

THE ADOPTION OF INNOVATIONS AS A MEASURE OF
PARTICIPATION IN ADULT EDUCATION

by

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ABSTRACT

The purpose of this study was to apply the procedures developed in studying the adoption of innovations to participation in adult education in order to test the utility of the concept of adoption as a way of studying and explaining the phenomenon of participation in adult education. It was assumed that adult education is an innovation which may be diffused in a process analogous to new agricultural practices.

The study was conducted in a census tract located in Surrey, British Columbia. An analytical survey and interview schedule was used to collect data from 100 housewives chosen at random for the sample.

Two adoption models were used. Each represents the decision process with a series of steps or stages. To develop an adoption score based on the five-stage model, four questions assessed each stage. The adoption score for the four-stage model was obtained with five questions assessing each stage. Thus both adoption scores had a range of zero to twenty and for both models sub-scores could be tabulated for each stage. These adoption scores were used as dependent variables. A participation score based on the number of courses taken provided an additional dependent variable.

Independent descriptive variables consisting of five personal characteristics and thirty-two motivational factors were used. The motivational factors, called goals and barriers, were rated by magnitude estimation.

Fifty-eight per cent of the variance in the number of courses taken by respondents was explained by eight variables. Five of these used to assess adoption explained 48 per cent of the variance, two barriers explained six per cent, while one goal explained four per cent but none of the personal

characteristics were selected. The study suggests that the decision to participate in adult education is not a simple one-step process in which an adult matches his needs and interests to a program that may be available. Rather, the four-stage model fits the phenomenon better than the five-stage model and indicates that decisions are achieved in stages. Although such phenomenon as repeated recycling through the process and time sequencing are unclear, the strategy of using an adoption model is promising.

The study has practical implications. Knowledge of adult education was extensive and printed advertising was widely read except by those with little formal education. Attitudes toward adult education were generally favourable but could be improved. Although 57 per cent reported participation during the previous 4 years and 75 per cent reported considering activities which they did not attend, those with the least formal education seldom even considered adult education.

Although the study indicates that the decision to participate is a process which takes place over time, and that the adoption of innovation strategy explains that process, it is not clear that adoption models are wholly adequate for that purpose. Further research applying decision models from other disciplines may explain participation in adult education with greater accuracy.

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CHAPTER I

INTRODUCTION

The phenomenon of participation in community adult education has been a matter of concern to both the field and the discipline of adult education for a number of years. Numerous studies have investigated various aspects of participation but thus far none have provided clues to change administrative practices so as to increase participation. Nor has research led to the formulation of any theoretical basis to clarify and explain the phenomenon of participation. Thus, although an extensive body of facts about participation has accumulated, it still remains something of an enigma.

In many ways, the decision by an adult to participate in an educational program is somewhat analogous to the acceptance of an innovation or a new practice so that the phenomenon of participation in adult education might be more clearly explained by using the concept of adoption of innovations. An extensive body of research literature about the adoption of innovations has been accumulated but thus far none has studied participation in adult education specifically.

PURPOSE

The purpose of this study is to apply the procedures developed in studying the adoption of innovations to assess the acceptance of adult education in a community in order to determine whether such procedures explain participation better than do variables based on motivation, personal characteristics, or a participation versus non-participation dichotomy.

HYPOTHESIS

The basic hypothesis of this study is:

Variables from the Adoption Models account for more variance in participation rates in Adult Education than do:

- (1) the personal characteristics of respondents
- (2) the goals motivating respondents toward participation or
- (3) motivational barriers inhibiting participation.

REVIEW OF THE LITERATURE

In order to achieve the purpose of this study, it will be necessary to consider both the literature relating to participation in adult education and that related to the adoption of innovations. Obviously, a complete and detailed review of both areas would contain material that is largely irrelevant, therefore, this review is limited to that literature which is immediately applicable to the purpose of this study.

Participation

The research literature about participation in adult education can be grouped into four major categories reflecting the particular levels of the phenomenon that have been studied. Considerable data about participation has been accumulated in each category but these have not led to any general theoretical explanation of the phenomenon that is sufficient to provide a structure for further research.

Community Level

Numerous studies have sought to assess the nature and extent of participation in a community through surveys or polls. In most cases, these have failed to provide an accurate measure of the amount of participation because of the difficulties in assessing and recording all partici-

pation in programs and activities. Adult education is so wide-spread that only those programs conducted by the traditional educational institutions can be studied readily. Verner and Newberry¹ have pointed out the qualitative differences in participation among the more visible institutional programs such as public schools, university extension, or agricultural extension. They found that while each of the traditional institutions appeared to attract a different segment of the population, all of them were "educating the educated."

Johnstone and Rivera² conducted a nation-wide poll in the United States that provides the most recent and most complete analysis of the extent of participation in a variety of forms of adult education. They found that some 22 per cent of the adult population was involved in some form of adult education during a twelve month period.

Characteristics of Individuals

A majority of the research studies reported have analysed the socio-economic characteristics of participants in an effort to determine who is involved in adult education. Some studies have compared participants with non-participants in an effort to isolate the personal characteristics that differentiate one from another. Other studies have compared persistent attenders with drop-outs in an attempt to determine the factors that may account for persistence or discontinuance.

Johnstone and Rivera³ summarized the personal characteristics of those who participated:

The adult participant is just as often a woman as a man, is typically under forty, has completed high school or more, enjoys an above-average income, works full-time and most

often is in a white-collar occupation, is married and has children, lives in an urbanized area but more likely in a suburb than a large city, and is found in all parts of the country, but more frequently in the west than in other regions.

Among the characteristics which have been found to differentiate participants from non-participants, age and educational level are the variables most consistently reported as statistically significant. That participation decreases as age advances has been reported frequently⁴ and Johnstone and Rivera noted that "... the rate fell from a high of 29 per cent among adults in their late twenties to 4 per cent among persons seventy and over."⁵ They also reported that the median age of those who participated was 36.5 years. It is apparent that those who participate actively in adult education programs fall into the middle years and that neither younger nor older adults are proportionately represented. Furthermore, there appears to be no noticeable difference in this regard between participation in adult education programs and in social organizations.⁶

Educational level, as measured by years of school completed, has been found to be the single most crucial variable differentiating participants from non-participants with participants having a higher level of educational achievement.⁷ Programs conducted for adults by different institutions tend to serve different groups in the population with those attending evening classes in the public schools tending to have less education than those in university extension programs.⁸ In general, adults with a higher educational level are more likely to seek additional education so that "adult education is widening the gap between the educated and the educationally unprivileged."⁹

Marital status does not seem to be related to participation except

in scattered references. Although Kaplan¹⁰ reported that single persons attended more frequently than married, that has not generally been substantiated.¹¹

Other socio-economic variables have been found to be related to participation in adult education at one time or another but none of these have appeared consistently and cannot, therefore, be considered as crucial factors affecting participation.

Program Characteristics

A number of factors under the control of an administrator of an adult educational program have been examined to determine if they influence participation. Pattyson¹² found that the day of the week on which a program was held appeared to influence participation. Verner and Neylan¹³ reported that the length of course affected participation--particularly persistence of attendance. Lamoureux¹⁴ studied the cost of a program but found no specific relationship to participation in university extension programs. For the most part, such situational factors have not been studied sufficiently to produce any valid generalizations about their influence on participation.

Motivation

Many studies in adult education have sought to identify both the personal goals and the barriers that might affect participation.

Goals are defined as "the end-result toward which action, muscular or mental, is directed."¹⁵ The goals that may lead an adult to participate in continuing education programs have been identified in a number of different ways. Houle¹⁶ classified learners as goal-oriented, activity-oriented, or learning-oriented while Havighurst¹⁷ postulated that participation stemmed

from developmental tasks which adults encounter at every stage of life. Riesman¹⁸ suggests that participation stems from whether adults are tradition-directed, inner-directed or other-directed. Kretch¹⁹ lists such goals as affiliation, prestige, power or curiosity--among others--and notes that although these are not directly measurable they can be inferred from subjective reports. Skinner²⁰ warns that "So long as the inner event (needs) is inferred, it is in no sense an explanation of the behaviour [i.e. participation] and adds nothing to a functional account." Thus inferred needs should not be used as pseudo-explanations for participation roles.

In spite of the theoretical problems created by the concept of goals as motivating participation, the effect of goals has been studied frequently. Johnstone and Rivera report that "job-centered reasons lead younger adults to take courses, [but] the enrolment goals of older adults are much less pragmatic and utilitarian."²¹ Among these goals were general knowledge, social contacts, get away from the daily routine, spare-time interests, skills to cope with everyday living, and domestic skills. They report that goals vary with age and social position.

Boshier²² factor analysed goals and concluded that participants were motivated either by a sense of deficiency or by a desire for growth. Either can lead to participation and then to satisfaction. In a similar study, the goals were identified as the desire to know, to reach a personal goal, to reach a social goal, to reach a religious goal, to escape, to take part in activity and to comply with formal requirements.²³ Unfortunately, these studies are done on populations of participants so that it is not possible to compare the goals of participants with those of non-participants.

Barriers to participation seem to have been studied less frequently than goals. Johnstone and Rivera found that the most frequent barriers were "financial (43 per cent), busy schedule (39 per cent) and a lack of sufficient physical energy at the end of the day (37 per cent)."²⁴ They also found that women identified more barriers than men and that older people were more likely to feel too old to learn or to feel that it would be childish to enroll in a course.

McKinnon²⁵ concluded that "within the central city [Vancouver] distance is a barrier to only a few participants", and Melton²⁶ found that people who preferred to participate at the university would travel long distances to attend even though equivalent courses were available much closer in the public schools. Lack of money is a long recognized barrier generally discussed within the framework of socio-economic status or poverty.²⁷ Elimination of fees increased participation on Indian Reserves,²⁸ but alienation from the general society is also a barrier to the poor,²⁹ to Native Indians³⁰ and to the foreign born.³¹

Lack of appropriate communication reduces participation. Anderson and Niemi³² conclude that the poor receive adequate mass media information, which they ignore, and inadequate inter-personal communication which they would be more likely to follow.

Close kinship ties on Indian Reserves are a barrier to participation presumably because of competition for the potential participant's time and energy.³³ In general, however, a systematic study to the barriers to enrolment has not been carried out and certainly little evidence is available as to the relative importance of those barriers.

Concept of Adoption

Although the research on participation has examined a number of factors affecting participation, it has not considered participation as a decision process. Research into the adoption of innovations has studied the process involved in reaching the decision to adopt and it has analyzed those who adopt or reject an innovation so as to categorize them in terms of their adoption behavior. The particular relevance of this research to the phenomenon of participation will be reviewed with respect to the nature of an innovation, the stages in the process of deciding whether or not to adopt, and the categories into which adults can be classified in terms of their response to innovations.

Innovation

Rogers³⁴ notes that an innovation is an object, practice, or idea that is perceived as new by the individual or group to which it is presented. Such innovation may be the product of invention, of discovery, or of a new alignment of pre-existent ideas. In order to be an innovation for a particular individual or group it must be previously unknown to them even though it may have long been known to others. Thus, what is an innovation for one group may be a tradition in another.

As object, an innovation may include such items as a new variety of seed, a drug, a piece of machinery, or any similar tangible object. As practice, an innovation may be a new mode of cultivation, a new surgical procedure, a new technical skill, or any similar pattern of behavior not previously known. As idea, an innovation may include such things as beliefs in a supreme power, literacy, or continuing education.

Barnett³⁵ on the other hand, has conceived of innovations as configurations of behavior and recombinations of existing ideas in which the relationship established between an individual and the idea is the central core of the innovation. Thus, the relationship between the child and the school is that of education so that the components child-school-education form a configuration that was once an innovation in our culture but is now a well established practice.

Characteristics of Innovations

Innovations may be simple or complex. In general, simple innovations are accepted more readily than are complex innovations. Thus, a farmer can accept a new variety of seed but may find it difficult to alter his farming practices which involve complex behavioral changes. In order to explain in greater detail the varying acceptance of innovations, Rogers³⁶ proposed five characteristics of innovations that influence their acceptance and adoption.

Relative advantage explains "the degree to which an innovation is perceived as being better than the idea it supersedes."³⁷ Relative advantage was positively related to the rate of adoption of innovations, in 67 per cent of the studies reviewed.³⁸

Compatibility is "the degree to which an innovation is perceived as consistent with existing values, past experiences, and needs of the receivers."³⁹ It was positively related to adoption, in 67 per cent of the cases.⁴⁰

Complexity is "the degree to which an innovation is perceived as relatively difficult to understand and use"⁴¹ and is related to adoption

in 56 per cent of the studies.⁴²

Trialability is "the degree to which an innovation may be experimented with on a limited basis"⁴³ this was related to adoption in 69 per cent of the studies.⁴⁴

Observability is "the degree to which the results of an innovation are visible to others."⁴⁵ It was related to adoption in 78 per cent of the studies.⁴⁶

Adopter Categories

Members of a population exposed to an innovation will respond to it at variable rates so it is desirable to identify the various segments of that population in terms of their response to the innovation.⁴⁷ This is accomplished by computing an adoption score based on the stage in the adoption process achieved by individuals at the time of the study. Rogers says that adoption scores have been found to follow a normal distribution, and he suggests dividing the population into categories using the normal curve and standard deviations, thus five categories can be identified which reflect the degree of response over time to an innovation. These are as follows:⁴⁸

Innovators are those with an adoption score two or more standard deviations above the mean, and make up 2.6 per cent of a population. This group is the first to accept an innovation and may be characterized as venturesome and willing to take risks.

Early adopters have an adoption score between one and two standard deviations above the mean. This group consists of 13.5 per cent of the population studied. The early adopter is respected by his peers, is successful, and he is discrete in accepting innovations.

Early majority comprise the 34 per cent of the population with an adoption score between the mean and one standard deviation above the mean. Rogers calls this group deliberate as they are willing to accept new ideas, but not willing to be the first.

Late majority are the 34 per cent with adoption scores between the mean and one standard deviation below the mean. Rogers notes "They can be persuaded of the utility of new ideas, but the pressure of peers is necessary to motivate adoption."

Laggards are the 16 per cent with the lowest adoption score. They may have traditional points of view, be suspicious of innovations and are obviously reluctant to change their ways.

Much of the research in the adoption of innovation has described the differences between early adopters and late adopters. Those differences are summarized by Rogers⁴⁹ and need not be repeated here in detail. In general, earlier adopters are better educated, have higher social status, use more sources of information, and in many ways seem to resemble a profile of participants in adult education. Later adopters, on the other hand, tend to resemble those who do not participate in adult education programs.

Although it is tempting to assume that early adopters of one innovation will be equally eager to adopt similar innovations, "The degree of acceptance of any one innovation was not an index to the acceptance of others."⁵⁰ Thus caution is necessary in making generalizations about the characteristics of those in different adopter categories.

Rejection and Discontinuance

Although the adoption of an innovation proposed is assumed to

be the desirable outcome, many individuals may decide against it. When an individual decides against adopting, this decision is termed a rejection.⁵¹ When an individual who has adopted an innovation later decides to stop using it, this is identified as discontinuance.⁵² Rogers and Shoemaker⁵³ cite two reasons for discontinuance: replacement of the innovation with another which is more satisfactory, and simple dissatisfaction.

In any population, therefore, it should be possible to divide adults into four groups on the basis of their decision about an innovation. Firstly, would be those who were still in the process of making a decision about an innovation; secondly, those who have decided to reject the innovation; thirdly, those who have adopted and are using the innovation; and fourthly, those who adopted the innovation initially but later discontinued its use. It is reasonable to suppose that there may be variations in the characteristics of people in each of these four groups. No research in adult education has analysed rejectors or those who have not yet made a decision, but studies of drop-outs in adult education are analogous to the study of discontinuance.

Adoption Process

The acceptance and adoption of an innovation is not merely a simple act but rather involves a process consisting of several steps or stages through which an individual passes in reaching a decision. Rogers defines this as "the mental process through which an individual passes from first knowledge of an innovation to a decision to adopt or reject and to confirmation of this decision."⁵⁴

In order to operationalize the adoption concept two models have

been developed. Each model proposes different stages for describing what is essentially the same process.

Five-Stage Adoption Model

The traditional adoption model was developed in 1955, and identifies five stages in the process used in reaching a decision. These stages are as follows:⁵⁵

1. Awareness stage

The individual learns of the existence of the new idea but lacks information about it.

2. Interest stage

The individual develops interest in the innovation and seeks additional information about it.

3. Evaluation stage

The individual makes mental application of the new idea to his present and anticipated future situation and decides whether or not to try it.

4. Trial stage

The individual actually applies the new idea on a small scale in order to determine its utility in his own situation.

5. Adoption stage

The individual accepts and uses the new idea continuously so that it is integrated into his existing behavior.

Some stages may be omitted by some individuals and the sequence of the stages followed may be altered by others. Rejection may occur at any stage and the process may continue past adoption with such behaviors as seeking further information or discontinuance.

Although the five-stage model has been used extensively, it has been criticized for three deficiencies. It assumes that the process always results in adoption rather than in rejection, it assumes that the stages are followed in order, and it assumes that the process stops when adoption occurs.⁵⁶ In spite of these criticisms, the five-stage model is used in this study so that comparisons can be made to previous research.

Four-Stage Adoption Model

A four stage model was proposed in 1971 "to account for the major criticisms raised about the five stage adoption model, to profit from recent researches on the process, and to be consistent with the learning process, theories of attitude change, and general ideas about decision making."⁵⁷

This model consists of the following stages or steps:⁵⁸

1. Knowledge

The individual is exposed to the innovation's existence and gains some understanding of how it functions.

2. Persuasion

The individual forms a favorable or unfavorable attitude toward the innovation.

3. Decision

The individual engages in activities which lead to a decision to adopt or reject the innovation.

4. Confirmation

The individual seeks reinforcement for the innovation-decision he has made, but he may reverse his previous decision if exposed to conflicting messages about the innovation.

ADULT EDUCATION AS AN INNOVATION

Various research reports provide data relevant to one or more of the stages and this supports the contention here that the adoption process is related to participation in adult education. Knowledge of a program is positively related to participation. Johnstone and Rivera found that "55 per cent said that they knew of at least one place where adults in their community could go to receive instruction, 33 per cent did not know whether or not such resources are available, and 12 per cent said there were no such places."⁵⁹ They also found "that public awareness of facilities varies quite markedly with the type of subject under consideration"; that persons with more schooling were "more knowledgeable about local facilities"; that "people without much education were more likely to know about courses in secondary schools"; and finally that adults were more likely to know about instruction offered by large institutions than about the same courses run in less prominent settings."⁶⁰ Anderson and Niemi comment that disadvantaged adults are likely to become aware through mass media, but that they "are rarely, if ever, induced to take action"⁶¹ by such messages. This explains in part the low participation in adult education by the poor. Lowenstein's comment that "Knowledge that the individual has of educational resource should be assessed in prediction of future adult education participation"⁶² seems obvious, however, with the exception of the study by Johnstone and Rivera, little research is available on what people in a community know about adult education.

The persuasion stage involves the formation of attitudes based, in part, on information obtained in the Knowledge Stage. London⁶³ found that people who placed a high value on education did not participate in

adult education activities significantly more frequently. Johnstone and Rivera⁶⁴ linked interest in learning and a willingness to take a course. They found approximately seven out of ten adults were interested in learning and thus were potential adult education clients; however, those wanting to learn but not interested in a course clearly require a change in attitude if they are to become participants. Older adults identified more barriers which may indicate a more negative attitude.⁶⁵ London notes that adults "lack a clear identification of themselves as students,"⁶⁶ which is a self-image problem and thus attitude related. Jensen seems to grasp the basic problem "Only as an adult educator develops strategy to overcome existing fears [substitute--to change existing attitudes] will adults conquer their resistance to enrolling in educational activities."⁶⁷ Although it is clear that attitudes are related to participation, it is unfortunately true, as Verner and Booth noted in 1960, that attitudes are "imperfectly understood and inadequately handled by adult educators."⁶⁸ The literature offers few clues as to how such attitude change should take place except that, for the poor and possibly for all others, personal communication is more successful than printed or other mass media messages.⁶⁹

There are a variety of factors which may lead an adult toward a decision to adopt adult education. Rogers⁷⁰ investigated "need for achievement" which he defined as "a social value that emphasizes a desire for excellence in order to attain a sense of personal accomplishment" and found that the desire for achievement was related to both farm and home innovativeness. For some adults, participation in an adult education program may result from the acceptance of a current fad and as Linton notes, "It is an observed

fact that certain new elements of culture will be eagerly accepted by groups when there are not discernible reasons of either utility or prestige."⁷¹ On the other hand, Lionberger claims that "Dissatisfaction with the conditions as they exist, followed by awareness of alternatives, is pre-requisite to change."⁷²

Cognitive dissonance may explain why persons with inadequate formal education enroll or consider enrolling. "Dissonance produces discomfort [in the individual] and correspondingly, there will arise pressures to reduce or eliminate the dissonance."⁷³ It may be that persons who believe that education is important and also believe that their own educational level is too low suffer dissonance. Thus dissonance reduction may be a factor in their decision about participating in adult education.

Since not all adults decide to participate in adult education, there may be variables related to such negative decision. Two propositions are presented here. Since "Behavior which is followed by the withdrawal of an aversive stimulus is called escape,"⁷⁴ perhaps many adults feel they have already escaped from books, teachers, and schools and may regard all kinds of education as aversive stimuli therefore avoiding adult education activities. Perhaps they feel they have escaped the drudgery experienced in school in their youth and associate adult education with that drudgery by the process of stimulus generalization.⁷⁵ Thus the attitudes and behavior they express toward adult education are similar to the conditioned responses of their youth. The difference, however, is that youth education was compulsory, adulthood education is voluntary and the predictable result is non-participation. The second proposition is that "Habit probably plays an important role in resistance to new ideas."⁷⁶

In the confirmation stage the individual "seeks reinforcement for the innovation-decision he had made."⁷⁷ When reinforcement is sufficiently strong, continued participation tends to result. When Johnstone and Rivera⁷⁸ asked participants how much they had benefited, 63 per cent said a great deal, 23 per cent said some, and only 13 per cent said not very much, which suggests that reinforcement occurred. Both Dickinson and Verner⁷⁹ and Verner and Neylan⁸⁰ report that drop-outs are more frequent when courses were longer than ten sessions and when academic or vocational subjects were studied. Dickinson and Verner also reported that "In general, the persistent attenders were older, married housewives who had children, while the drop-outs were younger and usually single."⁸¹

Adult education clearly fits the criteria of an innovation noted by Rogers. In the suburban community that is the locale for this study, adult education was introduced in the public school system some 15 years ago and by other agencies and organizations since then. Consequently, the criterion of newness to the community is satisfied. In addition, if an innovation is conceived as a configuration as Barnett proposed, an adult becomes one constituent related by education to a second constituent (which may be any of several programming organizations) so that a configuration is established which becomes a new relationship that is an innovation in the culture. Thus, by either criterion, adult education can be properly considered to be an innovation.

The dynamics of adult education are such that it lends itself to study and analysis identical with that presently used in studying other kinds of innovations. Adults in a community will vary from no awareness that adult education programs are available to continuous and sustained participation.

Although the four-stage and five-stage models both measure the involvement of an individual with an innovation, they do so by using distinctly different assumptions. Because of this, both models must be tested to determine the utility of the concept in studying participation in adult education. This results in what, in effect, are two separate studies that examine each model using virtually the same data and following identical procedures with respect to the detailed analysis of the results.

DEFINITION OF TERMS

The following terms have somewhat specialized meanings in this study:

Activity - One instructional unit in which an adult may enroll such as a course, class or workshop.

Adoption Models - Represent the various ways in which the adoption process may be sub-divided into stages or into adopter categories.

Adoption Scores - A measure of involvement with adult education from first knowledge to participation. The scores in both the five and four-stage models have a range of zero to twenty and are based on an equal number of items from each stage.

Adopter Categories - Classification into categories by adoption score that indicate the innovativeness of the respondent. This procedure uses a normal curve applied to the adoption scores of the respondents.

Adoption Variables - The 33 items used to assess the 2 adoption scores. Twenty variables are used to assess each score but 7 variables are common to both.

Adult Education - "Is a relationship between an educational agent and a learner in which the agent selects, arranges and continuously directs a sequence of progressive tasks that provide systematic experiences to achieve learning for those whose participation in such activities is subsidiary and supplementary to a primary productive role in society."⁸² In this study the term adult education is limited to that provided by the local school district and similar organizations.

Barriers - Factors which may make it difficult or impossible to enrol in adult education.

Descriptive Variables - The 37 items used to assess the respondent and his motivation. Included are the 16 goals and the 16 barriers rated by magnitude estimation. Also included are the following five personal characteristics; marital status, age, educational level as expressed in years of school computed, attendance in vocational training and employment outside the home. These were used as independent variables.

Dropping-out - The behavior of failing to complete an activity.

Goals - Factors encouraging enrolment in adult education.

Housewife - The senior female in the dwelling who thus has responsibility for the management of the household which she may share with the dominant male.

Magnitude Estimation - The procedure used for deriving a ratio scale underlying the various items defined as goals and barriers.

Motivational Ratio - A statistic assessing motivation of an individual calculated by dividing the natural logarithm of the geometric means of the ratings of the goals by the same statistic for the barriers.

Number Ratio - A statistic calculated by dividing the natural logarithm

of the number of goals reported by the same statistic for the barriers.

Participation - Attendance in an adult education activity.

Participation Score - The number of adult education activities in which the respondent has taken part. The maximum score is 15 which is rated by up to 3 activities per year for the 5 year period preceding the interview.

Personal Characteristics - The five variables which assess age, education, vocational training, marital status and employment.

Stage Scores - The sum of the correct response to the questions used in assessing each stage of the adoption process.

Chapter I

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CHAPTER II

PROCEDURE

In order to fulfil the purpose of this study, the analytical survey method was selected with a structured interview schedule used to collect data from a sample population. This procedure should provide the data to achieve three basic functions:

1. It should describe the degree of acceptance of adult education in a community, using the techniques developed for the measurement of the adoption of innovations.
2. It should explain variation in the acceptance of adult education through the analysis of selected independent variables.
3. It should provide the data necessary to estimate the construct validity of adoption as a measurement of participation in adult education in a community.

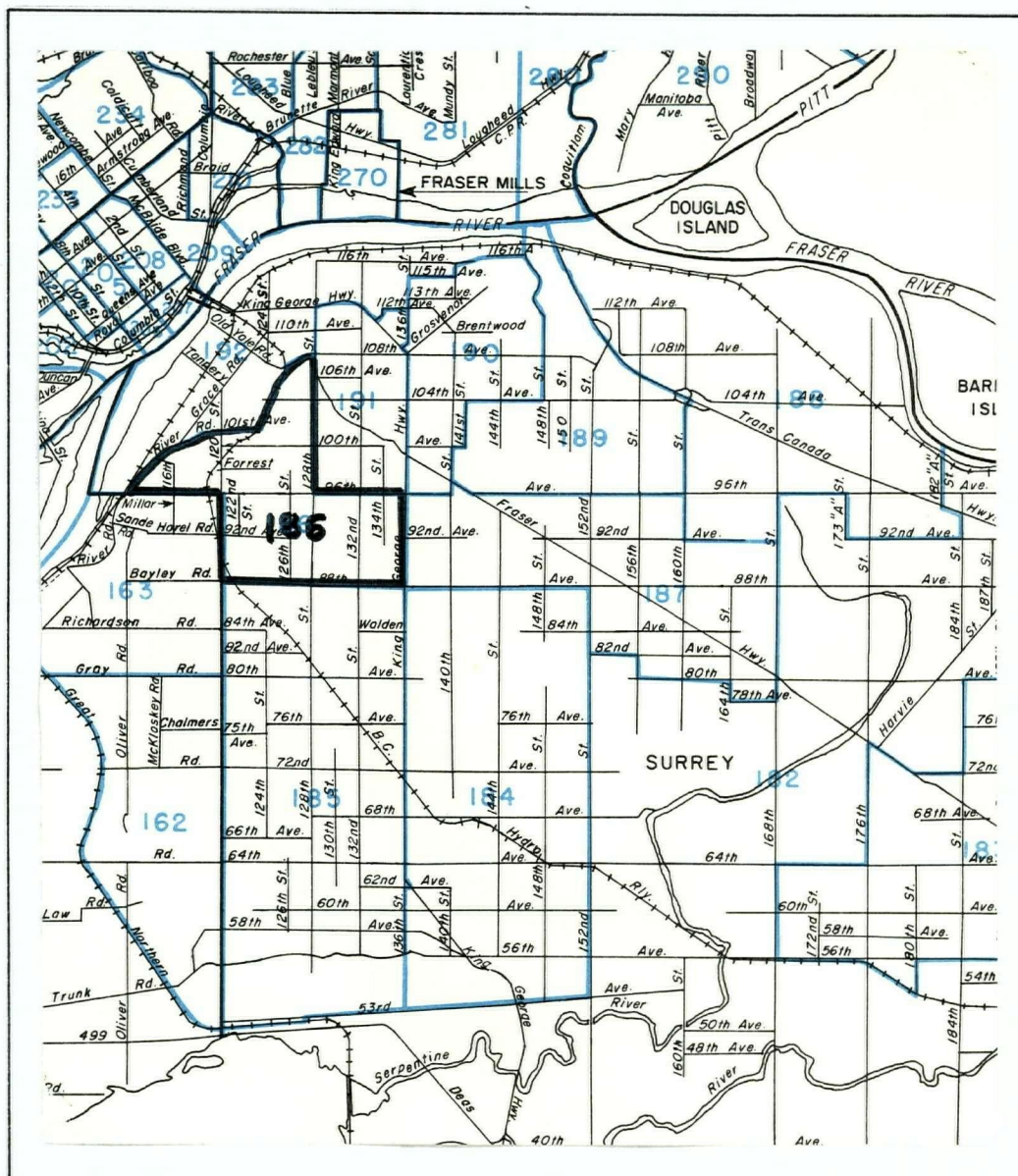
Although this is basically a traditional study of the adoption of innovations, the research technology developed for less complex innovations must be adapted to fit the nature and characteristics of adult education as the innovation to be measured. These adaptations are explained in detail below.

