The Relationship between the Demographic Characteristics and the Innovative Behavior in the Adoption of Automatic Teller Machines

Wan-Soo Lee*

< CONTENTS >

I. Introduction

Most consumerists and marketing practitioners appear to view widespread EFT (Electronic Fund Transfer Systems) as being inevitable (Adcock, Moore, and Crooks, 1977), considering the potential benefits EFT can offer to the consumers and the rapidly increasing, already burdensome workload of financial institutions.

There are many reasons that EFT should be implemented to a greater extent: (1) thirty-one to thirty-five billion checks are transacted every year and the number increases at the rate of 7% a year (Humes, 1978), (2) labor costs have increased by approximately 8% each year and the cost of technology has been decreasing at the rate of 6% per year (Kaplan, 1979), (3) the pressure to extend banking hours and the demand to provide new financial services (Zientara, 1978), (4) EFT technologies enable people in the lower socioeconomic status to utilize financial services as the risks of check bouncing do not exist (Humes, 1978), and

*Assistant Professor of Marketing, College of Business, Yonsei University.

(5) above all, EFT systems are more convenient and efficient, significantly reducing costs at a high transaction rate in the long run (Adcock et al., 1977).

Despite all these benefits and the fact that the EFT has been with U.S. consumers for about 11 years, EFT has not made much progress in terms of its adoption by consumers.

The EFT systems presently in operation are in the forms of automatic teller machines, on-line transactions, preauthorized payments, bank-at-home arrangements, corporate EFT systems, point of sales terminals, and automatic clearing houses (Zientara, 1978).

Compared to other EFT systems in terms of numbers installed and of the time elasped from the introduction into the market, ATMs represent the most widely known EFT system operated entirely by the consumer himself. Thus, it serves as the most ideal automated banking innovation for the pusposes of (1) exploring the consumer adoption process of ATMs and (2) establishing the groundwork for future studies on the adoption process of their EFT systems.

Given the considerable time elapsed since the introduction of ATMs and interest in the adoption of ATMs by consumers, one might expect considerable research work to have been done relating ATMs (hereafter referred to as V-24) to the theory of the adoption and diffusion of innovations. Yet very little is known on the consumer adoption process of ATMs.

V-24 offers consumers new ways of banking that require radical departure from the deeply entrenched banking habits and old attitudes toward conventional bank services. V-24 is an innovation, specifically a service oriented innovation.

There have been substantial research publications on the degree of consumer acceptance. However, most of the research publications have dealt with EFT systems in general and are nonempirical with their scope most often being limited to assessing the degree of consumer acceptance or resistance and without relying on the theories underlying the process of adoption and diffusion of innovations. Research investigating the process of adoption and diffusion of ATMs from the perspective of diffusion theory is virtually nonexistent.

In the light of this fact, the study was carried out in the form of comprehensive exploratory research in order to examine the differences among the early adopters, late adopters, and nonadopters of V-24 in personal characteristics (marital status, sex, ethnic background,

family life cycle, type of residence, occupation, employment status, regular working hours, age, income, social participation, cosmopolitanism, social mobility, print readership, exposure to news media in general, and proclivity to comply with prevailing social influences), and to discover the basic structure of innovativeness in V-24 usage by determining the primary dimensions of variations among the three adopter groups in personal characteristics.

The concept, innovativeness, defined most commonly as the degree to which an individual is relatively earlier in actual time of adopting an innovation than other members of his system (Rogers and Shoemaker, 1971), is central to the research of the adoption and diffusion of innovations.

The most frequently used model of innovativeness in the field of marketing views innovativeness as a function of persisting personal characteristics. The model assumes that innovators have certain distinguishable persisting personal characteristics that are different from noninnovators.

The major assumptions underlying the studies are that (1) innovators differ from noninnovators in certain persisting personal characteristics such as empathy, dogmatism, achievement motivation, intelligence, self-monitoring, social participation, social integration, cosmopolitanism, education, etc., and that (2) those persisting personal characteristics found to be relevant will be applicable to market research and a variety of managerial purpose such as product development, market segmentation, media selection, promotional campaign, etc.

Based on these assumptions, a great deal of research efforts have been focused on determining those persisting personal characteristics associated with early adopters of an innovation. For example, numerous studies have been conducted in an attempt to relate innovativeness to such personal characteristics as income (Bell, 1964; Coleman, 1960; Hayes, 1959), education (Hayes, 1959), age (Rogers. 1962), magazine readership (Rogers and Stanfield, 1968), group participation (Robertson, 1968b), social mobility; movement on the societal status hierarchy (Opinion Research Corporation, 1959), inner versus other directedness; predisposition to rely on internal or external standards and values to guide one's behavior (Donnelly, 1970; Donnelly and Ivancevich, 1974), venturesomeness (Robertson and Kennedy, 1968; Popielarz, 1967; Robertson, 1968a), dissemination of information (Engel, Kegerreis,

and Blackwell, 1969), and status concern; the person's need to be noticed and admired (Bourne, 1957; Whyte, 1954).

Table I presents a summary of the findings of a number of these studies. These studies provide valuable insight into the relationship between innovativeness and personal characteristics.

Table I. Factors Related to Consumer Innovativeness Across Product Categories

	Number of Studies and Relationships Shown*		
Factor	Positive	None	Negative
Demographic Factors			
Age	1	6	4
Education	7	3	0
Income	9	4	0
Occupational Status	6	5	0
Number of Children	1	8	1
Communication Behavior			
Print Readership	7	2	0
Television Viewership	1	3	1
Social Interaction Factors			
Social Participation:			
Informal	6	6	0
Formal	4	3	0
Opinion Leadership	10	3	0
Cosmopolitanism	1	3	0
Social Mobility	4	0	0
Norm on Innovation	6	0	0

Table I (continued)

Factor	Number of Studies and Relationships Shown*		
	Positive	None	Negative
Attitudinal, Perceptual, and Personality Factors			
Venturesomeness	5	0	0
Perceived Risk	0	4	5
Self-Perception of Innovativeness	2	0	0
Personality:			
Inventories**	2	3	0
Other-Directedness	1	5	0
Generalized Self-Confidence	1	1	0
Attitude toward Innovations	8	0	0
Value Factors			
Religious Participation	0	1	1
Values	1	0	0
Consumption Patterns			
Product Category Usage Rate	7	1	0
Number of Stores Shopped	1	0	1
Willingness to Try New Products	4	1	0
Brand Loyalty	0	1	3

* In the derivation of this table, a number of judgments had to be made. Not all studies reported significance levels of results, and a variety of statistical techniques was used when significance levels were reported. Certain definitional difficulties were also involved since what appeared to be equivalent concepts were not always presented as such or, operational definitions did not always suggest equivalent concepts.

** By personality "inventories" is meant administration of instruments measuring a variety of traits. Other studies discussed in this chapter have sometimes shown specific variable to be related to personality.

Source: Robertson, 1971.

II. Method

Sources of Data

The survey was made possible with the data provided by Valley Fidelity Bank in Knoxville, Tennessee, U.S.A. The bank first introduced automatic teller machines, V-24 (Automatic Teller Machines) in Knoxville, in 1974. For the first two years of the introduction of V-24, the use of V-24 was made available only to those customers of the bank who held a Visa card issued through the bank. During the time period, the scope of the services provided by V-24 was limited to the functions of Cash Dispensers.

In September, 1975, the bank made V-24 services available to all the customers who had bank accounts with the bank by issuing V-24 cards, and at the same time, the scope of the services provided by V-24 was extended to the regular services of human tellers.

For the purposes of this study, the relevant population from which a sample was selected was confined to those customers of the bank who had their bank accounts with the bank before September, 1976. The fundamental reason for this confinement was to ensure homogeneity in the population in terms of their opportunity to be exposed to the presence of V-24 and to subsequently classify the sample using one classificatory principle.

Using the simple random sampling procedure, 4,000 individual accounts, not including the commercial accounts, were randomly selected from the predefined population. Survey questionnaires (Appendix A) were mailed to randomly selected 4,000 individuals. Of the 4,000 survey questionnaires mailed, 735 questionnaires were returned. Of the 735 questionnaires returned, 185 responses were deleted for the reasons specified in Table II. This generated a net total of 546 usable responses. Of these 546 responses, 93 responses did not belong to any of the three groups of research interest —— early adopters, late adopters, and nonadopters. Finally, 453 responses were selected to be used in this study. Table III summarizes the breakdowns of the 453 responses by adopter categories.

Sample Size

The factors presented in Table IV were considered in estimating the sample size and total number of questionnaires to be mailed. Of the five factors in Table IV, factors I and II are

Table II. Summary Responses of the Mail Survey

Total Mailing, Not Including Commercial Accounts		4,000
Total Number of the Questionnaires Returned		735
Incorrect Addresses	– 30	
Unusable Responses	–140	
Responses Screened Out by Questions 1, 3, and 4	– 19	
Total Responses Deleted	–189	
Net Total of Usable Responses		546
Responses Not Classified as Early Adopters, Late Adopters, or Nonadopters	– 93	
Net Total of the Responses Used in This Study		435

Table III. Adopter Categories

	Absolute Frequency	Frequency (%)	Cumulative Adj. Fre. (%)
Early Adopters	102	22.5%	22.5%
Late Adopters	68	15.0%	37.5%
Nonadopters	283	62.5%	100.0%
	453	100.0%	

more relevant to estimating the sample size whereas factors III and VI are to estimating the total number of questionnaires to be mailed. Factor analysis dictates that sample size should be at least five times the number of variables used in the analysis.

Table IV. Factors Considered for the Sample Size and the Total Number of Questionnaires to Be Mailed.

I. Factor Analysis

$N > 5p$

where P = number of predictor variables
N = sample size

II. Split Sample Test*

III. Estimated Number of Responses to be Screened Out

IV. Expected Survey Response Ratio

*Total number of usable responses was not large enough to execute this plan.

Adopter Categories

Respondents were asked to indicate when they first used V-24 with V-24 card for the purpose of classifying them into three subpopulations: early adopters, late adopters, and non-adopters. Since this question relies on respondents' recall ability for its accuracy, some level of inaccuracy was expected.

