

That is, shoppers may have made better nutrition decisions with the graphical nutrient density format not because of the nutrient density information presented, but rather merely because the information was presented in a graphic format. Further, the differential effects of education found by Mohr, et al. may be partly a function of whether or not shoppers are utilizing the nutrient density and/or the graphic information in the graphic nutrient density format. For example, high school graduates may have generated more correct responses with the graphic nutrient density format simply by utilizing the graphic presentation of information rather than by using its nutrient density information. Because the Mohr, et al. study tested only the graphic nutrient density format against the current format, their results cannot be used to determine whether or not the nutrient density character of the graphical nutrient density format was responsible for the superior shopper performance in nutrition decision making.

In addition, a variable not reported in Mohr, et al. [4] may importantly affect the quality of shopper's nutrition decision making across label formats: whether or not shoppers have principal grocery shopping responsibility for the household. For instance, principal household grocery shoppers are probably more familiar with the current format and thus may perform more effectively and efficiently with the current format than with an unfamiliar alternative format (e.g., the graphical nutrient density format).

The purpose of the present paper is to report the results of a study designed to compare the effects of three nutrition label formats on the quality of consumer nutrition decision making: the current format, the graphical nutrient density format, and the simple graphic format (see Figure 1). Thus the present study replicates and extends the research of Mohr, et al. [4]. The effects of education level and principal shopping role on consumer nutrition decision making across the three label formats are tested.

METHOD

The present study utilized a survey instrument consisting of questions used by Mohr, et al. [4]. The questionnaire included items concerning consumers' food shopping patterns and their use of nutrition label information, questions tapping demographic characteristics, and three questions which asked shoppers to make nutrition decisions. Each of these latter three questions contained stimulus nutrition labels in one of three formats for three unidentified food products. The stimulus nutrition labels shoppers viewed in these three questions were in one of these three formats: current, graphical nutrient density, or simple graphic. In each of these three questions, shoppers were asked to

decide which food product best solved the nutrition problem presented in that question. Two of the label formats used in these three questions exactly replicated those used in Mohr, et al. (current and graphical nutrient density), while a third format was added for the present study: the simple graphic format (see Figure 1). The simple graphic format contains nutrient information identical to that in the current format--it merely portrays that information in a graphic, rather than a numeric, display. The instructions used in administering the questionnaire were identical to those employed by Mohr, et al.

Six supermarkets belonging to two large New England chains were selected for the study. At each supermarket, survey personnel asked shoppers to participate in a nutrition labeling survey as they passed the study area. Questionnaires, each containing one of the three nutrition label formats, were alternatively stacked and were handed out to shopper volunteers in order. While each shopper completed the final three nutrition items on the questionnaire, a researcher unobtrusively timed the shopper with a stopwatch.

RESULTS

Table 1 presents the mean number of correct responses to the three nutrition questions across label format conditions. The result of a oneway analysis of variance on the number of correct responses was significant ($F = 3.17$, $df = 135$, $p < .05$). *A posteriori* contrasts using Scheffe's procedure revealed that shoppers using the graphical nutrient density format had significantly more correct responses than did respondents using the current format. This finding is consistent with that of Mohr, et al. [4]. However, there was also a significant difference in the number of correct responses between shoppers using the simple graphic format and the current format. There was no significant difference in the number of correct responses between the graphical nutrient density format and the simple graphic format. These findings indicate that the improved nutrition decision making evidenced with the graphical nutrient density format may be primarily a function of its graphic presentation of nutrition information.

Table 1 also shows the mean time taken by shoppers to answer all three nutrition questions across label format conditions. The result of a oneway analysis of variance on time taken was significant ($F = 5.96$, $df = 135$, $p < .01$). *A posteriori* contrasts using Scheffe's procedure revealed that shoppers using the graphical nutrient density format took significantly less time to answer the questions than did respondents using the simple graphic format. Unexpectedly in the present study, that competing format was the simple graphic format. There were no

significant time differences between shoppers using the current format and either of the other two formats. Unlike Mohr, et al., shoppers in the present study did not take significantly less time with the graphical nutrient density format than with the current format.

TABLE 1. Mean Number of Correct Responses to the Three Nutrition Questions and Mean Time Taken Across Label Formats.

	Nutrition Label Format		
	Current	Graphical Nutrient Density	Simple Graphic
Number of Correct Responses	1.80 _a	2.26 _b	2.04 _b
Time (in minutes)	3.98	3.31 _c	4.40 _d
n	46	46	46

a,b p < .05 by Scheffe's procedure.

c,d p < .01 by Scheffe's procedure.

Table 2 presents percentage of correct responses on the three nutrition questions separately for two educational levels. While college graduates produced significantly fewer correct responses when using the current label format, the responses of those who have not graduated from college did not vary significantly across the three label formats. Unlike Mohr, et al. [4], shoppers in the present study who had graduated from college performed better using the graphical nutrient density format than the current format. It should be noted that among shoppers in both educational levels, there were no significant differences in performance between the graphical nutrient density format and the simple graphic format.

Table 3 presents the percentage of correct responses on the three nutrition questions separately for shoppers who have primary household grocery shopping responsibility and for those who either share such responsibility or for whom the responsibility belongs to some other household member. While shoppers who have primary grocery shopping responsibility produced significantly fewer correct responses when using the current label format, the responses of those not having primary shopping responsibility did not vary across the three label formats.

TABLE 2. Percentage of Correct Responses to the Three Nutrition Questions Across Label Formats, by Education Level.

College Graduates				
Nutrition Label Format				
		Current	Graphical Nutrient Density	Simple Graphic
	0	4.3%	0.0%	5.6%
Number of Correct Responses	1	17.4	17.4	11.1
	2	65.2	13.0	22.2
	3	13.0	69.6	61.1
n = 64				
p < .01 by chi-square test.				
Non-College Graduates ^a				
Nutrition Label Format				
		Current	Graphical Nutrient Density	Simple Graphic
	0	9.1%	0.0%	10.7%
Number of Correct Responses	1	31.8	22.7	25.0
	2	31.8	54.5	35.7
	3	27.3	22.7	28.6
n = 72				

^aHigh school graduates, some college, or trade, technical or business school.

DISCUSSION

The findings by Mohr, et al [4] that shoppers using the graphical nutrient density label format made better nutrition decisions than did shoppers using the current format was replicated in the present study. However, the present study also found that shoppers using the simple graphic format produced similar results. This finding provides evidence that the improved nutrition decision making in the graphical nutrient density format may be largely a result of the graphic presentation of nutrition information. The interpretive ambiguity inherent in the Mohr, et al. study now seems to have been clarified. It appears that it is the graphic nature of nutrition

label information presentation that produces improvement in the quality of nutrition decision making.

TABLE 3. Percentage of Correct Responses to the Three Nutrition Questions Across Label Formats, by Primary Household Grocery Shopping Responsibility.

Primary Household Grocery Shopping Responsibility: Self				
Nutrition Label Format				
	Current	Graphical Nutrient Density	Simple Graphic	
	0	6.7%	0.0%	13.3%
Number of Correct Responses	1	26.7	20.7	13.3
	2	50.0	27.6	33.3
	3	16.7	51.7	40.0

n = 89

p < .05 by chi-square test.

Primary Household Grocery Shopping Responsibility: Shared or Other				
Nutrition Label Format				
	Current	Graphical Nutrient Density	Simple Graphic	
	0	6.7%	0.0%	0.0%
Number of Correct Responses	1	20.0	20.0	31.3
	2	46.7	40.0	25.0
	3	26.7	40.0	43.8

n = 46

The conclusion of the Mohr, et al. [4] study that the graphical nutrient density format is a more effective aid to consumer nutrition decision making than is the current format must now be amended to indicate that the simple graphic format is an equally effective aid. This amendment has clear implications for policymakers considering changes in nutrition labeling regulations. The simple

graphic format has an advantage over the graphical nutrient density format in that it is less of a departure from the current format. The simple graphic format presents the same information as the current label in a graphic rather than a numeric format.