POPULATION

The community selected for this study is in British Columbia Census Tract 186.¹ This is an area of approximately five square miles located in the north-west portion of the Municipality of Surrey in British Columbia, Canada (Figure 1). The population in this census tract has

FIGURE 1

Map of the Sample Area



increased from 4,200 in 1956 to 13,210 in 1971 and there are 3,334 dwellings of which 255 are multiple-dwelling units.

In 1971 the mean value of the dwellings in the tract was \$23,018 which is slightly lower than the \$26,702 mean for all dwellings in the Municipality of Surrey. The median total income per household was \$9,479 which is \$800 higher than that for the Municipality. Of the 4,235 females over 15 years of age in the census tract, 35.5 per cent were in the work force. These data indicate that the population in this census tract is representative of the lower mainland of British Columbia. Thus, the results of this study will be applicable to similar populations elsewhere but it will not necessarily provide generalizations that are universally applicable.

In selecting this particular census tract, the five tracts closest to Queen Elizabeth Senior Secondary School were examined. This school has been the principal centre for adult education in Surrey for 15 years. A comparison of the five tracts indicated that tract 186 was typical of the five examined so it was selected since the school was located within the tract. The median distance from households within the tract to the school is approximately one mile. A Junior Secondary School with a large adult evening program is just outside the tract boundary and Douglas Community College which also offers courses for adults is within a mile of the tract boundary. Other educational activities for adults are available within two miles in the town of Whalley and an extensive adult education program is operated by the New Westminster School District within easy driving distance. The tract selected is, therefore, a typical residential area with good access to, and a record of, participation in adult education.

SAMPLE

A sample consisting of 100 dwellings in census tract 186 was selected by a two stage area sampling procedure.

In the first stage, maps were obtained from the municipal Engineering Department that showed the address and location of every dwelling in the tract. Although all the maps were dated within two years of the study, several blocks included recent construction and appropriate additions were made to the maps. Every city block or equivalent area was numbered. One hundred blocks were selected using a table of random number.

In the second stage, each dwelling in the blocks selected was numbered sequentially and one of these was chosen by using a table of random numbers. Alternate dwellings were identified and used when no response was received at the original dwelling in the sample. The census describes a dwelling as "a structurally separate set of living quarters, with a private entrance from outside or from a common hall or stairway inside the building"² and this definition was used for this study.

DATA COLLECTION

The housewife resident in the selected dwelling was interviewed by the author. All interviews were conducted in September, October and November 1975. An initial attempt to obtain an interview was made between 9 a.m. and 4 p.m. on Monday through Saturday and when necessary because of no response, at least one follow-up visit was made in the evening. The interviewer explained the survey, presented letters of introduction from the university and the school district, and asked for an interview. If the potential subject

was reluctant, further explanations were made, but care was taken not to prejudice the interview. Since encyclopedia salesmen had preceded the interviewer, many housewives were suspicious that the interviewer was also a salesman. The interviews were all conducted by the author.

INTERVIEW SCHEDULE

An interview schedule was constructed specifically for this study. This was modelled on schedules used in traditional adoption research³ with modifications as required by the nature of the study.

Measuring Adoption

When measuring the acceptance and adoption of simple innovations such as a new item or practice, it is usually preferable to study several innovations simultaneously so as to arrive at an adoption score for each respondent. Since participation in adult education is a complex innovation and fundamentally different from a simple item or practice, it was necessary to develop a scheme for measuring the acceptance of the innovation that was comparable to but not identical with that used for measuring the acceptance of a simple innovation.

The decision to participate in adult education was hypothesized to involve a process made up of a number of constituent steps that are comparable if not identical with the stages in the adoption of innovations. To measure the progression through the stages leading to adoption it was necessary to prepare a series of questions that would reflect the decision making process at each stage. The responses to these questions were scored on a scale ranging from no response (zero) to a maximum of twenty for response to all questions. This score was based on the assumption that each stage in the

adoption process was of equal importance. It is called the adoption score.

Since this study was dealing with a single complex innovation rather than with several simple innovations, several questions were devised to measure acceptance at each stage. In collecting data for the five-stage adoption model, four questions were used to measure responses at each stage and five questions were used for the four-stage model to insure that the scores achieved with either model would be comparable.

The questions devised for each stage were prepared in such a way as to elicit a response that would be comparable if not identical to the response one would receive in traditional adoption studies involving simple innovations.

Five-Stage Model (total of 20 points):

Awareness Stage (four points): At this stage it was necessary to assess the degree to which the respondent was aware of adult education as an activity available in the community. Positive responses to these questions earned one point each: Do you know what adult education is? Do you know where classes are held? Do you know what is taught? And do you know how adult education is advertised?

Interest Stage (four points): At this stage it was necessary to determine if an individual actively sought information, so the questions determined whether the respondent had made a telephone call enquiring about adult education, written a letter seeking further information, talked with friends or others about the program, or read the advertising literature.

Evaluation Stage (four points): At this stage an individual considers whether or not adult education would be useful to him so questions sought to determine if he had weighed the advantages or disadvantages of participating, whether or not anyone had encouraged or discouraged him, or if he had advised others to participate.

Trial Stage (four points): At this stage it is necessary to determine any specific behaviors that indicated a decision to participate such as attending a program that was cancelled, attending and then dropping out, or attending and completing the course. In addition, respondents were asked directly if they had enrolled on a trial basis.

Adoption Stage (four points): The adoption of adult education was assessed by summing the number of years during which the subject participated between 1972 to 1975.

At each stage the responses were summed to provide a score for that stage and the total score for all stages formed the final adoption score which was used as the dependent variable in the study.

Four-Stage Model (total 20 points):

The four-stage model utilizes seven of the questions from the five-stage model and thirteen additional questions not used in the five-stage model.

Knowledge Stage (five points): This stage is assessed from the four awareness questions and one additional question on how to enrol.

Persuasion Stage (five points): Five questions assessed the attitude of the respondent toward five characteristics of adult education as an innovation. The intention was to assess the relative advantage, compatibility, complexity, trialability, and observability of adult education by using Likert-type scales.

Decision Stage (five points): To determine whether individuals had made decisions they were asked if they had considered a specific activity and then not attended, if they had enrolled and then not attended, if they had been involved in a cancelled activity, if they had been a drop-out and if they had completed one or more adult education activities.

Confirmation Stage (five points): To assess the reaction of participants to adult education activities, respondents were asked if they intended to participate in the future, if they had had unpleasant experiences or if they had experienced unanticipated consequences. Those who did not intend to participate in the future were asked if they had been dissatisfied with their experiences and if they used the time formerly spent on adult education for some other purpose.

The responses to the questions in the four-stage model were summed for each stage as in the five-stage model and the scores for the four stages were summed to arrive at an adoption score. By these procedures stage scores and adoption scores for both models can be compared and contrasted.

Measuring Participation

A participation score was computed for each respondent. To compute

the participation score the total number of activities engaged in over a five year period was used. Since the data used to assess the participation score is also used to assess the adoption scores, the two scores are not independent.

Measuring Personal Characteristics

The review of the literature on participation in adult education and on the adoption of innovations indicated that only certain socio-economic characteristics have so far been found to be related either to participation or to adoption. For purposes of this study, therefore, data were collected related to five personal characteristics that were deemed on the basis of the literature sufficiently important including age, marital status, educational level, vocational training and employment.

Measuring Motivation

In an effort to get some assessment of the level of motivation to participate in adult education, the perception held by the respondent of goals for or barriers to participation were recorded. This was achieved by constructing a scale using the system of magnitude estimation developed by Stevens⁴ and others to rate the goals and barriers identified.

The procedure was simply to ask people to assign numbers to each goal and barrier which were proportional to their subjective impressions of importance. The procedure followed was modified from that suggested by Stevens. Respondents were given the sixteen goal cards, asked to read them, to select one which applied to them, to give that goal a number which is easy to divide and multiply, and finally to rate the remaining goals as a proportion of the first. The procedure was repeated for the barriers. Lindsay

and Norman evaluate such a procedure favorably: "After years of experience with magnitude estimation as a tool for measuring subjective experience, it would appear to be a reliable, robust method. It is simple and effective."⁵

To analyze the respondents' ratings the geometric means were standardized. To standardize each person's assessments, each assessment was multiplied by a common factor so that the individual mean for the 32 goals and barriers was 100. Thus an individual's estimates of the importance of the 32 goals and barriers relative to each other was unaffected. As a result of these adjustments the geometric mean for each single respondent's own ratings becomes 100, but the ratings between respondents can be compared and contrasted, goal by goal and barrier by barrier.

Both goals and barriers may be objectively real, expressed because they are the subjective evaluation of the respondent, or expressed because to do so is socially acceptable. Although there is no way of determining which of the three hypothesis is true for any one response, it seems justifiable to assume that expressed goals tend to increase the probability of participation and expressed barriers tend to decrease the probability of participation. Thus goals can be considered positive motivation and barriers negative motivation.

ANALYSIS OF DATA

The data were coded, punched on cards, and processed at the Computer Centre at the University of British Columbia and then analyzed to describe involvement, to investigate variability in adoption scores and to estimate validity of the techniques. Different analytical processes were used and different assumptions were made for each of the three functions.

Description of Involvement

To describe involvement Bi-variate Contingency Tabulations (UBC MVTAB)⁶ and Parametric and Non-parametric Correlations and Tests of Significance (UBC CORN)⁷ were made. Since these statistics deal with only two variables at a time, the correlations reported should be considered of lesser importance than the more powerful multivariate procedures used in subsequent sections.

Variance in Adoption Score

To assess variance in adoption scores, the Triangular Regression Package (UBC TRIP)⁸ was run with the adoption score as the dependent variable and the personal characteristics, goals and barriers as independent variables. This was done for both the five-stage and four-stage models.

To analyze the adopter categories and the rejection model the data was processed using a Stepwise Discriminant Analysis (UBC BMD07M)⁹. In all the procedures in this section the objective was to isolate independent variables related to involvement in adult education.

Validity of Scores

The validity of the scores and of single variables within the scales can only be assessed indirectly. Factor Analysis (BMDP4M)¹⁰ was used to see if the adoption variables would cluster into factors at all; and whether these were analogous to the adoption stages. (TRIP)¹¹ was used to indicate whether key variables came from each of the stages.

Other indicators of validity would test on the following assumptions:

1. That each question in an adoption stage should be significantly correlated to every other question in that stage.

2. Each stage score should be significantly correlated to the other stage scores in the model.
3. The adoption score is best which has the most variance explained by the independent variables.
4. If factor analysis of adoption variables produces a factor analogous to a stage, that stage is indicated to be more valid.
5. If a variable from one adoption model is significantly correlated to the adoption score of the other adoption model, that variable gains credibility. Obviously this test applied only to those variables not used to assess both models.
6. If those variables used in the adoption scores which do not preclude adoption explain more variance in the number of courses taken than do the goals, barriers and personal characteristics, then adoption measures provide a better explanation of participation than do goals, barriers and personal characteristics.

GENERAL APPROACH

The study is an exploration of the utility of techniques designed to analyze the adoption of innovations for the study of participation in adult education. The two groups of dependent variables measure adoption and participation. Since many variables are used to measure both adoption and participation, the research strategy becomes complex. The variables used primarily as independent variables were goals, barriers and personal characteristics.

CHARACTERISTICS OF THE SAMPLE

Data were collected on five personal characteristics of the

respondents and on how they rated 16 goals and 16 barriers to participation. While these 37 variables functioned primarily as the independent descriptive variables in an effort to explain variance in both adoption and participation scores, they also describe the 100 housewives who were interviewed.

Individual Characteristics

Marital Status. Married women were in the majority (88%), although two women were single and ten were either widowed, divorced or separated.

Age. The age distribution of the sample does not differ significantly from that in the census tract (Table I). The mean age of the sample was 39.6 and the standard deviation 14.4 years.

TABLE I

Percentage Distribution By Age in the Sample
And in the Census Tract

<u>Age</u>	<u>Sample</u>	<u>Tract</u>
17-24	13	14
25-34	32	25
35-44	22	23
45-54	14	18
55-64	11	10
65 up	8	10
	100%	100%

$$\chi^2 = 2.34 \quad df = 5 \quad N.S.$$

Educational Level. The median educational level is grade 11. Twenty-six per cent have less than grade 9 and 9 per cent have attended university but only 3 per cent have obtained degrees.

Vocational Training. Thirty-eight per cent reported receiving training relating directly to employment.

Employment. Forty-two per cent were employed, two per cent were retired and the remaining fifty-six per cent were not gainfully employed.

Goals and Barriers

That goals overall were rated more than twice as important as barriers is indicated since the geometric mean of the geometric means for the 16 goals is 145 whereas the same statistic for barriers to adoption is only 63. If the goals and barriers are ranked together in descending order, the highest 14 geometric means are all goals (Table II). The highest geometric mean, "to improve my mind", is 7.23 times the lowest geometric mean which is for the barrier "I don't want to be a student." This should be interpreted to mean that improving one's mind was considered, on the average, to be more than seven times as important as the fear of being a student in a classroom.

The four highest ranked goals are learning oriented: "to improve my mind" ranked highest with a mean of 275; "to learn job skills", "to learn something new" and "to learn about a hobby" were ranked next and ranged from 216 to 198 (Table III). The next six goals can perhaps be categorized as primarily social "to be with people" ranked fifth at 186; "to get a better job", 184; "to get the education I missed", 168; "to get a certificate", 144; "to enjoy myself", 141; "to find friends", 127; and "to learn to do volunteer work", 125. "To learn to be a better homemaker" ranked twelfth at 125; "to go to evening class and take other members of the family" was 124 and "to save money" was surprisingly low at 123. The only two goals with geometric means of less than 100 were "to have a night out", 78; and "to escape from

TABLE II

Goals and Barriers Ranked by Geometric Means

	Rank	Standardized Geometric Mean
Improve my mind	1	275.3
Improve my job skills	2	216.5
Learn something new	3	210.2
Hobby	4	198.6
Be with people	5	185.9
Get a better job	6	183.9
Get the education I missed	7	168.1
Get a certificate	8	144.2
To enjoy myself	9	141.2
To find new friend	10	126.7
Learn to do volunteer work	11	125.7
To be a better homemaker	12	124.8
Take whole family	13	123.9
Save money	14	122.9
Too busy	15	109.5
Wrong time	16	96.2
Don't want to go alone	17	95.8
Other things	18	86.6
To have a night out	19	77.9
Not enough energy	20	77.4
Fees too high	21	66.6
Transportation	22	65.0
Starting information	23	62.7
Too many problems	24	61.9
Distance	25	59.5
Information about where	26	59.3
To escape	27	56.9
Babysitting	28	51.8
No courses interest	29	46.7
Too old	30	44.0
Family	31	40.3
Don't want to be student	32	38.1

family", 57. (The goals are in rank order in Table III and the exact wording on the cards is in the appendix).

The barriers to participation ranked surprisingly low. The barrier with the highest rank, "I'm too busy and have no free time" had a geometric

mean of 109 ranked fifteenth on the list of 32 goals and barriers combined, and was the only barrier with a geometric mean of over 100. "Activities always seem to be at the wrong time or on the wrong night" ranked second among barriers with a geometric mean of 96; "fees too high" was sixth at 66; "I never seem to find out about classes before they start" ranked eighth; "too far to go" ranked tenth; "It is difficult to find out where the classes are, when they start, and how to enrol" ranked eleventh (g.m. = 59.3); "none of the activities interest me" ranked thirteenth as a barrier at only 47; and don't want to be a student" ranked last with a geometric mean of only 38. Thus, although scheduling and high fees seem to be something of a problem, the other characteristics of the activities were not considered to be important barriers to adoption.

TABLE III

Goals Ranked by Geometric Means

	Rank Order	Standardized Geometric Mean
Improve my mind	1	275.3
Job skills	2	216.5
Learn something new	3	210.2
Hobby	4	198.6
Be with people	5	185.9
Get a better job	6	183.9
Get the education I missed	7	168.1
Get a certificate	8	144.2
Enjoy myself	9	141.2
Find friends	10	126.7
Learn to do volunteer work	11	125.7
Learn homemaking	12	124.8
Take family	13	123.9
Save money	14	122.9
Have a night out	15	77.9
To escape	16	56.9

TABLE IV

Barriers Ranked by Geometric Means

	Rank Order	Standardized Geometric Mean
Too busy	1	109.5
Wrong time	2	96.2
Don't want to go alone	3	95.8
Other things	4	86.6
Not enough energy	5	77.4
Fees too high	6	66.6
Transportation	7	65.0
Starting information	8	62.7
Too many problems	9	61.9
Distance	10	59.5
Information about where	11	59.3
Babysitting	12	51.8
None interest	13	46.7
Too old	14	44.0
Family would object	15	40.3
Student	16	38.1

Other barriers are situational or relate to the individual adult. As noted earlier "too busy" was the highest ranking barrier. The other situational barriers are ranked in decreasing order as follows: "Don't want to go alone" ranked surprisingly high as the third most important barrier (g.m. = 95), "Other things I'd rather do" ranked fourth (g.m. = 86); "not enough energy" ranked fifth (g.m. = 77); "it is difficult to get transportation" ranked seventh (g.m. = 65); "I'd like to attend but there are just too many problems" ranked ninth (g.m. = 62); "babysitting" a surprisingly low rank of twelfth (g.m. = 52); "too old," perhaps a threshold barrier, but its geometric mean of only 44 ranked it as the fourteenth most important barrier; and worry about the family objecting did not rate much importance with a geometric mean of only 40.

Chapter II

FOOTNOTES

1. Census of Canada: 1971, Catalogues 95-728 (CT-28A) and 95-758 (CT-28B) (Ottawa, 1971).
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11. Bjerring and Seagraves, Op. Cit.

CHAPTER III

COMMUNITY INVOLVEMENT: THE FIVE-STAGE MODEL

The five-stage adoption model is the oldest model used to analyze the adoption of innovations. The five stages in the model will be discussed first and this will be followed by an analysis of the population by the adoption score and by adopter categories.

STAGE SCORES

Each of the five stages was assessed with four variables which formed a score for each stage. The relationships of the stage scores to the participation score and to the personal characteristics of the sample are considered first, followed by an estimation of their utility as measures of innovativeness.

Awareness Stage

An awareness that an adult education program existed in the community was clearly the norm for the sample. The mean awareness stage score was 3.59 (standard deviation = .81) with a range from zero to four for those able to answer all questions (Figure 2). All but one respondent gave an adequate definition of adult education while seventy-nine per cent knew where activities were held. Knowledge of what could be learned through adult education activities was noted by 91 per cent, and a similar percentage knew how adult education was advertised in the community. That 74 per cent of the sample answered all four questions indicates a high level of awareness.

THE AWARENESS STAGE VARIABLES



The awareness stage score was related to the participation score ($r = .32^{**}$) (Table V). Among the components of the awareness stage score, knowledge of location was related to educational level ($r = .27^*$) and to the participation score ($r = .32^{**}$); knowledge of advertising was related to participation score ($r = .21^*$); and knowledge of the kinds of things taught through adult education was related to the participation score ($r = .21^*$). Thus, the more courses an adult had taken the more knowledge he had about adult education in the community.

The awareness stage score indicates that at least 75 per cent of the population in the community is aware of the existence of the adult education programs available but this may not necessarily be true in other communities with less extensive programs. In the community studied, however, those with the least knowledge about the availability of adult education programs appear to be those with the least formal education and this is the group that might derive the greatest potential benefit from the programs. Clearly some of those most in need of access to further education are not being reached by the existing methods of creating awareness.

Interest Stage

Not only is awareness the norm but also some search for further information about adult education was reported by 96 per cent of the sample. Nearly half (46%) of those interviewed reported having made a phone call to enquire about adult education (Figure 3). There was a significant relationship between the participation score and whether or not subjects had made

* Indicates significance at .05 level of confidence.

** Indicates significance at .01 level of confidence.

TABLE V

Correlations Between Variables Assessing The
Five-Stage Adoption Model and Personal
Characteristics of Respondents

Items Assessing Adoption	Personal Characteristics					Participa- tion Score
	Marital Status	Age	Education Level	Voca- tional Training	Holds Job	Number of Courses Attended
<u>Awareness Stage</u>						
of definition	-	-	-	-	-	-
of location	-	.06	.27	.00	-	.32**
of variety	-	.09	.10	-	-	.21*
of advertising	-	.08	.27	-	-	.21*
stage score	.00	.12	.17	.19	.08	.32**
<u>Interest Stage</u>						
phone enquiry	-	.06	.21	.00	-	.44**
letter enquiry	-	.06	.14	-	-	.11
talked to friends	-	.05	.11	.00	-	.15
browsed in advertising	-	.18	.15	-	-	.21*
stage score	.06	-.13	.22*	.09	.10	.41**
<u>Evaluation Stage</u>						
thought about	-	.20*	.46**	.00	-	.27**
been encouraged	-	.12	.32**	.02	-	.26*
been discouraged	-	.09	.02	-	-	.03
given advice	-	.05	.19	.00	-	.37**
stage score	.09	-.22*	.31**	.18	.20	.42**
<u>Trial Stage</u>						
taken part on a trial basis	-	.32**	.07	.00	-	.07
trial score	.09	-.22*	.25*	.06	.17	.69**
<u>Adoption Stage</u>						
stage score	.14	-.19	.27**	.14	.14	.89**
five-stage adoption score	.13	-.22*	.33**	.18	.16	.76**

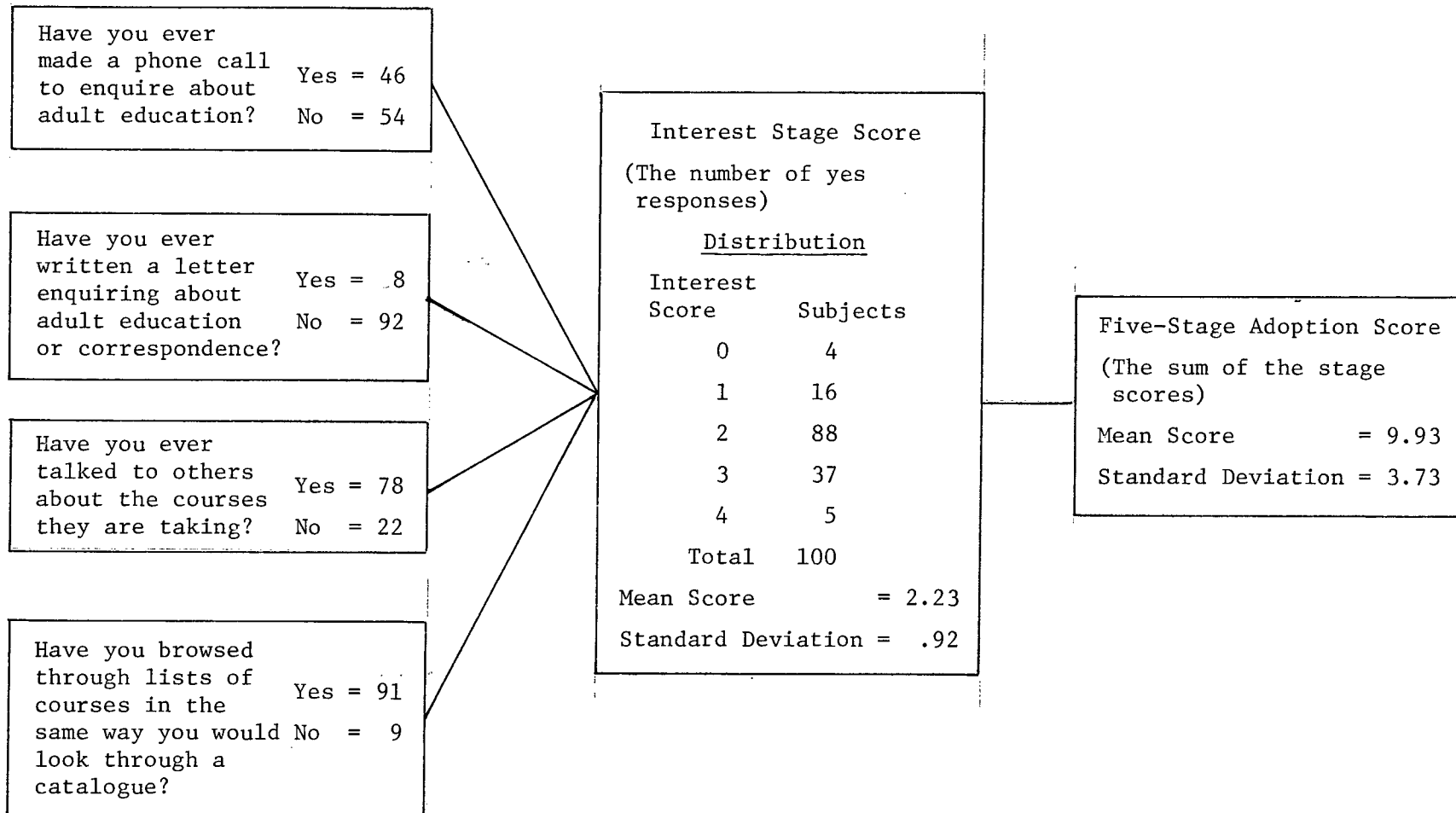
* Indicates significance at .05 level of confidence.

** Indicates significance at .01 level of confidence.

- Indicates too few subjects in one or more cells to calculate.

FIGURE 3

THE INTEREST STAGE VARIABLES



a phone call ($r = .44^{**}$), but none of the personal characteristics were related to seeking further information by using the telephone.

Eight per cent of the respondents had written letters to enquire about activities but this was not significantly correlated either to the participation score or to the personal characteristics of the participants.

Ninety-one per cent reported browsing through adult education advertisements. This was related to the participation score ($r = .21^{*}$) but not to the personal characteristics.

Most people (78%) reported talking to third parties about activities. Seventy-nine per cent of the participants reported discussing courses with others but 77 per cent of the non-participants also reported such discussions. Apparently knowledge about adult education is sufficiently widespread in the community so that prior participation does not seem to be an essential pre-condition to discuss adult education. Neither the participation score nor the personal characteristics of the subjects were related to discussions about adult education programs.

Browsing through printed advertising was the most popular method of getting further information, talking to others was also frequent and almost half used the phone but enquiries by mail were infrequent. Eighty per cent of the sample sought information through two or more channels. The mean interest stage score of 2.23 which has standard deviation of .92 is related to the participation score ($r = .41^{**}$), and to education ($r = .22^{*}$) but not to other personal characteristics.

Evaluation Stage

The mean evaluation stage score was 2.08 with a standard deviation

of 1.01 (Figure 4). Considering the advantages and disadvantages of participating is reported by 86 per cent and this is related to the participation score ($r = .27^{**}$) and to educational level ($r = .45^{**}$), but not to other personal characteristics. Thus, those who consider the advantages and disadvantages of enrolling in adult education, take more courses and are better educated.

Those who report being encouraged by others to participate (49%) also tend to have a higher participation score ($r = .26^{*}$) and to have more formal education ($r = .32^{**}$). A much smaller proportion, (6%) report being discouraged from participating. Being discouraged is related neither to the participation score nor to any of the personal characteristics. Giving advice to others about participating was reported by 69 per cent. This was related significantly to the participation score ($r = .37^{**}$) indicating that those who gave advice tended to take more courses.

Since only eight per cent of the sample have neither considered nor discussed adult education, it is clear that evaluating the desirability of participating in adult education is a behavior common to an overwhelming majority.