Through three successive pretests of the questionnaire, it was found that respondents could recall the time resonably accurately by a time unit of a year. For the purpose of this research, (1) early adopters were defined as those who adopted in the first three months after the issuance of the first V-24 card, (2) late adopters as those who adopted V-24 between two years and three months after the issuance of the first V-24 card and up to the time this research was initiated (September 1980), and (3) nonadopters as those who are aware of the existence of V-24 but who have never used it or discontinued using it. These definitions were considered most appropriate, given the time period elapsed from the first issuance of V-24 card and for the objectives of this research.

Feldman and Armstrong (1975) defined "early buyers" as the first 2,500 to purchase an automobile innovation. Robertson (1968a), and Robertson and Kennedy (1969) used the first 10% of a given market to purchase. Donnelly and Ivancevich (1974) defined innovators as those who purchased in the first three months. Peat, Gentry and Brown (1975) defined innovators as those who purchased in the first four months. Rogers and Shoemaker (1971) defines innovators as the first 2.5% of the individuals to adopt an innovation.

There is no right or absolute number of adopter categories that is best for all innovations, provided that they are, ideally speaking, mutually exclusive, and exhaustive, and are derived from one classificatory principle (Jahoda et al., 1951, p. 264).

Data Analysis

Two-way cross tabulation analyses using the chi-square significance test were used for the purpose of investigating the specific relation between the personality dimensions and the innovative behavior in the adoption of ATMs. Although the two-way cross tabulation provides some insight into a dependency relationship, it does not necessarily provide a final answer since the relationship determined in the analysis may change with the introduction of a third variable. The primary objective of employing this methods is to have some basic insight into the properties of innovativeness at the outset.

Factor analysis is frequently employed in marketing research for the purpose of exploring the unknown domain by reducing complex interrelationships to a relatively simple linear expression. It is employed in this study for the following purposes:

1. To discover the basic structure of innovativeness in V-24 usage by determining the primary dimensions of variations among the three adopter groups in personal characteristics.
2. To transform the original data into factor scores in order to use them as a part of the input data for the discriminant analysis to be performed in the subsequent study.

A fundamental advantage in using factor scores as the input data for the discriminant analysis is in eliminating multicollinearity relations among predictor variables since the factor scores derived from orthogonal rotations are independent from one another. In general, multicollinearity relations among the variables tend to increase the likelihood of generating a distorted picture of group differences by producing somewhat biased coefficient values.

In implementing factor analysis, the following statistical approaches were used to generate unbiased, conservative results. Firstly, Bartlett's test of significance of correlational matrix was employed to determine at the outset whether there exists any relationship among variables. Its operation is as follows:

$$H_0 : R = I, \quad H_1 : R \neq I$$

$$\chi^2 = -(n-1 - \frac{2v+5}{6}) \ln |R|$$

$$\text{Degree of Freedom} = \frac{v(v-1)}{2},$$

where n = number of observations,

v = number of variables used, and

$|R|$ = determinant of the correlational matrix.

Secondly, scree test and Harris procedure were employed to extract the exact number of factors. In scree test, all the characterstic roots are plotted with the value of the root along the ordinate and the root's factor number as the abscissa. The point where the factors curve above the straight line formed by the smaller roots gives the number of factors. The basic idea is that when the roots drop dramatically in size, an additional factor would add relatively little to the information already extracted.

In this study, scree test is used as a preliminary step to subsequently execute the Harris procedure since it tends to generate less conservative results than the Harris procedure. In the Harris procedure a number of different factor solutions are employed to examine the patterns of factor loadings across the different factor solutions employed. The number of factors is determined when the patterns of factor loadings are most consistent across the different factor solutions employed. In this study, Minres factor analysis, Truncated factor analysis, Image factor analysis, and Alpha factor analysis were employed for the Harris procedure. The responses of 453 early adopters, late adopters, and non-adopters to 26 items in Table V were factor analyzed.

Statements of Hypotheses

Although there exists substantial research work in the area of the diffusion and adoption of innovations, practically all of them have focused on the diffusion and adoption of *product-oriented innovations* rather than *service-oriented innovations.* Research investigating consumers' adoption behavior in service-oriented innovations is virtually nonexistent; this

Table V. List of the Variables Entered for Factor Analysis on Section 3.

Variables	Labels
901	Children Ages 1-5
902	Children Ages 6-12
903	Children Ages 13-18
93	Education
941	Number Community Groups-Orgs
942	Number Business Groups-Orgs
943	Number Social Groups-Orgs
944	Number Recreational Groups-Orgs
945	Number Religious Groups-Orgs
946	Number Other Groups-Orgs
961	Number Homemaker Mags Read
962	Number Fashion Mags Read
963	Number Movie-Romance-Crime Mags Read
964	Number Light Readings
965	Number Cultural-Intellectual Readings
101	Avg-Num Long Distance Calls per Month
102	Avg-Num Air Trips per Year
103	Avg-Num Miles Driven per Year
104	Avg-Num Times Eating Out per Month
105	Avg-Num Movies, Concerts, Plays per Month
106	Number Residences Past 15 Years
107	Avg-Hrs Magazines or TV per Day
108	Number Gasoline Credit Cards Owned
109	Number Bank Credit Cards Owned
110	Age
89	Children Under Age 19 Living with Family

Total Number of the Variables Entered: 26. Sample Size : 453.

is especially so for the innovations related to bank services.

In view of this fact, this study B undertaken with its primary objectives aimed at discovering the pertinent factors associated with the innovative behavior in the adoption of V-24 rather than at examining the interactions and causality relationships among them. Accordingly, the hypotheses established here are broad in nature, and are based upon the generalizations drawn by Rogers (Table VI), and summary findings of past studies in the area (Table I). The following hypotheses will be tested.

Hypothesis (A) Early adopters, late adopters, and nonadopters differ on the basis of the selected receiver variables (personal characteristics) specified below:

Demographic factors:

Hypothesis (A-1) marital status

Hypothesis (A-2) sex

Hypothesis (A-3) ethnic background

Hypothesis (A-4) family life cycle

Hypothesis (A-5) type of residence

Hypothesis (A-6) occupation

Hypothesis (A-7) education

Hypothesis (A-8) employment status

Hypothesis (A-9) regular working hours

Hypothesis (A-10) age

Hypothesis (A-11) income

Social interaction factors:

Hypothesis (A-12) social participation

Hypothesis (A-13) cosmopolitanism

Hypothesis (A-14) social mobility

Communication behavior:

Hypothesis (A-15) print readership

Hypothesis (A-16) exposure to news media in general

Hypothesis (A-17) proclivity to comply with perceived prevailing social influences

Table VI. Selected Generalization of the Properties of Innovativeness

The degree of communication integration in a social system is positively related to the rate of adoption of innovation (6 studies, or 100%, support).

Earlier adopters are no different from later adopters in age (44 studies, or 19%, show that earlier adopters are younger; 108 studies, or 48%, show no relationship; and 76 studies, or 33%, show that earlier adopters are older).

Earlier adopters have more years of eduation than do later adopters (203 studies, or 74% support; 72 do not support).

Earlier adopters have higher social status than later adopters (275 studies, or 68%, support; 127 studies do not support).

Earlier adopters have a greater degree of upward social mobility than do later adopters (5 studies, or 100%, support).

Earlier adopters are more likely to have a commerical (rather than a subsistence) orientation than are later adopters (20 studies, or 71%, support; 8 studies do not support).

Earlier adopters have a more favorable attitude toward credit (borrowing money) than later adopters (19 studies, or 76%, support; 6 studies do not support).

Earlier adopters have more specialized operations than later adopters (9 studies, or 60%, support; 6 studies do not support).

Earlier adopters have greater intelligence than later adopters (5 studies, or 100%, support).

Earlier adopters have more favorable attitude toward change than later adopters (43 studies, or 75%, support; 14 studies do not support).

Earlier adopters have a more favorable attitude toward education than later adopters (25 studies, or 81%, support; 6 studies do not support).

Earlier adopters have more social participation than later adopters (109 studies, or 73%, support; 40 studies do not support).

Earlier adopters are more highly integrated with the social system than later adopters (6 studies, or 100%, support).

Earlier adopters are more cosmopolite than later adopters (132 studies, or 76%, support; 42 studies do not support).

Earlier adopters have more change agent contact than later adopters (135 studies, or 87%, support; 21 studies do not support).

Earlier adopters have greater exposure to mass media communication channels than later adopters (80 studies, or 69%, support; 36 studies do not support).

Earlier adopters have greater exposure to interpersonal communication channels than later adopters (46 studies, or 77%, support; 14 studies do not support).

Source: Rogers and Shoemaker, 1971.

III. Results

Cross Tabulation Analysis.

A summary of cross tabulation analyses on each personal characteristic is presented in Table VII. The discussion of the results of the cross tabulation analyses on each personal characteristic is presented subsequently in detail.

Marital Status

Hypothesis A-1 states that early adopters, late adopters, and nonadopters differ on the basis of marital status. Table B-1 (Appendix B) presents the results.

Five categories of marital status were originally used in the survey questionnaire. However, due to the insufficient observations in the category "separated," insufficient in terms of the assumption that less than 20% of the total cells should be permitted to have expected frequencies less than 5 and none should have an expected frequency less than 1 (Snedecor and

Table VII. A Summary of Cross Tabulation Analyses on Personal Characteristics

Variables	Chi-Square Significance Test	Index* for Cross Tabulation Analysis
Marital Status	Significant at .05	Table B-1
Sex	Significant at .10	Table B-2
Family Life Cycle:		
Number of Children under Age 19 Living at Home	Significant at .05	Table B-4
Number of Children in the Age Range 1 to 5 Living at Home	Significant at .05	Table B-5
Number of Children in the age Range 6 to 12 Living at Home	Significant at .05	Table B-6
Number of Children in the Age Range 13 to 18 Living at Home	Significant at .10	Table B-7
Type of Residence	Significant at .10	Table B-8
Occupation	Significant at .05	Table B-9
Education	Significant at .05	Table B-10
Employment Status	Significant at .05	Table B-11
Regular Working Hours	Significant at .05	Table B-12
Age	Significant at .05	Table B-13
Income	Significant at .05	Table B-14
Social Participation	Not Significant at .05	Table B-15
Social Mobility	Significant at .05	Table B-16
Print Readership	Not Significant at .10	Table B-17
Exposure to News Media in General	Significant at .10	Table B-18
Proclivity to Comply with Perceived Prevailing Social Influences	Significant at .05	Table B-19

*Table B-1 through B-19 are in Appendix B.