Somewhat surprisingly, the present study found that shoppers took less time to make nutrition decisions with the graphical nutrient density format than with the simple graphic format. Unlike the finding of Mohr, et al. [4], shoppers in the present study did not take less time with the graphical nutrient density format than with the current format. It is unclear why shoppers would take longer to use the simple graphic format than the informationally richer graphical nutrient density format. The graphical nutrient density format presents a fundamentally different kind of information from that found in the current format and the simple graphic format: it presents information about the relationship between amounts of particular nutrients in a food and the number of calories that food provides. Providing this additional nutrient density information appears to speed up consumer nutrition decision making.

For now, it seems a possibility that shoppers were able to use the information provided in the graphical nutrient density format more efficiently than the information in the simple graphic format to answer nutrition questions. Recalling that shoppers did not produce a greater number of correct responses with the graphical nutrient density format than with the simple graphic format, it might be proposed that the graphical nutrient density format improves the efficiency, but not the effectiveness, of nutrition decision making. A satisfactory explanation for why the graphical nutrient density format should improve efficiency but not effectiveness and why the simple graphic format should improve effectiveness but not efficiency must await further research. Such additional research should probably use a wider variety of nutrition decisions in order to provide evidence as to the generality of the proposition that the graphical nutrient density format improves the efficiency and the simple graphic format improves the effectiveness of nutrition decision making.

Before making changes in nutrition labeling regulations, policymakers may wish to consider the possible effectiveness-efficiency tradeoffs in selecting between the graphical nutrient density format and the simple graphic format. To make such a judgment at this time requires careful consideration of the true purpose(s) of nutrition labeling. To the extent that nutrition labeling is provided to help consumers make better (rather than merely faster) nutrition decisions, the simple graphic format would appear to have the edge.

Mohr, et al [4] did not attempt to explain their finding that high school graduates produced superior nutrition decisions with the graphical nutrient density format. Unlike the Mohr, et al. finding, shoppers in the present study who had graduated from college produced superior nutrition decisions with the graphical nutrient density and simple graphic formats. One possibility for this finding is that the graphical nutrient density and the simple graphic formats require a level of understanding of the spatial presentation of information that is more likely to be found among college graduates than among those who have not graduated from college. Another possibility is that the graphical nutrient density and simple graphic formats, as "new" stimuli, may have produced higher attention levels among college graduates (perhaps shopper viewed them as a "challenge"). Again, additional research is needed to provide an explanation for this finding. From a policy perspective, the central issue concerns who nutrition labeling can or should help. Research generally indicates that there is a tendency for nutrition knowledge and label usage to increase as educational level increases [3]. It would appear, based on the results of the present study, that implementation of either the simple graphic format or the graphical nutrient density format has the potential to improve the quality of nutrition decision making in large numbers of college educated consumers.

Shoppers in the present study who identified themselves as having primary responsibility for their household's grocery shopping produced better nutrition decisions with the graphical nutrient density and simple graphic formats. Despite the fact that these shoppers were presumably more familiar with the current format than their nonprimary grocery shopper counterparts, they still performed better with the competing formats. This might be a function of their degree of motivation or interest in nutrition. It also might be that their skills in using label information to make nutrition decisions are more finely honed, and that these skills carry over to the graphic formats. For policymakers hoping to improve the quality of nutrition decisions among consumers having primary household grocery shopping responsibility, the simple graphic format and the graphical nutrient density format both appear to have promise.

Finally, a brief note concerning future research on the effects of nutrition label format on consumer nutrition decision making. As was noted above, additional research is needed to increase understanding of several aspects of these effects. Most such research should probably be observational, rather than survey, in nature. Observational research, whether it is done instore or in the laboratory, will allow researchers to tap the nutrition decision making process in ways that surveys cannot do. For example, an observational study can enable researchers to

determine how it is that consumers use the simple graphic format more effectively and the graphical nutrient density format more efficiently than the current format.

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APPENDIX

A vertical line passing through the endpoint of the calorie bar in the graphical nutrient density format is intended to encourage consumers to compare nutrient densities across food products. Further, this format encourages consumers to select foods in which the nutrient bars pass to the right of the vertical line (i.e., foods for which the nutrient calorie ratio is greater than 1:1).

REFLECTIONS ON CUDE AND RUDD

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Research may be defined as the activity that provides a persuasive answer to an important question. As critic, of these research papers, I will seek to discharge my responsibilities to both consumers and producers of these papers. With the consumer as my client, I will ask (1) whether the authors have addressed important questions, and (2) to what extent they have provided persuasive answers. Addressing the author's needs as producers, I will suggest (1) avenues for the improvement of their research, and (2) directions for future research.

APPROPRIATE TOPICS

I salute the authors of the three papers in this session for selecting topics that are (1) interesting, (2) important, and (3) do-able.

Two of the papers involve replications of earlier research. I salute the authors of these papers for recognizing the important role that replication has in scientific inquiry. Often, one test is not enough to establish a result.

Brenda Cude's paper is a model of good writing and clarity of presentation. I doff my hat.

But I would suggest to Professor Cude a title that conveys its message more graphically, for example, "Informationally Imperfect Markets: The Path to Poverty." As Cude's data show, informationally imperfect markets can rob innocent or inept consumers of large chunks of their purchasing power.

THE MORRIS-CUDE MEASURE OF POTENTIAL LOSSES: A CRITIQUE

Ruby Turner Morris should be an ACCI and consumer hero/heroine: she was the first to drive home the still underappreciated truth that informationally imperfect markets are chaotic, characterized by near-zero correlations between price and quality and utterly resistant to simple rules of thumb [2].

Morris was also the first to provide us with a dollar estimate of "potential losses from haphazard purchasing" [3]. But her measure of potential losses is open to major improvements.

So, while replication is to be commended in general, I chide Brenda Cude for reproducing Morris's approach rather than improving it.

As her measure of potential loss, Morris chose the case producing the maximum loss possible. She compared the highest price paid for the poorest quality variety with (2) the lowest price paid for the highest quality, the quality estimates resting on CU's ratings. And Cude followed.

In my view, credibility and plausibility would have been improved by also measuring and presenting two more "conservative" measures:

1. The average price paid for all varieties less the lowest price paid for the highest quality.

--The rationale: The average consumer choosing both price and quality randomly would pay this price, on the average.

2. The average price for the worst quality less the lowest price paid for the highest quality.

--Here the consumer is assumed to fare "worst" only in the matter of quality, paying an average price for that quality.

Of course, these measures would yield lower estimates of potential loss. But to skeptics, these estimates might be more believable.

List Prices, Not Actual Prices

Consumers Union (CU), which serves the consumer so well in so many ways, serves consumers ill in the manner in which it provides information on price and quality. Price first.

Consumer Reports (CR), typically publishes the list price or manufacturer's suggested retail price for each of the varieties that it tests. Sometimes it publishes the price that "CU's shoppers paid" or comments that "discounts are widely available."

