

Consumer Payment Systems: The Relationship of Attribute Structure to Preference and Usage*

Introduction

Within the marketing literature a great deal of research effort has been invested in attempting to understand consumer purchasing behavior. While extensive knowledge has been accumulated, one potentially important path of research has remained virtually unexplored. This concerns the *systems of payment* consumers use to conduct economic exchanges. Consumer attitudes toward, choices among, and use of alternative payment systems would appear to present some unique and important challenges for research.

Much prior research on consumer payment systems has consisted of descriptive profiles of credit card users (e.g., Etzel 1968, 1974; Matthews and Slocum 1969, 1972; Plummer 1971; Mandell 1972; Awh and Waters 1974; Wiley and Richard 1974; Russell 1975; Hawes, Talarzyk, and Blackwell 1976; Adcock, Hirschman, and Goldstucker 1977; Hirschman and Goldstucker 1978). Despite the great research attention given to credit cards, a review of published literature revealed no empirical or theoretical studies centered on other major payment systems such as cash, checking accounts, or travel and entertainment (T&E) cards. Two assumptions appear

Two hypotheses were examined in this research. According to the first, a differential pattern of attributes would be perceived by consumers to compose five alternate payment systems: cash, personal checks, bank cards, retail store cards, and travel and entertainment cards. This expectation was confirmed. The second hypothesis put forward the expectation that consumers' perceptions would be substantially linked to their preference for and usage of alternative payment systems. This expectation was confirmed by findings that the proportion of explained variance in preference and usage patterns attributable to consumers' perceptions exhibited consistently high statistical significance and appeared to have pragmatic substance.

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to underlie this lack of research on alternative consumer payment systems. First, researchers may have assumed that there were no substantive differences among payment systems. Second, they may have assumed that even if differences among payment systems did exist, such variations did not affect their use. The validity of both these assumptions has recently been challenged. Empirical studies have indicated that consumers do differentiate the relative importance of attributes salient to the credit card subset of payment systems (Hirschman and Julander 1978; Hirschman, Srivastava, and Alpert 1978; Hirschman, Alpert, and Srivastava 1980). These same studies provide evidence that consumers evaluate credit cards differentially on salient attributes. Furthermore, empirical evidence has shown that a relationship exists between a consumer's possession and utilization of alternative payment systems and his or her actual purchasing behavior (Hirschman 1979).

Purpose

The purpose of the present study is to explore two aspects of consumer payment systems which have not been previously investigated: (1) the pattern of attributes perceived by consumers to characterize five major payment systems: cash, bank credit cards, store credit cards, travel and entertainment cards, and personal checks; and (2) the relationship of these attributes to payment system usage and preference under four different purchasing situations: average day, out-of-town business trip, out-of-town pleasure trip, and major shopping trip, as well as an overall basis.

This research extends prior studies in three major ways. First, it introduces 11 attributes found salient to payment systems. Second, it measures the relationship of these attributes to the preference and usage of payment systems in different situations and on an overall basis. Prior to the present study, payment systems had been primarily examined within a department store purchasing context. Third, the investigation of payment systems is expanded beyond store and bank credit cards to include three other major payment systems: cash, personal checks, and travel and entertainment cards.

The underlying premise is that consumers perceive alternative payment systems to be composed of different levels of salient attributes. For example, some payment systems provide leverage potential; some are more widely accepted than others. The relative utility of the attribute set possessed by a particular payment system is believed to shift under the different demand conditions presented by various usage situations. Because of this, it is believed that the preference for and usage of alternative payment systems will shift also. This reasoning

gives rise to the following research hypotheses:¹ Hypothesis 1—Alternative payment systems are perceived by consumers to have different compositions of salient attributes. Hypothesis 2—Differences in attribute composition for payment systems are related to their preference and usage under different situations and on an overall basis.

Conceptualization and Methodology

The paucity of literature concerning payment system attributes and usage situations corresponds closely to the lack of theoretical development for this aspect of buying behavior. Thus it was necessary to employ an empirically grounded approach for the research (e.g., Zaltman, Pinson, and Anglemar 1972). Because it was essential to determine the set of attributes and situational contexts salient to payment systems before undertaking a major quantitative investigation, data were collected in two phases, qualitative and quantitative.