Cochran, 1967), it was combined with the category "divorced." This combination resulted in four distinct categories for the variable.

A large percentage of each of the three adopter groups are married. Looking only at the early adopters and nonadopters, these two groups are virtually identical in overall profile. However, late adopters are significantly different from both early and nonadopters in all categories except the category "single"; 67.6% of late adopters are married as compared to 71.6% of early adopters and 72.8% of nonadopters; 17.6% of late adopters are separated or divorced as compared to 5.9% of early adopters and 3.9% of nonadopters; and 4.4% of late adopters are widowed as compared to 9.8% of early adopters and 12.7% of nonadopters. Chi-square testing shows these differences to be significant at the 0.05 alpha level.

Sex.

Hypothesis A-2 states that early adopters, late adopters, and nonadopters differ on the basis of sex. Table B-2 (Appendix B) presents the results. The three adopter groups are dissimilar from one another, although the differences between early adopters and late adopters are more apparent than those between early adopters and nonadopters. Fifty-seven percent of early adopters are males, as compared to 36.8% of late adopters and 48.2% of nonadopters. Nonadopters are distributed approximately evenly over the two categories, whereas among late adopters, there are almost twice as many females as males. Chi-square analysis shows the differences between the three adopter groups to be significant at the 0.10 alpha level.

Ethnic Background

An application of cross-tabulation analysis to this variable was deemed to be unwarranted due to a concentration of 98.2% of the sample in the category "White" (Table B-3, Appendix B). There were no cases in the categories "Indian," "Oriental," and "Others."

Family Life Cycle.

Hypothesis A-4 states that early adopters, late adopters, and nonadopters differ on the basis of family life cycle. For the purpose of ascertaining detailed information, this hypothesis is tested separately in relation to each of the four variables associated with family life cycle:

(1) number of children under age 19 living at home, (2) number of children in the age range 1 to 5, (3) number of children in the age range 6 to 12, and (4) number of children in the age range 13 to 18.

Table B-4 (Appendix B) presents the results of the hypothesis tested based on (1), Table B-5 based on (2), Table B-6 based on (3), and Table B-7 based on (4). For the purpose of this analysis, family life cycle measured by the number of children under age 19 living at home was collapsed into the following categories: none (no children), 1 child, 2 children, and more than 2 children. Family life cycle measured by the other three variables was collapsed into two categories: none and one child or more.

The differences among the three adopter groups in terms of the number of children under age 19 living at home are quite apparent: early adopters have more children under age 19 at home than both late adopters and nonadopters, whereas late adopters have more children under age 19 at home than nonadopters. Of the early adopters, 21.3% (15.2% + 6.1%) have two or more children under age 19 at home as compared to 16.9% (15.4% + 1.5%) of late adopters and 11.8% (7.5% + 4.3%) of nonadopters; 56.6% of early adopters falls in the category "none" as compared to the corresponding 67.6% of late adopters and 75.3% of nonadopters. Chi-square testing shows these differences to be significant at the 0.05 alpha level for the three groups.

Secondly, no significant differences can be demonstrated between early adopters and late adopters in terms of the number of children in the age range 1 to 5 living at home, whereas both groups are quite different from nonadopters. Only 5% of nonadopters have at home children in this age range, less than half the 11.3% of early adopters, and 13.8% of late adopters. Chi-square testing indicates these differences to be significant at the 0.05 alpha level.

Thirdly, the three adopter groups are quite dissimilar from one another in terms of the number of children in the age range 6 to 12 living at home: 20.6% of early adopters have one or more children in this range in contrast with 10.8% of late adopters; 16.9% of late adopters fall in this category, as compared to 10.8% of late adopters. The differences between early adopters and nonadopters are more apparent than those between early adopters and late adopters, although the three groups are quite dissimilar from one another. The Chi-square test is significant at the 0.05 alpha level for the three group differences.

Finally, significant differences exist among the three adopter groups in terms of the numbers of children in the age range 13 to 18. Of the late adopters, 9.2% fall in the category "one or more children" in contrast with 22.7% of early adopters and 16.8% of nonadopters. The differences between early adopters and late adopters are more apparent than those between early adopters and nonadopters. Chi-square analysis shows the differences among the three groups to be significant at the 0.10 alpha level.

Summarizing the above four tests, three different patterns emerge: early adopters have more children under age 19 with a large percentage of them being clustered in the age range 6 to 18; late adopters have fewer children under age 19 than early adopters with a large percentage of them being clustered in the age range 1 to 12; and nonadopters have the least number of children under age 19 with a large percentage of them being clustered in the age range 13 to 18. Therefore, the hypothesis that early adopters, late adopters, and nonadopters differ on the basis of family life cycle can be accepted.

Type of Residence.

Hypothesis A-5 states that early adopters, late adopters, and nonadopters differ on the basis of type of residence. Table B-8 (Appendix B) presents results. Type of residence does not appear to distinguish early adopters from late adopters while both groups are quite different from nonadopters. Of the nonadopters, 9.3% fall in the category "rent apartment or rent house," as compared to 15.8% of early adopters and late adopters. Therefore, more individuals in the nonadopter group appear to own houses than those in the early and the late groups. Chi-square testing shows these differences to be significant at the 0.10 alpha level.

Occupation.

Hypothesis A-8 states that early adopters, late adopters and nonadopters differ on the basis of occupation. Table B-9 (Appendix B) presents the results. Twelve categories of occupation were originally used in the survey questionnaire. However, due to the insufficient number of observations in six categories of occupation, categories were collapsed, based on a continuum from white to blue collar, into the following six categories: managerial; professional; skilled trade; technical; office worker, or general labor; retired; homemaker; and others (students,

salesperson, military, or service worker).

Significant differences can be demonstrated between early adopters and nonadopters in overall profile. Early adopters are dissimilar from late adopters only in the two categories: skilled trade, technical, office worker, or general labor; and homemaker. Of the early adopters, 52% (25.5% + 26.5%) fall in the categories "skilled trade, office worker, technical, or general labor and professional," as compared to 37.1% (18.4% + 18.7%) of nonadopters. A large percentage (26.9%) of nonadopters are retired, as compared to 8.8% of early adopters. Chi-square testing shows these differences to be significant at the 0.05 alpha level for the three group differences.

Education.

Hypothesis A-7 states that the three adopter groups differ on the basis of education. Table B-10 (Appendix B) presents the results. More individuals in the early adopter group have higher education than those in the late adopter and nonadopter groups, while more individuals in the late adopter group have higher education than those in the nonadopter group. Of the early adopters, 76.4% (43.1% + 33.3%) have a college or graduate school education, as compared to 67.6% of late adopters and 60.4% of nonadopters. Chi-square testing shows these differences to be significant at the 0.05 alpha level for the three group differences.

Employment Status.

Hypothesis A-8 states that the three adopter groups differ on the basis of employment status. Table B-11 (Appendix B) presents the results. More individuals among early adopters fall in the category "fulltime" than those among late adopters and nonadopters, while more individuals in the late adopter groups are fulltime employed than the corresponding inviduals in the nonadopter group. Thirty percent of nonadopters are retired in contrast with only 11.8% of early adopters and 17.6% of late adopters. Of early adopters, 20.6% are not working (not employed or retired), as compared to the corresponding 36.7% of late adopters and 39.2% of nonadopters. The Chi-square test is significant at the 0.05 alpha level for the three group differences.

Regular Working Hours.

Hypothesis A-9 states that the three adopter groups differ on the basis of regular working hours. Table B-12 (Appendix B) presents the results. More individuals in the early adopter group are working during the bank hours than those in the late adopter and nonadopter groups, while there are more individuals working during the bank hours in the late adopter group than those in the nonadopter group. Of early adopters, 65.7% are working during the bank hours, as compared to 57.4% of late adopters and 46.6% of nonadopters. Chi-square testing shows these differences to be significant at the 0.05 alpha level.

Age

Hypothesis A-10 states that the three adopter groups differ on the basis of age. Table B-13 presents the results. In general, early adopters and late adopters are somewhat younger than nonadopters, while age differences are not as apparent between early and late adopters. Of the nonadopters, 17.3% are age 40 or younger, as compared to 37.3% of early adopters and 30.8% of late adopters. Of nonadopters, 65.5% are age 51 or older in contrast with 37.3% of early adopters and 45.5% of late adopters. Chi-square shows these differences to be significant at the 0.05 alpha level for the three groups.

Income

Hypothesis A-11 states that the three adopter groups differ on the basis of total income. Table B-14 (Appendix B) presents the results. Early adopters are somewhat more likely to have higher total family income than both the late adopter and nonadopter groups. Of the early adopters, 56.5% (22.8% + 33.7%) have a total family income of $25,000 or more, whereas slightly more than 60% of the late adopters and of the nonadopters have a total family income of $24,999 or less.

Considering only the late adopter and nonadopter groups, overall differences are not apparent although there are considerably more individuals with a total family income less than $15,000 among nonadopters than 20% of late adopters. Chi-square testing shows these differences to be significant at the 0.05 alpha level.

Social Participation.

Hypothesis A-12 states that the three adopter groups differ on the basis of social participation. Table B-15 (Appendix B) presents the results. As was mentioned in the previous chapter, social participation was measured by the total number of different categories of groups or organizations to which one belonged. Unlike in the case of product oriented innovations, Chi-square testing shows that no significant differences exist among the three adopter groups in terms of social participation. This result is not unusual considering the fact that most individuals prefer to restrain themselves from talking about personal financial matters such as banking transactions. Accordingly, hypothesis A-12 is rejected.

Social Mobility.

Hypothesis A-14 states that the three adopter groups differ on the basis of social mobility. Table B-16 (Appendix B) presents the results. As was mentioned in the previous chapter, social mobility was measured by the number of different residences one has lived in during the past 15 years. In view of the frequency distributions of this variable, responses to this question were collapsed into three categories: 0 to 1 residence; 2 or 3 residence; and more than 3 residences.

The three adopter groups are quite dissimilar: early adopters tend to be most socially mobile, late adopters the next, and nonadopters the last. Thirty-five percent of early adopters fall in the category of "more than 3 residences" as compared to 20.6% of late adopters and 10.7% of nonadopters. Only 24% of early adopters fall in the category "0 to 1 residence" in contrast with 33.8% of late adopters and 56.1% of nonadopters. Chi-square testing shows these differences to be significant at 0.05 alpha level.