Trial Stage

When the interview schedule was prepared it was assumed that the trial stage was part of the adoption process for every participant but now it appears that of the items used to score this stage all were irrelevant. Responses to those three items indicate that only one per cent enrolled in a class which was cancelled, 18 per cent dropped out of an activity and 51 per cent completed one or more activities (Figure 5). Of those who reported

FIGURE 4

The Evaluation Stage Variables

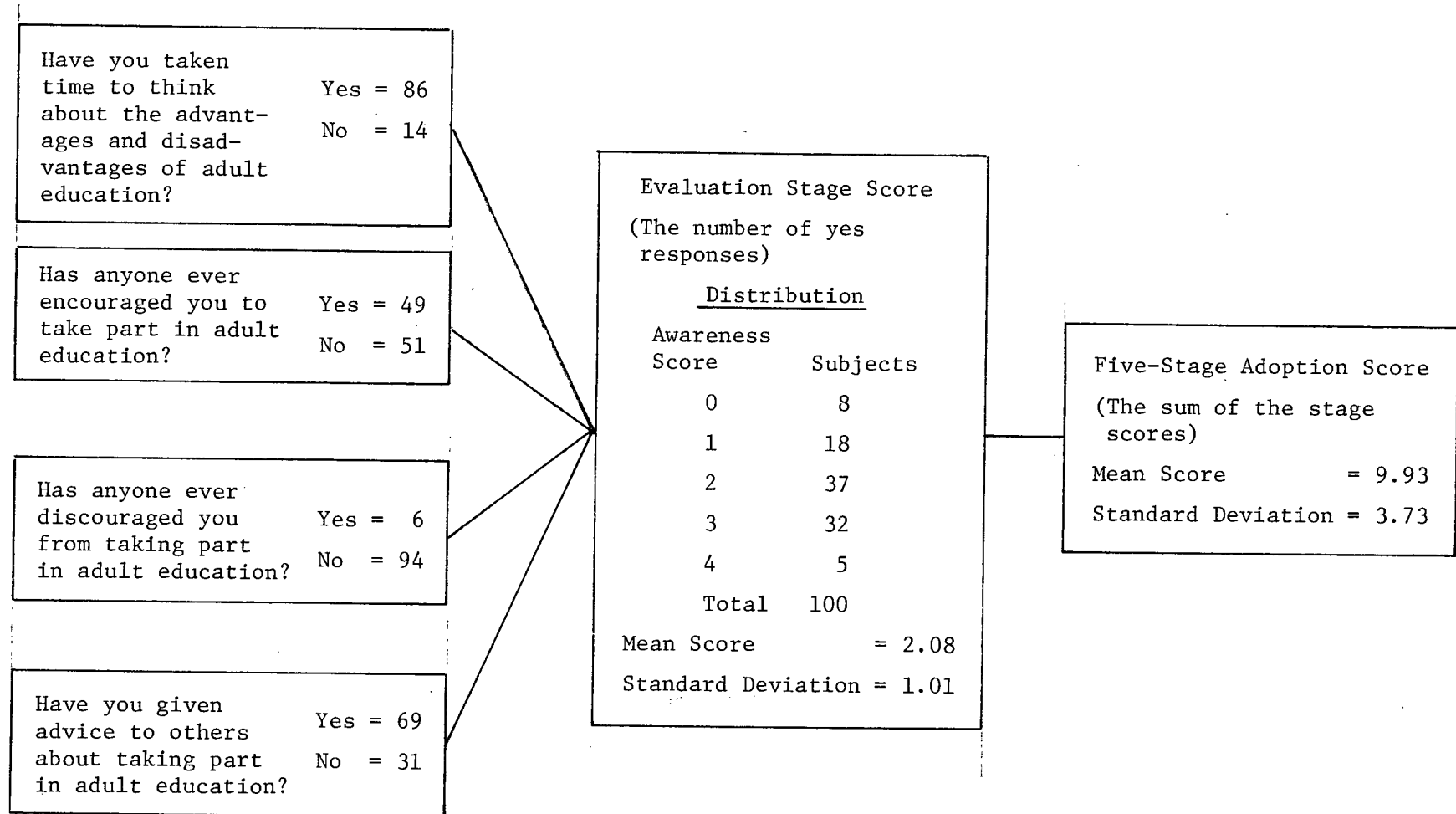
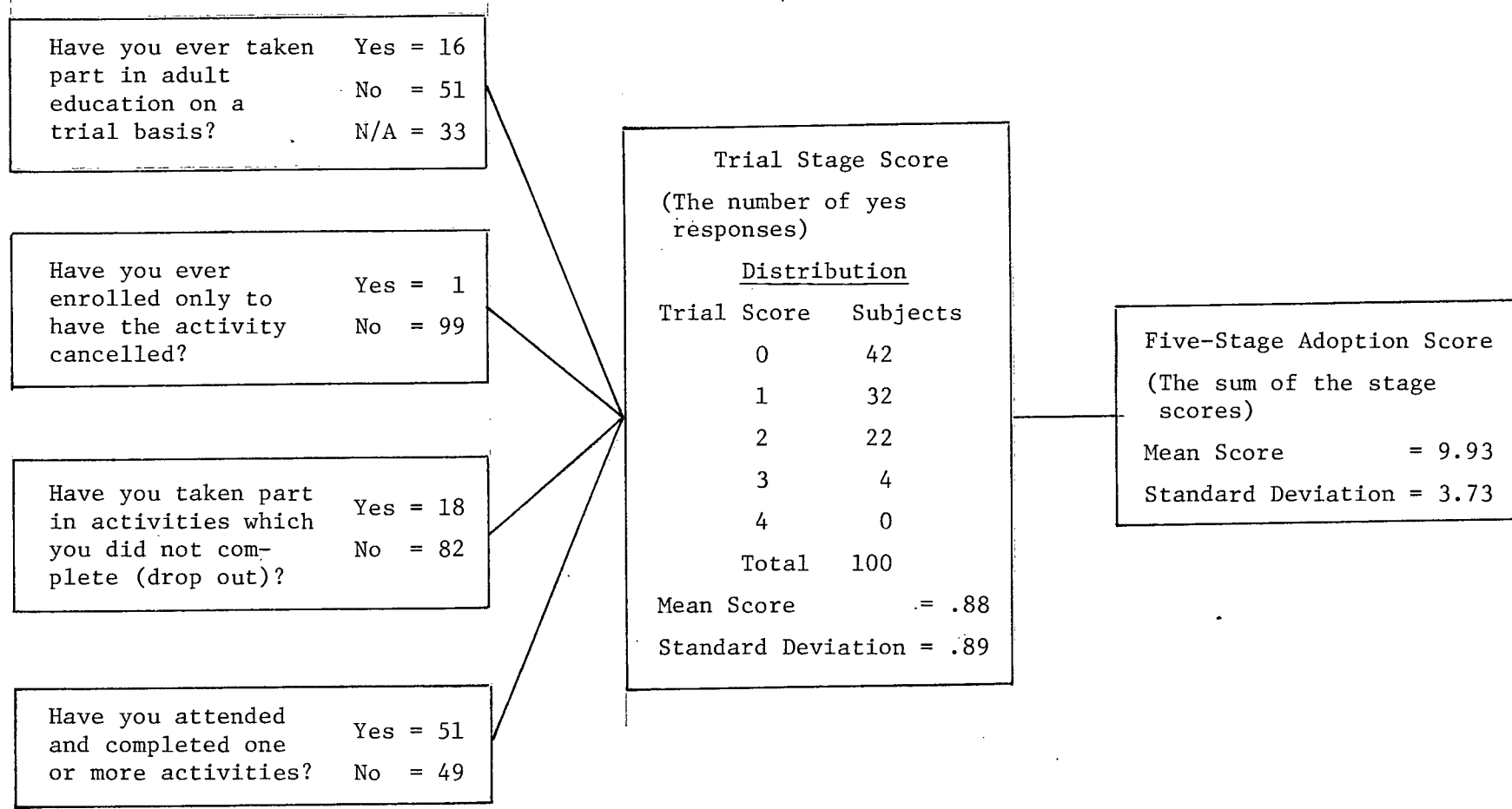


FIGURE 5

The Trial Stage Variables



participation in adult education, only 16 (24%) reported taking part on a trial basis. Since the interviewer not only asked about the trial stage but also probed the response with further questions to ensure the accuracy of the response, it seems certain that three out of every four participants in the sample did not think that they went through a trial stage. Whether or not a participant reports going through the trial stage seems to be the crucial measure. Reporting a trial stage, however, is not related to the participation score ($r = .07$) but it is related to age ($r = .37^{**}$).

Adoption Stage

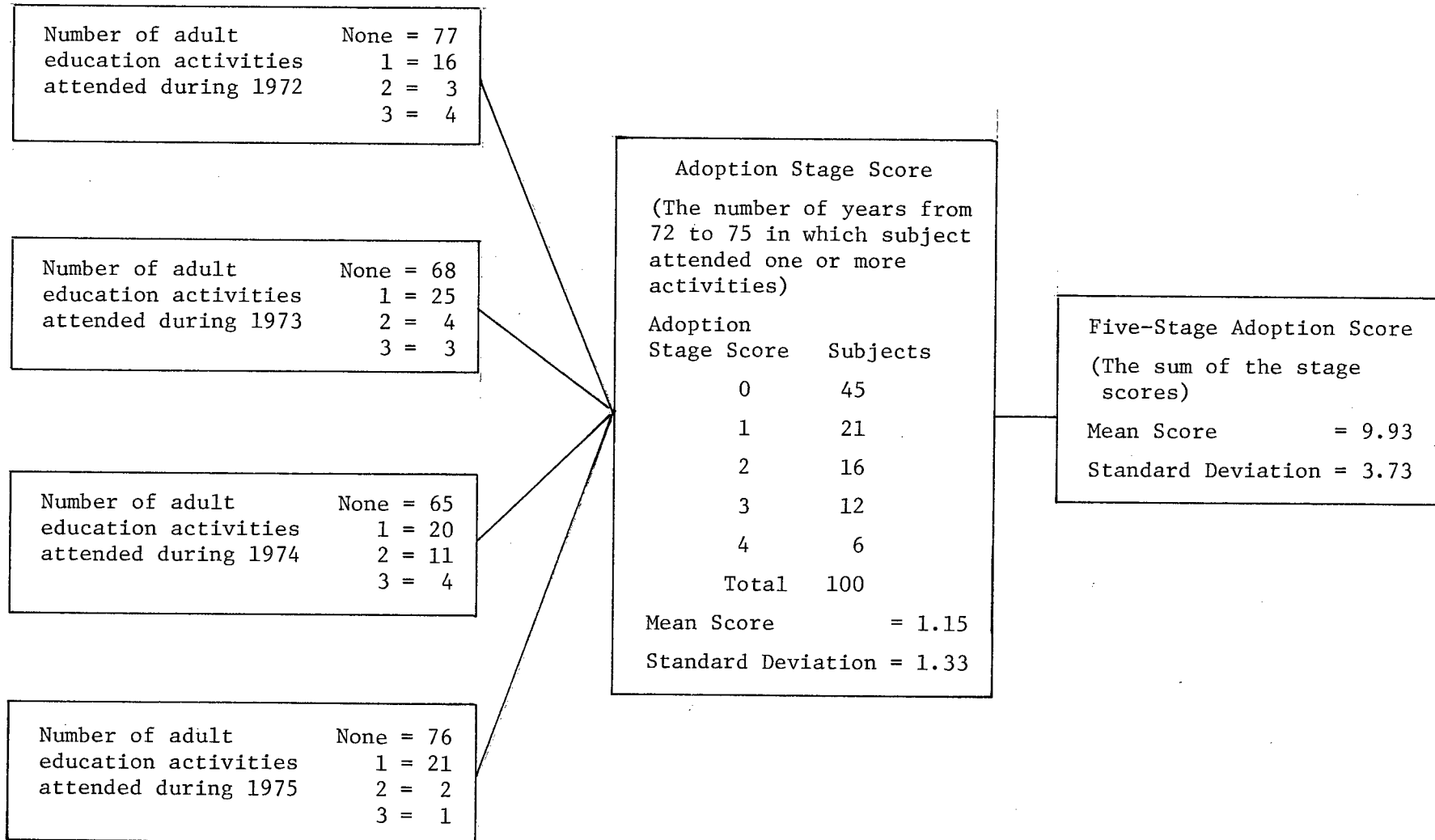
An adoption stage score was computed by the amount of participation in adult education activities that occurred between 1972 and 1975 (Figure 6). The mean adoption stage score of 1.15 (standard deviation = 1.33) indicates a tendency for an adult to participate slightly more frequently than every fourth year. While 45 per cent participated during one year only, 16 per cent two years, 12 per cent three years and 6 per cent participated in all 4 years studied. Since the average number of courses taken by participants in any given year was 1.38 per year, most of those adults interviewed took only one course in a given year.

It should be noted that the participation rate is open to interpretation: if those who took part in one or more activities from 1972 to 1975 is considered a participant, the participation rate is 55 per cent but if those who took part during the calendar year of the survey only are counted, the participation rate is only 21 per cent.

Since the participation score and the adoption stage score are calculated from variations of the same data, the correlation between them is

FIGURE 6

THE ADOPTION SCORE VARIABLES



high, but meaningless. As would be expected, the adoption stage score is related to educational level ($r = .28^{**}$), but not to other personal characteristics.

Validity of the Variables

Since the distribution of responses on many of the twenty items which make up the adoption score are skewed, a complete item-by-item analysis for construct validity⁴ is not practical. It is, however, possible to identify some items which are obviously not appropriate and to make the gross estimates necessary to determine which variables should be replaced if a more sophisticated scale were to be developed.

The four awareness questions were answered positively by 99, 79, 91 and 91 per cent respectively and the correlation matrix between the items is not meaningful. Each item correlates positively at the .05 level with the five-stage adoption score which indicates internal consistency but obviously the first item, which was answered positively by 99 per cent, presents an impossible statistical problem. It would be easy to suggest that the questions were inappropriate because the results are so obviously skewed, and to suggest development items which require greater awareness to answer positively. The problem with this suggestion is that the population is known to be in a geographical area intensely served by adult education. In an area less well served the responses to the items used in this study might well be more nearly normally distributed. The scanty evidence of construct validity for the awareness items indicates that none of the items is grossly inappropriate. In general the awareness variables seem to measure the construct called awareness.

The interest items are better distributed than the awareness items. All four are significantly correlated to the five-stage adoption score. Making phone enquiries and browsing through advertising areas are also significantly correlated to the participation score but writing letters of enquiry and talking to friends are not. Although more sophisticated statistics are used to analyse these variables in Chapter V, it seems that the items are all related to adoption, although writing a letter of enquiry is infrequent.

The evaluation stage seems to be represented by three valid items but the fourth, having been discouraged by others from participating, is not related to either the five-stage adoption score nor to the participation score. In addition, being discouraged was reported by only six per cent, thus the responses are poorly distributed. The other three behaviors, thinking about advantages and disadvantages of adult education, having been encouraged to participate by others and giving advice are significantly related to both the five-stage adoption score and the participation score. Thus a preliminary look at the four items used to scale the evaluation score indicates that three seem to be measuring the adoption process.

The trial stage procedures used in this study seem to have little utility. The responses to the direct question about participating on a trial basis were not significantly correlated to either the five-stage adoption score nor the participation score. Only 24 per cent of participants reported a trial. Both the small number reporting a trial stage and the lack of relationship between trial and the adoption score and between trial and the participation score indicates that a trial stage is not a necessary part of

the process of the adoption of adult education. Nonetheless the direct question may assess trial validly. To complete the scaling of the trial stage one point was given for each of the following behaviors: completing an activity, dropping out, and attending a class which was cancelled. Using these three items was based on the assumption, which now seems false, that all adopters go through a trial stage. The validity of the trial stage seems to revolve around two questions. Firstly do the four items actually measure trial? The answer based on the data in this section indicates clearly that they do not. And secondly is a trial stage part of the adoption of adult education process? The answer seems to be yes, but only in about every fourth case.

Adoption stage is scaled by enrolment. One point is given for enrolment in each of the four years prior to the interview. Statistical problems make it awkward to estimate validity from correlations but the process seems to have face validity. Surely for example, enrolment in all four years is greater involvement in the adoption process than enrolment in only one year.

Validity of the stages

The relationships between the stage scores are all significant at the .01 level of confidence which seems to indicate that the stages are interrelated (Table VI). This is consistent with the hypothesis that all the stages are part of the same process. Unfortunately, the analysis of the trial stage indicated that the response to the direct question "Did you take part on a trial basis?" is a more valid measure of trial than the trial stage score. If the correlations for the direct question are substituted for the stage

TABLE VI

Correlations Between the Stage Scores of
The Five-Stage Adoption Model

	Aw.	Int.	Eval.	Trial	Adoption
Awareness	1.00				
Interest	.63**	1.00			
Evaluation	.45**	.46**	1.00		
Trial	.33**	.35**	.36**	1.00	
(Trial Item)	(.03)	(.23)	(.07)	(.45)**	(.04)
Adoption	.35**	.36**	.45**	.76**	1.00

Note - Figures shown in brackets are for the variable "Did you take part on a trial basis?" which, as discussed earlier, is a better measure of a trial than is the trial stage score.

score, then the trial stage is not correlated significantly to any of the other four stages.

Several tendencies are apparent from the correlations between the stage scores. In general correlations are higher between adjacent stages than between more distant stages. Although this tendency could indicate a sequential effect, it is more likely that the variables in adjacent stages are more similar. For example possessing information as assessed in the awareness stage is closely related to seeking information in the interest stage which is adjacent. While adoption tends to be more closely related to each successive stage, the further a respondent progresses through the stages, the more likely he is to eventually adopt.

It seems that the four of the stages give evidence of validly measuring adoption. It is clear that the trial stage was not well constructed in the interview schedule and in addition there is some evidence that a trial stage is usually not part of the adoption process when that process is applied to adult education.

ADOPTION SCORE

The mean adoption score for the five-stage model was 9.93 with a standard deviation of 3.73. In the range of scores 72 per cent scored between 7 and 14 while 17 per cent scored 6 or less and 11 per cent scored 15 or more. The adoption score correlates significantly with age ($r = -.22^*$) and educational level ($r = .34^{**}$). These indicate that participation declines slightly as age increases but increases as educational level increases.

In a stepwise regression analysis (U.B.C. TRIP)¹ the adoption score was the dependent variable and the goals, barriers and personal characteristics were the independent variables. Two variables, the educational level of the respondents and their desire to learn something new, explained 17.7 per cent of the variance in the five-stage adoption score. Thus motivation to learn and having more formal education seem to be the best predictors of involvement in adult education. This finding is reported consistently throughout the study.

Although, as reported earlier, the trial-stage is not substantiated as a necessary stage in adoption, and although some of the variables are not significantly related to the adoption process, the five-stage adoption score is, nonetheless, a useful indicator of involvement in adult education.

ADOPTER CATEGORIES

Each respondent was given an adoption score that was based on the sum of the responses to 20 adoption questions. The respondents in the sample were classified into adopter categories on the basis of the normal curve following the procedure recommended by Rogers.² The lowest category has scores lower than minus one standard deviation from the mean while the highest category has scores above plus one standard deviation from the mean. The actual distributions used could not follow the normal curve exactly because the adoption score is in 20 discrete steps but the distribution used did not vary significantly from the normal curve (Table VII).

Although the adopter categories imply a time of adoption, in fact the adoption score used in this study measures involvement in each of the stages. Thus the early adopters have the most involvement with the innovation and the laggards have the least. It is possible that those with the most involvement in adult education were the first to adopt, but the data in this study does not allow such a relationship to be tested.

TABLE VII

Comparison of Actual and Theoretical Distributions of The
Sample by Adopter Categories for the Five-Stage Model

	Adopter Score	Actual Number Observed	Normal Curve Dis- tribution
Early Adopters (including innovators)	14-20	20	16
Early Majority	10-13	33	34
Late Majority	7-9	30	34
Laggards	0-6	16	16

$\chi^2 = 1.5$ $df = 3$ N.S.

A stepwise discriminant analysis was used to examine differences between adopter categories (U.B.C. BMD07M).³ The independent variables included the five personal characteristics, and the goals and barriers. Of these 37 variables, 4 had means that differed significantly among the adopter categories. Those in the categories differed in educational level, in the desire to escape from housework, in the desire to have enjoyment and fun, and in the belief that the fees were too high.

The four groups differed as follows:

Early Adopters: had the most education (11.9 years); the highest desire to enjoy themselves (gm = 327); and wanted to escape from housework (gm = 156).

Early Majority: has slightly less education (11.5 years); their desire to escape from housework was only moderately high (gm = 140); but both their desire to escape (gm = 60) and their concern for fees (gm = 61) were low.

Late Majority: had the most concern for fees (gm = 113); the lowest rating for the goal of enjoying themselves (gm = 85) and little desire to escape housework (gm = 38).

Laggards: had a moderate desire to enjoy themselves (gm = 130); the lowest education level (10.2 years) almost no concern about fees (gm = 20); or interest in escaping (gm = 31.21).

In general, it appears that those with the highest adoption scores have more education and a higher level motivation while those with the lowest scores have less of each. It should be noted however that this tendency is not consistent in all categories. For example the late majority express more

concern for the fees which may be an important or even a threshold barrier for that group.

UTILITY OF THE FIVE-STAGE MODEL

As it was applied to adult education in this study, the five-stage adoption model was a useful tool for evaluating community participation. The levels of awareness, interest, evaluation and adoption were readily described in a way that provided more insight than simply describing participants and non-participants. The results from the trial stage were less satisfactory.

Analysis which compares the two adoption models is presented in Chapter V. Consideration of that chapter is necessary before a final judgment can be made of the utility of the five-stage procedures.

Chapter III

FOOTNOTES

1. James Bjerring and Paul Seagraves, U.B.C. TRIP: Triangular Regression Package. (Vancouver, 1974).
2. Everett Rogers and F. Floyd Shoemaker, Communication of Innovations. (New York, 1971), p. 15.
3. Jason Halm, U.B.C. BMD07M: Stepwise Discriminant Analysis. (Vancouver, 1975).
4. Jum C. Nunnally, Psychometric Theory. (New York, 1967), pp. 82-87.

CHAPTER IV

COMMUNITY INVOLVEMENT: THE FOUR-STAGE MODEL

Community involvement in adult education is again reported in this chapter but this time by using the four-stage adoption model. Once it became evident that the problems with the trial stage impaired the five-stage model the four-stage model was studied more intensively. This model facilitated conclusions which approached theory in the middle range.¹

ADOPTION BY STAGE SCORES

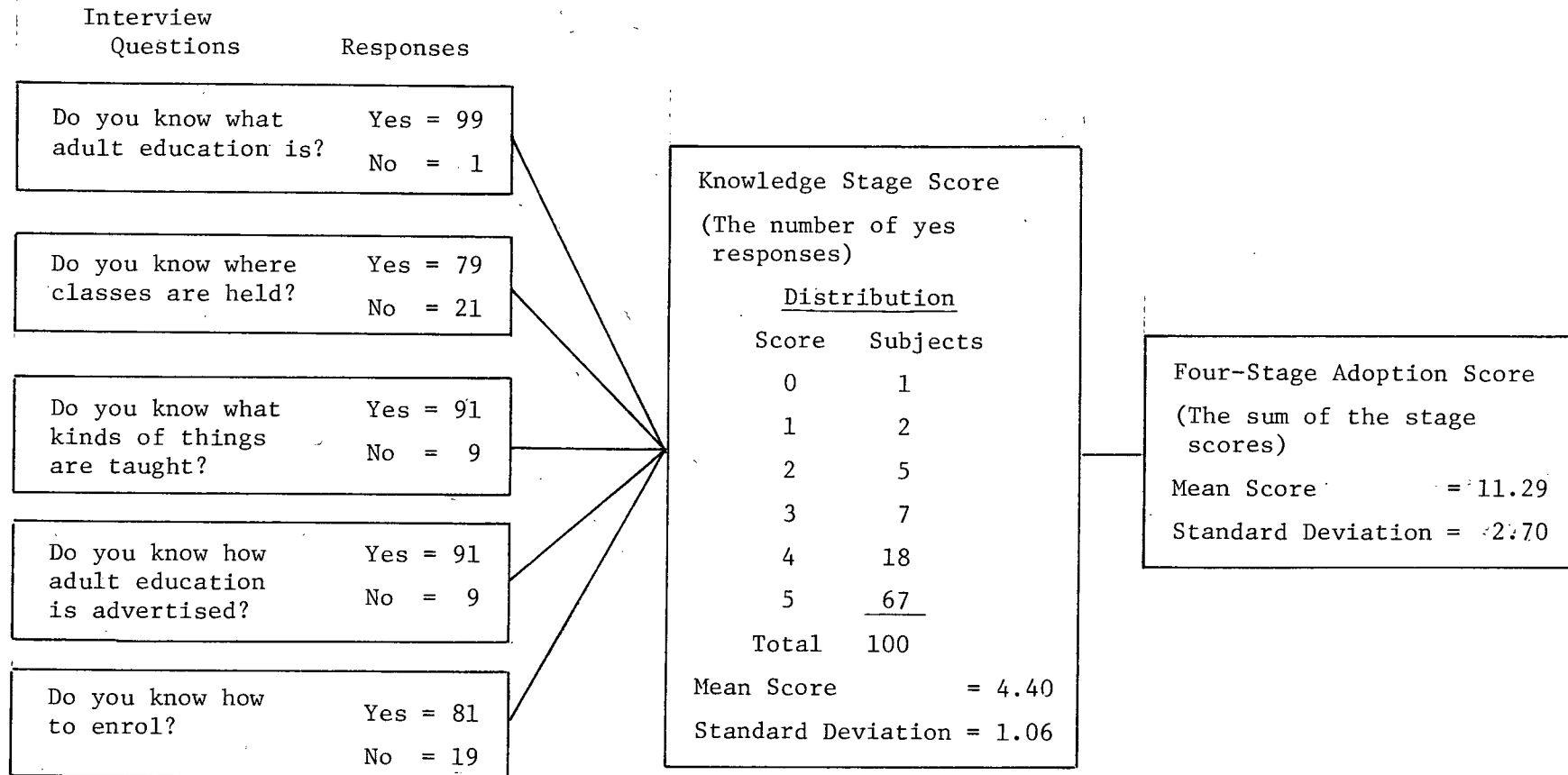
Four basic categories of questions were used to assess the stages: (1) Knowledge of activities, (2) attitude toward the characteristics of adult education, (3) decisions made and (4) reactions to participation. Each category consisted of five items to assess a stage. When the scores for the twenty items were summed this formed the adoption score.

Knowledge Stage

The knowledge stage was assessed by five questions that indicated a specific awareness about adult education (Figure 7). The mean knowledge score was 4.40 with a standard deviation of 1.06. This score indicates that on the average, the knowledge questions were answered correctly 88 per cent of the time. In fact, 67 per cent of the respondents were able to answer all five knowledge questions correctly. Obviously, knowledge of adult education was widespread in the sample area. Since the knowledge stage score correlated significantly with both educational level ($r = .22^*$) and the participation score ($r = .36^{**}$), those who know most about adult education tended to have

FIGURE 7

THE KNOWLEDGE SCORE VARIABLES



more formal education and to have taken part in more activities (Table VIII).

Only one respondent was unable to supply a satisfactory definition of adult education, although most tended to equate adult education with night school. Seventy-nine per cent of the sample knew where adult education programs were conducted, but only six per cent of those who had never participated knew where activities were held. The higher the level of formal education the more likely the subjects were to know where activities were held ($r = .27^*$). Eighty-six per cent of those with a high school education or better knew the location of activities compared to only 35 per cent of those with grade nine or less. Although age did not correlate significantly with knowledge of where activities were held, of those under 24 years of age, only 69 per cent knew the location of activities. No other personal characteristics were significant.

Only nine per cent were unable to give the title of at least one adult education course. Knowledge of what kinds of activities were offered was related to the participation score ($r = .21^*$) but to none of the personal characteristics.

More than nine out of ten (91%) knew how adult education had been advertised in Surrey. Most knew the brochure published jointly by the School District, Douglas College and the Surrey Recreation Department which is mailed to every household in the census tract three times each year. Advertising from other programs in the lower mainland area seem to be less well known. Knowledge of advertising was not significantly correlated to the personal characteristics, but those who knew about the advertising had a higher participation score ($r = .21^*$).