Qualitative Data Collection

In the qualitative phase, a series of focus group interviews was held with users of multiple payment systems.² Participants in the sessions were asked to discuss the different *attributes* they felt were relevant to payment system use. From this phase of research, a set of 11 attributes salient to payment system preference and usage were generated. These are described in the Appendix. Focus group participants were also asked about different *situations* for which their usage and preference for payment systems would vary. This part of the discussion gave rise to the four usage situations explored in the present study: average day, major shopping trip, out-of-town business trip, and out-of-town pleasure trip.

Quantitative Data Collection

The nationally representative Consumer Mail Panel maintained by Market Facts, Inc., served as the quantitative data source. Because Market Facts possessed prior knowledge of the payment systems used by panel members, questionnaires were directed toward those households having a personal checking account and at least one credit card. This assured that a sample of persons would be drawn containing subjects possessing at least three of the payment systems examined.

1. These hypotheses were restated in the null form for empirical testing. They are stated here in affirmative form to better represent the theoretical propositions underlying the research.

2. Participants were prescreened to have used at least four of the five major payment systems studied during the past year. This was done to assure that they could comment knowledgeably on payment system characteristics and use.

Use of cash by all households was believed to be a reasonable assumption.

A total of 1,500 questionnaires were sent to qualified households; 1,162 of these were returned in usable condition for a response rate of 77%. A comparison of eight demographic variables (e.g., household income, marital status) revealed no discrepancies ($P \leq .10$) between respondents and nonrespondents. Hence the obtained sample was judged to be representative of the larger Market Facts panel, given the added restriction of household credit card possession.

Variable Operationalization

Three variable sets were measured in the study: (1) consumer perceptions of the attribute structure of various payment systems, (2) consumer preference for alternative payment systems, (3) consumer usage of alternative payment systems. The operationalization of these variables is described below:

Perceptions. Respondents were given a list describing the 11 different payment system attributes and asked to report how much of each attribute was possessed by a particular payment system within a given situation and on an overall basis. Responses were recorded on a five-point scale ranging from "a very great amount" (5) to "none at all" (1). Measurement of the attributes, together with their descriptions, is given in the Appendix. Perception of the attribute composition of each payment system was found to display some situational variance, indicating that consumers' perceptions of the payment systems under study are somewhat influenced by the situational context (Hirschman 1982). These situational variations in perceptions, although not large, suggest the utility of using situation-specific measures of attribute structure when relating perceptual data to preference and usage. This was done in the present research.

Preferences. Consumer's preferences for the five alternative payment systems were measured by asking respondents how much they preferred to use a particular payment system. Preferences were recorded on a five-point scale ranging from "prefer very much" (5) to "do not prefer at all" (1) and were measured separately for the four usage situations and on an overall basis. Thus, again, situational specificity was obtained.

Usage. Consumer usage of the five payment systems was measured by asking respondents how likely they were to actually use a particular payment system in a particular situation. Usage was recorded on a five-point scale ranging from "always" (5) to "never" (1) and, as

before, was measured separately for the four usage situations and on an overall basis.

The questions measuring preference and usage were located four pages apart in an eight-page questionnaire to reduce the tendency of respondents to "match" their answers across the two questions.

Analysis: Hypothesis 1

To test the first hypothesis—that significant differences would be present in the attribute structure of alternative payment systems—Scheffé post hoc contrasts were performed on consumers' overall perceptions of each payment system's attribute composition.³ It should be noted that the computation of the contrasts was modified to be compatible with a repeated-measures ANOVA design. The repeated-measures procedure was required since each respondent reported attribute perceptions for each payment system, hence the contrasted "groups" are not independent.

Because of the large sample size, a cutoff criterion of $P \leq .005$ was used for identifying substantively significant differences among payment systems for a particular attribute. This level, representing a perceptual difference of 20% or more, appeared to be the minimum level at which managerial action could be meaningfully undertaken and sound theoretical deductions made. The mean levels of attributes perceived to compose each payment system are given in figure 1 and discussed below.

Cash

When overall perceptions of cash are compared with those for personal checks, cash is perceived as providing less documentation, transaction record, leverage potential, and security. On the other hand, cash is seen as providing greater ability to control spending and as possessing more acceptability and social desirability than a personal check. Cash and checks are perceived as approximately equivalent in helping the consumer with budgeting, in reversibility, and in the time it takes for funds to be transferred from buyer to seller.