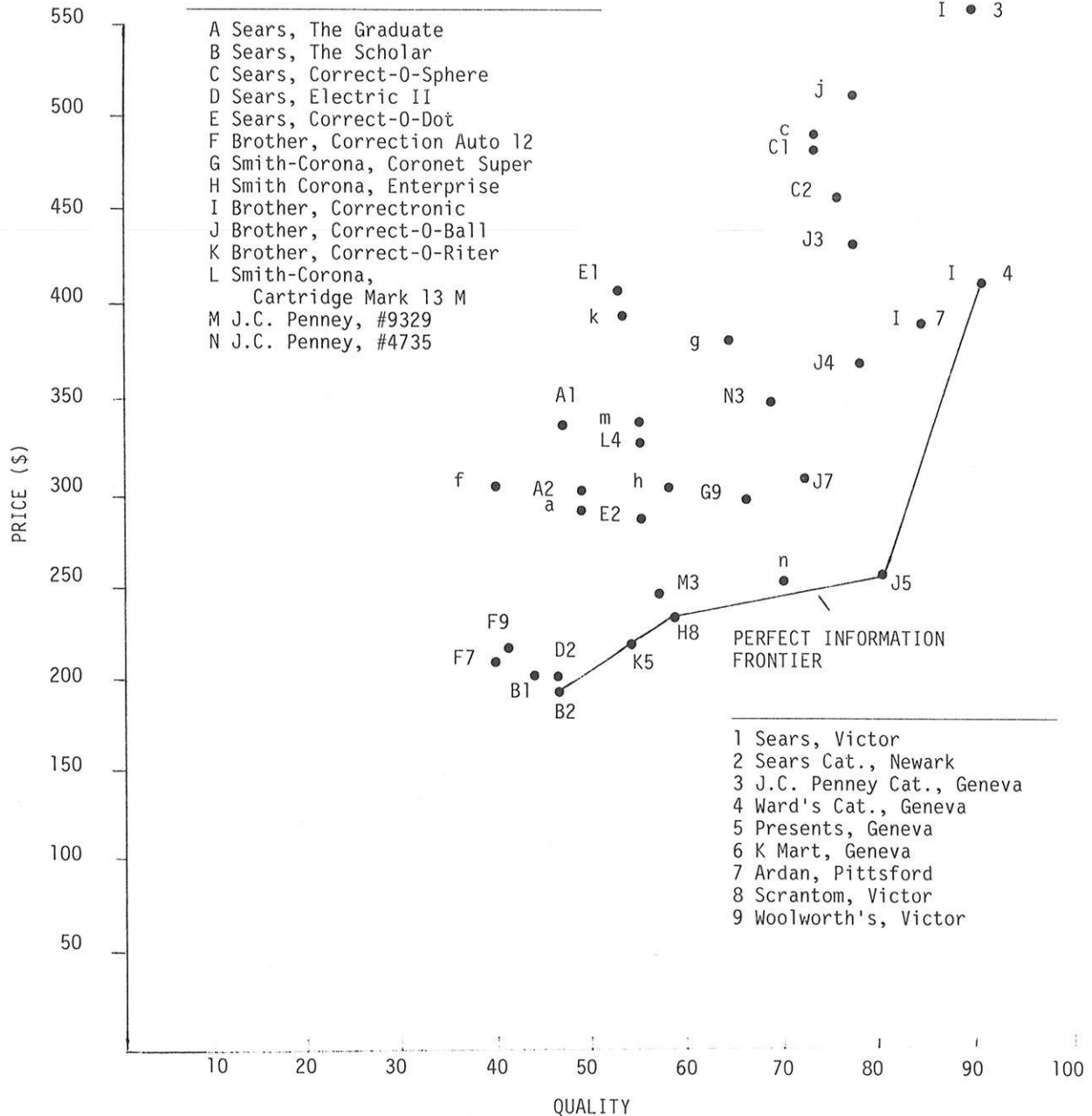
Brenda Cude, like Rudy Morris before her, relied on CR's list or manufacturer's suggested retail prices. In this critic's judgment, both Cude and Morris erred. They should have collected actual local prices.

Figure 1 makes the case. It depicts actual local prices, "suggested retail" prices as published by Consumer Reports (November, 1982, p. 552), and Susan Gover's quantification of quality data published in Consumer Reports for portable electric typewriters in a small town

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FIGURE 1. PRICES AND QUALITY FOR PORTABLE ELECTRIC TYPEWRITERS*
 Phelps, NY April 18-24, 1983

by Susan E. Gover



* Source for List Price: Consumer Reports, November 1982, p. 552.
 Lower case letters denote list price.

market centered in Phelps, N.Y.² Price and brand-model-retailer combination. Hence, both price and quality may take into account characteristics of retailers, e.g., locational convenience, helpfulness, etc. This is why quality scores plotted for identical brand-models, e.g., Typewriter I, may differ. Presumably Susan Gover found the characteristics of Ward's Catalogue Store in Geneva more attractive than those of Ardan in Pittsford. (Compare I4 with I7.)

The potential lesson of Figure 1 for the estimation of potential loss is that list prices may not represent true prices, and hence not be a valid measure of potential loss. In fact, in this particular case actual prices and list prices yield almost identical estimates of potential losses. But a single example is seldom persuasive.

What Brenda Cude should have done--and perhaps should do now--is to estimate the correlation between actual and list prices for a large, representative sample of products. The evidence thus obtained would help us judge whether the present estimates of potential loss are credible.

This chart should give pause to the staff of Consumers Union. Is there not some way that they can convey the dramatic differences between actual prices and list price instead of the bland warnings they now include? Why not a price-quality chart?

The Matter of Poor Quality

Losses from purchases of poor quality products are just as real as losses from paying too high a price. But they are difficult to quantify. For this reason the Morris-Cude measure of potential loss takes no account of losses due to the selection of poor quality brand-models.

Figure 1 expresses quality in the appropriate form: cardinally. That is, Typewriter J5 with a quality score of 80 is 38 percent better than Typewriter H8 with a quality score of 58 ($80/58 = 1.38$). Why is a cardinal measurement better? Because a consumer spends money that is cardinal, i.e., \$1 is twice as much as \$0.50; \$0.80 is 80 percent as much as \$1. If one spends cardinal money, it is rational to pose questions about quality in cardinal terms. Look again at Figure 1. A consumer possessing this chart might reasonably ask: instead of buying Typewriter H8 for \$240, it is worth spending \$10 more to buy Typewriter J5 for \$250? To answer his question, he must know by how much J5 is better than H8. The answer, as calculated above, is 38 percent.

²Susan E. Gover, who prepared this chart while an undergraduate at Cornell, is now a Cooperative Extension Agent in Wayne County, New York.

By contrast, the answer given by CR to the same question is highly unsatisfactory. CR tells the reader only that J5 is better than H8. It tells the reader nothing about the degree of betterness. This is especially galling to consumer economists because we know that CU's testing department calculates for each brand-model the cardinal (or numerical) quality score that Susan Gover has sought to reconstruct. The reason why CU publishes orderings of quality rather than numerical quality scores is their fear that readers may misunderstand numbers.³ The only exception to this practice is the numerical quality scores that CU has published over the last decade for audio equipment and food.

There are several challenges here, both to CU and to researchers. CU should again ask itself whether it is serving its subscribers-members well by concealing rather than publishing numerical quality scores. Further, I would suggest that CU would serve itself and its subscribers-members better by treating quality scoring as a scientific problem and inviting comment and scrutiny by the academic community, especially by those in a kindred organization like ACCI.

The quantification in dollar terms of losses from purchases of poorer quality poses an intellectual problem worthy of our best minds. It should be on the research agenda of many of us.

Meanwhile, I agree, limply, with Morris-Cude that their measure of potential loss understates losses because it takes no account of the poorer quality that haphazard purchases may yield.

For any readers wishing to know more about the details of how CU tests and scores quality, see [1] and [6]. Though published some time ago, CU's testing and scoring methods have remained unchanged. [1] was reviewed by CU's Technical Director and department heads before publication.

RUDD

Joel Rudd's article poses three issues, all procedural: (1) Reproducibility and Clarity of Explanation, (2) Multiple Publications from the Same Study, (3) Careful Statement of Claims.

Reproducibility and Clarity

Scientific writing requires clarity in explanation and completeness of description so that (1) readers can understand the experiment/survey/analysis under discussion, and (2) readers could, if so moved, reproduce the study and its results. Only with reproduction/replication can a result be established firmly.