Print Readership.

Hypothesis A-15 states that the three adopter groups differ on the basis of print readership. Table B-17 (Appendix B) presents the results. As indicated in the previous chapter, print readership is measured by the total number of different categories of magazines or newspapers usually read. Unlike in the case of product oriented innovations, Chi-square testing reveals that no significant differences exist among the three adopter groups. It appears

that one's exposure to printed news media does not have a significant impact upon the adoption decision to be made is, to a degree, associated with personal financial security.

Exposure to News Media in General.

Hypothesis A-16 states that the three adopter groups differ on the basis of exposure to news media in general. Table B-18 (Appendix B) presents the results. Exposure to news media in general was measured by the average time spent per day reading magazines or watchig TV. In view of the patterns of the frequency distribution of this variable, responses to this question were collapsed into five categories: 0 to 1 hour; 2 hours; 3 hours; 4 to 5 hours; and more than 5 hours.

Early adopters appear to be moderate in this exposure to the general news media, whereas both late adopters and nonadopters tend to be more extreme: only 20% (15% + 5%) of early adopters fall in the categories "4 to 5 hours" or "more than 5 hours," as compared to 31.4% (23.9% + 7.5%) of late adopters, and 34.4% (25.9% + 8.5%) of nonadopters. Fifty-nine percent (25% + 34%) of early adopters are in the categories "2 hours" or "3 hours" as compared to 48% of late adopters and 52.8% of nonadopters. Late adopters and nonadopters are quite similar. Chi-square analysis shows these differences to be significant at the 0.10 alpha level.

Proclivity to Comply with Perceived Prevailing Social Influences.

Hypothesis A-17 states that the three adopter groups differ on the basis of their proclivity to comply with perceived prevailing social influences. Table B-19 (Appendix B) presents the results. As indicated in the previous chapter, this variable was measured by asking respondents whether the car they usually drive is a fuel efficient small compact car. Early adopters and late adopters are more likely to drive a fuel effieient small cars than nonadopters, while no significant differences exist between early adopters and late adopters. Of the nonadopters, 31.2% drive a fuel efficient small car as compared to 44.9% of early adopters and 42.4% of late adopters. Chi-square testing shows these differences to be significant at the 0.05 alpha level.

Factor Analysis

The information obtained with the survey questionnaire was factor analyzed using Minres factor solution, and the extracted factors were orthogonally rotated via the Varimax method. Minres is the most widely accepted factoring method (Kim, 1975), and as compared to other factor solutions, it provides more accuracy in the estimates of off diagonal elements of the correlation matrix and in the angular relationships among vectors in N-dimensionsl space. The Varimax method of rotation was used to maximize the variance of the square of the loading in each column. As compared to other rotation methods, factor patterns produced by Varimax rotation are more easily interpretable (Harman, 1967).

Before factor analyzing the data, Bartlett's test of the significance of the correlation matrix was carried out to determine whether there exists any relationship among the 26 items. If no relationship exists, factor analysis is not warranted. The test indicates, as shown below, that the items are interrelated.

$$H_0 : R = I, \qquad H_1 : R \neq I$$

$$\chi^2 = -\left(n-1 - \frac{2v+5}{6}\right) \ln |R| = 4297.5105$$

$$d.f. = v(v-1)/2$$

$|R|$ = determinant of correlation matrix (see Table VIII)

$$4297.5105 > \chi^2_{0.05,\,325}$$

The scree test presented in Table IX indicates that five or six factors are the logical number of factors to be extracted for the analysis: the plots of the eigenvalues provided by Minres, Backdoor Image, and Image suggest six factors, whereas Alpha suggests five factors. Based on these findings, Harris procedure was carried out across the four different solutions (Alpha, BI, Image, and Minres) using four factors (5 ± 1) as the minimum trial number of factors and seven factors (6 ± 1) as the maximum with 0.3 as the criterion loading point. Of the four alternative number of factors, four factors, five factors, six factors, or seven factors, six factors yielded the most consistent loadings across the four different factor solutions, as shown in Table X.

Table VIII. Factor Loadings of the Variables in Section 3

VARIMAX ROTATED FACTOR MATRIS / MINRES FACTOR SOLUTION

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	COMMUNALITY
901	−0.00088	−0.01514	0.10824	0.03029	0.96273	0.04901	0.94213
902	−0.08955	0.13835	0.90187	0.18189	−0.01888	−0.14423	0.89478
903	0.07505	−0.07756	0.16762	0.94399	−0.05393	−0.02472	0.93439
93	0.49605	0.26596	0.20655	0.01778	0.13147	0.09873	0.38682
941	0.22141	0.53790	−0.03334	0.06549	−0.00523	0.13087	0.36092
942	0.37123	0.42738	0.07751	0.05296	0.08685	−0.02325	0.33736
943	0.23166	0.67379	−0.00852	−0.07298	0.04450	0.13889	0.53434
944	0.22334	0.47628	0.20609	−0.00433	−0.01378	0.08264	0.32623
945	−0.03738	0.40439	−0.09546	−0.03230	0.03643	0.10037	0.18648
946	0.18918	0.54751	−0.00389	−0.01599	−0.04058	0.06152	0.34126
961	−0.14105	0.07477	0.00311	−0.00422	0.02399	0.48626	0.26254
962	0.04883	0.09767	−0.00859	0.05141	0.00613	0.46153	0.22769
963	−0.04981	0.02479	−0.03498	−0.01457	0.05348	0.33235	0.11785
964	0.00995	0.11178	−0.03584	−0.05424	−0.07936	0.41958	0.19916
965	0.33576	0.20785	0.07680	−0.04355	0.08362	0.38861	0.32175
101	0.50298	0.09649	−0.08187	0.21720	0.05129	−0.05803	0.32218
102	0.54025	0.21905	−0.02888	0.15734	0.03241	−0.01122	0.36662
103	0.48933	0.09485	−0.00246	0.12476	0.07182	−0.26145	0.33752
104	0.32257	0.12840	−0.03136	−0.08467	−0.03429	−0.08339	0.13682
105	0.40655	0.17756	0.16414	−0.06518	−0.06988	0.14359	0.25250
106	0.27729	-0.24300	0.36965	−0.02618	0.35191	0.00512	0.39713
107	−0.22710	-0.05410	−0.06590	−0.01581	−0.03794	0.22158	0.10963
108	0.45975	0.14789	0.05455	−0.01448	−0.10280	−0.07363	0.25242
109	0.33512	-0.02301	0.01224	−0.05152	0.05202	0.02452	0.11895
110	−0.28376	0.27150	−0.46313	−0.10307	−0.29292	0.03857	0.46663
89	−0.00015	0.02524	0.63550	0.67053	0.36445	−0.07794	0.99301
Eigenvalues		3.48632	2.70337	1.28547	1.20989	0.81554	0.62711
% of Common Variance		34.4%	26.7%	12.7%	11.9%	8.1%	6.2%
% of Total Variance		13.4%	10.4%	4.9%	4.7%	3.1%	2.4%

% of the Total Variance of All the Variables Explained by 6 Factors: 38.9%

Determinant of Correlation Matrix = 0.0000619 (0.61869650D-04)

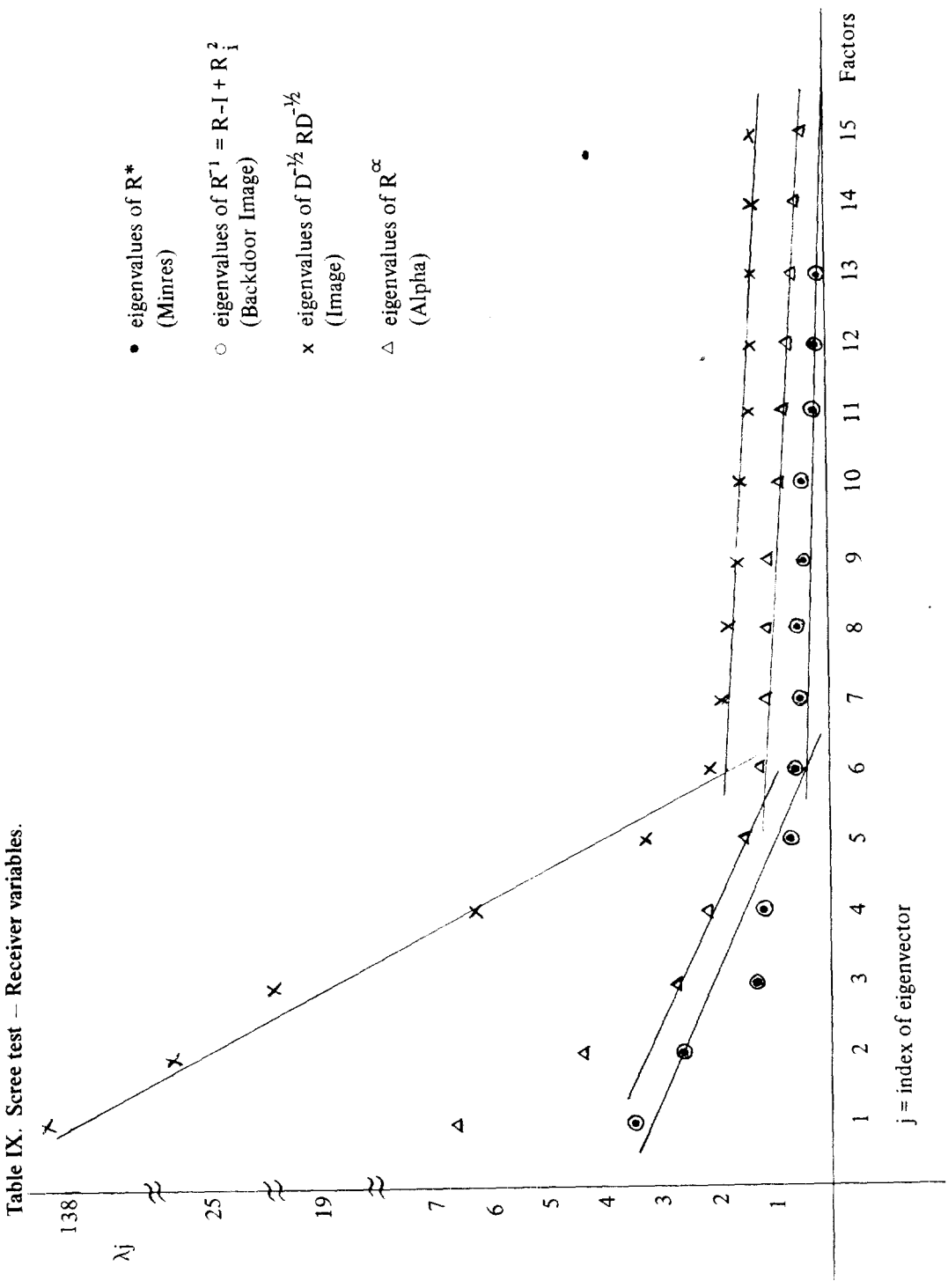

Table IX. Scree test – Receiver variables.