TABLE VIII

Correlations Between Variables Assessing
The Four-Stage Adoption Model and
Personal Characteristics of Respondents

	Personal Characteristics					Participation Score
	Marital Status	Age	Education Level	Vocational Training	Holds Job	(Number of courses attended)
<u>Knowledge Stage</u>						
of definition	-	-	-	-	-	.07
of location	-	.06	.27*	.00	-	.32**
of variety	.00	.09	.10	-	-	.21*
of advertising	.00	.08	.27*	-	-	.21*
of how to enrol	.00	.12	.37**	.00	-	.31**
stage score	.14	-.09	.21*	.19	.10	.36**
<u>Persuasion Stage</u>						
relative advantage	-	-.04	.12	.17	-	.32**
complexity	-	-.13	.46**	.07	.20	.30**
convenience	-	-.35**	.21	.07	-	.56**
observability	-	.26*	.09	.07	-	.14
drop-out reaction	-	.06	-.19	.14	-	.04
stage score	.20	.12	.26*	.11	.04	.23*
<u>Decision Stage</u>						
positive	.00	.20*	.27*	.00	-	.67
negative	-	.02	.04	.00	-	.20*
stage score	.17	-.16	.23*	.05	.10	.46**
<u>Confirmation Stage</u>						
behavioral intention	-	.45**	.49**	-	-	.53**
dissatisfaction	-	.23	-	-	-	.50
replacement	-	.34	-	-	-	.49
unpleasant experiences	-	.04	.21	.00	-	.49**
unanticipated Consequences	-	.10	.07	.00	-	.14
stage score	.16	.00	.29**	.00	.11	.52**

* Indicates significance at .05 level of confidence.

** Indicates significance at .01 level of confidence.

- Indicates too few subjects in one or more cells to calculate correlation.

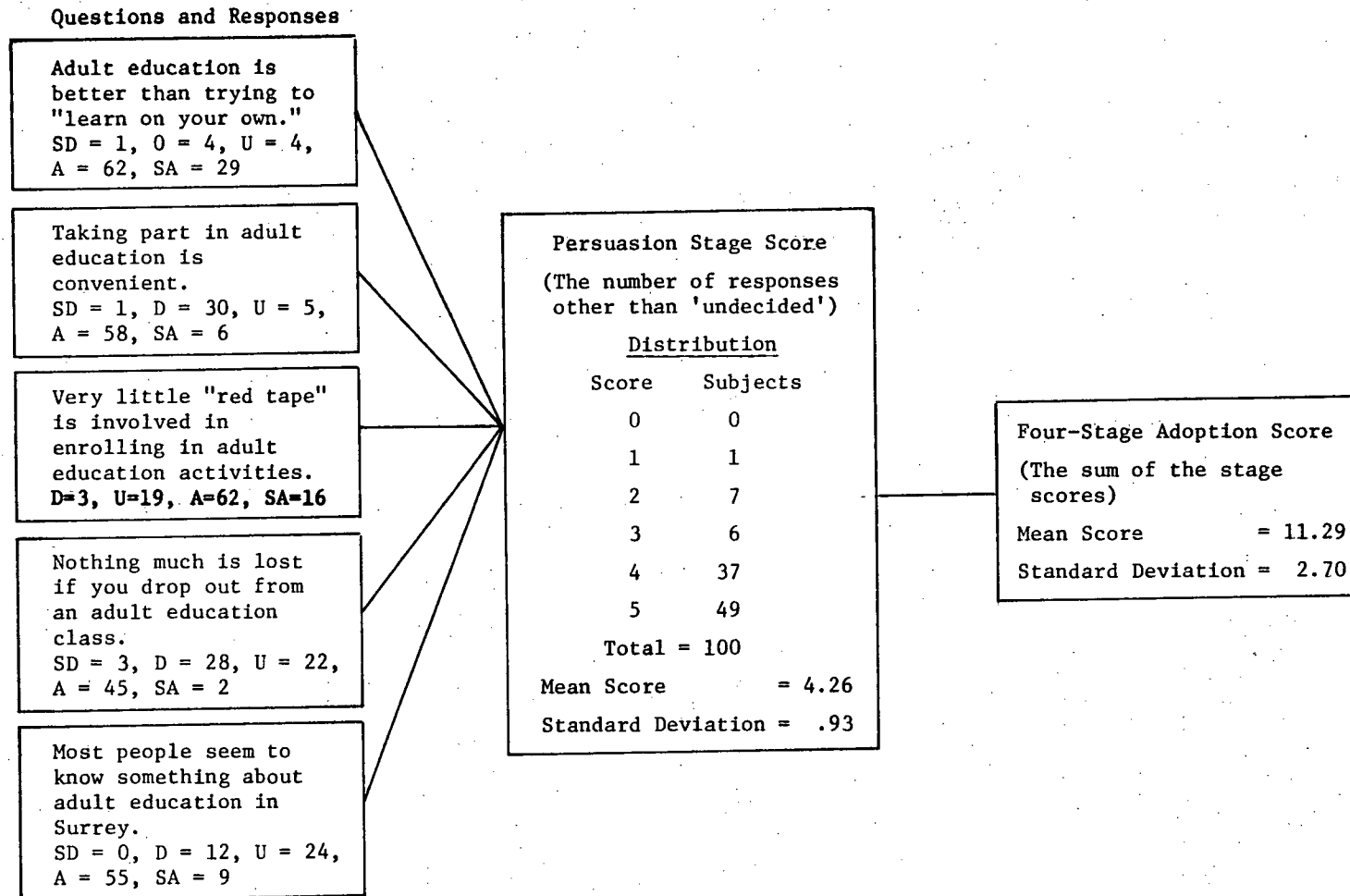
Although 81 per cent of those interviewed said they knew how to enrol, only 40 per cent of those who had never participated did know. The participation score is significantly correlated to knowledge of how to enrol ($r = .31^{**}$). Educational level is also related to enrolment knowledge ($r = .37^{**}$) and of the 26 per cent with grade 9 or less, only two-thirds knew how to enrol. Thus knowledge of enrolment procedures is lower among those with less education and among those who have never participated.

Persuasion Stage

At this stage attitudes about adult education were measured by using a five item Likert type scale. The mean persuasion stage score was 4.26 with a standard deviation of .93 (Figure 8). Since one point on the score is given for each item on which the subject has an opinion, the score indicates that the median respondent had opinions on four items. Having opinions was related to both educational level ($r = .26^{*}$) and to participation scores ($r = .23^{*}$) thus having attitudes about adult education is related to both previous participation and to a higher level of formal education. None of the other personal characteristics are related to having such attitudes.

Although indicating either a positive or negative attitude on a Likert item is enough to rate one point on the persuasion stage score and consequently on the adoption score, the direction of the attitudes reported were also recorded. In the following paragraphs, each of the five Likert items is discussed in detail. In each instance the response favorable to adult education is rated five, the unfavorable response rated one with the other three scores spread between. Three, of course, is the neutral point indicating no opinion.

FIGURE 8
THE PERSUASION STAGE VARIABLES



Relative advantage is the characteristic of adult education indicated by belief that adult education is better than trying to learn on your own. Ninety-one per cent either strongly agreed (29%) or agreed (62%) that adult education had such an advantage. None of the personal characteristics was related to belief in relative advantage, but those who rated relative advantage high tended to have a higher participation score ($r = .32^{**}$). Thus experience in adult education activities tends to increase the belief that adult education is better than trying to learn on your own.

Complexity is the degree to which an innovation is perceived as relatively difficult to use and understand. To assess complexity, respondents were asked if they thought "a lot of red tape is involved in enrolling in adult education activities." Strong agreement was taken to indicate an unfavorable attitude. Three per cent agreed that there was red tape, nineteen per cent had no opinion, sixty-two per cent disagreed and sixteen per cent strongly disagreed with the statement. Thus a total of seventy-eight per cent thought enrolling in adult education did not involve red tape. Those who thought adult education was free of "red tape" tend to have a higher participation score ($r = .29^{**}$) and to have a higher education level ($r = .46^{**}$).

Convenience is not one of the standard characteristics² of innovations. The data were collected by the item "Taking part in adult education is convenient." Most (58%) agreed and an additional six per cent strongly agreed. Five per cent were undecided, thirty per cent thought it inconvenient and an additional one per cent felt strongly that it is inconvenient. People who think adult education is convenient tend to have a

higher participation score ($r = .56^{**}$). As age advances, there is a tendency to view adult education as less convenient ($r = -.35^{**}$).

Observability is the degree to which the results of an innovation are visible to others.³ To investigate this characteristic subjects were read the proposition "Most people I talk to seem to know something about adult education in Surrey." Nine per cent strongly agreed, fifty-five per cent agreed, twenty-four per cent did not know, twelve per cent disagreed and none disagreed strongly. Agreement was significantly correlated with age ($r = .26^*$) indicating that older people believe adult education is known to others, but agreement did not correlate significantly to other personal characteristics nor to the participation score. Since learning is not directly observable, it should not be surprising that observability is not strongly related to participation.

Drop-out reaction is the term used to designate the characteristic initially developed to measure "trialability." The statement used, "If you start an adult education activity and don't like it, nothing much is lost if you quit"⁴ did not seem to measure trialability and was consequently re-named. Most respondents found the statement confusing and perhaps that confusion accounts in part for the lack of correlation between the item and either the personal characteristics of the subjects or their participation scores. Two per cent strongly agreed with the statement, forty-five per cent agreed, twenty-eight per cent disagreed, three per cent disagreed strongly and twenty-two per cent had no opinion. Many of those who disagreed expressed the belief that one should complete anything that one starts, thus attitudes not directly related to adult education influenced the responses. The item seems to be unrelated to adoption. It is not significantly

correlated to either the participation score or to the personal characteristics of the respondents.

Decision Stage

The decision stage was scaled on the basis of both positive decisions which led to participation and negative decisions which did not. Positive decisions were indicated by any involvement with adult education within five years prior to the interview. Some 51 per cent reported attending and completing one or more courses, 18 per cent reported dropping out, 1 per cent reported enrolling in a class which was cancelled, while none reported enrolling but not attending (Figure 9). In all, 57 per cent reported a positive decision and such decisions are related to age ($r = .20^*$) and to educational level ($r = .27^*$).

Respondents were asked if they had considered specific activities and then not enrolled. If they responded positively they were asked their reason for not enrolling. Up to two such negative decisions were recorded for each respondent. Seventy-five per cent reported considering a total of 113 activities and subsequently deciding not to enrol. Those with a higher participation score were more likely to make negative decisions but the correlation was not high ($r = .20^*$). Since 57 per cent made positive decisions in that they attended at least one activity and since 75 per cent reported negative decisions it is clear that some have made both positive and negative decisions.

Since the reasons for negative decisions were elicited before the subjects were asked to rate the barriers, they provide an interesting comparison with the barriers (Table IX). Although the subjective methods used preclude statistical analysis, the following barriers seem to gain

FIGURE 9

THE DECISION STAGE VARIABLES

Questions and Responses

Thought about some specific activity and then decided not to attend. Yes = 75 No = 25

Enrolled but not attended. Yes = 0 No = 100

Enrolled but the activity was cancelled. Yes = 1 No = 99

Attended but did not complete (drop out) one or more activities. Yes = 18 No = 82

Attended and completed one or more activities. Yes = 51 No = 49

Decision Stage Score
(The number of yes responses)

Distribution

Score	Subjects
0	13
1	40
2	36
3	11
4	0
5	0

Total = 100

Mean Score = 1.45

Standard Deviation = .86

Four-Stage Adoption Score
(The sum of the stage scores)

Mean Score = 11.29

Standard Deviation = 2.70

credibility: "too busy", "activities are at the wrong time", "child and family take priority", "lack of motivation", "work related problems" and "transportation."

TABLE IX

The Number of Subjects Stating Barriers as Reasons
For Negative Decisions

	Number of Subjects Giving Reasons for Negative Decision
<u>Card Barriers</u>	
Don't want to go alone	0
No babysitter	0
Too busy	15
Too far to go	2
No energy	7
My family would object	1
Fees too high	5
Lack of knowledge re activities	3
None of the activities interest me	1
I'm too old	1
Other things I'd rather do	1
Too many problems	1
Activities at wrong time	16
Don't want to be a student	0
Transportation	10
<u>Write-In Barriers</u>	
Child and family related	10
Lack of motivation	8
Work related problems	6
Other activities have priority	0
Health	2
Inadequate activities	4
Lack of money	0
Weather	0
<u>Miscellaneous</u>	
None of barriers	2
Will take in future	18

Not all of the reasons for not enrolling, however, were related to barriers. Eighteen subjects had considered activities which they planned to take in the future. The frequency with which the "plan to take it in the future" response occurs in an open question is a further indication that the adoption of adult education is a process which occurs over time.

The mean decision score for the decision stage was 1.45 with a standard deviation of .86. This score is significantly related to the educational level ($r = .24^*$) but not to other personal characteristics.

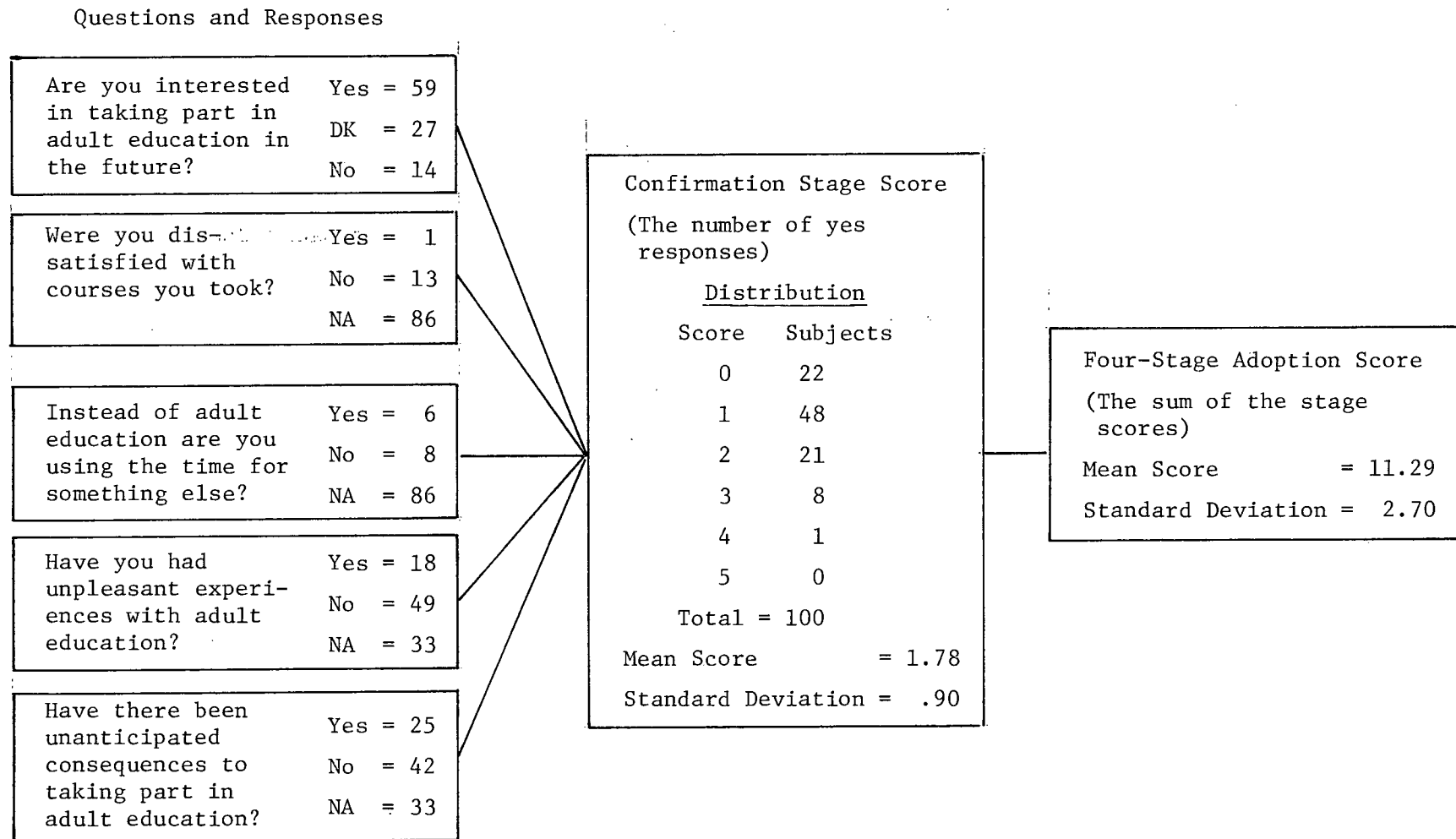
Confirmation Stage

The confirmation stage is assessed by eliciting the reaction of participants to their experiences in attending adult education activities. The confirmation stage score records one point for having a behavioral intention on future participation, one point for replacing adult education with another activity, one for reporting an unpleasant experience and one for expressing an unanticipated consequence. Thus the confirmation score gives either a favorable or an unfavorable reaction equal rating; that is one point. The mean confirmation stage score was 1.78 with a standard deviation of .90 (Figure 10). The confirmation score is related to educational level ($r = .29^{**}$) but not to other personal characteristics.

Behavioral intentions were assessed by asking "might you be interested in taking part in adult education in the future." Fifty-nine per cent said yes, 27 per cent were unsure and 14 per cent said no. The intention to participate is strongly related to the participation score ($r = .53^{**}$) which indicates that those who participate most are most likely to express an intention to take part in the future. Those who have never participated

FIGURE 10

THE CONFIRMATION STAGE VARIABLES



are equally divided among the three possible responses, while 80 per cent of those who have participated intend to enrol again. That the intention to enrol increases with age ($r = .45^{**}$) is surprising as it appears to contradict earlier data on the relationship of age to participation. That 13 of the 14 respondents who do not plan to enrol have a grade nine or less education is further evidence of the strong relationship between formal educational level and involvement with adult education ($r = .49^{**}$).

Dissatisfaction and Replacement were two reactions gathered from the 14 participants who did not intend to enrol in the future. Only one of the 14 reported dissatisfaction with activities but six reported replacing adult education with other activities such as: sewing, two; employment related activities, three; and helping her soccer-playing son, one. Although replacement and dissatisfaction are outcomes of confirmation suggested by Rogers,⁵ the data in this study are too few to warrant statistical analysis and thus little can be said of theoretical relevance.

Unpleasant experiences were reported by 18 respondents in the sample. Poor instructors were mentioned by 12 but, surprisingly, 11 of those 12 said they planned to enrol in the future. Instructors were reported as insensitive to individual needs and to pace instruction to suit only the most able students. Seven per cent of the sample complained about sloppy enrolment procedures, misrepresentation in course advertising, course cancellations, or general disorganization. Since administrators both employ teachers and organize activities, these complaints seem to be administratively controllable characteristics that can be altered.

Unanticipated consequences arising from participation were reported by 25 per cent of the sample. Twenty-two per cent reported consequences that

generally indicated pleasure whereas three per cent reported unpleasant consequences. Since unpleasant experiences were also recorded in the previous item the total number of complaints recorded is 21 whereas 22 responses were complimentary. The unanticipated consequences were diverse. Four were pleased that they could learn more easily than they expected, two reported pleasure at meeting new friends, three had compliments for instructors (as opposed to twelve who complained on an earlier item) and three liked the way activities were organized. The remaining consequences were not easily categorized: one felt taking yoga helped her recover from a nervous breakdown, another felt a discussion group got her into a better "head space", one got a job for a friend, one now does all the sewing for her children, one saves money, and one woman met a doctor at a Spanish class and the doctor fixed her husband's elbow. One subject reported using the first aid she learned in an emergency, and one felt dejected after her pottery class was over because she no longer felt creative. Three unanticipated consequences were problems: one respondent found the pace of instruction too fast, one said her occupation interfered and one disappointed wife had a husband who could not learn to dance.

Validity of Variables

Utilizing correlations it is possible to estimate whether the variables used in the four-stage model are related to adoption. As was the case for a similar discussion in the previous chapter, the arguments used here are indirect and circumstantial. Nonetheless, such an analysis easily isolates those variables which are grossly unrelated to adoption. In the following chapter, the two models are compared and additional arguments are

presented concerning the validity of various components of both models.

Knowledge Stage. Most of the correlations between the knowledge questions and the other three stage scores are significant (Table X). Unfortunately, responses to the definition question were too badly skewed to give useful correlations. Nonetheless, the other four items seem to be part of a consistent pattern of correlations and none seem to be grossly or obviously unrelated to adoption.

Persuasion Stage. Of the five characteristics which were used to scale the persuasion stage score, three seem valid and two seem inappropriate. Relative advantage, complexity, and convenience are almost all significantly related to each other and to the participation score (Table XI and XII). Their relationships to the other stage scores and the participation score are mostly significant at the .05 level or very nearly so. Thus these three characteristics seem to be related to each other and to adoption. They seem to be very satisfactory items except that convenience is not one of the standard characteristics. Relative advantage and complexity are thus the only two standard characteristics which seem to be validly measured.

Observability and drop-out reaction seem to be characteristics unrelated to adoption. Observability is not significantly correlated to any of the other characteristics nor to the participation score, but since it is related to the knowledge and confirmation stages it may have minimal validity. In contrast to the other characteristics drop-out reaction is completely unrelated to either the other four characteristics of adult education or to the participation score and thus seems to have no claim to validity.

TABLE X
Correlations Between Knowledge Stage Variables
And the Stage Scores

Knowledge Items	Persuasion Stage Score	Decision Stage Score	Confirmation Stage Score
What is adult education	.14	.17	.02
Where are activities	.51**	.39**	.27**
What is taught	.24**	.37**	.18
How advertised	.35**	.21*	.10
How to enrol	.41**	.35**	.30**

Note - That "What is adult education?" question was answered positively by 99 per cent of the respondents.

- Exact wording of the variables is in the interview schedule in the Appendix.

* Indicates significance at the .05 level of confidence.

** Indicates significance at the .01 level of confidence.

TABLE XI

Correlation Patterns Between the Persuasion Stage Variables

	Relative Advantage	Convenience	Complexity	Observability	Drop-out Reaction
Relative Advantage	1.00				
Convenience	.47**	1.00			
Complexity	.31	.63**	1.00		
Observability	-.05	-.01	.17	1.00	
Drop-out Reaction	-.17	-.06	.12	-.03	1.00

* Indicates significance at the .05 level of confidence.

** Indicates significance at the .01 level of confidence.

TABLE XII

Correlation Between the Persuasion Stage Variables
And the Other Stage Scores

Persuasion Items	Knowledge Stage Score	Confirmation Stage Score	Participation Score
Relative Advantage	.21	.21	.32**
Convenience	.40**	.40**	.56**
Complexity	.50**	.20	.30**
Observability	.28*	.29**	.14
Drop-out Reaction	.00	-.12	.04

Note - The decision stage score correlations are not shown because of skewed distributions.

* Indicates significance at the .05 level of confidence.

** Indicates significance at the .01 level of confidence.

Decision Stage. Since four of the five behaviors used to scale the decision stage involve participation and since participation and adoption are scaled by using many of the same variables, the validity of those four items are difficult to evaluate. An additional statistical problem is that three of the four have very skewed distributions. Items with better distribution would have been more useful.

The fifth item in the decision score rates negative decisions. Such decisions are related to participation ($r = .20^*$), to the knowledge stage ($r = .26^{**}$), to the persuasion stage ($r = .21^*$), but not to the confirmation stage ($r = .04$). Thus negative decision making seems to be related to both participation and to adoption.

In general three of the five items in the decision stage are satisfactory, but those assessing enrolling but not attending and enrolling

in a cancelled class are such infrequent behaviors as to be irrelevant. Thus both the persuasion and decision stages are assessed with only three adequately valid items.

Although the goals and barriers are used as independent variables in this study, they are logically related to the decision stage. In developing better items to scale this stage it might be possible to incorporate the concept of goals and barriers.

The Confirmation Stage presents special problems in scaling, since, from a logical point of view, only those who are adopters can have a confirmation stage score. To resolve this problem four of the five items were coded "yes" or "no" or "not applicable." This procedure effectively reduced the number of subjects from 100 to 67 for the two items on unanticipated consequences and unpleasant experiences and to 14 for the replacement and dissatisfaction items. As a result the correlations are difficult to interpret. The fifth item, behavioral intention, was responded to by all subjects. It now appears that this last item more logically belongs in the decision stage. Nonetheless, it is a good item since it is significantly correlated to the participation score ($r = .53^{**}$) to the knowledge score ($r = .27^{*}$) and to the decision score ($r = .45^{**}$). Thus the behavioral intention item seems valid.

All in all, the five items used to scale the confirmation score do not give encouraging signs of construct validity. Perhaps this is because they do not directly measure reinforcement but they undoubtedly form a rough measure of involvement at the post enrolment period. Clearly better items are needed if a more valid measure of the confirmation stage is to be obtained.

Stage Scores. If stage scores are valid in the sense that they all measure adoption, involvement in each stage should be related to involvement in every other stage. The confirmation stage score seems to show the least relationship to the other stage scores but in spite of this, all the correlations are significant at the .05 level and all the correlations between the first three stages are significant at the .01 level (Table XIII). The optimum theoretical level of correlation between stage scores is difficult to estimate but in spite of the weakness of many of the individual variables which make up the stage scores, there seems to be a consistent relationship between the stages. This consistency gives credibility to the proposition that each of the stages is validly measuring the construct called adoption.

TABLE XIII

Correlations Between Stage Scores

	Knowledge Score	Persuasion Score	Decision Score	Confirmation Score
Knowledge Score	1.00			
Persuasion Score	.50**	1.00		
Decision Score	.44**	.31**	1.00	
Confirmation Score	.27**	.21*	.40**	1.00

* Indicates significance at the .05 level of confidence.

** Indicates significance at the .01 level of confidence.

ADOPTION SCORE

The mean adoption score for the model was 11.29 with a standard deviation of 2.70. Eighty-six per cent of the scores fell between 7 and 14,

while 6 per cent were 6 or less and 8 scored 15 or higher. The only personal characteristic which correlated significantly with the adoption score was educational level ($r = .35^{**}$) thus those with more formal education tend to have more involvement in adult education.

In a regression analysis (UBC TRIP)⁶ the adoption score was defined as the dependent variable and the independent variables were the goals, barriers and personal characteristics. Of those 37 independent variables, three variables explained 21.5 per cent of the variance in the adoption score. Those variables were age, educational level and the desire to learn something new. This result would seem to support two hypotheses: that the best educated are the most involved in adult education and that adult education participation tends to be reinforcing. Although the amount of variance explained by these two factors is small, the results are consistent with those elsewhere in the study.

ADOPTER CATEGORIES

The sample was divided into four adopter categories using the same procedures applied to the five-stage model (Table XIV). The adopter categories indicate the innovativeness of groups of individuals with the early adopters being the most innovative and laggards the least. As was the case with the five-stage model, innovativeness in this study is measured by involvement in the stages, not by the time of adoption.

The only personal characteristic on which the means for the adopter categories differ significantly was educational level (Table XV). Laggards averaged slightly better than a grade ten education whereas Early Adopters averaged grade 11.8. Although the difference is significant only

at the .02 level the trend is consistent: the more formal education the more innovative the adult.

TABLE XIV

Comparison of Actual and Theoretical Distributions
By Adopter Categories for the Four-Stage Model

	Adopter Score	Actual Distribution	Normal Curve Distribution
Early Adopters (including Innovators)	14-20	22	16
Early Majority	12-13	34	34
Late Majority	9-11	25	34
Laggards	0-8	19	16

$\chi^2 = 5.19$ $df = 3$ N.S.

TABLE XV

A Comparison of Adopter Categories by Those Variables
With Significantly Different Means

	Laggard	Late Majority	Early Majority	Early Adopters	Grand Mean	Significance Level
Education	10.2	10.6	11.1	11.8	10.9	.02
To Escape	27.4	28.3	134.7	62.6	56.9	.01
Learn Something New	96.9	167.9	260.5	374.3	210.2	.01
Learn a Hobby	70.9	213.3	289.6	243.8	198.6	.02
Have a Night Out	32.6	50.3	113.6	152.2	77.9	.04
Other Things I'd Rather Do	70.8	33.4	90.4	282.6	86.6	.00

The mean ratings of the goals given by those in the various adopter categories differed significantly on four goals. Those whose adoption score placed them in the early majority category showed the greatest interest in "escaping from housework and children" ($gm = 135$) whereas both the late majority ($gm = 28$) and the laggards ($gm = 27$) show almost no interest in getting away from the household chores. In the case of the other three goals, the rating is roughly proportional to involvement in that early adopters give high rating to "learning something new", to "learning about a hobby" and to "having a night out." These goals are rated progressively lower by the early majority, late majority and lowest for the laggards. The highest single rating ($gm = 274$) is given by the early adopters to the desire to "learn something new." The lowest rating ($gm = 27$) is given by laggards to the desire to "escape from children and housework."

The barrier "too many other things I'd rather do" showed significantly different means for the groups. It seems to be the greatest problem to early adopters ($gm = 282$) but an average problem to the early majority ($gm = 90$) and laggards ($gm = 71$) while it is almost no problem at all to the late majority ($gm = 33$). This suggests that the early adopters are busy people who are attracted to adult education in spite of their other commitments.