³This statement is based upon numerous conversations the author has had over the years with Irwin Landau, Editorial Director of CU.

As to clarity, examine Figure 1 in Rudd's paper, as presented in the paper distributed at ACCI, a colleague and I--both consumer economists but neither versed in nutritional science--were unable to grasp the essential difference between (1) the simple graphic format, and (2) the graphical nutrient density format. We noted that the graphical nutritional density format included (1) information on calories, and (2) a vertical guideline denoting the 5 percent RDA level. We wondered how such minuscule differences could give rise to the dramatic differences in understanding recorded in Table 1. It was only through Joel Rudd's verbal presentation at ACCI that we understood the essential difference in format.

By agreement with Joel Rudd, the paper published here will seek to explain fully these essential differences.

Understanding and reproducibility also demand the publication of the exact wording of questions from which data are obtained. This is because the distribution of responses to questions is a function of the exact wording of the questions asked. Phrased more graphically, a self-seeking survey researcher can obtain almost any distribution of results he/she wishes by altering the wording of a question! See Shuman and Presser [5] for a documentation of some of these effects. For this reason I criticize Joel Rudd for failing to reproduce in his original paper the exact wording of the three questions giving rise to the data in Tables 1, 2, and 3. By agreement with Joel Rudd, the paper as published here makes good this fault.

Multiple Publication from the Same Study

Joel Rudd's article is not the first to be published from his study. Another article, suitably tailored in analysis and content to the different audience of the Home Economics Research Journal, has just been published [4]. The article was received by the Editors on November 7, 1984 and accepted for publication on October 6, 1985. I reprove Joel Rudd for not leveling with the ACCI Conference Chairman, this critic, and those attending ACCI by disclosing the existence of the other article.

But his behavior raises the entire issue of the appropriateness of the publication of similar papers in different journals. Our field, being multi-disciplinary and applied, suffers the disadvantages of segmentation by discipline and specialized interests. We probably do not need a survey to establish that many readers of JCA are not readers of (say) the Home Economics Research Journal, the Journal of Consumer Research, or the American Economic Review. If this is true, it follows that the maximum distribution of knowledge is advanced by multiple publication of the same or similar articles in different journals, suitably tailored to the needs of each audience. It goes without saying, however, that the author should inform editors and readers as to alternative outlets, either past or in process.

Careful Statement of Claims

Scientific writing requires care and precision in description. In stating the purpose of his study, Joel Rudd writes (p. 6): "The purpose of the present paper is to report the results of a study designed to compare the effects of three nutrition label formats on the quality of consumer nutrition decision-making. . . ." [Underlining mine.] Wrong! This study reports on respondent's ability to answer questions after they have been asked to examine nutrition information contained in mock nutritional labels under three alternative formats. It does not explore whether the subjects would examine the labels on their own volition. It does not study how well information is transmitted from the three formats under real life conditions. Hence, Rudd's study does not focus on decisions, instead it deals with the ability of consumers to assimilate information from three formats.

We--and Joel Rudd, too--hope that consumers will read the labels and we hope that the labels, if read, will be as effective under real life conditions as they were under the highly artificial conditions of the experiment.

Rudd's summary statement in the Abstract was worded more carefully: "Findings indicate that supermarket shoppers are able to make nutrition decisions most effectively with the simple graphic" [Underlining mine.] The Abstract is the most important part of any paper. I commend Joel Rudd's conservatism here.

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COMMENTS ON "COMMUNICATING PERFORMANCE INFORMATION TO CONSUMERS OF CLOTHING: AN ECONOMIC ANALYSIS," by Wanda Sieben and Jean Kinsey

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This paper provides a useful overview of the literature dealing with labelling, particularly care labelling for clothing. Although the literature is not extensive, there is some descriptive work and, in addition, there is some related literature that provides a framework for analysis of the impact labelling might have on consumers and the market for clothing. This paper identifies this literature and adapts the Kinsey, Roe, and Sexauer elaboration of the Peltzman model to this problem.

The disappointing aspect of this paper is that it provides no empirical work. The Kinsey, Roe, and Sexauer model predicts that there is some consumer surplus loss associated with misleading information or information which is not complete. Sieben and Kinsey argue that labelling in clothing often leads to misunderstanding or false expectations by consumers. However, before many resources are used to correct this problem, it is important to know how important it is. It may be substantial or it may be quite limited. The empirical work required to evaluate the size of the problem remains undone.

The size of the consumer surplus loss associated with misinformation in this case may be limited because of the role of repeat purchases and brand recognition in clothing. Sieben and Kinsey point out that brand recognition has been important in these products, sometimes serving to provide guarantees of quality. If this is true, and if label information misinforms or misleads consumers, manufacturers will surely feel the effects of this in future sales. It might be fruitful to build this into the model itself so that its effects can be predicted.

Labelling is an important topic in consumer economics. Much of our consumer protection policy is designed to inform consumers through labelling. Because this is true, more empirical work is needed to evaluate the extent to which labelling truly provides information.

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STRESS FROM FINANCIAL PROBLEMS AND WAYS OF COPING:
IMPLICATIONS FOR FAMILY FINANCIAL COUNSELORS

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ABSTRACT

A random sample of 607 Washington residents was interviewed to identify sources of stress and methods of coping. In this paper the authors describe and compare the group of people who indicated that financial problems are causing them the most stress with the group identifying other problems as their greatest cause of stress. Chi-square tests show four financial and one other source of stress to be significantly related to the first of these groups. Two sources of stress were significantly related to the group reporting other problems. Five ways of dealing with stress were significantly related to the reporting of financial problems as the greatest source of stress. Implications for financial counselors are discussed.

INTRODUCTION

It is generally assumed that families are under more stress today than in the recent past. That stress comes from many different sources. The divorce rate has more than doubled in the last two decades and the number of teen pregnancies has tripled since the early 1970s. Currently, one out of four families with children under 18 is headed by a single parent [13]. Nearly half of the families living below the poverty line are maintained by women [12]. Dual-worker and dual-career couples are no longer in the minority, and the problems of time pressures and inadequate day care concern these as well as single-parent families. The extent of family violence shocks the nation.

There is a great deal of uncertainty about the direction of the American economy. Many states have suffered tremendous economic upheavals and pockets of persistent high unemployment. High interest rates and inflation have created additional problems. These factors and others have contributed to stress in American families.

As individuals progress through the life cycle, some events such as setting out on one's own or the transition to parenthood are predictable, or normative crises. Stress from unanticipated experiences such as unemployment, illness, or divorce, described by McCubbin as nonnormative events, places the individual or family in a state of instability [4,5].

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People use a number of coping strategies as they deal with the instabilities and resulting stress they are feeling. Some of those coping strategies are considered to be productive as they contribute new information, help reestablish an internal balance, or reorient the individual to the problem situation. Other coping strategies, including various defense mechanisms, are non-productive or even destructive in their effects on the individual or the affected family [15].

Coping strategies may be related to the problem which individuals identify as causing the most stress in their lives. Are certain coping strategies more likely to be used by persons experiencing stress from unemployment or financial problems? Are these strategies useful for coping with such problems?

Financial counselors could be more effective when working with persons experiencing stress from financial problems if they knew sources of that stress and the methods those persons use to cope with their stress. Counselors could then use counseling methods to provide an environment for reinforcement of more effective coping strategies or promotion of change from the less effective or destructive coping techniques.

In this paper the authors will describe and compare a group of persons who indicated that financial problems are causing the most stress in their lives with a group of persons identifying other problems as their greatest cause of stress. Specific sources of stress will be examined as will methods of coping with stress. Tests of significance will be applied to determine if there are significant differences between the groups of respondents with respect to sources of stress, means of coping, and demographic characteristics.