Compared with bank credit cards, cash is viewed as having less ability to provide documentation, reversibility, transaction record, leverage potential, and security. Cash and bank cards are seen as being similar in transfer time, acceptability, and social desirability. Cash is

3. Compositional comparisons on a situational basis are available in Hirschman (1982).

	BUDGETING	DOCUMENT- ATION	REVERSI- BILITY	CONTROL SPENDING	TRANSACT. RECORD	LEVERAGE POTENTIAL	ACCEPT- ABILITY	TRANSFER TIME	SOCIAL DESIR- ABILITY	SECURITY
CS W/PCK	3.9	2.2	3.2	4.1	2.4	1.5	4.9	3.8	3.9	2.0
	3.8	4.2	3.5	3.7	4.1	2.0	3.6	3.5	3.2	3.3
CS W/BC	3.9	2.2	3.2	4.1	2.4	1.5	4.9	3.8	3.9	2.0
	3.5	4.2	4.1	2.9	4.4	4.4	4.6	3.5	3.8	3.5
CS W/TE	3.9	2.2	3.2	4.1	2.4	1.5	4.9	3.8	3.9	2.0
	2.8	4.0	3.7	2.6	4.4	4.1	4.2	3.4	4.1	3.6
CS W/SCD	3.9	2.2	3.2	4.1	2.4	1.5	4.9	3.8	3.9	2.0
	3.3	4.1	4.3	2.9	4.4	4.4	4.6	3.5	3.7	3.5
PCK W/BC	3.8	4.2	3.5	3.7	4.1	2.0	3.6	3.5	3.2	3.3
	3.5	4.2	4.1	2.9	4.4	4.4	4.6	3.5	3.8	3.5
PCK W/TE	3.8	4.2	3.5	3.7	4.1	2.0	3.6	3.5	3.2	3.3
	2.8	4.0	3.7	2.6	4.4	4.1	4.2	3.4	4.1	3.6
PCK W/SCD	3.8	4.2	3.5	3.7	4.1	2.0	3.6	3.5	3.2	3.3
	3.3	4.1	4.3	2.9	4.4	3.9	3.8	3.5	3.7	3.5
BC W/TE	3.5	4.2	4.1	2.9	4.4	4.4	4.6	3.5	3.8	3.5
	2.8	4.0	3.7	2.6	4.4	4.1	4.2	3.4	4.1	3.6
BC W/SCD	3.5	4.2	4.1	2.9	4.4	4.4	4.6	3.5	3.8	3.5
	3.3	4.1	4.3	2.9	4.4	3.9	3.8	3.5	3.7	3.5
TE W/SCD	2.8	4.0	3.7	2.6	4.4	4.1	4.2	3.4	4.1	3.6
	3.3	4.1	4.3	2.9	4.4	3.9	3.8	3.5	3.7	3.5

FIG. 1.—Post hoc contrasts: repeated-measures ANOVA. CS = cash, PCK = personal check, BC = bank card, TE = travel and entertainment card, SCD = retail store card; $b = P = .005$.

believed to exceed bank cards in providing budgeting ability and the ability to control spending.

Contrasted with T & E cards, cash is viewed as having less documentation ability, transaction record, leverage potential, and security. Cash is perceived to provide more budgeting ability and ability to control spending, and to possess more acceptability and a longer transfer time. Cash and T & E cards are perceived to possess about the same amount of social desirability.

Finally, when cash is compared with retail store cards, it is perceived to have more budgeting potential and acceptability and to provide more ability to control spending. Cash is seen as having less ability to provide documentation, reversibility, transaction record, leverage potential, and security. From these comparisons some generalizations may be made regarding cash as a payment system: the primary performance attributes of cash appear to be its widespread acceptability, its utility as a self-budgeting device, and its ability to help the consumer control spending.

Personal Checks

Personal checks have already been contrasted with cash, hence analysis will focus on a comparison of checks with the various types of credit card payment systems. When overall perceptions of personal checks are contrasted with those for credit cards (i.e., bank, retail store, T & E), a consistent pattern emerges. Personal checks are perceived to have significantly more ability to assist in budgeting and control spending. Checks, however, provide significantly *less* reversibility, leverage potential, acceptability, and social desirability than do credit cards. Personal checks and credit cards are seen as providing similar amounts of documentation, transaction record, transfer time, and security.

Some generalizations can be made regarding checks as a payment system. Personal checks appear to be intermediate to cash and credit cards in terms of perceived attribute structure. They possess the ability to help consumers budget and regulate their spending, which are two dominant attributes of cash, while at the same time they provide the security and record-keeping potential of credit cards. However, personal checks lack the widespread acceptability of cash and the leverage potential of credit cards.