REJECTION ANALYSIS

A multiple group discriminant analysis (BMD07M)⁷ was performed in order to determine differences between three groups of subjects: those continuing in the adoption process, those who have rejected and those in the confirmation stage (Figure 11). None were classified as unaware of adult

FIGURE 11

The Rejection Model

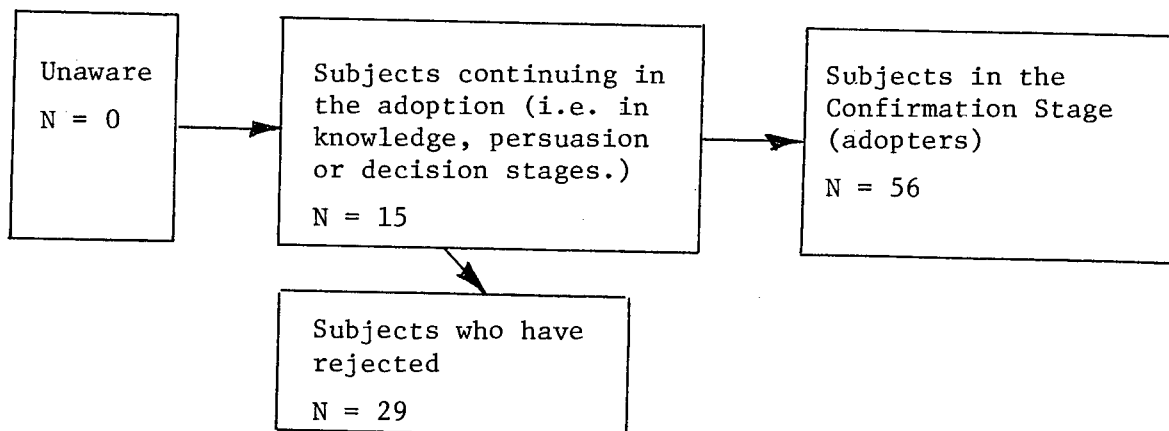


TABLE XVI

A Comparison of Rejection Model Categories by Variables
With Significantly Different Means

	Continuing in Stages	Reject	In Confirmation Stage	Grand Mean	Significance Level
Per cent Married ^a	80%	90%	90%	88%	.02
Education (Grade) ^b	11.2	10.1	11.3	10.9	.00
To Escape (G) ^c	27.2	30.6	95.9	56.9	.01
To Learn (G)	141.8	123.8	305.4	210.2	.01
Night Out (G)	27.4	44.0	138.8	77.9	.00
To Be With People (G)	73.3	140.6	275.0	185.9	.04
Going Alone (B)	23.5	114.5	127.0	95.8	.01
Distance (B)	15.8	100.0	65.3	59.5	.01
Lack Energy (B)	24.3	123.2	82.8	77.4	.04
Too Old (B)	12.9	76.4	45.8	44.0	.02
Schedule (B)	28.1	99.9	131.5	96.2	.02
Transportation (B)	27.2	134.3	56.3	65.0	.05
Number of subjects	15	29	56	100	

^a Approximate figures calculated from ordinal classifications. Statistics used coded data.

^b Approximate grade levels. Statistical analysis used coded data.

^c Approximate geometric means with grand mean of 100. Statistical analysis used natural logs to better approximate a normal distribution.⁸

education. Rejectors were those who had not reached the confirmation stage and did not express an interest in participating in the future.

The results of this analysis of variance indicate significant difference between the three groups of subjects on twelve variables (Table XVI).

Subjects Continuing in the Process

The group continuing in the process of adoption consistently have the lowest geometric means for both goals and barriers in those which have significantly different means for the three groups. In other words, those progressing through the first three stages of the four-stage model tend to express less interest in the goals and less concern for the barrier. They express little interest in escaping from children and housework ($gm = 27.2$), in having a night out ($gm = 27.4$), or in being with other people ($gm = 73.3$). Although their interest in learning seems slightly higher than that of rejectors (141.8 to 123.8), it is less than half that expressed by subjects in the confirmation stage. Barriers which have significantly different means for the three groups are also given a low rating by subjects continuing in the process of adoption. The geometric means are less than 30 for the following barriers: "Don't want to go alone", "Too far", "I haven't enough energy", "I'm too old to learn" and for "Activities seem to be scheduled at the wrong time." Subjects continuing in the process have the same educational level as subjects in the confirmation stage (11 years) which is about one year more than the rejectors. In general, subjects continuing in the stages rate both goals and barriers at low and often very low levels. Perhaps to those in the first three stages of adopting adult education, the innovation does not seem important enough to either reject or adopt.

Subjects Rejecting

Rejectors share the low interest in goals expressed by those continuing in the process but rate the barriers as highly as do the adopters. This seems to indicate that rejectors have little interest in the benefits of adoption but a high estimate of the costs. That rejectors have the lowest educational level is consistent with other results.

Subjects in the Confirmation Stage

That subjects in the confirmation stage should rate the goals of adult education highly is not surprising, but that they should also rate the barriers high is puzzling. For example, scheduling is rated as a problem by adopters ($gm = 132$) but not by subjects continuing in the process ($gm = 28$). Even the rejectors rate scheduling as only an average problem ($gm = 100$). In the main adopters rate both the benefits and the costs of adult education slightly higher than do rejectors or subjects continuing in the stages. Since subjects in the confirmation stage have participated in adult education and since they tend to give barriers a high rating, it would seem that the barriers are substantial but the goals are even more so, hence they decide in favor of participating.

UTILITY OF THE FOUR-STAGE MODEL

As modified to suit adult education, the four-stage adoption model was generally acceptable in that the results were fairly consistent. Nevertheless, it was apparent that at least seven of the twenty items used to assess an adoption score were unrelated to adoption thus lacking construct validity and the remaining were not beyond criticism. In spite of this problem, the model seems to provide an opportunity to look at participation in adult

education in more detail than has been possible heretofore.

Chapter IV

FOOTNOTES

1. Robert Merton, Social Theory and Social Structure. (New York, 1968), pp. 50-51.
2. Everett Rogers and F. Floyd Shoemaker, Communication of Innovations. (New York, 1971), pp. 137-157.
3. Ibid., p. 155.
4. Ibid.
5. Ibid., p. 116.
6. James Bjerring and Paul Seagraves, U.B.C. TRIP: Triangular Regression Package. (Vancouver, 1974).
7. Jason Halm, U.B.C. BMD07M: Stepwise Discriminant Analysis. (Vancouver, 1975).
8. Virginia L. Saunders, Measurement and Statistics. (New York, 1958).

CHAPTER V

CROSS-MODEL COMPARISONS

Since two adoption models are used to assess community involvement in adult education, it is possible to examine the validity of the variables used to measure the stage achieved in the adoption process, the stage scores and finally the adoption scores by making statistical comparisons between a variable from one model and the adoption score from the other model. For example, the variable used to assess knowledge of how to enrol in the four-stage model correlates significantly with the five-stage adoption score. Thus it is logical to assume that knowledge of how to enrol is a valid measure of adoption. Such a logical assumption is based on the proposition that the adoption scores are reasonable and that both models accurately measure the same thing. Such evidence of validity is clearly self-corroborative and can be aggregated with similar evidence. Thus variables and scores which consistently show significant cross-model relationships are more likely to be valid, whereas measures which do not show such relationships consistently are probably less valid and therefore do not accurately measure that conceptualization of the adoption process intended in the research design. Although such statistical comparisons provide more evidence of construct validity than predictive or convergent interpretations, they do help clarify the essential components of adoption.

Although correlation coefficients have examined the cross-model question, additional analyzing with both factor and regression strategies has considered many variables simultaneously. These tests examine the variables used in both models in order to determine whether the adoption of adult

education occurs as a one-step or as a multi-stage decision process.

A COMPARISON OF THE ADOPTION VARIABLES

In comparing the variables used to assess each stage in the five-stage model with the four-stage adoption score not all of the 20 variables can be tested. Seven of these are common to both models at some stage while four variables measure participation directly and are thus an integral part of both adoption scores. This leaves nine variables which can be tested for significant relationships with the adoption score from the other model.

A significant correlation coefficient between a variable assessing the five-stage model and the four-stage adoption score indicates the believability of the former. On that assumption the following variables seem to validly measure adoption: making a phone enquiry, talking to friends about adult education, browsing through adult education literature, thinking about the advantages and disadvantages of adult education, having been encouraged to participate, and having given advice about adult education (Table XVII). Since three of these valid variables assess interest and another three assess evaluation, those two stages gain believability from this cross-model analysis. Although only one variable from the trial stage was analysed, it was not significantly correlated to the four-stage adoption score thus casting further doubt on the trial stage. Since none of the variables from either the awareness or the adoption stage could be compared to the four-stage adoption score, this analysis neither substantiates nor detracts the validity of those stages or the variables they contain.

Of the variables used to arrive at an adoption score in the four-stage model, 13 can be correlated with the five-stage adoption score (Table XVIII).

TABLE XVII

Variables in The Five-Stage Model Correlated With
The Total Adoption Score of the Four-Stage Model

Variables in the Five-Stage Model	Correlation Coefficients With the Four-Stage Adoption Score
Interest Stage	
- Phone enquiry	.39**
- Letter of enquiry	.12
- Talk to friends about adult education	.42**
- Browsed through advertising	.45**
Evaluation Stage	
- Thought about advantages and disadvantages	.52**
- Been encouraged	.35**
- Been discouraged	.07
- Given advice	.52**
Trial Stage	
- First activity taken on a trial basis	.06

* Indicates significance at the .05 level of confidence.

** Indicates significance at the .01 level of confidence.

On the assumption that a significant correlation coefficient indicates that the appropriate stage of adoption is in fact being assessed, the following variables gain construct validity: knowledge of how to enrol; the four attitude variables which measure relative advantage, convenience, complexity and observability; the intention to enrol in the future; and reporting unpleasant experiences. Five variables do not show similar evidence of validity because their correlations with the five-stage adoption score are not significant: the attitude about dropping out; reporting a negative decision, reporting dissatisfaction with activities, reporting replacement

TABEL XVIII

Variables in the Four-Stage Model Correlated With
The Total Adoption Score of the Five-Stage Model

Variables in the Four-Stage Model	Correlation Coefficients With the Five-Stage Adoption Score
Knowledge Stage	
- Knowledge of how to enrol	.53**
Persuasion Stage	
- Relative advantage	.38**
- Convenience	.50**
- Complexity	.44**
- Drop-out reaction	.01
- Observability	.29**
Decision Stage	
- Negative decision	.16
Confirmation Stage	
- Behavioral Intention re future enrolment	.52**
- Dissatisfaction	.52
- Replacement	.07
- Unpleasant experiences	.32**
- Unanticipated consequences	.20

* Indicates significance at the .05 level of confidence.

** Indicates significance at the .01 level of confidence.

of adult education with other activities and reporting unanticipated consequences from participating.

In general it seems that the confirmation stage has the least number of valid variables and that situation is consistent with the results reported earlier.

If variables which assess adoption are correlated with the participation score, it is possible to get a general impression of what attitudes, communication pattern and facts are utilized by those adults who take part in adult education. Obviously those adoption variables which measure participation directly are excluded from this analysis. The variables are listed in decending order of their relationship with the number of courses taken during the five years previous to the interviews (Table XIX). The highest ranking variable, the belief that adult education is convenient, indicates the importance of satisfied customers. That the use of telephones is so closely associated to participation is perhaps indicative of the formal nature of the adult education surveyed. Where classes are held and how to enrol seem to be the crucial information for participating. Those who participate tend to give advice but being discouraged from participating does not significantly affect the rate at which people participate.

It is tempting to assume that the variables ranking high on the list necessarily precede enrolling in activities but no such time sequencing can be implied from this analysis. A more powerful test utilizing regression analysis is performed on the variables discussed here and it is reported later in this chapter. The utility of the ranking reported here is that it includes all the variables.

TABLE XIX
Correlations Between Variables Assessing
Adoption and the Participation Score

Rank Order	Variable	Stage in Which Variable Located	Correlation With Participation Score
1	Adult education is convenient	Persuasion	.556**
2	Future plans	Confirmation	.526**
3	Phone enquiry	Interest	.440**
4	Advice giving	Evaluation	.374**
5	Relative advantage	Persuasion	.317**
6	Where classes held	Knowledge	.316**
7	How to enrol	Knowledge	.309**
8	Adult education complex	Persuasion	.296**
9	Thought about advantages	Evaluation	.274**
10	Been encouraged	Evaluation	.255*
12	What is taught	Knowledge	.231*
12	How advertised	Knowledge	.231*
12	Browsing in advertising	Interest	.231*
14	Negative decision	Decision	.204*
15	Talked to friends	Interest	.152
16	Observability	Persuasion	.139
17	Written enquiry	Interest	.118
18	Drop-out reaction	Persuasion	.042
19	Being discouraged	Evaluation	.028

* Indicates significance at the .05 level.

** Indicates significance at the .01 level.

A COMPARISON OF STAGES

Since the adoption scores used to assess involvement in adult education are the sum of the stage scores, it is possible to get a better understanding by correlating the stage scores from one adoption model with the stage scores of the other model (Table XX). The persuasion stage score of the four-stage model correlates significantly with all the stage scores in the five-stage model. Thus having attitudes about adult education is related to the awareness, interest, evaluation, trial and adoption stages. Five statistically significant correlations indicates that the persuasion stage is, in part at least, measuring some of the same phenomena as are the various stage scores in the five-stage model. If the stage scores from the five-stage model are validly measuring adoption then it follows that the persuasion stage was also validly measuring adoption.

The argument advanced for the persuasion stage score can be duplicated for the confirmation stage score in the four-stage model and for the interest and evaluation stage scores in the five-stage model. For the remaining five stage scores the situation is complicated by statistical considerations. The knowledge and awareness stage scores can not be correlated because four variables are common to both. The decision and adoption stage scores share variables with other stage scores. Since the trial stage score is, as noted earlier, assessed with inappropriate variables the significant correlations with the other stage scores are misleading in that they are based on data without construct validity. Thus, with the exception of the trial stage score, there is statistical evidence that all of the stage scores measure, in part at least, the adoption process.

TABLE XX
Correlations Between the Four and Five Stage
Adoption Models By Stage

Five-Stage Model	Knowledge	Persuasion	Decision	Confirmation
Awareness	N.A.	.48**	.42**	.21**
Interest	.60**	.44**	.30**	.29**
Evaluation	.48**	.41**	.47**	.38**
Trial	.37**	.21**	N.A.	.46**
Adoption	.39**	.24*	N.A.	.56**

N.A. So marked when the two stages include one or more of the same variables.

* Indicates significance at the .05 level of confidence.

** Indicates significance at the .01 level of confidence.

ADOPTION: ONE STEP OR SEVERAL

The decision to adopt adult education may be more appropriately described as a process consisting of several stages rather than as a one-step decision. This can be examined more conclusively by dealing simultaneously with a large number of variables. The assumption is that if variables cluster into one predominant factor in a factor analysis or if the variables which best explain the variance in participation are derived from but one stage of the adoption process, then it follows that the adoption of adult education may take place primarily as a one stage decision. On the other hand, if the variables cluster into several factors of comparable weight and/or if those which best explain variance in participation are derived from more than one stage, then the results would tend to confirm the

hypothesis that the adoption of adult education results from a decision process consisting of more than one stage or step. In such a case the weight of evidence would hold that a decision to adopt is staged at least in a person's mental processes although not necessarily in any particular time sequence.

Factors in Adoption

Factor analysis was used to determine whether the variables used to arrive at the adoption scores would cluster corresponding with the adoption stages. Several technical difficulties were encountered in the analysis. The variables used in both the four and five-stage models were analyzed simultaneously but some variables were excluded from the analysis because they measured participation. Since adoption and participation are so closely related such an exclusion seemed logically necessary because the search was for factors leading to adoption rather than adoption itself. A further complication was encountered in that 67 per cent of the respondents answered two of the confirmation stage questions and only 14 per cent answered two others. Thus in order to have a sample of reasonable size, the variables with a 67 per cent response were included while the 14 per cent response items were excluded.

Eight factors were identified in the analysis and these do not match the stages in either the four or the five-stage models. Nonetheless, the factors can be subjectively matched with the stages in a manner suggesting comparability between the factors and the stages (Table XXI). In and of themselves, the eight factors seem to form a decision pattern which is similar to but not identical with both of the adoption models. Since the factors

TABLE XXI
Factors in the Variables Used to Assess the Adoption Scores

Factor	Variance Explained	Summary of Major Variables	Loading of Major Variables	Adoption Stage Variable Assesses		Stage Roughly Equivalent to Factor	
				Five-Stage	Four-Stage	Five-Stage	Four-Stage
1 Learning Enough to Adopt	18.3%	Kinds of courses	.805	1	1	Awareness and Interest	Knowledge
		Thought advantages	.802	3	-		
		Know how to enrol	.703	-	1		
		Know where	.618	1	1		
2 Communication	9.5%	Phone enquiry	.780	2	-	Interest and Trial	Decision
		Talked to others	.662	2	-		
		Attended on trial	.492	4	-		
		Given advice	.437	3	-		
3 Casual Curiosity	8.1%	Browse advertising	.813	1	1	Evaluation	Persuasion
		Ad.ed. convenient	.545	-	2		
		Negative decision	- .345	-	3		
4 Attitude Formation	7.7%	Relative Advantage	.866	-	2	Evaluation	Persuasion
		Convenience	.464	-	2		
		Observability	- .490	-	1		
5 Negative Experiences	6.9%	Been Discouraged	.850	3	-	Adoption	Confirmation
		Unpleasant Experiences	.544	-	4		
		Red tape enrolling	- .496	-	2		
6 Tentative Action	6.4%	Letter of enquiry	.859	2	-	Interest and Trial	Decision
		Red tape enrolling	.414	-	2		
		Negative Decision	.404	-	3		
7 Planning for the Future	5.7%	Attend in Future	.806	-	4	Evaluation and Trial	Decision
		Been encouraged	.581	3	-		
8 Concern for Consequences	5.3%	Unanticipated Consequences	.787	-	4	Adoption	Confirmation
		Observability	.415	-	2		
		Drop-out reaction	- .542	-	2		

are ranked in order of the amount of variance they explain, no time sequence is implied nor does there seem to be any way of time-ordering the factors except that factor 1, learning enough to adopt, would appear to be an obvious first step. Thus, although the factor analysis raises an important question related to the sequence of behavior involved in adoption it provides no clues to the answer.

The first factor "learning enough to adopt" explains 18.3 per cent of the variance and seems to be a threshold factor. If respondents know what kinds of activities are available, where they are held, how to enrol and the advantages of participation, they would appear to be ready to move toward forming attitudes and making decisions. This factor is clearly comparable to both the awareness and knowledge stages.

The second factor which involves communication about adult education explains 9.5 per cent of the variance. The communication most in evidence is oral: phoning and talking. Attending on trial is also present and suggests that experience in adult education on a trial basis is also a factor in communication. This factor is somewhat analogous to the interest stage.

A kind of casual curiosity seems to characterize factor three which explains 8.1 per cent of the variance and involves browsing through advertising and thinking adult education would be a good idea (convenient), but not going so far as to consider or reject specific activities. This, too, appears related to the information stage.

Factor 4, the "Attitude Formation" factor, explains 7.7 per cent of the variance. As discussed earlier, the five attitude items were not entirely satisfactory. Relative Advantage, Convenience and Observability

are attributes which cluster around the factor 4 axis as might be expected. Complexity, the attitude toward red tape, is more closely associated with factor 6 and the attitude item about drop-outs is associated with factor 8. Although these latter two of the five attitude items are absent from this factor, they are the least related to adoption.

Factor 5 involves being discouraged by others and having negative experiences and explains 6.9 per cent of the variance. Those with such experiences don't think that enrolling involves red tape, thus people may consider their own and their friends unpleasant experiences but participate in spite of them.

Factor 6, which explains 6.4 per cent of the variance, seems to involve a behavioral syndrome not seen by adult education administrators. The respondent writes a letter or thinks about an activity, but never attends. Although he does not think enrolling involves red tape, he does not do so. Perhaps by going through these tentative actions he reduces the dissonance he may feel between the learning he has and would like to have. For him, adult education provides a kind of psychic comfort in the knowledge that the opportunity for further learning is available even though he is not impelled to engage in it.

Factor 7 explains 5.7 per cent of the variance. The dominant items in the factor are "planning to take part in activities in the future" and "having been encouraged by others to do so." In a sense this is a companion to factor 5 as both are primarily cognitive.

Factor 8 includes a tendency to report unanticipated consequences, a knowledge that others know about adult education and a concern for the cost

if one drops out of adult education activities. It accounts for five per cent of the variance.

The absence of a single general factor (as seen in the unrotated factor structure) argues against the hypothesis that adoption is a single-stage process. Although this result does not confirm the concept of sequential stages, it indicates that stages do exist.

Matching the eight factors to the adoption stages is subjective, but it seems clear that at least one factor can be matched to each of the stages in both the four-stage and five-stage models (Table XXI). Whether this matching of factors and stages is evidence that the adoption of adult education can be assessed by either of the two adoption models, or is merely an illusion, is difficult to say. At the very least, however, this analysis indicates that the adoption of adult education is a decision process which can be reasonably described by stages rather than as a single act.

Since 68 per cent of the variance is explained by the eight factors it seems reasonable to wonder whether these eight factors are more functional in the study of participation in adult education than are the stages in the four or five-stage model. The factor analysis does provide some clarity to these eight factors and since they have face validity they could be considered to form a reasonable model. It should be noted, however, that the time sequencing implicit in the four and five-stage models is missing from the eight factors. It may well be that the decision process for complex innovations such as adult education does not tend to follow a standard-time sequenced pattern but is more individualized and idiosyncratic than for the

simple innovations usually studied.

Variance in Participation

A stepwise regression analysis was used to determine which of the variables used to assess adoption best explained the variance in the participation score. The hypothesis tested was that the variables which best explain variance in the number of courses taken should have been present in assessing each of the adoption stages. If, however, the variables which explained the most variance in the number of courses taken were used to assess one or two of the stages, then doubt would be cast on the validity of those stages in which none of the variables appeared.

Since participation is the dependent variable, those adoption variables which directly or indirectly defined participation were eliminated from the analysis which meant including all the variables from the earlier stages and eliminating some of those from the later stages.

In the stepwise regression analysis five variables were identified which cumulatively explained 48 per cent of the variance in the number of courses taken. Those variables include (1) knowledge of where activities are held (2) having made a phone enquiry (3) belief adult education is convenient (4) having made a negative decision and (5) having the behavioral intention of enrolling in the future. Since one of these five variables is from each stage of the four-stage model, this would seem to support the hypothesis (Table XXII). The fifth variable, whether the subject has made a phone call, does not fit directly into the four-stage model and may indicate a weakness in that model in that it does not appear to assess communication. These five variables also fit the five-stage model (Table XXII) as one

TABLE XXII

A Matching of the Adoption Variables Which Best Explain Variance
In the Participation Score With the Adoption Stages

Variable	Order of Inclusion in equation	R ²	Normalized Coefficient	<u>Matching Stage</u>	
				Five-Stage Model	Four-Stage Model
1. Knowledge of location of adult education activity	(5)	.48	.20	Awareness--used to assess that stage	Knowledge--used to assess that stage
2. Placing a phone enquiry	(2)	.36	.24	Interest--used to assess that stage	Does not match any one stage
3. Attitude that adult education is convenient	(2)	.41	-.25	Equivalent to Evaluation but used to assess per- suasion	Persuasion--used to assess that stage
4. Decision not to enrol in some specific activity	(4)	.48	.20	Equivalent to Trial but used to assess decision	Decision--used to assess that stage
5. Behavioral Intention	(1)	.25	.33	Equivalent to Adoption but used to assess Confirmation	Confirmation--used to assess that stage

variable emerges from each stage.

Although the argument used in matching variables to stages is subjective in the five-stage model, it is quite clear that variance in participation is related to all of the stages in the four-stage model and to most if not all of the stages in the five-stage model. Thus, there is further evidence that the decision to participate is a process which can be explained by stages. This analysis is a powerful indication of the existence of a multi-stage decision process in adopting adult education.

In addition to indicating that adoption takes place in stages the regression analysis gives further evidence of the validity of the five variables which explain so much of the variance in the number of courses taken.

It should be noted that the variables explaining participation are ranked in order of the variance in participation which they explain and thus not in any time order of occurrence.

COMPARISON OF MODELS BY ADOPTION SCORES

A definitive comparison of the models by adoption scores is difficult because 20 questions are used to scale each adoption score of which seven are common to both scales and therefore the two adoption scores are inherently related. Furthermore, at least six variables clearly overlap structurally. Since three of these six variables are in each model, both models contain seven common variables and three additional invalid variables. In these circumstances a comparison of adoption scores for the two models must be approached with caution.

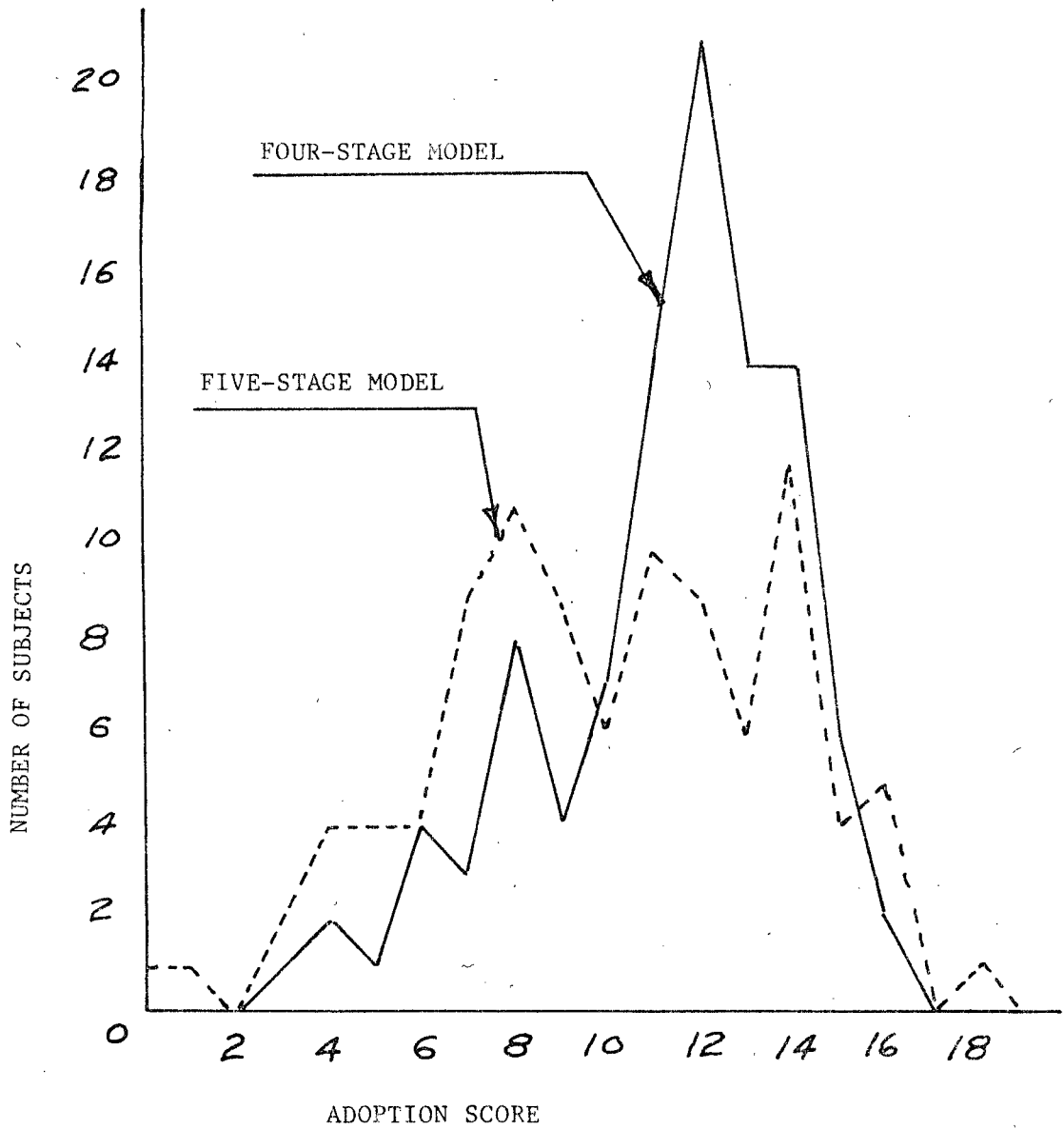
That the distribution of the two adoption scores should be so

similar is not surprising since 35 per-cent of the variables are common to both scales and thus the high correlation between them ($r = .84$) is expected. The participation score correlates to the five-stage adoption score ($r = .76$) at a higher coefficient than it does to the four-stage adoption score ($r = .55$), but this is due in part to the fact that there are seven variables common to both the five-stage adoption score and to the participation score, but only three variables are common to both the four-stage adoption score and to the participation score.