METHODOLOGY

Interviews

A statewide sample of Washington residents was interviewed by telephone during December 1984 and January 1985. Interviews were conducted utilizing a Computer Assisted Telephone Interviewing (CATI) system, and Random Digit Dialing (RDD). To give every adult an equal chance to respond, the person over 18 who had had the most recent birthday was selected for the interview [3]. Interviews averaging 20 minutes were completed with 607 individuals, or 67% of those asked to participate.

TABLE 2. Characteristics Of Sample By Respondents' Reporting Of Their Greatest Cause Of Stress.

Characteristics	N	Financial	Other
		Problems(%)	Problems(%)
<u>Age: $X^2 = 10.90 (.03)$</u>			
18-29	178	24.6	75.4
30-39	159	22.9	77.1
40-49	64	13.4	86.6
50-65	103	15.0	85.0
66-89	48	8.1	91.9
<u>Sex: $X^2 = 2.10 (N.S.)$</u>			
Male	265	22.1	77.9
Female	288	17.2	82.8
<u>Children: $X^2 = 5.30 (.071)$</u>			
No Children	151	21.3	78.7
Children, none at home	134	12.6	87.4
Children at home	255	21.9	78.1
<u>Employment Status: $X^2 = 24.34 (.0001)$</u>			
Employed	357	20.4	79.6
Unemployed	29	50.5	49.6
Retired	80	11.8	88.2
Student/Homemaker	85	12.0	88.0
<u>Income: $X^2 = 16.79 (.002)$</u>			
Less than 10,000	82	30.5	69.5
10,00 to 19,999	130	23.3	76.7
20,00 to 29,999	111	22.0	78.0
30,000 to 39,999	95	12.4	87.6
40,000 or more	103	10.0	90.0
<u>Housing: $X^2 = 9.02 (.003)$</u>			
Own Home	329	14.9	85.1
Rent	198	25.5	74.5
<u>Location: $X^2 = .008 (N.S.)$</u>			
East (primarily rural)	141	19.3	80.7
West (primarily urban)	412	19.6	80.4

¹People living in Eastern Washington and women were overrepresented in the sample. Data presented in this paper are weighted so they accurately represent the state population on these two characteristics.

stress decreases. Lastly, almost twice as many renters as owners are most concerned with financial problems.

Sources of Stress

Responses for moderate stress and great stress were combined for each of the twenty items representing sources of stress (Table 3) and then ranked from highest to lowest for each group. "Concern for your child or children" is the greatest source of moderate or great stress for both groups, and the twentieth ranked item for both was "a household member's use of alcohol or drugs."

Table 4 reports chi-square tests for the seven items exhibiting a significant relationship with the greatest cause of stress. The four financial items (1) "having enough income to pay bills on time," (2) "your overall financial condition," (3) "unemployment in the household," and (4) "the security of your job" were more likely to be a source of stress for people whose greatest cause of stress is financial problems. A fifth item, "having reliable transportation to get places you need to go" was also associated with the group experiencing financial problems. Respondents indicating other problems as the greatest cause of stress were more likely to report "your own health" or "the death of a friend or relative" as sources of stress.

Methods of Coping with Stress

Following the questions regarding sources of stress, the respondents were told: "One of the most important things we hope to learn from this study is the things people do to relieve any tension, nervousness, or stress they feel in their daily lives. I would like to read to you a list of things people sometimes do to handle stress. For each one I would like to ask whether you frequently, sometimes, seldom, or never use it to deal with stress you are feeling." The results of this question appear in Table 5.

There are striking similarities between the two groups in the ways persons deal with stress they are feeling. The first three items were ranked identically in terms of frequent use by respondents. Some differences are evident when the percentage of respondents frequently using items ranked 5 to 11 are examined.

Chi-square tests of significance are reported in Table 6. Persons who report financial problems as the greatest cause of stress are significantly more likely to frequently (1) "smoke," (2) "eat something," (3) "get angry," and (4) "yell" than are persons who report other problems as the greatest cause of stress. On the other hand, persons who report problems other than financial problems are more likely to "get exercise or go jogging" than those persons experiencing financial problems.

Instrument

The instrument consisted of questions about problems in respondents' communities, the degree of stress experienced personally from 20 different sources of stress and what caused them the most stress overall. Stress was defined to the respondents as "...pressures that cause people to feel upset, tense, nervous or worried." Respondents were asked to what extent they used 20 different methods of dealing with stress, and their most effective way of dealing with stress. The instrument concluded with demographic questions.

Determining the Greatest Cause of Stress

This paper focuses on financial problems as the greatest cause of stress in comparison with all other problems as the greatest cause of stress. The question used to determine the "greatest cause of stress" occurred at the middle of the interview.

Respondents first answered general questions regarding problems of families in their communities and stress in their own lives. The question which followed was "Next I would like to read to you a list of concerns that people have mentioned to us as important causes of stress in some people's lives. For each one, please indicate whether it causes you no stress at all, a little stress, a moderate amount of stress, a great amount of stress in your daily life, or whether it does not apply to you." The data on these twenty items will be reported later from Table 3.

Next they were asked "Thinking of all of the things that might be stressful to you, regardless of whether they were on the list I just read, what is the single most important thing causing any stress you are feeling in your life?" The advantage of this question structure and sequence was that it encouraged respondents to think for several minutes about the possible causes of stress in their lives before being asked to pinpoint the single most important cause. Hence, a more thoughtful answer could reasonably be expected.

TABLE 1. The Single Most Important Thing Causing Stress.

Category of Stress	Total	Percent
Concerns about self	126	21.4
Parenting	62	10.6
Family relations	80	13.7
Financial problems	108	18.4
Work or school	88	14.9
Other concerns	90	15.3
No stress reported	34	5.7
	588	100.0

Data from the open-ended question were coded into common categories as presented in Table 1. Financial problems, including those of unemployment, were indicated as the greatest source of stress by 18% of the 588 persons who answered the question, or 19.5% of those reporting stress from any sources [1,3].

FINDINGS

Persons designating financial problems were compared with the group of respondents who identified any other problem as their greatest cause of stress. It would be erroneous to assume that persons in the "other problems" group were not experiencing any stress related to financial problems or that persons with "financial problems" were only experiencing stress of that kind. It is assumed people responded with their greatest cause of stress.

Sample Characteristics by Greatest Cause of Stress

The portion of the sample expressing financial problems as their greatest cause of stress was examined to determine if there were differences between that group and persons expressing other problems. Chi-square tests of significance (Table 2) reveal that there are significant differences between the two groups of respondents in some characteristics. There is an inverse relationship between age of the respondent and the likelihood of financial problems being the greatest cause of stress; i.e., younger people are more likely than older people to express financial problems as the greatest source of stress.

Women commonly receive lower incomes than men, and financial stress is associated with separation, divorce, and single parenthood [2,9]. In this study neither the sex of the respondent nor their marital status was significantly associated with financial problems as the greatest cause of stress.

There is a weak association ($p = .07$) between financial problems as a cause of stress and the presence or absence of children in the home. Respondents with children, but with none living at home, were least likely to mention financial problems as their greatest cause of stress. This may also be because they are likely to be older.