Bank Credit Cards

Bank credit cards have already been contrasted with cash and personal checks, so discussion will focus on differences and similarities within the credit card payment system subset. Relative to T & E cards, bank cards are viewed as having significantly more budgeting potential, reversibility, and acceptability. Relative to retail store credit cards,

bank cards are perceived to possess significantly greater leverage potential and acceptability. The remaining attributes have similar perceived levels and do not provide dimensions for differentiating bank cards from T & E or retail store credit cards.

Travel and Entertainment Cards, Retail Store Credit Cards

The T & E card and retail store credit card were significantly different on four attribute dimensions. The T & E card was perceived to possess more social desirability and acceptability than the retail store card but less reversibility and budgeting potential.

Thus, with regard to hypothesis 1, we may conclude that overall perceptions of payment system attributes do display some significant differences among alternative systems. Let us now turn to an examination of how these perceptions relate to payment system preference and usage.

Analysis: Hypothesis 2

Of perhaps even greater strategic and theoretic utility than overall compositional differences among payment systems is the relationship of these differences to payment system preference and usage. In hypothesis 2, we are examining the contribution made by each attribute to payment system use and preference in different situations and on an overall basis. In essence, we are quantifying the linkages among consumer situational perceptions, attitudes, and behaviors.

To examine these linkages, simultaneous multiple regression analyses were performed using situation-specific perceptual data as predictors of each payment system's rated preference and usage. The results of these regressions are given in figures 2 (usage) and 3 (preference), which contain the β coefficients found significantly related ($P \leq .05$) to the two criteria.

Perceptions, Usage, and Preference

It is important to keep in mind that actual usage of payment systems is affected by many factors not necessarily controllable by the consumer. For example, the acceptance of a payment system at a particular retail outlet and the short-term unavailability of cash may act to constrain actual usage below (or above) preferred usage for a particular payment system. Hence we do not anticipate finding complete congruence between the relationships of perceived attributes to usage and to preference. The points at which these two sets of relationships are nonisomorphic are likely to be those in which there are conditions beyond the consumer's immediate control.

	CASH			PERSONAL CHECKS			BANK CARDS			RETAIL STORE CARDS			T & E CARDS			
	OV	A	D	MST	OTB	OTP	OV	AD	MST	OTB	OTP	OV	AD	MST	OTB	OTP
Budget	--	.05 ^b	.36 ^c	--	.04 ^b	.09 ^b	.12 ^c	.21 ^c	--	.05 ^b	.15 ^c	--	.22 ^c	--	.15 ^c	.06 ^b
Document	--	.12 ^c	.23 ^c	.26 ^c	.30 ^c	--	.06 ^c	.15 ^c	.07 ^c	.15 ^c	.08 ^a	.18 ^c	--	.07 ^c	--	.20 ^c
Revers.	.12 ^c	.12 ^c	.06 ^b	.15 ^c	.19 ^c	--	.13 ^c	--	.06 ^c	.10 ^c	--	.55 ^c	--	.27 ^c	.10 ^c	.12 ^c
Control	--	.06 ^c	--	.19 ^c	.14 ^c	--	.15 ^c	--	.27 ^c	.05 ^a	.14 ^c	--	--	--	.08 ^c	.16 ^c
Tra. Rec.	.09 ^c	.16 ^c	.14 ^c	--	--	--	.22 ^c	--	.13 ^c	.15 ^c	.13 ^c	.13 ^c	.12 ^c	.23 ^c	.06 ^a	--
Lev. Pot.	.27 ^c	--	.20 ^c	.06 ^b	.18 ^c	.11 ^c	--	--	.11 ^c	.11 ^c	.21 ^c	--	--	--	.12 ^c	--
Accept.	.09 ^c	--	.47 ^c	.14 ^c	.27 ^c	.10 ^b	.14 ^c	.15 ^c	--	.28 ^c	.09 ^a	.08 ^c	--	.15 ^c	.32 ^c	.28 ^c
Tra. Time	.24 ^c	.22 ^c	.13 ^c	.13 ^c	--	.17 ^c	.05 ^c	.09 ^c	.11 ^c	.22 ^c	.22 ^c	.29 ^c	.20 ^c	.06 ^b	.24 ^c	.26 ^c
Tfer. Time	.37 ^c	--	.21 ^c	.27 ^c	--	.37 ^c	.10 ^c	.28 ^c	.06 ^c	.38 ^c	.35 ^c	.14 ^c	.22 ^c	--	.12 ^c	.59 ^c
Prestige	.08 ^b	.14 ^c	--	.18 ^c	.05 ^b	.18 ^c	.20 ^c	--	.27 ^c	.07 ^c	--	.06 ^b	.07 ^b	.19 ^c	.04 ^a	.13 ^c
Security	.20 ^c	.60 ^c	.06 ^b	.28 ^c	.58	.17 ^c	.64 ^c	.44 ^c	.49 ^c	.48 ^c	.08 ^b	.37 ^c	.15 ^c	.29 ^c	.33 ^c	.39 ^c
Adjusted R ²	.41	.58	.38	.42	.53	.27	.70	.25	.64	.55	.25	.41	.18	.37	.43	.34
F	29.2	82.1	29.5 ^c	32.0 ^c	60.8 ^c	15.6 ^c	139.5	16.3	79.6 ^c	66.1 ^c	14.5 ^c	41.8	11.0 ^c	27.1 ^c	40.1 ^c	22.0 ^c
N =	441	654	506	481	577	441	654	506	481	577	441	654	506	481	577	441