Table X **Section 3: Determination of the Number of Factors by Harris Procedure**

	Varimax Rotated Factor Matrix			
	ALPHA	BI	IMAGE	MINRES
	FACTOR 3	FACTOR 1	FACTOR 1	FACTOR 1
901	−0.00102	0.00088	0.00520	0.00088
902	−0.04594	−0.08955	0.01900	−0.08955
903	0.11854	0.07505	0.05199	0.07505
93	0.27864	0.49605	0.50968	0.49605
941	0.21618	0.22141	0.28291	0.22141
942	0.20201	0.37123	0.43075	0.37123
943	0.14299	0.23166	0.33777	0.23166
944	0.12189	0.22334	0.30764	0.22334
945	−0.08234	−0.03738	0.04684	−0.03738
946	0.10601	0.18918	0.28591	0.18918
961	−0.15585	−0.14105	−0.11742	−0.14105
962	0.06534	0.04883	0.04385	0.04883
963	−0.04849	−0.04981	−0.05205	−0.04981
964	−0.00891	0.00995	0.00875	0.00995
965	0.21956	0.33576	0.32236	0.33576
101	0.57743	0.50298	0.40753	0.50298
102	0.59473	0.54025	0.48202	0.54025
103	0.50248	0.48933	0.43134	0.48933
104	0.24677	0.32257	0.30482	0.32257
105	0.23573	0.40655	0.40985	0.40655
106	0.11788	0.27729	0.23271	0.27729
107	−0.13360	−0.22710	−0.23352	−0.22710
108	0.47107	0.45975	0.41583	0.45975
109	0.35432	0.33512	0.26631	0.33512
110	−0.11958	−0.28376	−0.23823	−0.28376
89	0.00770	−0.00015	0.04755	−0.00015

Table X (continued)

	Varimax Rotated Factor Matrix			
	ALPHA	BI	IMAGE	MINRES
	FACTOR 1	FACTOR 2	FACTOR 5	FACTOR 2
901	–0.04059	–0.01514	–0.03224	–0.01514
902	0.11370	0.13835	0.03953	0.13835
903	–0.05266	–0.07756	–0.06822	–0.07756
93	0.45929	0.26596	0.12143	0.26596
941	0.49497	0.53790	0.44249	0.53790
942	0.53817	0.42738	0.26741	0.42738
943	0.69730	0.67379	0.51189	0.67379
944	0.51994	0.47628	0.33304	0.47628
945	0.37420	0.40439	0.32758	0.40439
946	0.55413	0.54751	0.40206	0.54751
961	0.06289	0.07477	0.07966	0.07477
962	0.11885	0.09767	0.08234	0.09767
963	0.02237	0.02479	0.03365	0.02479
964	0.14544	0.11178	0.11043	0.11178
965	0.32850	0.20785	0.14084	0.20785
101	0.11013	0.09649	0.10776	0.09649
102	0.23164	0.21905	0.18461	0.21905
103	0.13405	0.09485	0.06207	0.09485
104	0.20908	0.12840	0.07818	0.12840
105	0.36768	0.17756	0.06175	0.17756
106	–0.04710	–0.24300	–0.28407	–0.24300
107	–0.14420	–0.05410	0.01229	–0.05410
108	0.21510	0.14789	0.10017	0.14789
109	0.01921	–0.02301	–0.02056	–0.02301
110	0.03891	0.27150	0.32079	0.27150
89	0.02230	0.02524	–0.03219	0.02524

Table X (continued)

	Varimax Rotated Factor Matrix			
	ALPHA	BI	IMAGE	MINRES
	FACTOR 5	FACTOR 3	FACTOR 2	FACTOR 3
901	0.11889	0.10824	0.05258	0.10824
902	–0.10813	0.90187	0.95475	0.90187
903	–0.00545	0.16762	0.14198	0.16762
93	–0.04969	0.20655	0.12450	0.20655
941	0.21652	–0.03334	0.04021	–0.03334
942	–0.05348	0.07751	0.07669	0.07751
943	0.10811	–0.00852	0.02486	–0.00852
944	0.03877	0.20609	0.17615	0.20609
945	0.08534	–0.09546	–0.05206	–0.09546
946	0.01367	–0.00389	0.00003	–0.00389
961	0.53398	0.00311	0.04410	0.00311
962	0.56500	–0.00859	–0.04115	–0.00859
963	0.31621	–0.03498	–0.03706	–0.03498
964	0.15206	–0.03584	–0.02481	–0.03584
965	0.12998	0.07680	0.05369	0.07680
101	0.02710	–0.08187	–0.02490	–0.08187
102	0.09002	–0.02888	0.00730	–0.02888
103	–0.14519	–0.00246	–0.00170	–0.00246
104	–0.06395	–0.03136	–0.04861	–0.03136
105	0.03265	0.16414	0.07346	0.16414
106	–0.09009	0.36965	0.21482	0.36965
107	0.11310	–0.06590	–0.03929	–0.06590
108	–0.15073	0.05455	0.03148	0.05455
109	0.00211	0.01224	–0.01807	0.01224
110	–0.00914	–0.46313	–0.30287	–0.46313
89	0.01436	0.63550	0.62434	0.63550

Table X. (continued)

	Varimax Rotated Factor Matrix			
	ALPHA	BI	IMAGE	MINRES
	FACTOR 2	FACTOR 4	FACTOR 3	FACTOR 4
901	0.09422	0.03029	0.01873	0.03029
902	0.50389	0.18189	0.12941	0.18189
903	0.60541	0.94399	0.96096	0.94399
93	0.08620	0.01778	0.06989	0.01778
941	0.04682	0.06549	0.02428	0.06549
942	0.07055	0.05296	0.05744	0.05296
943	−0.04739	−0.07298	−0.07763	−0.07298
944	0.10181	−0.00433	0.03648	−0.00433
945	−0.05962	−0.03230	−0.03371	−0.03230
946	−0.01200	−0.01599	0.01171	−0.01599
961	0.01229	−0.00422	−0.05081	−0.00422
962	−0.02915	0.05141	0.06151	0.05141
963	−0.05367	−0.01457	−0.01997	−0.01457
964	−0.05443	−0.05424	−0.04011	−0.05424
965	−0.01656	−0.04355	−0.03298	−0.04355
101	0.12303	0.21720	0.15635	0.21720
102	0.10929	0.15734	0.11118	0.15734
103	0.06361	0.12476	0.10261	0.12476
104	−0.12808	−0.08467	−0.08136	−0.08467
105	−0.03844	−0.06518	−0.00720	−0.06518
106	0.09554	−0.02618	0.03320	−0.02618
107	−0.03808	−0.01581	−0.00987	−0.01581
108	0.00123	−0.01448	−0.00370	−0.01448
109	−0.06857	−0.05152	−0.05132	−0.05152
110	−0.23302	−0.10307	−0.17796	−0.10307
89	1.15384	0.67053	0.64256	0.67053

Table X (continued)

	Varimax Rotated Factor Matrix			
	ALPHA	BI	IMAGE	MINRES
	FACTOR 4	FACTOR 5	FACTOR 4	FACTOR 5
901	0.46363	0.96273	0.95268	0.96273
902	0.22895	−0.01888	0.05941	−0.01888
903	−0.01687	−0.05393	−0.02410	−0.05393
93	0.30881	0.13147	0.13054	0.13147
941	−0.12493	−0.00523	−0.00187	−0.00523
942	0.11037	0.08685	0.06125	0.08685
943	−0.14069	−0.04450	−0.05216	−0.04450
944	0.05092	−0.01378	0.01596	−0.01378
945	−0.15590	−0.03643	−0.04450	−0.03643
946	−0.07955	−0.04058	−0.05445	−0.04058
961	−0.01435	0.02399	0.00959	0.02399
962	0.02850	0.00613	0.00869	0.00613
963	0.03965	0.05348	0.05678	0.05348
964	−0.07969	−0.07936	−0.08134	−0.07936
965	0.20045	0.08362	0.09390	0.08362
101	−0.01858	0.05129	0.07635	0.05129
102	0.01211	0.03241	0.03952	0.03241
103	0.07866	0.07182	0.06498	0.07182
104	0.01080	−0.03429	−0.03732	−0.03429
105	0.12051	−0.06988	−0.06683	−0.06988
106	0.69991	0.35191	0.35963	0.35191
107	−0.08866	−0.03794	−0.02037	−0.03794
108	0.01441	−0.10280	−0.08051	−0.10280
109	0.13405	0.05202	0.07532	0.05202
110	−0.67538	−0.29292	−0.30709	−0.29292
89	0.41885	0.36445	0.41419	0.36445

Table X (continued)

	Varimax Rotated Factor Matrix			
	ALPHA	BI	IMAGE	MINRES
	FACTOR 6	FACTOR 6	FACTOR 6	FACTOR 6
901	0.00669	0.04901	0.06050	0.04901
902	−0.03198	−0.14423	−0.12474	−0.14423
903	−0.07991	−0.02473	−0.06471	−0.02472
93	0.06669	0.09873	0.14101	0.09873
941	−0.04297	0.13087	0.14153	0.13087
942	−0.08536	−0.02325	0.06157	−0.02325
943	0.09699	0.13889	0.19232	0.13889
944	0.02114	0.08264	0.14370	0.08264
945	0.04944	0.10037	0.13625	0.10037
946	0.06260	0.06152	0.14394	0.06152
961	0.15558	0.48626	0.35414	0.48626
962	0.00991	0.46153	0.35210	0.46153
963	0.18231	0.33235	0.24656	0.33235
964	0.49638	0.41958	0.31243	0.41958
965	0.39185	0.38861	0.31400	0.38861
101	−0.07946	−0.05803	−0.10554	−0.05803
102	−0.05649	−0.01122	−0.03760	−0.01122
103	−0.17673	−0.26145	−0.21897	−0.26145
104	−0.09615	−0.08339	−0.04731	−0.08339
105	−0.00783	0.14359	0.15834	0.14359
106	0.01016	0.00512	0.01045	0.00512
107	0.29827	0.22158	0.14346	0.22158
108	0.07317	−0.07363	−0.05503	−0.07363
109	0.08285	0.02452	−0.00719	0.02452
110	0.24713	0.03857	0.02732	0.03857
89	−0.01767	−0.07794	−0.08312	−0.07794