Three economic factors also display significant differences between the two groups: employment status, income, and housing tenure. Surprisingly, only 50% of unemployed respondents indicated financial problems as the greatest cause of stress. Only 12% of retired persons were so stressed. An inverse relationship exists with income, that is as income increases the percentage of respondents mentioning financial problems as the greatest cause of

TABLE 3. Sources Of Moderate And Great Stress By Persons With Financial Problems As The Greatest Cause Of Stress And Persons With Other Problems As The Greatest Cause Of Stress.¹

Source Of Stress	Financial Problems As Greatest Cause Of Stress		Other Problems As Greatest Cause Of Stress	
	%	Rank	%	Rank
Concern for your child or children	72.0	1	65.4	1
Having enough income to pay bills on time	71.9	2	38.6	9
Your overall financial condition	70.1	3	40.5	8
Unemployment of someone in your household	57.1	4	32.3	11
Finding enough time to do everything you are expected to do	55.6	5	54.4	2
Concern for your spouse or living partner	53.7	6	43.0	7
Concern about protecting the natural environment	48.9	7	47.1	5
Concern about an aging parent or parents	42.7	8	48.1	4
Other aspects of your job	42.3	9	50.8	3
The security of your job	38.5	10	22.6	15

¹Items ranked from 11 through 20 for the group with financial problems were: concern about other close relatives or friends, other national or international problems you hear about in the news, having reliable transportation to get to places where you need to go, the threat of nuclear war, concern about having something stolen or being a victim of some other crime, you own health, living in a house or residence that does not meet your needs, a recent death of a friend or relative, illness or injury to someone in your household, and a household member's use of alcohol or drugs.

TABLE 4. Significant Differences In Sources Of Stress By Persons With Financial Problems As The Greatest Cause Of Stress And Persons With Other Problems As The Greatest Cause Of Stress.

GREATEST CAUSE OF STRESS	SOURCES OF STRESS						
	Having Enough Income to Pay	Overall Financial Condition	Unemploy- ment in Household	Security of Your Job	Own Health	Death Friend/ Relative	Reliable Transport- ation
<u>Financial Problems (%)</u>							
Great stress	37.0	32.9	32.0	15.0	5.9	4.3	11.9
Moderate stress	35.0	37.2	25.2	23.5	19.9	15.3	17.9
A little stress	16.6	21.9	16.1	32.0	27.8	5.1	21.2
No stress	11.5	8.0	26.8	29.5	46.4	75.3	56.8
<u>Other Problems (%)</u>							
Great stress	18.7	9.3	13.4	8.6	9.5	10.3	6.3
Moderate stress	19.9	31.2	18.9	14.1	13.6	9.8	11.6
A little stress	20.7	29.2	18.0	21.4	43.8	10.6	19.7
No stress	40.7	30.3	49.7	56.0	33.1	69.2	62.4
X ² p (3 d.f.)	43.48 .0001	53.85 .0001	16.22 .001	15.62 .001	13.28 .004	9.10 .028	8.98 .03

TABLE 5. Frequently Used Ways To Deal With Stress By Persons With Financial Problems As The Greatest Cause Of Stress And Persons With Other Problems As The Greatest Cause Of Stress.¹

Ways Of Dealing With Stress	Financial Problems As Greatest Cause Of Stress		Other Problems As Greatest Cause Of Stress	
	%	Rank	%	Rank
Talk to a friend or relative about the problem	41.0	1	49.8	1
Joke or use humor	40.4	2	44.5	2
Try to change what you say or do so the stressful situation does not occur again	35.9	3	35.7	3
Keep your feelings to yourself so others do not know you are stressed	34.7	4	34.3	5
Smoke a cigarette	31.0	5	17.2	8
Meditate, pray or read religious material	30.1	6	29.7	6
Eat something	28.9	7	16.0	9
Get exercise or go jogging	28.8	8	35.3	4
Go somewhere to be alone	21.7	9	20.8	7
Get angry	21.5	10	15.1	10
Yell at someone	17.4	11	8.4	14

¹Items ranked from 12 through 20 for the group with financial problems were: spend money, try to get others to change, talk to a professional such as a counselor or doctor, cry, have a drink of beer, wine, whiskey, or something like that that, simply give up and not do anything, take a tranquilizer or other medication, hit something or someone, and talk to a stranger about the problem.

TABLE 6. Significant Differences In Ways People Deal With Stress By Greatest Cause Of Stress.

GREATEST CAUSE OF STRESS	WAYS OF DEALING WITH STRESS				
	Smoke	Eat Something	Exercise	Get Angry	Yell
<u>Financial Problems (%)</u>					
Frequently use	31.0	28.9	28.8	21.5	17.4
Sometimes use	2.9	27.2	23.7	49.4	26.7
Seldom use	2.9	16.9	25.6	23.2	29.6
Never use	63.3	27.1	21.9	5.9	26.3
<u>Other Problems (%)</u>					
Frequently use	17.2	16.0	35.3	15.1	8.4
Sometimes use	9.6	31.4	27.4	40.0	26.7
Seldom use	2.6	20.2	14.7	32.5	30.2
Never use	70.6	32.4	22.7	12.5	34.8
χ^2 (3 d.f.)	13.60	9.61	7.64	9.77	8.87
P	.003	.02	.05	.021	.031

DISCUSSION AND IMPLICATIONS

Financial counselors are instructed to "understand the person with the problem" in order to be effective in their work with persons experiencing financial stress [7,8,10,11,14]. This study provides useful information about financially stressed Washington families, and it may also provide insights for financial counselors in other states.

Financial problems are the greatest cause of stress for 18% of the sample of Washington households. This finding, based on responses to an open-ended question, is validated by a related finding to a close-ended question. Specifically, those who mentioned financial problems as their greatest cause of stress were significantly more likely to report "[not] having enough income to pay bills on time," "overall financial condition," "unemployment in the household," "security of the job," and "having reliable transportation" as sources of stress. Respondents experiencing stress from financial problems are more likely to be young, have lower incomes, and live in rented housing.

Half of the unemployed persons in this study indicated that financial problems were their greatest cause of stress. This group may be made up primarily of persons who are especially vulnerable to the effects of the loss of their job. For example, people who are located in areas with high unemployment, have heavy mortgage or other credit obligations, have children to support, and have few other resources to call on find it especially hard to deal with financial stress [6, p. 151].

The other 50% of unemployed respondents who report other problems as their greatest cause of stress may fit into two other categories with regard to financial stress. First, persons may be described as having "readjustive invulnerability." That is, they may be able to muster personal resources such as savings or the employment of another family member. They may also be able to rely on community resources such as of AFDC or unemployment compensation so that they are able to prevent or minimize stress from unemployment. Alternatively, some persons who are experiencing unemployment may be "invulnerable." They are able to resist the pressure of unemployment without experiencing stress because they expect to find employment soon [6, p. 151]. Thus, it should not be assumed that financial problems are the greatest source of stress faced by every unemployed person in the sample.

Persons experiencing financial stress use several methods to cope with the stress they are feeling. They are equally as likely as other Washingtonians to talk with others about problems, joke or use humor, try to change themselves so the stressful situations will not occur again, or keep feelings to themselves. These coping strategies offer counselors and

their clients the potential to gather more information about the problem, to allow time to reorganize oneself, or to plan other ways of dealing with stress [15].

Results of data analysis also indicate that persons experiencing financial stress are significantly more likely to smoke, eat something, get angry, or yell at someone as a way of dealing with stress. Expressing anger and yelling both have the potential for releasing tension and thus freeing the person to begin working on the problem in a more productive way. The negative aspects of these two coping behaviors may, however, overshadow other coping strategies, especially when one considers the object of the anger or yelling. Anger may also be felt, but not expressed. Anger which is internalized may short-circuit client and counselor plans and lead to further frustration or depression.

Smoking and eating, as diversions, could provide for a "strategic withdrawal" to gather strength for later action. As compulsive behaviors they may become defense mechanisms which inhibit or block constructive ways of adaption to stress.

Understanding clients implies sensitivity and acceptance of their situation in a nonjudgmental way. It is important for counselors to determine if the financial problems are the result of external factors beyond the clients' control or if personal spending habits are the problem. Some persons may be experiencing financial stress through no fault of their own. For example, an aluminum plant cuts back on its work force, a lumber mill closes down due to lack of demand for its product, or farm prices fall below the cost of production. Those persons are likely to feel out of control in the situation. Responses of yelling and anger may be expressions of true frustration by persons who have been effectively adapting to change before unemployment took place. Acceptance of anger as a valid expression of stress can lead to the development of more effective coping strategies. Alternatively, some financial stress is the result of a lack of self control or excessive spending. Counselors and clients may be able to work more effectively on problems the client can control. In either case, if the client or family asserts "it's not my fault," little progress can be made.

