investigated in future research. Specifically, a set of variables with varying levels might be put forward in an orthogonal plan that would measure responses from a conjoint design where forced choice is integrated in the measure.

References

- Coupey, Eloise: Restructuring: Constructive Processing of Information Displays in Consumer Choice. *Journal of Consumer Research* 21 (June 1994): 83-99.
- Dholakia, Ruby Roy: Competition between Goods and Services: Setting the Research Agenda, in *Research in Marketing*, J. N. Sheth, ed., JAI Press, Greenwich, CT. 1992, pp. 81-114.
- Dholakia, Ruby Roy: The Marketing Challenge: When Services Compete with Products, in *Strategic Perspective on the Marketing of Information Technologies*, vol. 4, Ruby Roy Dholakia, ed., JAI Press, Greenwich, CT. 1994, pp. 55-70.
- Dholakia, Ruby Roy, Mundorf, Norbert, and Dholakia, Nikhilesh: Bringing Infotainment Home: Challenge and Choices, in *New Infotainment Technologies in the Home: Demand-Side Perspectives*, Ruby Roy Dholakia, Norbert Mundorf, and Nikhilesh Dholakia, eds., Lawrence Erlbaum, Mahwah, NJ. 1996, pp. 1-22.
- Dholakia, Ruby Roy, and Venkatraman, Meera: Marketing Services that Compete with Goods. *Journal of Services Marketing* 7 (Spring 1993): 16-23.
- Dodds, William B., Monroe, Kent B., and Grewal, Dhruv: Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. *Journal of Marketing Research* 28 (August 1991): 307-319.
- Johnson, Michael D.: Consumer Choice Strategies for Comparing Noncomparable Alternatives. *Journal of Consumer Research* 11 (December 1984): 741-753.
- Johnson, Michael D.: Comparability and Hierarchical Processing in Multialternative Choice. *Journal of Consumer Research* 15 (December 1988): 303-314.
- Kahneman, Daniel, and Tversky, Amos: Prospect Theory: An Analysis of Decision Making under Risk. *Econometrica* 47 (March 1979): 263-291.
- Kahneman, Daniel, and Tversky, Amos: Choices, Values and Frames. *American Psychologist* 39 (April 1984): 341-350.
- Keppel, G.: *Design and Analysis: A Researcher's Handbook*, Prentice Hall, Englewood Cliffs, NJ. 1991.
- Leavitt, Harold J.: A Note on Some Experimental Findings about the Meaning of Price. *Journal of Business* 27 (July 1954): 205-210.
- Monroe, Kent B.: *Pricing: Making Profitable Decisions*, McGraw Hill, New York. 1979.
- Monroe, Kent B.: The Framing of Consumer Choices, in *Advances in Consumer Research*, vol. 14, Melanie Wallendorf and Paul Anderson, eds., Association for Consumer Research, Provo, UT. 1986, p. 182.
- Monroe, Kent B., and Krishnan, R.: The Effect of Price on Subjective Product Evaluations, in *Perceived Quality: How Consumers View Stores and Merchandise*, Jacob Jacoby and Jerry C. Olson, eds., Lexington Books, Lexington, MA. 1985, pp. 209-232.
- Nunnally, J. C.: *Psychometric Theory*, 2nd ed., McGraw Hill, New York. 1978.
- Schoemaker, Paul J. H.: The Expected Utility Model: Its Variants, Purposes, Evidence, and Limitations. *Journal of Economic Literature* 20 (June 1982): 529-563.
- Scitovszky, Tibor: Some Consequences of the Habit of Judging Quality by Price. *Review of Economic Studies* 12 (Winter 1945): 100-105.
- Tabachnick, Barbara, and Fidell, Linda: *Using Multivariate Statistics*, Harper Collins Publishers, New York. 1989.
- Thaler, Richard: Mental Accounting and Consumer Choice. *Marketing Science* 4 (Summer 1985): 199-214.
- Yadav, Manjit S., and Monroe, Kent B.: How Buyers Perceive Savings in a Bundle Price: An Examination of a Bundle's Transaction Value. *Journal of Marketing Research* 30 (August 1993): 350-358.