FIG. 2.—Relationship of perception to usage. The sample size varies for each analysis due to exclusion of missing data respondents. $a = P = .05$, $b = P = .01$, $c = P = .001$.

	CASH			PERSONAL CHECKS			BANK CARDS			RETAIL STORE CARDS			T & E CARDS		
	O	V	A	O	V	A	O	V	A	O	V	A	O	V	A
	MST	OTB	OTP	MST	OTB	OTP	MST	OTB	OTP	MST	OTB	OTP	MST	OTB	OTP
Budget	.16 ^c	.07 ^c	.05 ^b	.16 ^c	.05 ^b	.10 ^c	.13 ^c	.19 ^c	.10 ^c	.17 ^c	.33 ^c	-.20 ^c	-.27 ^c	.14 ^c	-.13 ^c
Document	-.13 ^c	-.13 ^c	-.08 ^c	-.24 ^c	-.07 ^b	.15 ^c	.05 ^a	.19 ^c	.20 ^c	.09 ^c	-.05 ^b	.39 ^c	.10 ^c	.16 ^c	.15 ^c
Reverse	-.13 ^c	-.40 ^c	--	-.23 ^c	-.06 ^b	--	-.38 ^c	-.08 ^c	--	.39 ^c	.07 ^b	.25 ^c	.07 ^c	.13 ^c	.05 ^b
Control	.08 ^b	.07 ^b	.38 ^c	.10 ^c	.21 ^c	--	.08 ^c	-.37 ^c	--	--	-.06 ^b	-.19 ^c	-.18 ^c	-.15 ^c	-.18 ^c
Tra. Rec.	--	-.21 ^c	-.08 ^c	-.12 ^c	-.28 ^c	--	.14 ^c	-.18 ^c	--	.36 ^c	.09 ^c	.20 ^c	.24 ^c	.07 ^c	.18 ^c
Lev. Pot.	-.42 ^c	-.05 ^b	-.21 ^c	-.09 ^c	-.16 ^c	.16 ^c	--	.26 ^c	--	.15 ^c	--	.16 ^c	.17 ^c	.05 ^a	.17 ^c
Accept.	.50 ^c	.22 ^c	.23 ^c	.23 ^c	.22 ^c	-.21 ^c	--	-.32 ^c	-.32 ^c	.33 ^c	.25 ^c	.09 ^c	-.21 ^c	--	-.34 ^c
Tra. Time	.16 ^c	.09 ^c	.14 ^c	--	.20 ^c	-.25 ^c	-.05 ^b	--	--	-.21 ^c	--	-.14 ^c	-.07 ^b	-.09 ^c	-.16 ^c
Tfer. Time	.09 ^b	-.25 ^c	-.09 ^c	-.18 ^c	-.26 ^c	.18 ^c	.16 ^c	.19 ^c	.22 ^c	.14 ^c	--	-.32 ^c	.16 ^c	-.07 ^c	.30 ^c
Prestige	--	-.18 ^c	--	--	--	.10 ^c	.10 ^c	--	.17 ^c	.15 ^c	-.14 ^c	--	--	-.10 ^c	-.26 ^c
Security	-.20 ^c	-.20 ^c	-.18 ^c	-.31 ^c	-.23 ^c	-.35 ^c	-.35 ^c	-.08 ^c	-.39 ^c	-.24 ^c	-.25 ^c	-.18 ^c	-.44 ^c	-.35 ^c	-.36 ^c
Adj. R ²	.40	.38	.40	.31	.35	.28	.37	.51	.24	.28	.27	.37 ^c	.39	.35	.34
Overall F	28.1 ^c	38.1	31.8 ^c	20.8 ^c	29.5 ^c	16.4 ^c	35.2	48.1 ^c	14.7 ^c	21.4 ^c	15.7	35.1	29.9 ^c	24.6 ^c	28.2 ^c
N =	441	654	506	481	577	441	654	506	481	577	441	654	506	481	577