Talking with "a professional such as a counselor or doctor" is a productive coping mechanism, but only 6% of the respondents report seeking professional help frequently. Those persons who do reach the stage of seeking help need to have their stress recognized. This acknowledgment of stress will enable them to move on to problem solving that will help create order, enhance self-esteem and convey hope for the future.

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SATISFACTION/DISSATISFACTION
WITH FINANCIAL MANAGEMENT AMONG MARRIED STUDENTS

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ABSTRACT

This study was designed to determine the relative importance of budgeting, record keeping, financial preparedness for emergencies, debt-to-income ratio, changes in income and saving assets and bill payment problems in explaining satisfaction/dissatisfaction with financial management practices among married students. Data were collected from 184 wives in student families living at Iowa State University Housing Community. Multivariate regression was used to analyze the data. The findings indicate that perceived usefulness of budgeting, keeping track of cancelled checks, and financial preparedness for small emergencies were more strongly related to satisfaction/dissatisfaction with financial management practices among married students than several other financial management practices.

INTRODUCTION

The United States, and indeed the world, is faced with the problem of scarce resources. No society has enough resources to satisfy everyone's wants and desires. One of the most important resources is money. The scarcity of money creates the need for allocation decisions and attempts to maximize satisfaction while minimizing one's resource expenditures. Achieving a pattern of consumer spending that provides maximum satisfaction depends on money management practices. Appropriate money management procedures can become powerful and effective tools in helping individuals and families achieve the things they really want and in freeing them from daily worries and problems of mismanaged money. Money management is a system of planning and implementing based on expected income. The tool for money management is called a budget and the process is called budgeting. A budget is a plan for allocation of available resources among various needs and wants. Budgeting entails the monitoring and controlling of expenditures in order to achieve goals set in financial planning [1, 3, 9, 12].

Money management is central to successful marital relationships. Unfortunately, according to a nationwide survey of American families conducted by Yankelovich [19], about 54 percent of these families would be classified as those who argue a lot about money. Yankelovich stated that families quarrel most frequently about overspending, poor money management techniques and the inability to keep track of where the money goes.

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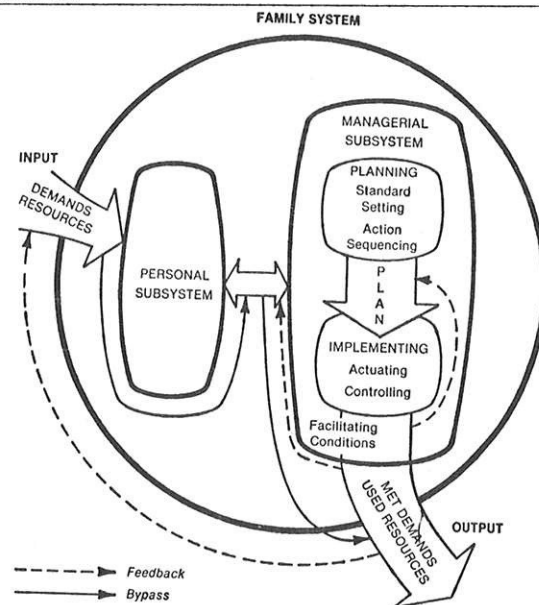
Young married students typically have limited financial resources and low levels of income. Even under these limiting conditions, however, sound financial management techniques can serve as effective tools in helping married students optimize their financial goals and the standard of living they desire to achieve. The purpose of this study is to determine what factors contribute to satisfaction/dissatisfaction with financial management techniques among married students.

CONCEPTUAL FRAMEWORK

Deacon and Firebaugh [5] developed a systems framework for home management to provide a conceptual tool for understanding the interactions between the personal and the managerial subsystems of the family. The personal subsystem deals with interpersonal relations and personal development of the family members.

Figure 1 [5, p.31] shows that the major components of the managerial system are "inputs," "throughputs," and "outputs." Managerial inputs include demands (goal and events) and resources. Goals are value-based objectives that give direction and orientation to managerial actions; values are meanings related to what is desirable and has worth to family members [5, p.29]. Events are described as unanticipated or low-probability occurrences that require action [5, p. 228]. Finally, resources are means for meeting family demands and may be either material as money and durable goods or human as knowledge and abilities of family members.

FIGURE 1. Family System with Managerial Subsystem Emphasis.



Managerial throughputs consist of planning and implementing. Planning is defined as a series of decisions concerning standards and/or sequences of action [5, p. 225]. Standard setting is the goal clarification and resource assessment needed to specify the quality and/or quantity of what family members desire in attempting to reconcile resources with demands [5, p. 33]. Sequencing refers to ordering activities or tasks; it is the order in which activities will be completed. Implementing is defined as actuating standards and sequences and controlling the actions [5, p. 35]. Actuating means putting the plan into action. Controlling is the checking of actions and outcomes for conformity to plans and, if necessary adjusting standards or sequences [5, p. 227].

Outputs of the managerial system are referred to as met demands and used resources which result from transformation in the managerial system in response to demands and resource inputs [5, p. 35]. Met demands are the output from managerial action initiated by goals and events. It is the satisfaction and meaning gained from accomplishing goal and event demands. Used resources component of output is the change in the stock of available means. Resources may be reduced, exchanged, or increased, depending upon the managerial philosophy of the family members. Feedback about the results of the managerial system re-enters the system as inputs and may lead to changed in throughput and/or output [5, p. 228].

In the present study, the income and savings assets of married students are considered as inputs. Budgeting, record keeping, debt-to-income ratio and bill payment problems are considered as throughputs. Financial preparedness for emergencies, achievement of financial goals, attainment of the desired standard of living and satisfaction/dissatisfaction with financial management are considered as outputs.

PREVIOUS RESEARCH

Little if any research has been conducted on satisfaction/dissatisfaction with financial management to our knowledge. Previous studies of financial management have been concerned with such factors as income, role of the family financial officer, debt problems, net worth and money management practices, but none about the satisfaction/dissatisfaction of married partners with the money management practices themselves.

For instance, a number of researchers have reported on the influence of income on financial management. Gross and Zwemer [7] indicated that high-income families made more written plans than middle-income families though three-fourth of the families in their sample had no definite spending plans at all. Maloch and Weaver [12] found a positive relationship between income stability and family planning behavior. They noted that a stable income allows families to make either short or long range plans while a fluctuating income lends itself much more readily to short range planning. In a study of financial problems of urban families, Williams

[17] reported that families with steady income had fewer and less severe financial problems than those with fluctuating income.

Ferber and Lee [6] examined financial managerial behavior among 230 couples in Illinois. The findings of their research showed that immediately after marriage half of the couples made joint financial decisions. Yet interestingly, after one year of marriage only 37 percent of the couples made joint decisions, with the shift toward the wife becoming the family financial officer (FFO). Ferber and Lee noted that when the husband was the FFO, the couple saved a higher proportion of their income and had more savings and assets in the form of real estate and negotiable securities. Wright [18] studied debt problems of 2800 families who used the Family Counseling service in Syracuse, New York between 1972 and 1976. In contrast with the Ferber and Lee [6] findings, Wright found that a large proportion of the families with serious debt problems also had the wife as the FFO.

Leibhart, Barnett and Heck [2, 8, 11] reported on the effect of managerial behavior on financial problems of individuals and families. Leibhart [11] examined financial management practices of 60 bankrupt and 60 non-bankrupt men in Nebraska. Leibhart found that the non-bankrupt group made more complete plans and planned for longer periods of time than the bankrupt group. Barnett [2] indicated that families with low level of financial management functioning in her study had a larger debt ratio, and a longer length of debt than those with higher level of financial management functioning. Heck [8] reviewed research on consumer debt problems over the past two decades and found that households with debt problems were more likely to have high debt-to-income ratios.