Table VIII presents the Varimax rotated factor matrix based on Minres factor solution using six factors. As in the previous Harris procedure, 0.3 is used as the criterion loading. Factor 1 is significantly correlated with the variables 93, 942, 965, 102 to 105, 108, and 109 and explains 13.4% of variation of the 26 variables. Factor 2 is significantly correlated with the variables 941, 942, 943, 944, 945, and 946 and explains 10.4% of variation of the 26 variables. Factor 3 is significantly correlated with the variables 902, 106, 110, and 89 and explains 4.9% of variation of the 26 variables. Factor 4 is significantly correlated with the variables 901, 106, and 89 and explains 3.1% of variation of the 26 variables. Factor 6 is significantly correlated with the variables 961, 962, 963, 964, and 965 and explains 2.4% of variation of the 26 variables. The total proportion of variation of the 26 variables that can be explained by the six factors amounts to 38.9%. As shown in Table VIII, factor 1 explains 34.4% of that total proportion, factor 2 26.7%, factor 3 12.7%, factor 4 11.9%, factor 5 8.1%, and factor 6 6.2%. Thus, factor 1 can explain the largest percentage of the variation that can be explained by the six factors.

Evaluating the communality for each variable, these six factors can best explain the variable 89 ("children under age 19 living at home"); 99.3% of variation of this variable can be explained by the six factors. Looking at the cluster and nature of those variables that are significantly correlated with each factor, factor 1 appears to represent cultured cosmopolitanism, factor 2 social interaction, factor 3 life cycle II, factor 4 life cycle III, factor 5 life cycle I, and factor 6 print readership (Table XI). Factor 1 has salient loadings by variables 93, 942, 965, 101, 102, 103, 104, 105, 108, and 109. As shown in Table V, the variable 93 represents education, 942 number of business groups or organizations to which one belongs, 965 number of cultural, intellectual magazines and newspapers one reads, 101 to 105cosmopolitan factor, 108 number of gasoline credit cards owned, and 109 number of bank credit cards owned. Synthesizing the essence of these salient variables, they may be deemed to represent "cultured cosmopolitanism." Factor 2 has salient loadings by variables 941 to 946. All these variables are related to the measures of social participation. Thus, they may be synthesized to represent "social interaction." Factor 3 has salient loadings by variables 902, 106, 110, and 89. Of these four variables, variables 902, 110, and 89 have rela-

tively heavy loadings on the factor. As shown in Table V, variable 902 represents number of children in the age range 6 to 12 living at home, 110 age, and 89 number of children under age 19 living at home. In this context, they may be synthesized to represent "life cycle II." Factor 4 has salient loadings by variables 903 and 89. Variable 903 represents number of children in the age range 13 to 18, and 89 number of children under age 19 living at home.

Table XI. Salient Loadings on Extracted Factors in Section 3

	Factor					
Variables	1	2	3	4	5	6
93	.50					
942	.37					
965	.34					
101	.50					
102	.54					
103	.49					
104	.32					
105	.41					
108	.46					
109	.33					
941		.54				
942		.43				
943		.67				
944		.48				
945		.40				
946		.55				
902			.90			
106			.37			
110			−.46			
89			.64			
903				.94		
89				.67		
901					.96	
106					.35	
89					.36	
961						.49
962						.46
963						.33
964						.42
965						.39

Unlike the salient loadings of other variables on other factors, these two variables have significantly heavier loading on this factor, 0.94399 and 0.67053. They may be synthesized to represent "life cycle III." Factor 5 has salient loadings by variables 901, 106, and 89. The variable 901 represents number of children in the age range 1 to 5, 106 number of different residences an individual has lived in during past 15 years, and 89 age. In this context, they may be synthesized to represent "life cycle I." Factor 6 has salient loadings by variables 961 to 965. All these variables are related to the measures of print readership. Thus, they may be synthesized to represent "print readership."

IV. Summary and Conclusions

The three adopter groups are significantly different on the basis of demographic factors, social interaction factors, communication on behavior, and normative compliance. Compared to late adopters and nonadopters, a larger percentage of early adopters are single, male, in the middle stage of family life cycle, higher in occupational status, full-time employed, working during regular bank business hours, more highly educated, younger, higher in income, more socially mobile, spending moderate time for general news media, more compliant with social influences, and have more children under age 19 living at home. Synthesizing these characteristics of early adopters, they can be described as being highly motivated cultured cosmopolitan, socially interactive, middle aged, family oriented, and financially more affluent intellectuals. The differences between early adopters and nonadopters in these characteristics are generally more apparent than those between early adopters and late adopters. Personal characteristics and other factors influence the basic tendency to innovate, and affect the way in which the innovation decision process occurs for a given individuals. (Roger and Shoemaker, 1971)

The findings of this study suggests important implications for marketing action in that overall marketing promotional activities should be designed to meet the needs, wants, and concerns of those who share the abovementioned demographic characteristics. The knowledge gained from this study helps us to delineate "who" they are that produce

certain behavioral manifestations. However, it provides us hardly any information on "why" and "how." "Who" is basically exogeneous in nature and thus, they are mostly uncontrollable, whereas "why" and "how" are basically endogenous in nature and thus are somewhat controllable. The study designed to investigate "why" and "how" utilizing the findings of this study would provide us valuable information in faciliating the adoption process of automatic teller machines. Furthermore, the study needs to be replicated in order to ensure the validity of the research findings.

REFERENCES

(f) Adcock, William O., Jr., Moore, Anne M. and Crooks, Jean H.,"Consumerism Issues in EFTS", *The Magazine of Bank Administration.* Volume 53 (February 1977), 26-9.

Bell, William E.,"Consumer Innovators: A Market for Newness", *Proceedings.* Winter Conference, American Marketing Association, 1964.

Bourne, Francis S.,"Group Influence in Marketing and Public Relations", in Likert, Rensis and Hayes, Samuel P., Jr., eds., *Some Applications of Behavioral Science Research.* Paris: UNESCO, 1957, 217-24.

Coleman, Richard P.,"The Significance of Social Stratification in Selling", in Bell, Martin L., ed., *Proceedings.* The 43rd National Conference, American Marketing Associaton, Chicago (December 1960).

Donnelly, James H., Jr.,"Social Character and Acceptance of New Products", *Journal of Marketing Research.* Volume 7 (February 1970), 11-3.

Donnelly, James H., Jr., and Ivancevich, J.M.,"A Methodology for Identifying Innovator Characteristics of New Brand Purchases", *Journal of Marketing Research.* Volume 11 (August 1974), 331-34.

Engel, James F., Blackwell, Roger D., and Kegerreis, Robert J., "Word of Mouth Communication by the Innovator", *Journal of Marketing.* Volume 33 (July 1969), 15-9.

Feldman, L.P. and Armstrong, G.M., "Identifying Buyers of a Major Automotive Innovation", *Journal of Marketing.* Volume 39 (January 1975), 54-62.

Harman, Harry H. *Modern Factor Analysis.* Second ed.,Chicago: University of Chicago Press, 1967, 304-13.

Hayes, Samuel P., Chairman. "The Adoption of New Products: Process and Influence". *Foundation for Research on Human Behavior.* Ann Arbor: University of Michigan Press, 1959, 6.

Humes, Kathryn H. "The Checkless/Cashless Society? Don't Bank on It". *The Futurist.* Volume 12, Number 5 (October 1978), 301-6.

Johoda, Marie, et al. *Research Methods in Social Relations.* New York: Holt, Rinehart and Winston, 1951, 264.

Kaplan, Sheldon D. "EFT: How the Public Views It". *Administrative Management.* Volume 40, Number 10 (October 1979), 35, 46, 48-49, 70-72.

Kim Jae-On. "Factor Analysis", in Nie, Norman H., Hull, C. Hadlai, Jenkins, Jean G., Steinbrenner, Karin, and Bent, Dale H., Second eds., *Statistical Package for the Social Sciences.* New York: McGraw-Hill, 1975, 480.

Opinion Research Corporation. *America's Tastemakers.* Research Report 1, Princeton, New Jersey, 1959.

Peat, N.C., Gentry, J.W., and Brown, T.L. "A Comment on Identifying Buyers of Major Automotive Innovation",*Journal of Marketing.* Volume 39 (October 1975), 61-2.

Popielarz, Donald T. "An Exploration of Perceived Risk and Willingness to Try New Products",*Journal of Marketing Research.* Volume 4 (November 1967), 368-72.

_____. *Innovative Behavior and Communication.* New York: Holt, Rinehart and Winston, 1971.

Robertson, Thomas S. "Purchase Sequence Responses: Innovators vs. Noninnovators". *Journal of Advertising Research.* Volume 8 (March 1968a), 47-52.

_____. "Social Factors in Innovative Behaviror", in Kassarijian, Harold H and Robertson, Thomas G., eds., *Perspectives in Consumer Behavior.* Glenview, Illinois: Scott, Foreman, 1968, 371-72.

_____and Kennedy, J.N. "Prediction of Consumer Innovators: Application of Multiple Discriminant Analysis", *Journal of Marketing Research.* Volume 5

(February 1968), 64-9.

Rogers, Everett M. *Diffusion of Innovations.* New York: The Free Press of Glencoe, 1962, 168-71.

_____ and Shoemaker, F.F. *Communications of Innovations.* New York: The Free Press of Glencoe, 1971.

Rogers, Everett M. and Stanfield, J. David. "Adoption and Diffusion of New Products: Emerging Generalizations and Hypothesis", in Bass, Frank M., King, Charles W., and Pessimier, Edgar A., eds., *Applications of the Sciences in Marketing Management.* New York: John Wiley and Sons, 1968, 227-50.