FIG. 3.—Relationship of perception to preference. a = $P = .05$, b = $P = .01$, c = $P = .001$

Cash

The predictability of cash usage varied from $R^2 = .58$ (average day) to $R^2 = .41$ (overall); this compares favorably with perception-based predictability found in many marketing studies (e.g., Zaltman and Wallendorf 1979). The attributes whose perceived levels appear to contribute most consistently to the prediction of cash usage include security, transaction time, acceptability, documentation, and reversibility. The perceived levels of transaction time and acceptability appear to contribute positively to cash usage. Recall that cash is above average on these desirable attributes; hence they act to enhance its usage. Conversely, the perceived levels of security, documentation, and reversibility are negatively related to cash usage. Recall that cash is believed below average in these desirable attributes; hence their perceived deficiency acts to reduce cash usage.

The predictability of cash preference ranged from $R^2 = .40$ (overall, major shopping trip) to $R^2 = .31$ (out-of-town business trip). The pattern of importance for attribute influence on preference differs somewhat from the pattern for attribute influence on usage, as expected. The attributes whose perceived levels appear to enhance preference for cash include its acceptability, ability to help control spending, and transaction time. Those whose perceived levels appear to inhibit preference for cash include security, transfer time, transaction record, leverage potential, documentation, and reversibility. In all of these latter performance areas, cash is perceived to be deficient vis-à-vis other payment systems.

Personal Checks

A wide range of predictability was found for personal check usage; the highest R^2 obtained was .70 (average day), the lowest was .25 (major shopping trip). The usage of personal checks appears to be most strongly enhanced by their perceived high levels of security, budgeting control, and transfer time. Conversely, use of checks is inhibited by their perceived deficiencies in transaction time and acceptability. This suggests that national check-cashing systems, which assist the more rapid approval and processing of checks at the point of sale, should substantially enhance check usage.

The predicted preference for personal checks ranged from a high of $R^2 = .51$ (major shopping trip) to a low of $R^2 = .24$ (out-of-town business trip); thus check preference is not as explainable by perceptions as is check usage. Those attributes contributing positively to preference for personal checks were prestige, transfer time, and documentation. Those which appeared to detract from preference for personal checks include reversibility, security, and transaction time. Hence efforts by personal check marketers to enhance the security and

reversibility of purchasing by check, as well as decreasing the transaction time required to use this payment system, should enhance consumers' preferences for checks.

Bank Cards

The ability of attribute perceptions to predict usage of bank cards ranged from $R^2 = .43$ (out-of-town pleasure trip) to $R^2 = .18$ (major shopping trip). Those attributes found consistently positively associated with bank card usage were security, prestige, transfer time, acceptability, transaction time, documentation, leverage potential, and transaction record. Thus the perceived (high) levels of these desirable characteristics appear to enhance bank card usage. Conversely, the perceived (low) levels of budgeting ability and ability to control spending seem to have an inhibiting effect on bank card usage.

Predicted preference for bank cards ranged from $R^2 = .27$ (overall) to $R^2 = .39$ (major shopping trip). The attributes found to contribute most positively to bank card preference included transfer time, transaction time, acceptability, leverage potential, reversibility, and documentation—quite similar to the results obtained for predicting bank card usage. As before, the major detrimental factors in bank card preference were found to be budgeting ability and ability to control spending—both of which are perceived as being “low” in this form of payment system. Furthermore, as with cash and personal checks, the (lack of) security was found to inhibit bank card preference. These findings suggest that managers of bank credit cards may enhance the preference and usage of this payment system by improving consumers' perceptions of its ability to help them control spending and maintain a budget. Automatic notification of the customer at the point of purchase of the present outstanding bank card balance might help achieve this objective.