The adoption scores for both models are reasonably widely dispersed with a range of 0 to 20 and a mean score for the four-stage model is 11.29 and for the five-stage model, 9.93. The respective standard deviations are 2.70 and 3.73. The frequency distribution (Figure 12) shows the spread of the scores for the two scales. The distribution of the scores and the lack of skewedness seemed to indicate a wide range of involvement with the innovation called adult education. That such a range exists on both scores is encouraging evidence that the adoption process does in fact operate for adult education and that participation in adult education is not the either/or dichotomy which has been assumed so often.

FIGURE 12

Frequency Distributions for Adoption Scores
On Both the Four and Five-Stage Models



CHAPTER VI

ANALYSIS BY GOALS AND BARRIERS

Goals are the motivational factors usually called needs, and if these goals can be shown to explain the variance in adult education participation it would support the hypothesis that individual needs plus programming designed to meet those needs results in participation. The traditional assumption is that an adult who has an educational need reads the program advertisements to find an activity to meet his need and if the barriers are not too great, he enrolls and thereby becomes a participant. Although a number of factors may be involved, this decision process is considered to occur in one step.

MEASURING THE GOALS AND BARRIERS

In designing this study it was assumed that each goal and barrier was applicable to all respondents who would, therefore, be able to give meaningful ratings to all goals and barriers. While the interviews were being conducted it became evident that for almost every respondent some were not applicable. When pressed for a rating, many responded with a rating of "one", others said "zero" and for still others the rating was left blank. This unanticipated problem complicated the statistical analysis.

For the motivational analysis 30 of the 100 interviews were rejected for either of two reasons: they did not use the same standard for judging both goals and barriers; or they had four or less ratings on either the goals or the barriers. Although this procedure made it possible to analyze the remaining 70 interviews, it compromised the randomness of the

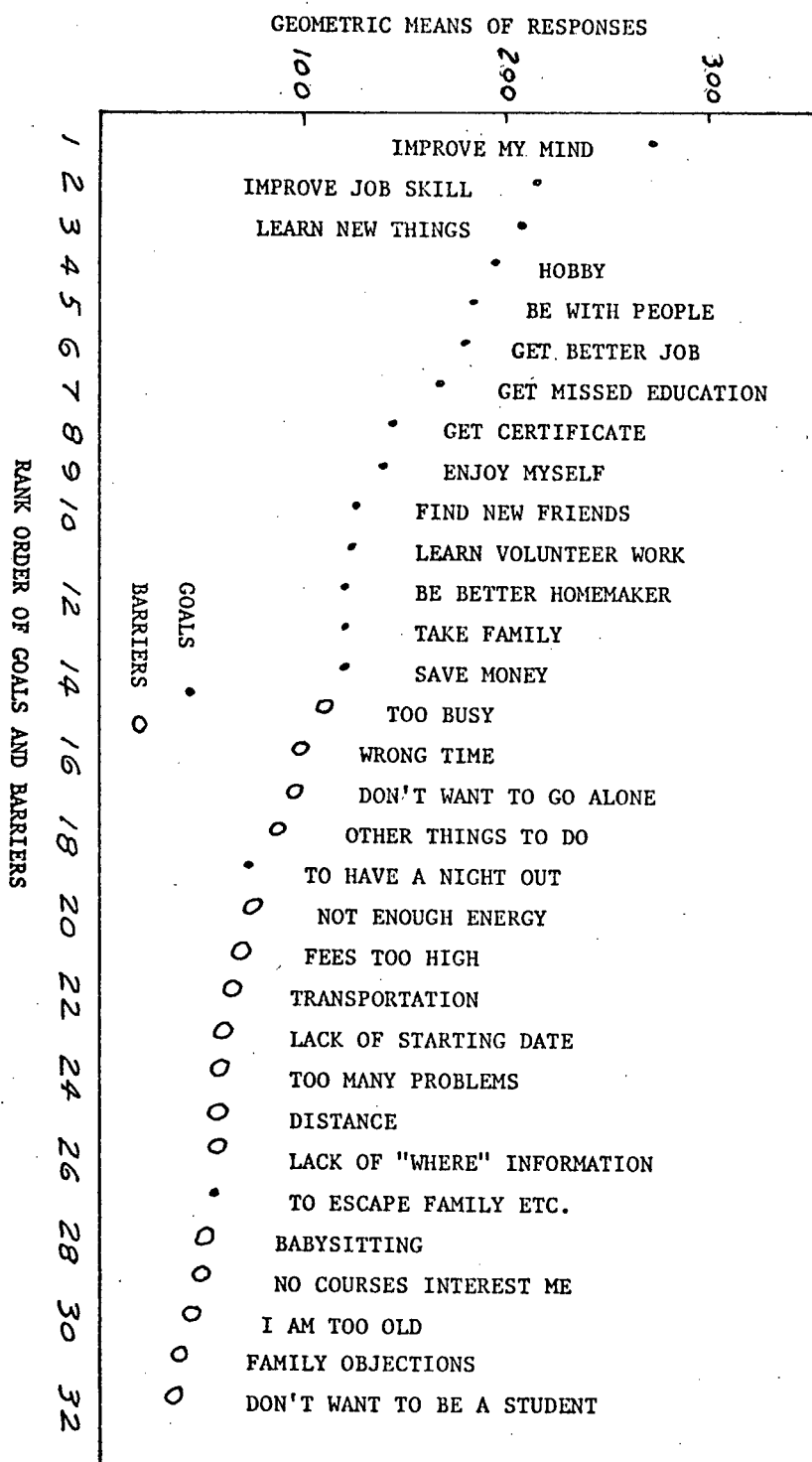
sample and eliminated some legitimate "one" responses.

When the geometric means were calculated for the ratings given to each goal and barrier and when those geometric means were placed in rank order, there were two indications that goals differed from barriers. The more obvious indication was that of the 32 ratings, the highest 14 were all goals. Thus, in general, adults consider the goals associated with participating to be more important than are the barriers to such participation. The second indication was apparent when the geometric means were plotted against variables placed in rank order of those geometric means (Figure 13). A curve drawn through the goals is obviously different from that drawn through the barriers with the exception of the two lowest ranked goals which do not follow the pattern.

Another indication that goals differ from barriers is apparent when the geometric means for the goals of each respondent is plotted against the same statistic for the barriers using unstandardized ratings, it is clear that most respondents rated goals higher than barriers and that those who rated the goals with large numbers also rated the barriers with large numbers (Figure 14).

In order to determine whether the ratings of the goals and barriers follow the characteristic pattern for data collected by magnitude estimation, the geometric means for each goal and barrier was plotted against an estimation of the standard error* of the same mean (Figure 15). In that plot the

$$\text{*Standard error of geometric mean} = \sqrt{\frac{\text{S.D. Arith. Mean}}{N-3}}$$



GOALS AND BARRIERS IN RANK ORDER OF THEIR GEOMETRIC MEANS

FIGURE 13

FIGURE 14
A COMPARISON OF GOALS AND BARRIERS BY
PLOTING GEOMETRIC MEANS

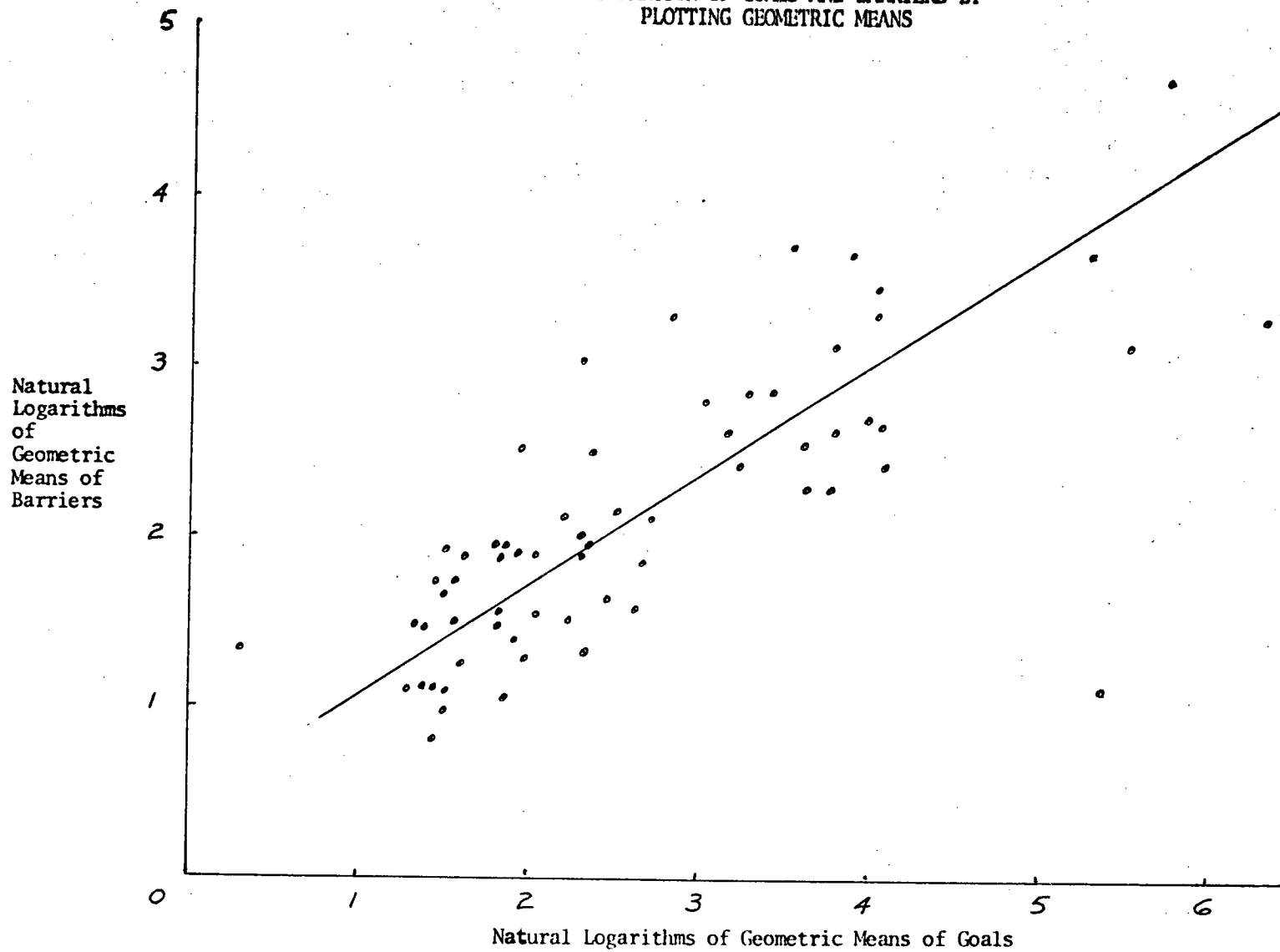
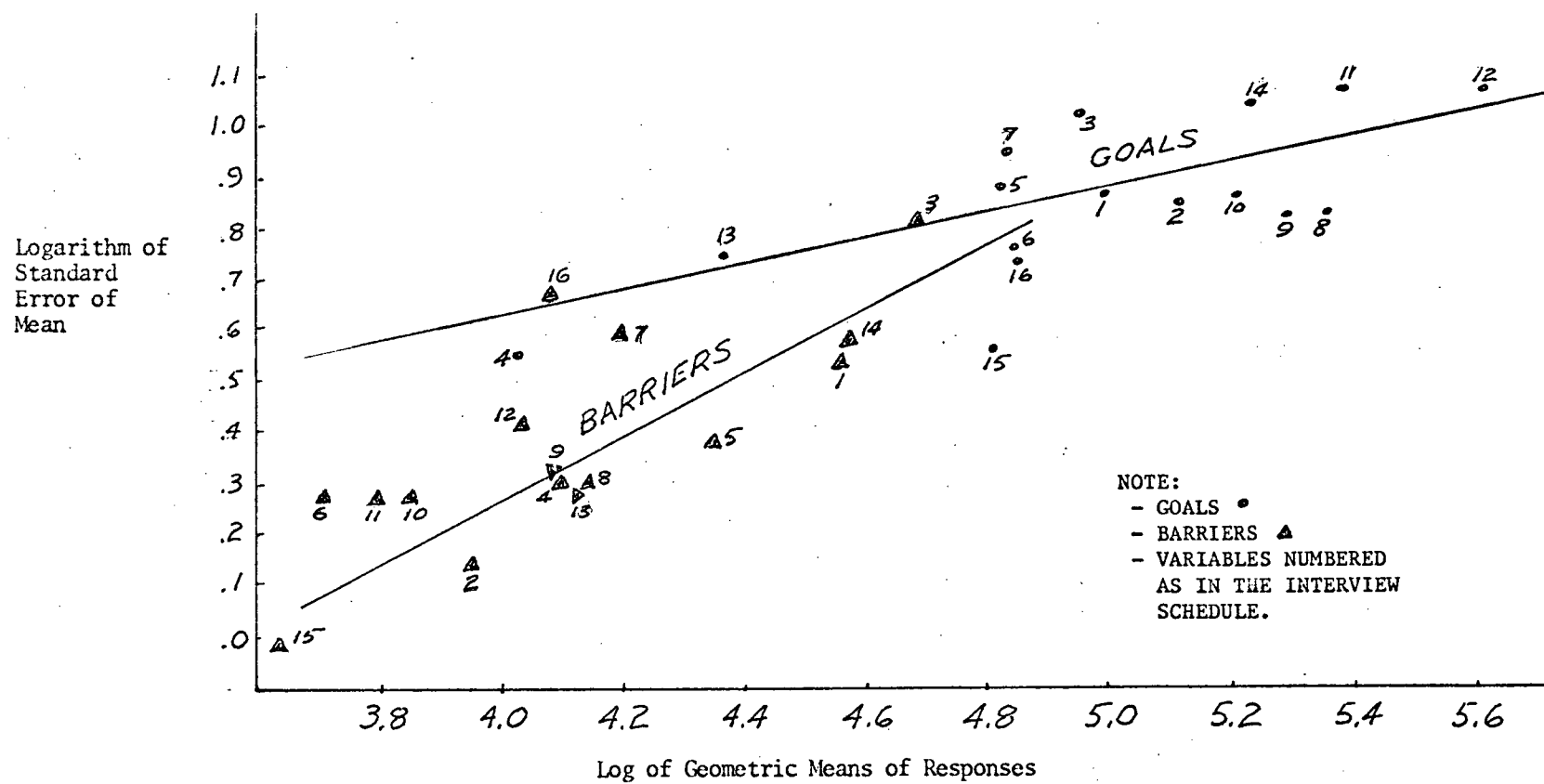


FIGURE 15
A COMPARISON OF THE GEOMETRIC MEANS FOR THE GOALS AND BARRIERS
TO THE STANDARD ERROR OF THE MEAN FOR THOSE VARIABLES



goals generally follow a line with a gentle slope and the barriers follow a line with a steeper slope. Both situations indicate that variability increases with the geometric means which is expected in magnitude estimation.² Thus it seems that goals and barriers are different classes of phenomenon. The steeper slope of the barriers is consistent with the hypothesis that barriers tend to reach a critical or threshold value more quickly than goals. If barriers are more likely to act as thresholds, that result is consistent with the tendency for barriers to be significantly related to both adoption and participation scores whereas goals are not.

In general this procedure for measuring goals and barriers seems promising. For those variables which respondents perceive as applying to them personally, there are indications that they were rated on ratio scales. In such circumstances, the ratings have excellent utility in that they have been standardized so that comparisons can be made between both individual ratings and between geometric means. Such data are ideal for analysis.

ANALYSIS BY GOALS AND BARRIERS

The concept of goals and barriers to participation in adult education was introduced in this study in an effort to determine if any variance that might occur between the adoption and the participation scores could be ascribed to motivational factors.

Motivation and Adoption

Since goals and barriers are distinctly different factors it can be hypothesized that those who are most involved in adult education would consider goals to be more important than barriers. To measure the relative importance of the two categories of variables a motivational ratio

was calculated for each respondent by dividing the geometric mean of his ratings of the goals by the geometric means of his rating of the barriers. The actual calculations utilized natural logarithms and in accordance with magnitude estimation procedures, these were used to plot the figures.

The motivational ratio for the 70 subjects included in the analysis had little relationship to other variables (Table XXIII and XXIV). The actual ratio, 1.71, indicates that for ratings which are neither one, zero, nor blank, the ratings given goals was higher than for barriers. The ratio is not significantly related to age or to educational level but it is related to the number of barriers rated which probably indicates the importance of the number of barriers. The motivational ratio is not related to either the adoption score or to the participation score.

When the natural logarithm of the motivational ratio was plotted against the Four-Stage Adoption score, those with low adoption scores seemed to differ little from those with high adoption scores. (Figure 16). This is consistent with other data in that there is a slight tendency for those with higher scores to have a higher motivational ratio, but again the tendency is not strong ($r = .10$).

When the natural logarithm of the motivational ratio was plotted against the participation score, non-participants seem to have greater variability than participants. (Figure 17). Those who have taken part in six or more activities during the past five years have higher ratios but since this includes only six respondents the tendency is not well established. In general the data can be interpreted to substantiate the finding that the motivational ratio is not strongly related to the

FIGURE 16
A COMPARISON OF THE FIVE-STAGE ADOPTION SCORE TO THE MOTIVATIONAL RATIO

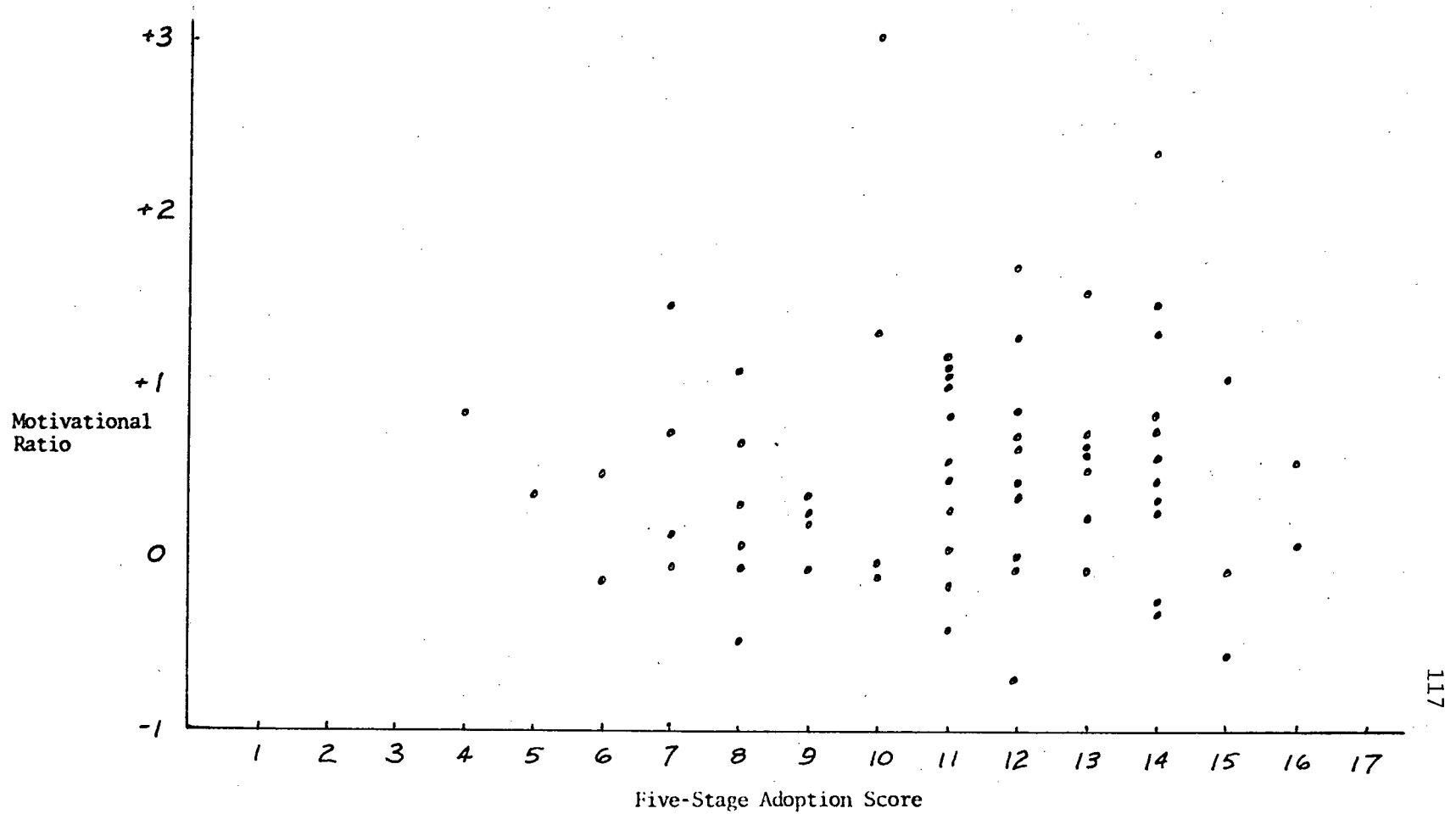


FIGURE 17
A COMPARISON OF THE PARTICIPATION SCORE TO THE MOTIVATIONAL RATIO

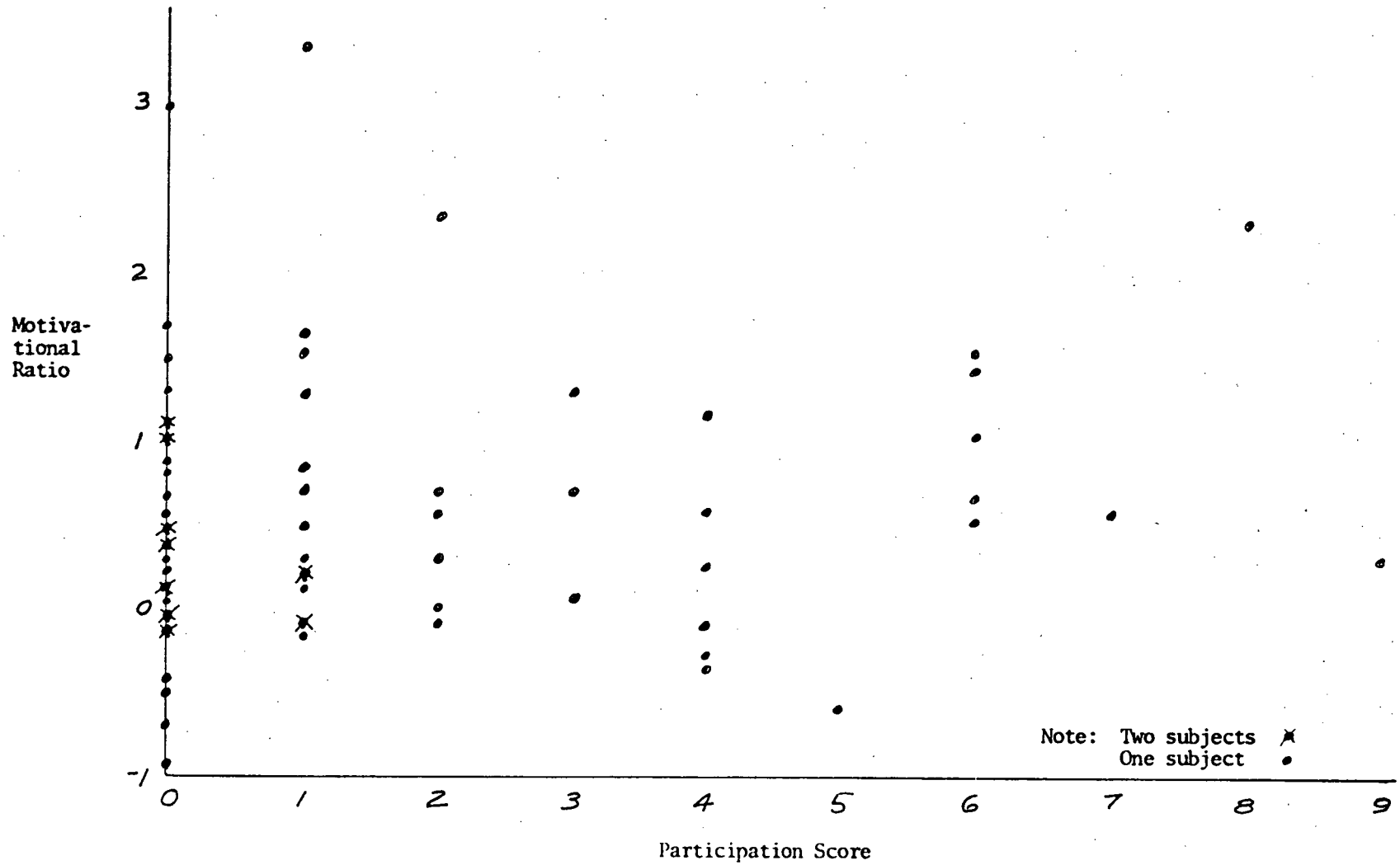


TABLE XXIII
Means and Standard Deviations of Variables Used In
Motivational Analysis (70 Observations)

Variable	Arithmetic Mean	Standard Deviation
Motivational Ratio	1.72	2.28
Number Ratio	1.41	1.41
Number of Goals	13.10	2.87
Number of Barriers	9.72	3.67
Age	38.3	13.8
Education	10.6 years	2.9 years
Five-Stage Adoption Score	9.81	3.63
Four-Stage Adoption Score	11.18	2.80
Participation Score	1.68	2.29

participation score ($r = .09$). In general then, the motivational ratio does not appear to have predictive strength.

Number Ratio Analysis

The number ratio is calculated for each respondent by dividing the number of goals rated by the number of barriers rated. This also utilized logarithms. This ratio was calculated in order to compare it to the motivational ratio and thus to determine whether the magnitude of the ratings was a better predictor than the number of ratings. The arithmetic mean of the number ratios is 1.41 indicating that goals were more frequently rated than barriers.

Since the number ratio is significantly correlated to both the four-stage adoption score ($r = .25^*$) and the educational level of the respondents ($r = .25^*$) while the motivational ratio do not correlate to

any of the variables studied it would seem to be a better predictor than the motivational ratio (Table XXIV).

Variance in Participation

A stepwise regression analysis in which the participation score, which assesses the number of courses taken, was the dependent variable and the goals, barriers and personal characteristics were the independent variables, was made to determine whether a small number of goals or barriers would explain a large percentage of the variance in the number of courses taken. The analysis indicated that no such cluster of variables existed but that the desire to learn something new explained six per cent of the variance whereas the 36 other variables explained less. Thus, the possibility of explaining variance in participation adequately by goals and barriers seemed unlikely to unpromising.

Predictive Ability

In general the goals and barriers explained little of the variance in either adoption or participation scores. Therefore the outlook for such research does not seem promising.

EVALUATION OF GOALS AND BARRIERS

The 16 goals and 16 barriers were selected after a review of the literature, therefore it was necessary to determine whether they were in fact actually considered in making a decision on whether or not to participate in adult education.

TABLE XXIV

Correlations Between the Motivational Ratio, The Adoption Scores
And Selected Personal Characteristics

	Motiva- tional Ratio	Number Ratio	Number of Goals	Number of Barriers	Age	Educa- tion	Five- Stage Adoption Score	Four- Stage Adoption Score	Partici- pation Score
Motivational Ratio	1.00								
Number Ratio	.01	1.00							
Number of Goals	.21	.16	1.00						
Number of Barriers	.24*	-.78**	.43**	1.00					
Age	-.07	-.07	-.03	.08	1.00				
Education	.07	.25*	-.05	-.16	-.32**	1.00			
Five-Stage Adoption Score	.05	.19	-.06	-.15	-.06	.29*	1.00		
Four-Stage Adoption Score	.10	.25*	-.07	-.16	.14	.31	.83**	1.00	
Participation Score	.09	.14	-.02	-.15	-.17	.29*	.77**	.58**	1.00

* Indicates significance at the .05 level of confidence.

** Indicates significance at the .01 level of confidence.

Factors Grouping Goals and Barriers

A factor analysis of the 16 goals and 16 barriers combined produced six fairly clear-cut factors which explains 68 per cent of the variance in the ratings (Table XXV).

The first factor was labelled Personal Barriers and Situations and it explains the most variance (37%). The variables in this factor related to the individual and to the family. Family objections were loaded highest but shortages also characterize the list. There seems to be a lack of transportation, information, babysitting and energy. Fear of being a student, an inability to find interesting activities and the belief that one is too old to benefit from learning were also associated with this factor. A fitting summary for this factor might be "Too many problems."

The second factor, Intra-personal Goals explains 14.1 per cent of the variance. Included are those variables usually associated with entertainment: to have a night out, to find friends, to enjoy myself, to escape from housework. Included in this factor seem to be the items which are festive and joyful.