Snedecor, George W. and Cochran, William G. *Statistical Methods.* Sixth Edition. Ames, Iowa: The Iowa State University Press, 1967, 240-42.

Whyte, William H., Jr. "The Web of Word of Mouth", *Fortune.* Volume 50 (November 1954), 140-43, 204-12.

Zientara, Marguerite. "Consumer Approval Held Main ECF Challenge", *Computerworld.* Volume 312, Number 25 (June 19, 1978), 17.

APPENDAX A

SURVEY QUESTIONNAIRE SECTION 3

Section 3 – Demographic Information

The following questions are for statistical purposes only. They are solely to help us analyze the data from the survey and all information given will remain completely anonymous and confidential.

For each statement, please circle the number which best describes you. Where a line is provided, please write in your answer. The purpose of this survey will be served best if you accurately answer each question. Please be sure to answer every question.

86. I am: 1. Single 2. Married 3. Separated 4. Divorced
5. Widowed

87. I am: 1. Male 2. Female

88. I am: 1. White 2. Black 3. Indian 4. Oriental
5. Other

89. How many children 18 and under live in your family?

0 1 2 3 4 5 6 7 8 9

90. Please indicate the number of children in each age range living at home?

Age Range	Number
1 – 5	_____
6 – 12	_____
13 – 18	_____

91. Please indicate where you live?

1. Your Own Home 2. Rent Apartment 3. Rent House

92. Which of the following classifications comes closest to describing your occupation?

1. Managerial 2. Skilled Trade 3. General Laborer
4. Office Worker 5. Technical 6. Professional
7. Student 8. Homemaker 9. Retired 10 Salesperson
11. Military 12. Service Worker

93. Please circle the highest grade that you completed in school.

Grade school 1 2 3 4 5 6 7 8

High School 9 10 11 12

College 13 14 15 16

Graduate School 17 18 19 20 21 22 23 24

94. Do you belong to:			95. If "yes", how many?
community groups or organizations?	1. Yes	2. No	_____
business or job related groups or organizations?	1. Yes	2. No	_____
social groups or organizations?	1. Yes	2. No	_____
recreational groups or organizations?	1. Yes	2. No	_____
religious groups or organizations?	1. Yes	2. No	_____
other groups or organizations?	1. Yes	2. No	_____

96. Do you usually read magazines or newspapers that would fall into each category below?		97. If "yes", how many?
Homemaker magazines (Woman's Day, Family Circle, Better Homes and Gardens, etc.)	1. Yes 2. No	_____
Fashion magazines (Glamour, Vogue, Mademoiselle, Ebony, etc.)	1. Yes No	_____
Movie, Romance, Crime magazines	1. Yes 2. No	_____
Light reading, news magazines and newspapers (Life, T.V. Guide, Readers' Digest, Jet, etc.)	1. Yes 2. No	_____
Cultural, intellectual magazines and newspapers (Time, Business Week, New York Times, Atlantic Monthly, etc.)	1. Yes 2. No	_____

98. Is the car you usually drive a fuel effecient small compact car?

1. Yes 2. No

99. Please indicate your employment status.

1. Part-time 2. Full-time 3. Self-employed
4. Not employed 5. Retired

100. Please indicate your regular working hours.

1. Weekdays: From _____ to _____
2. Weekends: From _____ to _____

101. How many long-distance calls a month on the average do you make? _____

102. How many times a year on the average do you travel by air? _____

103. How many miles a year on the average do you drive? _____

104. How many times a month on the average do you go out to eat? _____

105. How many times a month on the average do you attend movies, concerts, or plays?

_____

106. Please indicate the number of different residences you have lived in during past 15 years. _____

107. Please indicate the average time you spend per day reading magazines and watching T.V. _____

108. How many gasoline credit cards do you own? _____

109. How many bank credit cards (Master Charge, Visa, etc.) do you own? _____

110. Please indicate your age. _____

111. Please indicate your approximate total family income (before taxes).

1. $1-4,999	4. $15,000-19,999	7. $30,000-34,999
2. $5,000-9,999	5. $20,000-24,999	8. $35,000-39,999
3. $10,000-14,999	6. $25,000-29,999	9. More than $40,000

THANK YOU VERY MUCH FOR YOUR TIME, COOPERATION, ASSISTANCE.

A postage paid, self-addressed envelope is enclosed for your convenience.

APPENDIX B

PERSONAL CHARACTERISTICS

Table B-1. Relation Between Three Adopter Groups and Marital Status

COUNT ROW PCT COL PCT TOT PCT	Single	Married	Separated, Divorced	Widowed	Row Total
Early Adopters	13	73	6	10	102
	12.7	71.6	5.9	9.8	22.5
	26.0	22.5	20.7	20.4	
	2.9	16.1	1.3	2.2	
Late Adopters	7	46	12	3	68
	10.3	67.6	17.6	4.4	15.0
	14.0	14.2	41.4	6.1	
	1.5	10.2	2.6	0.7	
Non-Adopters	30	206	11	36	283
	10.6	72.8	3.9	12.7	62.5
	60.0	63.4	37.9	73.5	
	6.6	45.5	2.4	7.9	
Column Total	50	325	29	49	453
	11.0	71.7	6.4	10.8	100.0

1 out of 12 (8.3%) of the valid cells have expected cell frequency less than 5.0.

Minimum Expected Cell Frequency = 4.535

Raw Chi Square = 20.45058 with 6 Degrees of Freedom. Significance = 0.0023

Table B-2 Relation Between Three Adopter Groups and Sex

COUNT ROW PCT COL PCT TOT PCT	Male	Female	Row Total
Early Adopters	57	45	102
	55.9	44.1	22.6
	26.1	19.2	
	12.6	10.0	
Late Adopters	25	43	68
	36.8	63.2	15.0
	11.5	18.4	
	5.5	9.5	
Non-Adopters	136	146	282
	48.2	51.8	62.4
	62.4	62.4	
	30.1	32.3	
Column Total	218	234	452
	48.2	51.8	100.0

Raw Chi Square = 5.97218 with 2 Degrees of Freedom. Significance = 0.0505

Table B-3. Frequency Distribution of Ethnic Background

	Absolute Frequency	Relative Frequency (%)	Adjusted Frequency (%)	Cumulative Adjusted Frequency (%)
White	440	97.1	98.2	98.2
Black	8	1.8	1.8	100.0
Missing Cases	5	1.1	Missing	100.0
Total	453	100.0	100.0	

Table B-4. Relation Between Three Adopter Groups and Family Life Cycle Measured by Number of Children Under Age 19 Living at Home

COUNT ROW PCT COL PCT TOT PCT	None	1 Child	2 Children	>2 Children	Row Total
Early Adopters	56 56.6 18.1 12.6	22 22.2 32.4 5.0	15 15.2 32.6 3.4	6 6.1 31.6 1.4	99 22.3
Late Adopters	44 67.7 14.2 9.9	10 15.4 14.7 2.3	10 15.4 21.7 2.3	1 1.5 5.3 0.2	65 14.7
Non-Adopters	210 75.3 67.7 47.4	36 12.9 52.9 8.1	21 7.5 45.7 4.7	12 4.3 63.2 2.7	279 63.0
Column Total	310 70.0	68 15.3	46 10.4	19 4.3	443 100.0

2 out of 12 (16.7%) of the valid cells have expected cell frequency less than 5.0.

Minimum Expected Cell Frequency = 2.788

Raw Chi Square = 15.64057 with 6 Degrees of Freedom. Significance = 0.0158

Table B-5. Relation Between Three Adopter Groups and Family Life Cycle Measured by Number of Children in the Age Range 1 to 5

COUNT ROW PCT COL PCT TOT PCT	None	≧1 Children	Row Total
Early Adopters	86 88.7 21.1 19.5	11 11.3 32.4 2.5	97 22.0
Late Adopters	56 86.2 13.8 12.7	9 13.8 26.5 2.0	65 14.7
Non-Adopters	265 95.0 65.1 60.1	14 5.0 41.2 3.2	279 63.3
Column Total	407 92.3	34 7.7	441 100.0

Raw Chi Square = 8.07789 with 2 Degrees of Freedom. Significance = 0.0176

Table B-6. Relation Between Three Adopter Groups and Family Life Cycle Measured by Number of Children in the Age Range 6 to 12

COUNT ROW PCT COL PCT TOT PCT	None	≧ 1 Children	Row Total
Early Adopters	77 79.4 20.3 17.5	20 20.6 32.8 4.5	97 22.0
Late Adopters	54 83.1 14.2 12.2	11 16.9 18.0 2.5	65 14.7
Non-Adopters	249 89.2 65.5 56.5	30 10.8 49.2 6.8	279 63.3
Column Total	380 86.2	61 13.8	441 100.0

Raw Chi Square = 6.48897 with 2 Degrees of Freedom. Significance = 0.0390

Table B-7. Relation Between Three Adopter Groups and Family Life Cycle Measured by Number of Children in the Age Range 13 to 18

COUNT ROW PCT COL PCT TOT PCT	None	≧ 1 Children	Row Total
Early Adopters	75 77.3 20.5 17.0	22 22.7 29.3 5.0	97 22.0
Late Adopters	59 90.8 16.1 13.4	6 9.2 8.0 1.4	65 14.7
Non-Adopters	232 83.2 63.4 52.6	47 16.8 62.7 10.7	279 63.3
Column Total	366 83.0	75 17.0	441 100.0

Raw Chi Square = 5.00193 with 2 Degrees of Freedom. Significance = 0.0820

Table B-8. Relation Between Three Adopter Groups and Type of Residence

COUNT ROW PCT COL PCT TOT PCT	Own House	Rent Apt. or House	Row Total
Early Adopters	85 84.2 21.5 18.9	16 15.8 29.6 3.6	101 22.4
Late Adopters	56 82.4 14.1 12.4	12 17.6 22.2 2.7	68 15.1
Non-Adopters	255 90.7 64.4 56.7	26 9.3 48.1 5.8	281 62.4
Column Total	396 88.0	54 12.0	450 100.0