Retail Store Cards

The predictive ability of the perceptual data with regard to retail store card usage ranged from a high of $R^2 = .74$ (average day) to a low of $R^2 = .34$ (overall, out-of-town pleasure). The perceived attributes which appear to be positively contributing to retail store card usage are transfer time, security, transaction time, reversibility, and documentation. The attribute which appears to contribute negatively to retail store card usage is acceptability.⁴

A somewhat similar pattern of coefficients emerges for retail store card preference, although the obtained R^2 values are substantially lower. These ranged from a high of $R^2 = .38$ (major shopping trip) to a

4. Recall that many retail store cards are accepted only by the local stores issuing them.

low of $R^2 = .19$ (out-of-town business trip). Contributing positively to retail store card preference are transaction time, transfer time, the provision of a transaction record, and documentation. Negatively related to retail store card preference are its perceived (lack of) security, (in)ability to provide sufficient budgeting assistance, and (lack of) acceptability. This indicates that enhancing the security of the retail store card, making it acceptable at a wider variety of retail outlets, and perhaps educating the consumer in its use as a budgeting device should increase preference for this payment system.

Travel and Entertainment Cards

The prediction of T & E card usage by perceptions ranged from $R^2 = .67$ (out-of-town business trip) to $R^2 = .34$ (overall). Those attributes appearing to contribute positively to usage included security, transfer time, transaction time, transaction record, and documentation. Those attributes whose perceived levels appear to inhibit T & E card usage are its (in)ability to control spending and (lack of) budgeting ability.

For T & E card preference, the R^2 values ranged from .32 (out-of-town pleasure trip) to .18 (out-of-town business trip), which does not indicate a high level of preference predictability for this payment system. Those attributes positively related to T & E card preference were prestige, transfer time, leverage potential, transaction record, and documentation. Appearing to contribute negatively to T & E card preference are its (lack of) security, (in)ability to help control spending, and (lack of) budgeting ability. Enhancement of these perceived deficiencies, it is presumed, should enhance T & E card preference.

Conclusions

Two hypotheses were examined in this research. First, a differential pattern of attributes would be perceived to compose five alternative payment systems: cash, personal checks, bank cards, retail store cards, and T & E cards. This expectation was confirmed, and a comparative analysis of payment system attribute structure revealed several dimensions along which performance was perceived to differ. The second hypothesis put forward the expectation that consumers' perceptions would be substantially linked to their preference for and use of alternative payment systems. This belief was generally supported in that the proportion of explained variance in payment system preference and usage patterns attributable to consumer perceptions exhibited consistently high statistical significance and an adequate degree of pragmatic substance. Suggestions were made, in light of the magnitude and sign of the obtained attribute coefficients, regarding their purposeful manipulation by management to enhance preference and usage of specific payment systems.

It is believed that the analyses presented have served to extend the

investigation of consumer payment systems into some novel and constructive areas. Knowledge of the idiosyncratic attribute structure characterizing each payment system and the relationship of that structure to preference and usage of these exchange media should enable managers to develop more effective marketing strategies, while concurrently permitting theoreticians to construct more precise scenarios of payment system functioning in purchase processes.

Appendix

Measurement of Payment System Attributes

Question

For each payment system, please indicate how much of the various characteristics are possessed by the system:

A very great amount				None at all	
5	4	3	2	1	

Characteristic

Budgeting: The payment system helps with budgeting and planning expenditures.

Control Spending: The payment system helps to keep spending under control.

Documentation: The payment system provides a consolidated record of purchasing.

Reversibility: The extent to which a payment system provides the ability to reverse a transaction made at the point of purchase.

Transaction Record: The payment system provides a physical record of each transaction made at the point of purchase.

Acceptability: The payment system is acceptable in a wide variety of retail outlets.

Leverage Potential: The payment system allows one to "borrow" money, to spend money not on hand currently.

Transaction Time: The speed with which a purchase transaction is conducted using a given payment system.

Security: The security associated with a payment system if it is lost or stolen.

Social Desirability/Prestige: The social desirability or prestige possessed by a particular payment system.

Transfer Time: The period of time before the funds "spent" with the payment system are actually transferred from the buyer's account to that of the seller.

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