Inter-personal Goals make up the third factor, and account for 5.9 per cent of the variance. While the first factor included reasons for not doing something, this factor includes the things one should do: take the family to educational activities where they can take part simultaneously, to get the education missed in youth, learn to do volunteer work and so on.

The fourth factor is Vocational Goals. Quite simply it involves getting a better job, improving job skills and getting a certificate. In this factor upward vocational mobility is the objective and adult education

TABLE XXV

Factors in the Goals and Barriers

Factor	Variance Explained	Summary of Major Factors	Loadings of Major Variables
1 Personal Barriers and Situations	37%	My family would object Can't get transportation Don't want to be student Don't get starting dates Too many problems Too far to go Don't know where No activities of interest Too old Can't get baby sitting Not enough energy Activities at wrong time Fees too high Don't want to go alone Competing activities	.817 .793 .777 .748 .731 .730 .711 .703 .653 .649 .626 .618 .616 .537 .435
2 Intra-personal Goals	14%	To have night out To find friends To enjoy myself To escape housework Learn homemaking To be with People To save money To learn something new To learn a hobby	.805 .720 .710 .685 .672 .669 .659 .572 .477
3 Inter-personal Goals	6.0%	To take family out To get missed education To learn to be volunteer To improve my mind To get a certificate To learn a hobby To find friends	.754 .732 .713 .585 .554 .537 .447
4 Vocational Goals	4.4%	To get a better job To improve job skills To get a certificate	.756 .751 .573
5 Competing Activities	3.7	Too busy Other activities	.788 .412
6 Alienation	3.0	Too old No activities of interest	.494 .448

is the means. A surprisingly small amount of variance, 4.4 per cent is associated with such vocational training.

Factor 5 is labelled Competing Activities. These are the activities which compete with adult education for the time and resources of the subjects. Their competition accounts for 3.7 per cent of the variance.

The final factor is labelled Alienation. Too old and not interested seem to be key words. Don't want to improve my mind and can't get babysitting are also associated with the factor which account for 3.3 per cent of the variance.

The factor analysis of the Goals and Barriers seems straightforward. The typical adult has many small problems which impede enrolment, but wants to participate for a variety of reasons. Since each factor tends to include either goals or barriers rather than a mixture of both, the assumption that goals are different from barriers is substantiated. The three factors involving barriers explain a total of 44 per cent of the variance whereas the three factors involving goals explain only 24 per cent of the variance thus barriers seem more critical than goals which is consistent with other results.

Although this does not provide conclusive evidence that the goals and barriers presented for rating are those considered by adults in deciding whether to participate, the factors have face validity and at the very least there is no indication that they are grossly lacking in construct validity.

Write-In Goals

After rating the 16 study goals respondents were asked to identify any personal goals not included and to rate them. Seventeen such goals were identified by 15 respondents. The standardized geometric mean for the goals was 398 which means that they were considered to be almost four times as important as the average rating for study goals. Such high rating to goals which the respondents themselves identified is to be expected, thus any comparison between these and the study goals should be viewed with caution.

Fourteen of the write-in goals were clustered into three categories with the remaining three goals considered as miscellaneous.

The standardized geometric mean for the category containing the three work-related goals was highest (629.6). These included a back-up education in case of a financial emergency, or learning new job skills.

The second highest category (573) included five goals related to the family. These included a desire "to learn so that I can teach my children", "to be able to talk to my children", "to help my children with their school work", "to get a better future for my children" and "to learn for the benefit of my family and friends."

A third category included various intellectual and cognitive interests and the standardized geometric mean was 240. "To escape getting into a rut" was typical of these.

The three miscellaneous goals had high scores and included. "Would go with a friend who needed a companion" (g.m. = 500); "to relax and get a change of atmosphere" (g.m. = 253) and "for exercise and fresh air" (g.m. = 275).

Most of these 17 write-in goals are in some way related to the 16 study goals or as mirror images of barriers. Perhaps the only write-in goal not in any way related to those included in the study is the desire of women to teach and communicate with their children. Thus the study goals seem to have had construct validity.

Write-In Barriers

Although the standardized geometric mean for the write-in barriers was lower than for goals (388 for goals and 318.15 for barriers) there were more than three times as many. Fifty-two barriers were listed in contrast to only 17 goals. These were organized into eight categories with four not categorized and thus considered miscellaneous (Table XXVI)

TABLE XXVI
The Geometric Means for Write-In Barriers

Barrier	N	Standardized Geometric Mean
Inadequate activities	3	932
Work-related problems	8	417
Lack of money	2	415
Health problems	5	390
Lack of motivation	10	350
Family comes first	12	241
Other activities more important	6	222
Weather	2	39
Miscellaneous		
- Don't drive a car	1	185
- Holidays are during class schedule	1	138
- Don't want to go when I don't know anyone	1	7800
- English not good enough to take part	1	320
Total	52	

Although the geometric mean for responses to the study barrier "None of the activities interest me" was only 46.7, the geometric mean for the write-in responses relevant to inadequate programming was 932 or more than nine times the average response. One subject complained of a lack of activity for husbands and wives, a second said the courses were not always interesting and the third subject said that learning on her own was faster. Perhaps these responses indicate that a small number feel very strongly that programming is inadequate.

None of the 16 study barriers anticipated the problem women have which result from earning an income. Of the eight write-in barriers related to work, five involved either swing shift or irregular hours; one subject said her new job kept her busy; one expressed the classic comment that she did not want to sit in a class after a hard day's work; and one said that although she does participate, her husband's meetings interfere. The geometric mean for these eight barriers was 417.

Lack of money was expressed by two respondents and for them it was a problem four times as great as the average. Lack of money is closely related to the barrier "fees too high" which was presented to the subjects, but after reading and rating 32 times, it is understandable that respondents should occasionally express barriers that duplicate those in the study.

Health was expressed as a barrier by five subjects. Problems included pregnancy, hearing and old age. They rated their health problems from 224 to 1296 with a geometric mean of 390. For one person in twenty, health may be a decisive barrier.

Some form of low motivation was expressed by ten subjects. Three used the word lazy to describe themselves. The expression "Don't get out and get started" is typical of the remainder. The geometric mean of these

ten barrier scores was 350. Describing oneself as lazy during an interview with a stranger requires a frankness that is not possible for everyone, thus low motivation may be an even more important variable than can be shown from the data.

Although subjects were requested to rate a study barrier which stated "My family would object", 12 expressed additional family related barriers. The two following statements are typical: "My children's activities come first" and "I'd rather spend my time with my family." A sick husband and an aged mother were also referred to as barriers. The geometric means for the 12 family-related write-in barriers was 240, almost six times as high as for the "family would object" barrier on the cards.

In spite of the fact that one of the study barriers noted "Too many other things I'd rather do", six subjects expressed specific activities which they preferred to adult education. These preferences were for bingo, two subjects; and for bowling, bridge, craftwork and housework, one subject each. The geometric mean for these "other activities" was 222.

Weather was expressed as a barrier to participation by two subjects but they rated it as rather unimportant.

The following four responses were not categorized: don't drive (g.m. = 185); my holidays are during adult education schedule (g.m. = 138); I'm worried that my English is not good enough (g.m. = 320); and I don't like to start when I don't know anyone (g.m. = 7800). The last was clearly a threshold barrier.

The write-in goals and barriers provide a commentary on the

adequacy of the 32 which were presented to the subjects in the study, but statistical comparisons between them and the write-in variables is obviously impossible. It appears from the variety and number of write-in barriers that the study barriers were less complete than were the study goals.

IMPORTANCE OF BARRIERS

That barriers tend to show more strength in the various analyses than do goals, raises the question of the utility of studying barriers. While it is true that respondents consistently rate goals higher it is also true that barriers are usually more closely related to participation and adoption scores and when the goals and barriers were factor analysed the barriers explained almost twice as much variance as the goals. That subjects offered 52 write-in barriers but only 17 write-in goals may only indicate that the list of goals was the more complete, but that so many respondents took time to provide so many additional write-in barriers may also indicate the importance of barriers. If, however, barriers are relatively more important than goals why were they rated so much lower? The answer may be that respondents feel goals are positive and thus feel comfortable giving them high ratings. Barriers, in contrast, seem negative and respondents may feel pressure from the interviewer and be conditioned by society in general to rate these negative barriers at a lower level.

If barriers are actually more powerful predictors of participation than goals and if the goals used in this study are analogous to the needs discussed so frequently in adult education, then needs assessment of individuals or a community may not be the optimum strategy for increasing participation. It may be necessary to analyse barriers as well.

BASIC HYPOTHESIS

The basic hypothesis is that "adoption variables account for more variance in participation than motivation or personal characteristics." The variables used to assess adoption explain 48 per cent of the variance in the participation score whereas the goals account for only 4 per cent, the barriers for 6 per cent and the personal characteristics for none at all yielding a total of 58 per cent of all participation variance accounted for (Figure 18). Forty-two per cent is not accounted for. Although these results seem clear-cut, they need to be interpreted with caution, because participation and adoption are not completely independent phenomena in conceptual terms, even though in operational terms they are independent.

In arriving at both adoption scores, variables which measure participation directly are included, but those variables were excluded from the regression analysis used to explain the variance (Table XXVII). In general, variables from early stages of the adoption process were included whereas those from the later stages were excluded. Thus in the five-stage model, variables from the awareness, interest and evaluation stages were all included whereas all but one from the trial and adoption stages were excluded because they measure participation. In the four-stage adoption model, variables from the knowledge and persuasion stages were all included and all but two from the decision and confirmation stages were excluded (Table XXVIII). In the main, those variables from the early stages of the adoption process predict 48 per cent of the variance in the number of courses taken by respondents. Those who have taken the most courses are the most likely (1) to express the intention of participation in the future, (2) to have made a phone enquiry about activities, (3) to believe that adult education is convenient, (4) to have decided not to enroll in specific activities and (5) to have given advice to others.

That barriers selected in the regression analysis explain more variance in participation than do goals is consistent with findings elsewhere. Having (1) too many problems and (2) having competing activities explains 6 per cent of the variance in participation, but the goal of saving money explains only four per cent. That the desire to learn something new does not appear in this regression analysis is surprising and is inconsistent with other results.

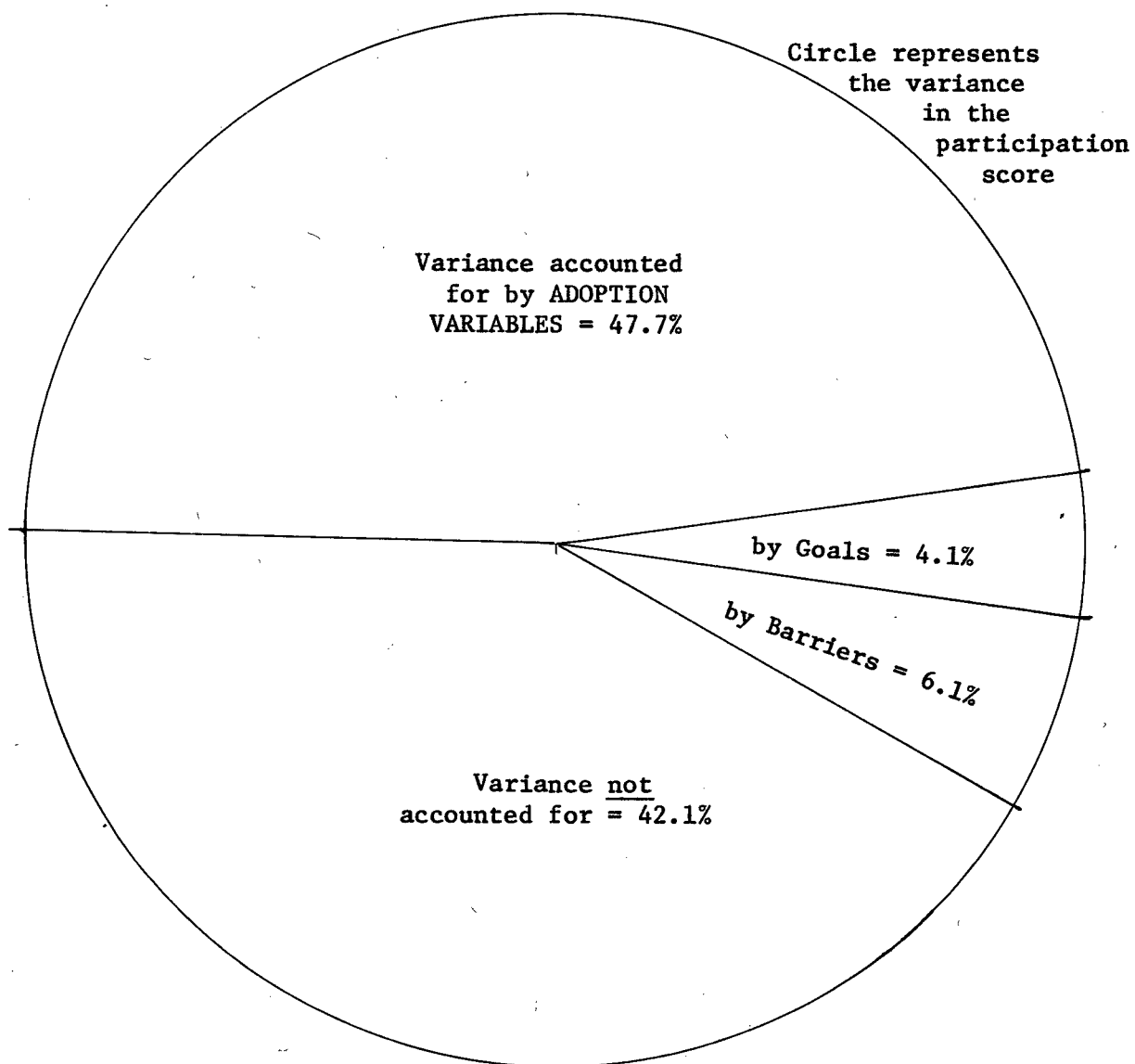
None of the personal characteristics explained enough variance to be included in the regression equation. From earlier results the educational level of the respondents would seem to have been a likely significant variable but it was not so.

Although using regression analysis to test the basic hypothesis indicated several significant variables which were inconsistent with findings elsewhere, in general the results were consistent:

- (1) adoption variables best explain variance in participation (48%)
- (2) goals are poor predictors of participation (4%)
- (3) barriers account for more variance in participation than do goals, 6 per cent by barriers compared to only 4 per cent by goals, but barriers are also poor predictors of participation.
- (4) the personal characteristics of the respondents do not explain participation to any significant degree.

Thus there are strong indications that involvement in the adoption process is more closely related to participation than are the motivations expressed by the respondents or are their personal characteristics.

FIGURE 18
DISTRIBUTION OF VARIANCE IN THE PARTICIPATION
SCORE BY CATEGORIES OF VARIABLES



Note:-

In this analysis none of the variance is explained by the Personal Characteristics of the respondents.

TABLE XXVII

Variables Which Best Explain Variance
In the Participation Score - A Test of The Hypothesis

Variable	Order of Inclusion in Equation	R ²	Normalized Coefficient	F Probability	Purpose of Variable
Behavioral Intention re future enrollment	1	24.7	.36	.000	<u>Adoption variable</u> Four-Stage Model Confirmation Stage
Placing a phone enquiry	2	36.0	.25	.003	<u>Adoption variable</u> Five-Stage Model Interest Stage
Attitude that Adult Education is CONVENIENT	3	40.1	.26	.004	<u>Adoption variable</u> Four-Stage Model Persuasion Stage
Deciding not to enroll in some specific activity	4	44.8	.24	.002	<u>Adoption variable</u> Four-Stage Model Decision Stage
Too many problems (Barrier)	5	48.3	.18	.021	<u>Barrier</u>
Competing activities interfer with participation (Barrier)	6	51.0	.34	.001	<u>Barrier</u>
Goal of saving money	7	55.1	.30	.002	<u>Goal</u>
Giving advice to others	8	57.9	.20	.020	<u>Adoption variable</u> Five-Stage Model Evaluation Stage
Constant			-5.1	.000	

TABLE XXVIII

Partial Correlations of Variables Which are Significantly
Correlated to the Participation Score

Variable	Partial Correlation	F-Probability
Knowledge of where	.32	.003
Knowledge of kinds	.21	.041
Knowledge of advertising	.21	.041
Knowledge of how to enroll	.31	.003
Making a phone enquiry	.44	.000
Browsing through advertising	.21	.041
Thinking about advantages	.27	.008
Having been encouraged	.26	.014
Giving advice to others	.37	.000
Believing Adult Education convenient	.45	.000
Believing Adult Education free of red tape (Complexity)	.26	.011
Intending to participate in future	.50	.000
Educational level	.24	.024
Goal of enjoying self	.21	.045

Chapter VI

FOOTNOTES

1. Peter H. Lindsay, An Introduction to Psychology. (New York, 1973), p. 652.
2. S.S. Stevens, "A Metric for Social Consensus." Science, 151:540 (1966).

CHAPTER VII

CONCLUSIONS

The application of adoption research methodology to participation has made it possible to measure involvement in adult education from a new perspective since adoption theory has not been used previously to assess participation. There seems little doubt but that adults do accept adult education by stages, and to that extent it indicates a new approach to a theory of participation.

SUMMARY OF FINDINGS

The Subjects

One hundred interviews were completed with housewives residing in the census tract containing the largest adult education centre in Surrey, British Columbia. The average age of the subjects was 40, eight were over 65, and 13 under 25. Just under half had a job, and two reported that they were retired. The formal educational level varied: 26 subjects reported less than grade nine, the median was grade 11, and only three per cent reported university degrees. Vocational training was reported by 38 per cent. Most (88%) were married; two per cent were single and the remainder were either widowed, separated or divorced.

Goals and Barriers

Respondents rated the importance to them of 16 goals and 16 barriers relevant to participation in adult education. Magnitude estimation procedures and a standardizing procedure made it possible for each respondent to have a geometric mean of 100 for the 32 ratings. Thus geometric means for each of the goals and barriers could be calculated and compared.

The respondents rated goals as being twice as important to participation as were barriers. The goal "To improve my mind" received the highest rating. "To improve job skills", "To learn something new" and "To learn hobby skills" were also rated high. Other goal ratings were scattered but "To have a night out" and "To escape from housework" were the lowest rated goals.

The highest rated barrier was "I'm too busy." "Schedule problems", "Not wanting to go alone", "Conflicting activities: and "Lack of energy" were other barriers rated high. "The fear of being a student" ranked lowest as a barrier.

Adoption Stages

The involvement of the public in adult education was measured by utilizing the theory and techniques developed to investigate the adoption of innovations. These techniques assume that the acceptance and use of an idea or practice results from a decision process which occurs by stages.

The five stage adoption model is a step-by-step description of the process of adopting an innovation. When this model is applied to the adoption of adult education, the findings can be summarized as follows:

Awareness Stage: Awareness of adult education is extensive in the area studied. Almost four in every five respondents (79%) knew where activities were held and 91 per cent knew at least one subject which was offered.

Interest Stage: The printed advertising received by mail was the most used communication channel.

Ninety-one per cent reported browsing through such advertisements. Talking to friends about adult education was reported by 78 per cent, and 46 per cent reported making a telephone enquiry. A letter of enquiry was used by only eight per cent.

Evaluation Stage: Some 86 per cent reported thinking about the advantages and disadvantages of adult education with more reported being encouraged (49%) than discouraged (6%). Most (69%) reported giving advice to friends or relatives.

Trial Stage: Sixteen per cent reported that they attended their first adult education activity on a tentative basis with the intention of dropping out if they did not like it. Thus, 72 per cent of the respondents who had participated in adult education indicated that they did not pass through a trial stage.

Adoption Stage: During the period 1972-1975, 55 per cent enrolled in one or more activities with one adult in four participating in any one year. Six per cent enrolled in at least one activity during all four years and could thus be considered persistent attenders.

The adoption process is also described in a four-stage model proposed by Rogers in 1971, and the findings from each stage in this model provide a contrast to those of the earlier model.

Knowledge Stage: Knowledge about adult education was widely diffused. Some 80 per cent knew where classes were held and how to enrol. More than 90 per cent had seen advertising and knew what was taught.

Persuasion Stage: In general, the respondents indicated that they held favorable attitudes toward adult education. They thought it was convenient, and preferable to attempting to learn on their own. Most believed they could enrol without much difficulty and that they could drop out of classes without much loss.

Decision Stage: Three out of four subjects had thought about some specific activity and then decided not to attend. Fifty-seven per cent reported completing one or more courses within the previous five years, and 18 per cent reported having dropped out of a class.

Confirmation Stage: Some 50 per cent reported that they planned to enrol in the future, while only 14 per cent reported that they definitely did not and of these, six per cent reported doing something else in the time formerly used for adult education. Unpleasant experiences in adult education courses were reported by 18 per cent of the sample.

Adoption Scores

Respondents were assigned adoption scores which were derived from the scores in the various stages of the adoption process. Thus the adoption score measures the degree of the involvement in adult education and places

adults on a continuum between those who are unaware to those who participate in several adult education activities each year. These adoption scores were used primarily as dependent variables.

The mean adoption score for the five-stage model was 9.93 (standard deviation = 3.73) and for the four-stage model it was 11.29 (standard deviation = 2.70). Since the range was zero to twenty and since the scores were reasonably well distributed, two useful ordinal scales resulted.

Adopter Categories

The analysis of the population by adopter categories indicates that individuals in each group can be characterized as follows: early adopters were the busiest, the best educated and had the most desire to learn and to enjoy themselves. The early majority differ from the early adopters in that their interests were primarily in hobbies and in being entertained. The late majority have some interests in learning a hobby or something new but otherwise their motivation is low and there is some evidence that they consider the fees to be too high. Finally, the laggards have the least education and the least motivation to participate in adult education programs.

Participation in Adult Education

Fifty-seven per cent had enrolled in one or more activities within the five years prior to the interview and 70 per cent had enrolled at some time during their adult life. Because of the extensive opportunities available to residents of the tract surveyed, these data may not be applicable elsewhere; nonetheless in the tract surveyed, only 30 per cent had never

taken part in any adult education program.

A participation score was calculated by summing the number of courses taken during the period 1971-1975 inclusive. Since up to three courses per year were included, the score ranged from zero to fifteen. The mean score was 1.89 with a standard deviation of 2.47. The participation score was used as a dependent variable in some analyses.

Variance in the Adoption Scores

The goals, barriers and personal characteristics of the respondents explained about one fifth of the variance in adoption scores. When the five-stage adoption score is the dependent variable in a stepwise regression analysis and the goals, barriers and personal characteristics of the respondents are the independent variables, educational level and the desire to learn something new are the two variables which explained 18 per cent of the variance in that adoption score. In a parallel regression analysis with the four-stage model when that adoption score was the dependent variable, the age of the respondent, their educational level and their desire to learn something new explained 21 per cent of the variance in the four-stage adoption score. Thus those who progress furthest through the adoption stages have the most formal education and the most desire to learn. It seems that those who receive the most education in their youth are more likely to want to learn as adults, and are more likely to know about, to consider, and to participate in adult education.

Variance in the Participation Score

In order to test the basic hypothesis, the participation score was used as the dependent variable in a regression analysis and the goals, barriers, personal characteristics and the 20 adoption variables not

measuring participation were the independent variables. Eight independent variables explained 57.9 per cent of the variance in the participation score. Of that 57.9 per cent, 47.7 per cent was accounted for by adoption variables, 4.1 per cent by goals, 6.1 per cent by barriers and none of the personal characteristics were selected. It is clear that the adoption variables best explained participation and it is important to note the five adoption variables are widely distributed throughout the adoption stages.

CONCLUSIONS

The principle objective of this study was to determine whether or not the research methodology developed to study the adoption of innovations was more suitable for the study of participation in community adult education programs than is investigating the motivation and personal characteristics of adults. Adult education studies have tended to assume that an adult compares his needs to the offerings in an adult education program and chooses the most suitable activity which he then attends. Such a decision has been assumed by scholars and practitioners to occur essentially in one step. In contrast, adoption research conceptualizes a series of steps or stages which occur over time. This study sought to determine either that the acceptance of adult education is a one-step decision, in which case the traditional ideas would be supported, or that acceptance takes place in a series of decisions in which case the adoption of innovations model would be supported.

Adoption Process

The various statistical analyses reported indicate that the acceptance of adult education is a process that can be described as occurring in stages. There are numerous indications that a valid means of measuring the adoption of adult education could be developed, consequently, the methodology for assessing the adoption of innovation would appear to be suitable to investigate participation in adult education. This was approached in this study by considering adult education to be a single innovation and investigating each stage in detail but, alternatively, adult education could have been divided into a number of innovations following traditional methods of assessing an adoption score. The latter procedure may be worthy of investigation.

Although adults who participate seem to be involved in the adoption stages, this study has not attempted to establish either the sequencing of the stages nor the timing of them. It is unclear, for example, whether the persistent participant obtains most of his knowledge before taking his first course, or whether he acquires knowledge throughout the process of attending or even thereafter.

Even though this study raises questions about the adoption of adult education which cannot be answered from the data available, it has provided results which suggest that a multi-stage adoption process would provide a more accurate and detailed analysis of the decision to participate in adult education.

One-Step Model

This study indicates that participation results from a decision process which occurs in more than one step or stage. Since the goals and

barriers examined do not adequately explain the variance in the participation score, it is difficult to argue that motivational factors explain participation. Nor does a single factor explain the variance in participation. Thus, a model which assumes a one-step decision in which an adult considers goals and barriers while deciding among the activities available is not substantiated by this study. On the other hand, neither is the evidence sufficiently complete to reject such a model categorically.

Utility of the Adoption Variables

The utility of the adoption variables has been assessed primarily on the basis of their relationship to the adoption and participation scores. In addition, those variables which when taken together, explained 48 per cent of the variance on the participation score were considered to be particularly satisfactory. On that basis the following subjective judgement has been made of the utility of the variables as measured.*

1. Very satisfactory variables

- Knowledge of what is taught
- Making a phone enquiry
- Attitude that adult education is convenient
- Deciding not to attend a specific activity
- Intention to participate in the future
- Participation during 1972
- Participation during 1973
- Participation during 1974
- Participation during 1975

* See Appendix A

2. Reasonably satisfactory variables

- Knowledge of when activities are held
- Knowledge of how activities are advertised
- Browsing through advertising
- Thinking about advantages and disadvantages of adult education
- Being encouraged to enrol by others
- Giving advice to others
- Knowledge of how to enrol
- Attitude that adult education has relative advantage
- Attitude that adult education is not complex
- Dropping out of an activity
- Completing an activity
- Reporting unpleasant experiences with adult education

3. Unsatisfactory

- Knowledge of where activities were held
- Writing a letter of enquiry
- Talking to others about adult education
- Being discouraged from enrolling
- Attitude that adult education is observable in the community

4. Very unsatisfactory

- Reporting first enrolment was a trial
- Enrolling but not attending
- Attitude that dropping out does not involve loss to participant
- Enrolling in a class which was cancelled for lack of enrolment

- Reporting dissatisfaction with activities
- Reporting replacement of adult education with other activities
- Reporting unanticipated consequences

Utility of An Adoption Model

Perhaps the greatest potential of the adoption models is the framework they offer for unifying participation research so that the relationships between variables can be investigated systematically. If the adoption model were to be used extensively, studies on any one element in participation need not be done in isolation since a standardized adoption score could be a link among studies.

Basic Hypothesis

The variables used in this study which assess the early adoption stages clearly explain variations in participation rates better than do the variables which assess the motivation or the personal characteristics of the respondents. Thus it seems that those who know about adult education, who express attitudes toward the characteristics of adult education, and report communicating about adult education are most likely to have high participation rates. In contrast the results do not indicate strongly that those who participate can be differentiated from those who do not on the basis of the ratings which they give to the goals for participating or the barriers they see inhibiting such participation. In the main, variance in personal characteristics do not seem to make it possible to differentiate between participants and non-participants except that in some analysis participants seem to be better educated.

When the adoption of innovation methodology is applied to adult education, participation by the adult in courses or other activities is the climax toward which the process builds. Thus measurements of the adoption process in adult education can never be completely independent of participation measures. The important difference is that assessing an adoption score necessitates consideration of a decision process which may take long enough to measure in years whereas assessing participation involves simply recording the results, if any, of that decision process. This study indicates that the studying of the entire decision process by using adoption models is a more powerful methodology than simply studying the results by using participation scores.

SUGGESTIONS FOR INCREASING PARTICIPATION

The application of the adoption model to the study of adult education has made it possible to suggest administrative procedures which should result in both greater participation and a broader clientele than was possible by viewing participation uni-dimensionally. The traditional viewpoint of participation is seldom stated explicitly but it appears to assume that adults have learning needs that administrators should assess and then organize programs to match those needs.