Raw Chi Square = 5.47342 with 2 Degrees of Freedom. Significance = 0.0648

Table B-9. Relation Between Three Adopter Groups and Occupation

COUNT ROW PCT COL PCT TOT PCT	Managerial	Tech, Offc, Labor	Professional	Retired	Homemaker	Other	Row Total
Early Adopters	19	26	27	9	10	11	102
	18.6	25.5	26.5	8.8	9.8	10.8	22.5
	26.4	28.9	28.1	9.8	16.9	25.0	
	4.2	5.7	6.0	2.0	2.2	2.4	
Late Adopters	13	12	16	7	12	8	68
	19.1	17.6	23.5	10.3	17.6	11.8	15.0
	18.1	13.3	16.7	7.6	20.3	18.2	
	2.9	2.6	3.5	1.5	2.6	1.8	
Non-Adopters	40	52	53	76	37	25	283
	14.1	18.4	18.7	26.9	13.1	8.8	62.5
	55.6	57.8	55.2	82.6	62.7	56.8	
	8.8	11.5	11.7	16.8	8.2	5.5	
Column Total	72	90	96	92	59	44	453
	15.9	19.9	21.2	20.3	13.0	9.7	100.0

Raw Chi Square = 24.43564 with 10 Degrees of Freedom. Significance = 0.0065

Table B-10. Relation Between Three Adopter Groups and Education

COUNT ROW PCT COL PCT TOT PCT	High Sch. or Less	College	Graduate School	Row Total
Early Adopters	24 23.5 15.2 5.3	44 43.1 22.4 9.7	34 33.3 34.3 7.5	102 22.5
Late Adopters	22 32.4 13.9 4.9	34 50.0 17.3 7.5	12 17.6 12.1 2.6	68 15.0
Non-Adopters	112 39.6 70.9 24.7	118 41.7 60.2 26.0	53 18.7 53.5 11.7	283 62.5
Column Total	158 34.9	196 43.3	99 21.9	453 100.0

Raw Chi Square = 14.52224 with 4 Degrees of Freedom. Significance = 0.0058

Table B-11. Relation Between Three Adopter Groups and Employment Status

COUNT ROW PCT COL PCT TOT PCT	Parttime	Fulltime	Self-employed	Not Employed	Retired	Row Total
Early Adopters	7 6.9 21.9 1.5	66 64.7 27.8 14.6	8 7.8 29.6 1.8	9 8.8 18.8 2.0	12 11.8 11.0 2.6	102 22.5
Late Adopters	0 0.0 0.0 0.0	40 58.8 16.9 8.8	3 4.4 11.1 0.7	13 19.1 27.1 2.9	12 17.6 11.0 2.6	68 15.0
Non-Adopters	25 8.8 78.1 5.5	131 46.3 55.3 28.9	16 5.7 59.3 3.5	26 9.2 54.2 5.7	85 30.0 78.0 18.8	283 62.5
Column Total	32 7.1	237 52.3	27 6.0	48 10.6	109 24.1	453 100.0

2 out of 15 (13.3%) of the valid cells have expected cell frequency less than 5.0.

Minimum Expected Cell Frequency = 4.053

Raw Chi Square = 29.75960 with 8 Degrees of Freedom. Significance = 0.0002

Table B-12. Relation Between Three Adopter Groups and Regular Working Hours

COUNT ROW PCT COL PCT TOT PCT	Bank Hours	Outside Bank Hours	Sometimes	Row Total
Early Adopters	67 65.7 28.3 14.9	23 22.5 14.9 5.1	12 11.8 20.0 2.7	102 22.6
Late Adopters	39 57.4 16.5 8.6	23 33.8 14.9 5.1	6 8.8 10.0 1.3	68 15.1
Non-Adopters	131 46.6 55.3 29.0	108 38.4 70.1 23.9	42 14.9 70.0 9.3	281 62.3
Column Total	237 52.5	154 34.1	60 13.3	451 100.0

Raw Chi Square = 12.83917 with 4 Degrees of Freedom. Significance = 0.0121

Table B-13. Relation Between Three Adopter Groups and Age

COUNT ROW PCT COL PCT TOT PCT	<31 Years	31-40 Years	41-50 Years	51-60 Years	>60 Years	Row Total
Early Adopters	16	22	26	28	10	102
	15.7	21.6	25.5	27.5	9.8	22.5
	42.1	31.4	28.3	22.4	7.8	
	3.5	4.9	5.7	6.2	2.2	
Late Adopters	12	9	16	19	12	68
	17.6	13.2	23.5	27.9	17.6	15.0
	31.6	12.9	17.4	15.2	9.4	
	2.6	2.0	3.5	4.2	2.6	
Non-Adopters	10	39	50	78	106	283
	3.5	13.8	17.7	27.6	37.5	62.5
	26.3	55.7	54.3	62.4	82.8	
	2.2	8.6	11.0	17.2	23.4	
Column Total	38	70	92	125	128	453
	8.4	15.5	20.3	27.6	28.3	100.0

Raw Chi Square = 50.72118 with 8 Degrees of Freedom. Significance = 0.0000

Table B-14. Relation between Three Adopter Groups and Total Family Income

COUNT ROW PCT COL PCT TOT PCT	<15,000	15,000-24,999	25,000-34,999	>34,999	Row Total
Early Adopters	17 16.8 14.4 3.8	27 26.7 20.1 6.1	23 22.8 26.4 5.2	34 33.7 32.4 7.7	101 22.7
Late Adopters	13 20.0 11.0 2.9	27 41.5 20.1 6.1	14 21.5 16.1 3.2	11 16.9 10.5 2.5	65 14.6
Non-Adopters	88 31.7 74.6 19.8	80 28.8 59.7 18.0	50 18.0 57.5 11.3	60 21.6 57.1 13.5	278 62.6
Column Total	118 26.6	134 30.2	87 19.6	105 23.6	444 100.0

Raw Chi Square = 17.76334 with 6 Degrees of Freedom. Significance = 0.0069

Table B-15. Relation Between Three Adopter Groups and Social Participation

COUNT ROW PCT COL PCT TOT PCT	None	1-2 Cate - gories	3-4 Cate - gories	5-6 Cate - gories	Row Total
Early Adopters	13 12.7 28.9 2.9	35 34.3 19.3 7.7	33 32.4 19.8 7.3	21 20.6 35.0 4.6	102 22.5
Late Adopters	5 7.4 11.1 1.1	30 44.1 16.6 6.6	26 38.2 15.6 5.7	7 10.3 11.7 1.5	68 15.0
Non-Adopters	27 9.5 60.0 6.0	116 41.0 64.1 25.6	108 38.2 64.7 23.8	32 11.3 53.3 7.1	283 62.5
Column Total	45 9.9	181 40.0	167 36.9	60 13.2	453 100.0

Raw Chi Square = 8.62358 with 6 Degrees of Freedom. Significance = 0.1959

Table B-16. Relation Between Three Adopter Groups and Social Mobility

COUNT ROW PCT COL PCT TOT PCT	0,1 Residences	2,3 Residences	>3 Residences	Row Total
Early Adopters	24 24.0 11.8 5.4	41 41.0 24.8 9.2	35 35.0 44.3 7.8	100 22.3
Late Adopters	23 33.8 11.3 5.1	31 45.6 18.8 6.9	14 20.6 17.7 3.1	68 15.2
Non-Adopters	157 56.1 77.0 35.0	93 33.2 56.4 20.8	30 10.7 38.0 6.7	280 62.5
Column Total	204 45.5	165 36.8	79 17.6	448 100.0

Raw Chi Square = 46.98300 with 4 Degrees of Freedom. Significance = 0.0000

Table B-17. Relation Between Three Adopter Groups and Print Readership

COUNT ROW PCT COL PCT TOT PCT	No Categories	1 Category	2 Categories	3 Categories	4-5 Categories	Row Total
Early Adopters	3 2.9 15.8 0.7	15 14.7 19.5 3.3	42 41.2 22.8 9.3	32 31.4 24.8 7.1	10 9.8 22.7 2.2	102 22.5
Late Adopters	4 5.9 21.1 0.9	8 11.8 10.4 1.8	33 48.5 17.9 7.3	17 25.0 13.2 3.8	6 8.8 13.6 1.3	68 15.0
Non-Adopters	12 4.2 63.2 2.6	54 19.1 70.1 11.9	109 38.5 59.2 24.1	80 28.3 62.0 17.7	28 9.9 63.6 6.2	283 62.5
Column Total	19 4.2	77 17.0	184 40.6	129 28.5	44 9.7	453 100.0

2 out of 15 (13.3%) of the valid cells have expected cell frequency less than 5.0.

Minimum Expected Cell Frequency = 2.852

Raw Chi Square = 5.00144 with 8 Degrees of Freedom. Significance = 0.7574

Table B-18. Relation Between Three Adopter Groups and Exposure to News Media in General

COUNT ROW PCT COL PCT TOT PCT	0-1 Hours	2 Hours	3 Hours	4-5 Hours	>5 Hours	Row Total
Early Adopters	21	25	34	15	5	100
	21.0	25.0	34.0	15.0	5.0	22.3
	30.0	20.5	28.6	14.4	14.7	
	4.7	5.6	7.6	3.3	1.1	
Late Adopters	13	14	19	16	5	67
	19.4	20.9	28.4	23.9	7.5	14.9
	18.6	11.5	16.0	15.4	14.7	
	2.9	3.1	4.2	3.6	1.1	
Non-Adopters	36	83	66	73	24	282
	12.8	29.4	23.4	25.9	8.5	62.8
	51.4	68.0	55.5	70.2	70.6	
	8.0	18.5	14.7	16.3	5.3	
Column Total	70	122	119	104	34	449
	15.6	27.2	26.5	23.2	7.6	100.0

Raw Chi Square = 13.84706 with 8 Degrees of Freedom. Significance = 0.0858

Table B-19. Relation Between Three Adopter Groups and Proclivity to Comply with Perceived Prevailing Social Influences

COUNT ROW PCT COL PCT TOT PCT	Yes	No	Row Total
Early Adopters	44 44.9 28.4 10.2	54 55.1 19.6 12.6	98 22.8
Late Adopters	28 42.4 18.1 6.5	38 57.6 13.8 8.8	66 15.3
Non-Adopters	83 31.2 53.5 19.3	183 68.8 66.5 42.6	266 61.9
Column Total	155 36.0	275 64.0	430 100.0

Raw Chi Square = 7.20206 with 2 Degrees of Freedom. Significance = 0.0273