Although this traditional strategy may appear to have been successful in establishing adult education and although a few administrators have done much more than program, advertise and hope, this study suggests that administrators can initiate actions appropriate to each stage in the adoption process that will lead to even greater participation. The following suggestions are matched to the appropriate stages.

Adult educators seem to have been successful in diffusing knowledge

about what adult education is, where it is held, what is available, how to enrol and how to find and use program advertisements. Mass Media, mostly print, have been used quite effectively for this purpose and adult educators are therefore justified in believing that their advertising has made almost every adult aware of adult education.

The attitude of the public toward adult education is only slightly favorable. Since attitudes tend to influence adoption, it is important that adults be encouraged to have more positive attitudes. Improving attitudes involves more than simply improving public relations. A genuine attempt must be made to alter the characteristics of activities so that there is a better product to adopt. But even though programs may be improved, changing negative attitudes into positive attitudes is seldom achieved without inter-personal communication. Rather than changing attitudes toward adult education in general, it will be more effective to improve attitudes toward the five important characteristics of adult education as an innovation. The results of this study suggest that improving attitudes toward the following five characteristics of adults should increase participation in any given program.

Relative advantage relates to the degree to which adult education is better than alternate forms of learning such as self-directed learning or full-time training. Adults need to be aware of the greater efficiency that can result from adult education over self-directed learning and of the economic and social advantages of part-time participation. Although this may be accomplished through the printed word with the better educated, other adults will require more personal communication. The more personal the contact the more likely it is that a favorable attitude change will occur.

Compatibility relates to the degree to which adult education is consistent with existing values, experiences and needs. Lists of courses and their descriptions received in advertisements are unlikely to convince the under-educated that adult education would fit into their lifestyle. Community development or the community school concepts may be more effective not only for the under-educated ~~not now involved~~ but also for those participating on a limited basis.

Trialability relates to the degree to which adult education may be tried on a limited basis without a high level of commitment. This could be met by advertising that the first session is free and that fees would not be collected immediately. Although this would be inconsistent with present procedures, it would give programs greater trialability. Since traditional pattern of courses require a commitment many adults cannot or will not make, a variety of program formats would increase the alternatives available so that those adults with little or no experience in adult education could be introduced to it.

Observability relates to the degree to which the results of the innovation are visible. Since adult education takes place in schools, colleges, churches and other facilities which are primarily associated with activities other than adult education and since learning cannot be observed directly, the consequences of participation in adult education in a community can be almost invisible. Administrators of programs can arrange displays of craft work by adult students. Newspaper articles describing activities can also ensure the increased visibility of programs and of the results of participation in them.

Complexity is the degree to which an innovation is perceived as

difficult to understand and use. Complex pre-registration or enrolment procedures make programs appear more complex and thus less acceptable to the less educated. Clearly any effort to ease access to programs will make them less complex and should make them more accessible and acceptable to those adults not previously involved.

Decisions about participation in adult education programs offered by formal educational institutions usually occur in September, January or April, that is immediately preceding the program starting dates. Thus the adult must reach a decision during a fixed and limited time period; consequently, if he is unaware of that period, he may have to postpone his participation for up to five months. Undoubtedly many adults can adjust their learning requirements to such patterns, but those with less motivation and education are probably less inclined to do so. The results of this study indicate that greater programming flexibility would probably increase enrolments.

Although the 32 goals and barriers analyzed in this study have some influence on decisions to participate, involvement in the early stages of the adoption process have considerably more influence. Thus helping adults understand the process of adopting adult education would seem more fruitful than trying to convince them that the barriers to participation are minimal and that adult education will facilitate the achievement of their goals.

Adults obviously learn much about the advantages and disadvantages of adult education while they are participating. Although excellent instruction occurs in adult education programs, many instructors fail to utilize the best techniques for instructing adults. In-service training for potential and active instructors would be helpful and administrators have a

responsibility to provide this to ensure well organized learning experiences. Such experiences will generate enthusiasm among participants which will have an effect on both attitudes and on future decisions concerning participation.

There is always pressure on administrators to organize activities, to advertise and to enrol an ever increasing number of adults. It is easy to assume that if large numbers of participants are attracted, then the program must be meeting the needs or goals of adults. This cycle can go on indefinitely and is undoubtedly one reason for the pervasiveness of the "organize, advertise and hope" style of program planning. This study indicates, however, that improving attitudes of adults toward adult education, that easing the decision to enrol, and that ensuring the satisfaction of those who participate are all more likely strategies to ensure optimum enrolments than is concentrating on improving printed advertising.

None of the suggestions made in this section are new, but the overall approach is. The basic strategy suggested is to continue mass media advertising to ensure knowledge; to improve the product and promote it through interpersonal communication so as to produce more favorable attitudes; to make it easy for clients to follow through on a decision to enrol; to make such a decision more attractive than alternate behaviors; and finally to ensure that those who participate are anxious to re-enrol by organizing well instructed and administered activities. If this strategy is followed, it seems reasonable to expect greater participation. It is not easy to follow these recommendations but if appropriate action is taken even on a piecemeal basis, more adults should learn to use adult education as the innovation which meets their requirements for learning.

THEORETICAL IMPLICATIONS

The study of participation in adult education has been associated with the concept of needs. The needs met by adult education are assumed to be analogous to the thirst for water. Since the thirst for water can be quenched by providing water, it seems logical to assume that learning needs can be satisfied by the provision of adult education so that all that is required to ensure participation is programs that contain activities appropriate for the needs. When a program attracts a large number of participants, it is almost impossible to resist the obvious conclusion that the program must be meeting the needs of those participants. This parsimonious theory of participation is so attractive that it is seldom questioned.

The equation that a need plus an appropriate activity equals participation does not provide an adequate explanation of the phenomenon of participation in adult education. Nor does it provide a basis for any extensive analysis of the process involved in deciding to participate. Consequently, it has not been possible to develop any fundamental theory of participation that can integrate existing empirical evidence or provide a framework leading to the discovery of new facts about participation in adult education.

Although this study has not led to a general theory of participation in adult education it has introduced the possibility for general theory development at a level beyond the simple needs-program explanation. Furthermore, it suggests that the search for a theory of participation must extend beyond the simple attendance or not dichotomy and into the complex area of the acceptance and adoption of innovations for a more complete investigation and explanation of participation.

SUGGESTIONS FOR FURTHER RESEARCH

If the adoption of innovations concept is to be used to investigate participation in adult education, it will be necessary to develop a valid and reliable instrument for measuring adoption scores. Some of the required variables have been isolated in this study but additional variables need to be identified. In general, the four-stage seems to be more promising than the five-stage model. By factor analyzing all the variables related to, but not directly measuring, participation, it might be possible to develop a more functional model. Although such a model might not be identical with the adoption models, it could account for those complexities of adult education which are unlike the relatively simple innovations usually investigated by the adoption concept.

Since the adoption of innovations concept is one way of analysing the decision making process, and since it appears to reflect the decision to participate in adult education, it would be wise to test decision models from other disciplines to adult education. It is entirely possible that such models could be superior in explaining variance in participation rates.

In any case, further research with adoption models seems promising. It is unclear, for example, whether the adoption stages are primarily sequential or whether they occur simultaneously. It is also unclear how adults cycle back into the process after each enrolment or how rejection and discontinuation function in relation to participation.

One limitation of this research project was the conceptualization of participation in adult education was a single innovation. Thus participation in all activities were assumed to be equal. That is participation in

college courses was equated with public school courses as was basket weaving with physics. It might be useful to compare the adoption scores of those who participate at different institutions or those who take different categories of courses, or indeed those who study under different methods of instruction.

Categorizing variables into groups and as dependent or independent variables was unsatisfactory. To a large measure, the difficulty arises because participation is a narrow concept which is an integral part of a broader concept called adoption. Thus, in some cases, the goals and barriers seem comparable to the variables used to measure adoption. The extent to which this problem actually exists can be investigated by factor analyzing appropriate variables from all categories and then comparing the factors so derived to the variables categories used in the study.

In general, the assumption that participation can be described as a decision process seems justified. Which decision model is most suitable, and how it can be best applied seems worthwhile topics for further research.

Chapter VII

FOOTNOTES

1. Everett Rogers and Floyd Shoemaker, Communication of Innovations.
(New York, 1971), p. 103.

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THE APPENDICES

The appendices are included primarily for the scholar interested in the adoption of innovation research techniques and/or in using magnitude estimation to assess variables.

APPENDIX A The Adoption Variables

APPENDIX B The Interview Schedule

APPENDIX C Where Adults Attended

APPENDIX A

THE ADOPTION VARIABLES

The appropriate strategy for developing an adoption score would have been to take about twenty variables to assess each stage. Unfortunately, this was not so obvious when the interview schedule was prepared. Those variables which were used are assessed and classified in this appendix so as to provide guidance in the preparation of a standardized four-stage adoption score. The variables used to assess the five-stage model are also classified since some of them might be included in a future interview schedule.

FIVE-STAGE MODEL

Awareness Stage

1. What do you think adult education is?

Since 99 of the 100 respondents could give an adequate description of adult education this item was unsatisfactory and should be replaced.

2. Do you know where such adult education classes are held in Surrey?

A reasonably satisfactory item which should be retained since it is related to adoption and participation scores.

3. Do you know what kind of things are taught?

A very satisfactory item since it was one of the five which explained 48 per cent of the variance in the participation score and since it is related to the participation and adoption scores.

4. Do you know how adult education is advertised in Surrey?

A reasonably satisfactory item since it is related to the participation and adoption scores.

Interest Stage

1. Have you ever made a phone call to enquire about adult education?

Since this was one of the five variables which explained forty-eight per cent of the variance in the participation score and since it is strongly related to both the adoption scores it can be rated as a very satisfactory variable.

2. Have you ever written a letter enquiring about adult education or correspondence courses?

Very few (8%) had written such letters and such behavior was not related to either participation or the four-stage adoption score. This is an unsatisfactory variable.

3. Have you ever talked with friends or acquaintances about the courses which they are taking?

Such behavior is related to adoption scores but since it is not significantly correlated to the participation score it seems unsatisfactory. Perhaps re-wording would be appropriate in future studies.

4. Have you ever browsed through lists of courses in the same way you look at Eaton's catalogue?

Since browsing is related to both participation and adoption scores, it is a reasonably satisfactory item. Perhaps putting a time limit would be desirable.

Evaluation Stage

1. Sometime during the past five years have you taken time to think about the advantages and disadvantages of taking part in adult education?

Those who had done so had significantly higher participation and adoption scores, thus this is a reasonably satisfactory item.

2. Has anyone ever encouraged you to take part in adult education?

Since half (49%) reported being encouraged and since encouragement is related to adoption and participation scores, it is a reasonably satisfactory variable.

3. Has anyone discouraged you from taking part in adult education?

Since being discouraged is not related to either the participation score, the adoption scores, nor the personal characteristics of the respondents and since it occurred infrequently (6%), it should be considered an unsatisfactory variable. Nonetheless, it is a logical variable and should probably receive further consideration before dropping it from a future adoption score. Perhaps it should be re-worded.

4. Have you given advice to others about taking part in adult education?

Advice giving is strongly related to adoption scores and to the participation score indicating that this is at least a reasonably satisfactory variable.

Trial Stage

1. Have you ever taken part in adult education on a trial basis?

(The interviewer probed the responses to ensure accuracy).

Only 24 per cent of 57 participants reported going through such a trial stage and such a report was not related to either the adoption or participation scores. This was a revealing item but for assessing adoption it was very unsatisfactory.

2. Have you ever enrolled in a class which was cancelled for lack of enrolment? (Responses taken from table recording participation).

Reported by only one per cent and seems very unsatisfactory.

3. Have you ever dropped out of an activity? (Responses taken from table recording participation).

Reported by 18 per cent of the respondents but considering the responses to the first variable in this stage, it seems a very unsatisfactory item.

4. Have you ever completed an adult education activity? (Responses taken from table recording participation).

The comments for the third question in this stage apply equally to this very unsatisfactory question.

Note: The assessment of the trial stage in this study is compatible with the hypothesis that trial is not a necessary pre-condition for adoption. Under these circumstances assessing trial in a valid manner may not be feasible. Thus using the five-stage model to assess adult education does not seem practical if the goal is to develop a standardized scale which is both valid and reliable.

Adoption Stage

- 1 to 4. The variables used to assess this stage taken from the table recording participation. The question was "During the last

five years have you voluntarily attended any part-time activities like those listed on this card? (Card was shown listing programs). One point on the adoption score was given for enrolment in any year 1972 through 1975.

Since this procedure measures participation directly and since it also measures adoption directly, correlations with the adoption and participation scores are logically meaningless. Although statistical evidence is lacking, there is every logical reason to believe that these four variables assess adoption satisfactorily.

General Suggestions

Developing a standardized adoption score for adult education based on the five-stage model does not seem promising. It would be more useful to utilize some of the more satisfactory variables in that model and incorporate them in the four-stage model.

FOUR-STAGE MODEL

Knowledge Stage

1 to 4. The same items as in the awareness stage of four-stage model.

See comments there.

5. Do you know how to enrol in adult education activities?

A reasonably satisfactory question since the responses are significantly correlated with appropriate stage, adoption and participation scores.

Persuasion Stage

All five items in this stage are scaled by the Likert method. Respondents were handed a card listing the five responses. Each of the five items was designed to assess an attitude in one of the five characteristics of an innovation. Although the procedure seems promising, the design of the items proved less satisfactory.

1. Adult education is better than trying to "learn on your own."

A reasonably satisfactory item since it is strongly related to the adoption and participation scores. Relationships with other attitude items and stage scores also indicate validity. Learning on your own does seem to be the logical other choice for the adult but only five per cent indicated preference for self directed instruction. It is difficult to be certain that this item measures relative advantage.

2. Taking part in adult education is very inconvenient.

Very satisfactory in that it was one of the variables which, in combination with four others, explains forty-eight per cent of the variance in the participation score. Significant correlations indicate its relationship to adoption scores, stage scores and to other persuasion items in a pattern indicating that it is a valid measure. But it was designed to measure compatibility and convenience is only one element in compatibility. Perhaps several items would be required to adequately assess compatibility.

3. A lot of "red tape" is involved in enrolling in adult education activities.

A reasonably satisfactory item in that responses are related to the adoption scores, the participation scores and to stage scores. The assumption

is that "red tape" in enrolling equals complexity and this assumption, though difficult to substantiate statistically, seems reasonable.

4. If you start an adult education activity and don't like it, nothing is lost if you quit.

A very unsatisfactory item for two reasons. Many respondents either found it difficult to understand or said that you should finish anything you start. The various correlations are not significant, probably because of the confusion over the meaning of the question. The item was designed to assess trialability of adult education but it clearly does not do so. Considering the lack of substantiation for a trial stage, it is unclear whether an item could be so worded as to assess trialability. It is possible, of course, that the unrelatedness of the item is in part explained by the small number of respondents indicating a trial stage. If this is the explanation, then any item in trialability will be invalid.

5. Most people I talk to seem to know something about adult education.

An unsatisfactory item in that it is related to the five-stage adoption score but not to the participation score. Other statistical evidence indicates both significant and non-significant relationships. The problem now appears to be the vague wording. The key words, "something about", seemed confusing.

Note: Although three of the persuasion variables seem valid, all five distributions of responses were skewed. It would probably be necessary to develop a large number of attitude items, incorporate them in a study, and factor analyze the results before valid and reliable attitude questions could be developed. The results of this study indicate that

such an effort would be worthwhile.

Decision Stage

Of the five items, the four which indicate positive decisions were scaled from the participation table. The negative decision item was asked as a question.

1. Enrolling in an activity and then not attending.

This behavior was not reported by any respondent and is obviously a very unsatisfactory variable.

2. Enrolling in a class which was cancelled for lack of enrolment.

Since this behavior was reported by only one respondent, it is also a very unsatisfactory variable.

3. Dropping out of an activity.

Reported by 18 per cent but difficult to estimate the utility of this variable statistically. It seems reasonably satisfactory.

4. Completing one or more activities.

Reported by 51 per cent but also difficult to estimate statistically. It seems reasonably satisfactory.

5. During the past five years have you thought seriously about some specific activity and then decided not to attend?

A very satisfactory item because it, in combination with four other variables, explained forty-eight per cent of the variance in the participation score. Surprisingly, it was not significantly correlated to the five-stage adoption score.

Note: Although the negative decision question had utility, the other four variables now seem poorly designed. Clearly a decision to take part

in the future is possible, but that behavior was elicited only in the persuasion stage questions which was clearly an error in the design. The following items are rough suggestions for future assessment of the decision stage:

1. Number of activities completed during previous five years.
2. Number of times subject has dropped out during previous five years.
3. Intention to participate in the future.
4. Negative decision as used in this study.
5. How often do you make a decision about whether to attend or about which activities to attend.
 - a) never
 - b) infrequently
 - c) once per year
 - d) more than once per year

Confirmation Stage

1. Do you think you might be interested in taking part in adult education in the future?

A very satisfactory variable in that it is one of the five variables best explaining variance in the participation score and it correlates significantly with the adoption scores. Although this variable measures adoption, it is not clear that it measures confirmation rather than decision.

2. Were you dissatisfied with the course?

This item was administered only to those who had participated, but who did not plan to do so in the future. As a result, only 14 per cent were eligible to respond. Statistical analysis was thus about meaningless and the

variable is therefore considered very unsatisfactory. In retrospect the item should have been coded so that all respondents could have been asked the question.

3. Instead of taking adult education are you using the time to do something else?

As in item 2, only 14 responses were elicited. Although activities which compete with or replace adult education need to be investigated, this variable was very unsatisfactory in that it was ineffective in doing so.

4. Have you had any unpleasant experiences with adult education?

A reasonably satisfactory variable in that it relates to both participation and adoption scores. Since the question was asked only of participants, only 67 per cent were able to respond and that created coding problems.

5. Have there been any unanticipated or surprising advantages or disadvantages to taking part in adult education?

This question is asking in part for the same information as in item 4 and is unrelated to the participation score. As in item 4 it was asked to only 67 per cent of the respondents. It is rated as unsatisfactory.

In general the confirmation variables suffered from being used to consider theoretical propositions: unanticipated consequences, disenchantment and replacement. It would probably have been better to have included some of the following items which are more simple and direct:

How would you rate instruction?

Have you had pleasant experiences?

Have you had unpleasant experiences?

Have you recommended courses you have taken to others?

Is there enough variety in the course offerings?

Have you applied what you learned?

DEVELOPING A STANDARDIZED SCORE

Although the analysis of the data in this study engenders confidence that a standardized adoption score based on the four-stage model is possible, insufficient data were collected in this study. Respondents were assessed either one point or none on the 20 adoption variables. Although that procedure was simple, it resulted in much lost data. For instance the strength and direction of the persuasion responses were lost. In a future adoption study it might be well to consider using ratings which included fractions or scaling techniques and thereby increase the accuracy of assessment.

Whatever procedure is followed, it is recommended that many more variables be assessed. In that way invalid variables can be excluded and there will still be enough valid variables remaining. That such a procedure was not followed in this study was a serious error in design.

APPENDIX B
THE INTERVIEW SCHEDULE

In order to provide more information the interview schedule has been annotated by the inclusion results and by explanatory notes.

INTERVIEW SCHEDULE
1974 ADOPTION STUDY - ADULT EDUCATION
SURREY

ID - 1-3

Interview Number _____

Card # 4=1

Respondent's Name: _____

Address: _____

Record of Calls:	Date	Time	Result or Comments
------------------	------	------	--------------------

1st	_____	_____	_____
2nd	_____	_____	_____
3rd	_____	_____	_____
4th	_____	_____	_____

Notes: _____

I'm doing an adult education survey and would like to ask you some questions about part-time learning for adults.

What do you think adult education is?

Has definition	<input type="checkbox"/>	1	99%	5
Has not	<input type="checkbox"/>	2	1%	

ANY PART-TIME ACTIVITIES WHERE THE MAIN GOAL IS LEARNING.

Do you know where such adult classes are held in Surrey?

No	<input type="checkbox"/>	1	21%	6
Yes	<input type="checkbox"/>	2	79%	

Do you know what kinds of things are taught?

No	<input type="checkbox"/>	1	9%	7
Yes	<input type="checkbox"/>	2	91%	

Do you know how adult education is advertised in Surrey?

No	<input type="checkbox"/>	1	9%	8
Yes	<input type="checkbox"/>	2	91%	

Do you know how to enroll in adult education activities?

No	<input type="checkbox"/>	1	19%	9
Yes	<input type="checkbox"/>	2	81%	

We are interested to know if you have ever tried to find out more about Adult Education courses and activities.

For example:

Have you ever made a phone call to enquire about Adult Education?

No	<input type="checkbox"/>	1	54%	10
Yes	<input type="checkbox"/>	2	46%	

Have you ever written a letter enquiring about Adult Education or correspondence courses?

No	<input type="checkbox"/>	1	92%	11
Yes	<input type="checkbox"/>	2	8%	

Have you ever talked with friends or acquaintances about the courses which they are taking?

No	<input type="checkbox"/>	1	22%	12
Yes	<input type="checkbox"/>	2	78%	

Have you browsed through lists of courses in the same way you would look at Eaton's catalogue?

No	<input type="checkbox"/>	1	9%	13
Yes	<input type="checkbox"/>	2	91%	

What lists? _____

Sometime during the past 5 years, have you taken time to think about the advantages and disadvantages of taking part in adult education?

No ☐ 1 14% 14

Yes ☐ 2 86%

Has anyone ever encouraged you to take part in adult education?

No ☐ 1 51% 15

Yes ☐ 2 49%

Has anyone ever DISCOURAGED you to take part in adult education?

No ☐ 1 94% 16

Yes ☐ 2 6%

Have you given advice to others about taking part in adult education?

No ☐ 1 31% 17

Yes ☐ 2 69%

If yes

Mostly encouraged ☐

Mostly discouraged ☐

During the past 5 years, have you thought seriously about attending some specific activity and then decided not to attend?

No ☐ 1 25% 18

Yes ☐ 2 75%

If yes can you recall the kind of activity

Activity #1 Kind _____

Reason _____

Activity #2 Kind _____

Reason _____

Relative Advantage

Adult education is better than trying to "learn on your own."

SA	A	U	D	SD	
5	4	3	2	1	19
29%	62%	4%	4%	1%	

Compatibility

Taking part in adult education is very inconvenient.

SA	A	U	D	SD	
1	2	3	4	5	20
1%	30%	5%	58%	6%	

Complexity

A lot of red tape is involved in enrolling in adult education activities.

SA	A	U	D	SD	
1	2	3	4	5	21
0%	3%	19%	62%	16%	

Trialability

If you start an adult education activity and don't like it, nothing much is lost if you quit.

SA	A	U	D	SD	
5	4	3	2	1	22
2%	45%	22%	28%	3%	

Observability

Most people I talk to seem to know something about adult education in Surrey.

SA	A	U	D	SD	
5	4	3	2	1	23
9%	55%	24%	12%	0%	

Note: To facilitate answering the five attitude questions respondents were handed a card on which were printed the following five responses--
STRONGLY AGREE, AGREE, UNDECIDED OR DON'T KNOW, DISAGREE and STRONGLY DISAGREE. They were to read the statement and choose the most appropriate response.

During the past 5 years, have you voluntarily attended any 177
part-time activities like those listed on this card.

(White large card) Let housewife read

No ☐

Yes ☐

Do not take more than 3
activities in any one year.

If more, take activities
housewife thought most important

Attendance

C - Complete

DO - Drop Out

E - Enroll only

X - Class cancelled

Partici-
pation
Score

		WHAT	WHERE		
1975	1				
	2				
	3				
1974	1				
	2				
	3				
1973	1				
	2				
	3				
1972	1				
	2				
	3				
1971	1				
	2				
	3				
Total Quantity Score					

Note: In order to ensure that the list of activities recorded on the previous page was accurate, respondents were given a card to read on which was listed the following activities:

NIGHT SCHOOL CLASSES

DOUGLAS COLLEGE EXTENSION

INDIVIDUAL LESSONS, PIANO, FLYING, ETC.

CORRESPONDENCE COURSES

BIBLE CLASS

LABOR UNION COURSE

Y.M.C.A.

CENTENNIAL ART CENTRE CLASSES

CAMP ALEXANDRA CLASSES

SWIMMING OR SKATING LESSONS

ETC.

Do you think you might be interested in taking part in Adult Education in the future?

Definitely not	<input type="checkbox"/>	1	14%	29
Don't know	<input type="checkbox"/>	2	27%	
Definitely yet	<input type="checkbox"/>	3	59%	

You do not plan to take further Adult Education?

Were you dissatisfied with the course?

No	<input type="checkbox"/>	1	13%	30
Uncertain	<input type="checkbox"/>	2	86% (not applicable)	
Yes	<input type="checkbox"/>	3	1%	

*Specify if yes _____

Instead of taking Adult Education are you using the time to do something else?

No	<input type="checkbox"/>	1	8%	31
Yes	<input type="checkbox"/>	2	6% (including more free time) (86% not applicable)	

*If yes, specify activity _____

Have you had any unpleasant experiences with Adult Education?

A poor teacher, trouble getting a fee refund, a cancelled class.

No ☐ 1 18%

32

Yes ☐ 2 49%

N.A. ☐ 3 33%

If yes, specify _____

Have there been any unanticipated or surprising advantages or disadvantages to taking part in Adult Education?

No ☐ 1 42%

33

Yes ☐ 2 25%

N.A. ☐ 3 33%

If yes, specify _____

Have you ever taken part in adult education on a Trial Basis?

No ☐ 1 51%

34

Yes ☐ 2 16%

N.A. ☐ 3 33%

What is your marital status?

Single	<input type="checkbox"/>	1	2%	35
Widowed, divorced or separated	<input type="checkbox"/>	2	10%	
Married	<input type="checkbox"/>	3	88%	

In what year were you born?

YEAR

raw 36, 37

coded 38

Note: Ages

17-24	25-34	35-44	45-54	55-65	65-up
13%	32%	22%	14%	11%	8%

What was the highest year you completed in school?

Less than 9	<input type="checkbox"/>	1	26%	39
9 - 10	<input type="checkbox"/>	2	17%	
11	<input type="checkbox"/>	3	15%	
12 - 13	<input type="checkbox"/>	4	33%	
Some University	<input type="checkbox"/>	5	6%	
University Degree	<input type="checkbox"/>	6	3%	

Have you taken any full-time vocational or job related training since you left high school?

No	<input type="checkbox"/>	1	62%	40
Yes	<input type="checkbox"/>	2	38%	

Specific kind of training _____

Are you employed outside the home?

No	<input type="checkbox"/>	1	56%	41
Retired	<input type="checkbox"/>	2	2%	
Yes	<input type="checkbox"/>	3	42%	

Magnitude Estimation Sheet

GOALS

1	To get a CERTIFICATE	
2	To get the EDUCATION I missed	
3	To ENJOY myself	
4	To ESCAPE from housework	
5	To take the FAMILY	
6	To find new FRIENDS	
7	To learn to be a better HOMEMAKER	
8	To LEARN something new	
9	To learn a HOBBY	
10	To get a better JOB	
11	To improve my JOB SKILLS	
12	To improve my MIND	
13	To have a NIGHT OUT	
14	With interesting PEOPLE	
15	To SAVE money by learning to do things for myself	
16	To learn to do VOLUNTEER or community work	

BARRIERS

1	Don't want to go alone	
2	Difficult to get BABYSITTING	
3	Too BUSY	
4	(DISTANCE) too far to go	
5	Not enough ENERGY	
6	My FAMILY would object	
7	FEES too high	
8	(KNOWLEDGE) I never find out about classes before they start	
9	It is difficult to find out where the classes are, etc.	
10	None INTEREST me	
11	Too OLD to learn	
12	Too many OTHER THINGS going on that I'd rather do	
13	I'd like to attend but there are just too many PROBLEMS	
14	Activities always seem to be at the WRONG TIME, etc.	
15	Don't want to be a STUDENT in a class again	
16	Can't always get TRANSPORTATION	

APPENDIX C

WHERE ADULTS ATTENDED

Although one of the assumptions in this study is that participation in an activity is of equal value no matter where the subject attends it is interesting to note where the courses were taken. The tally of the 189 courses taken by the 100 respondents is as follows:

Surrey School District Adult Education	63
Adult Education - Other School Districts	30
Recreation Departments	15
Community College	26
University Extension	3
Commercial (Private Enterprise)	23
YM-YWCA	8
Church	8
Labor	1
In-Service (Hospital)	5
Correspondence	3
Miscellaneous	4
	<hr/>
	189

Thus public school adult education accounts for half the courses, community colleges 14 per cent and private enterprise courses only 12 per cent. From the diversity of activities elicited from the respondents, it seems likely most part-time learning which took place over the five year period was recorded. But at the very least it is certain that this study includes much more adult education than that provided by publically supported educational institutions.