Deacon and Firebaugh [4] stated that household net worth influences financial management practices of families. A low net worth would indicate few material resources, and a recognition of this may motivate families to engage in careful financial planning. However, Sahlberg [15] reported that families with high levels of net worth in her sample tended to formulate more spending plans. Sahlberg also found that the family life cycle stage had a negative relationship on the formality of spending plans, suggesting that families in older stages engage in less formal financial planning.

Mullis and Schnittgrund [14] and Schnittgrund [16] studied money management practices of 199 low-income families in Phoenix, Arizona. They found that families with spending plans were more satisfied with their financial management practices than those without spending plans. Heck [9] compared managerial behavior of 195 households and found that planners were more satisfied than non-planners with their families output level.

In summary, the review of literature indicates that though many studies have focused on the practical aspects of financial management practices, none have looked at satisfaction/dissatisfaction among individuals and families with financial management

practices themselves. The present study was designed to examine such aspects of financial management as relative importance of budgeting, record keeping, financial preparedness for emergencies, debt-to-income ratio, changes in income and savings assets and bill payment problems in explaining satisfaction/dissatisfaction with financial management among married students.

METHODOLOGY

A random sample of 258 households was drawn from the 1285 student families in the Iowa State University Married Students Housing Community. An interviewer delivered a questionnaire on money management techniques to the wife of each couple in person, explained the procedure for answering it, and picked up the completed questionnaire after three days. A follow-up phone call was then made to each wife whose questionnaire was incomplete to obtain missing information. Ten percent of the households could not be reached and an additional six percent refused or failed to return the questionnaire. Of the remaining eighty-four percent, households were eliminated from the sample if the wife was a foreign student or a single parent. The final sample consisted of 184 American married student couples.

Included in the questionnaire were items which tapped the spouses' satisfaction with various aspects of their financial management schemes, their approach to budgeting and use of credit, their debt load, and their financial preparedness for emergencies. Additional questions gathered information about decision making and decision implementing patterns of the spouses. Questions about other socioeconomic and demographic characteristics of the spouses were also included.

Variables

The dependent variable of this study is satisfaction with financial management. It was obtained through the wife's response to the following question: "What is your overall satisfaction with your financial management techniques?" Response categories formed a 7 point scale which ranged from very dissatisfied, to neutral, to very satisfied.

The major independent variables in this study are financial management characteristics. On the basis of previous research 15 items were selected to represent financial management (See Table 1). Factor analysis of these items uncovered 6 factors which we identified as (1) usefulness of budgeting, (2) financial preparedness, (3) record keeping, (4) budgeting, (5) debt-to-income ratio, and (6) anticipated changes in future income. These factors and associated financial management item factor loadings are reported in Table 2.

² Although items were grouped only with the factors on which they had the highest loadings, two of the fifteen items had factor loadings of .40 or greater on a second factor as well. The "follow a written budget" item also loaded .50 on Factor 1 (usefulness of budgeting), and the "anticipated changes in future income" item also loaded .42 on Factor 4 (budgeting practices).

Method of Analysis

Multivariate regression was used to analyze the data. Beta coefficients were used to analyze the relative importance of each independent variable in

TABLE 1. Items Used in This Study

Item	Coding of Item
Follow a written budget	1= never 2= seldom 3= sometime 4= often 5= always
Follow a mental budget	1= never 2= seldom 3= sometime 4= often 5= always
Record keeping of all household expenditures	1= never 2= seldom 3= sometime 4= often 5= always
Record keeping of major expenditures	1= never 2= seldom 3= sometime 4= often 5= always
Record keeping of income	1= never 2= seldom 3= sometime 4= often 5= always
Record keeping of cancelled checks	1= never 2= seldom 3= sometime 4= often 5= always
Percentage of income to debts	1= less than 10% 2= 10-15% 3= 16-25% 4= 26-50% 5= 51% or more
Income adequacy	1= not adequate 2= can meet necessities 3= can afford some things 4= can afford everything 5= can afford everything and save
Changes in future income	1= lower than this year 2= the same as this year 3= higher than this year 4= much higher than this year
Changes in savings assets	1= lower than last year 2= the same as last year 3= more than last year 4= much more than last year
Bill payment problems	1= got behind 2= got behind, & made larger payments 3= made larger & more frequent payments 4= payments were made on time

TABLE 1 continued

Item	Coding of Item
Preparedness for small emergencies	1= very unprepared 2= unprepared 3= somewhat prepared 4= prepared 5= very prepared
Preparedness for large emergencies	1= very unprepared 2= unprepared 3= somewhat prepared 4= prepared 5= very prepared
Budget helped achieve goals	1= did not help 2= helped a little 3= helped somewhat 4= helped a lot
Budget helped attain standard of living	1= did not help 2= helped a little 3= helped somewhat 4= helped a lot

the regression procedures. Items in a preliminary factor analysis that significantly contributed to regression equation at or beyond the .10 level of statistical significance (i.e., had a t-statistic equal or greater than 1.64) were included in the final comprehensive regression analysis.² The coefficient of multiple determination (R^2) was used to assess the proportion of variance in the dependent variable explained by the independent variables (See Table 3).

TABLE 2. Factors Derived from the Independent Variables

Factor Items	Factor Loadings
Factor 1: Usefulness of Budgeting	
Budget helped achieved goals	.89
Budget helped attain standard of living	.87
Factor 2: Financial Preparedness	
Financial preparedness for small emergencies	.78
Financial preparedness for large emergencies	.78
Income adequacy	.71
Changes in savings assets	.47
Factor 3: Record Keeping	
Record keeping of all household expenditures	.67
Record keeping of major expenditures	.78
Record keeping of income	.54
Record keeping of cancelled checks	.51
Factor 4: Budgeting	
Follow a written budget	.54
Follow a mental budget	.84
Factor 5: Debt-to-income Ratio	
Percentage of debt to income	.78
Factor 6: Changes in Future Income	
Changes in future income	.52
Bill payment problems	.78

TABLE 3. Final Regression of Satisfaction/Dissatisfaction with Financial Management Among Married Students.

Statement	Beta Value	t value	p value
Factor 1: Usefulness of Budgeting			
Budget helped achieve goals	.17	1.78	.08*
Budget helped attain standard of living	.17	1.73	.09*
Factor 2: Financial Preparedness			
Financial preparedness for small emergencies	.26	3.17	.002**
Income adequacy	.12	1.54	.13
Factor 3: Record Keeping			
Record keeping of all household expenditures	-.01	.15	.88
Record keeping of cancelled checks	.13	1.79	.08*
Factor 4: Budgeting			
Follow a written budget	.06	.69	.49
Follow a mental budget	.03	.45	.65
Factor 5: Debt-To-Income Ratio			
Percentage of debt-to-income	-.10	1.35	.18
Factor 6: Changes in Future Income			
Bill payment problems	-.01	.17	.87
R^2	.31**		

*Significance at the .10 level

**Significant at the .05 level

RESULTS AND DISCUSSIONS

Preliminary Factor Regression

Usefulness of budgeting. The usefulness of budgeting variables (Factor 1) reflects the use of budgeting to achieve the family financial goals and to attain the desired standard of living. Both usefulness of budgeting variables were significant at the .05 level in the preliminary regression and were included in the final regression.

Financial preparedness. The financial preparedness variables reflect the degree of financial preparedness of the families for small and large emergencies, income adequacy and changes in savings assets (Factor 2). Two variables, financial preparedness for small emergencies and income adequacy, met the criteria of statistical significance for inclusion in the final regression model. Financial preparedness for small emergencies was significant at the .01 level in the preliminary regression.

Record keeping. The record keeping variables included record keeping of all household expenditures, of major expenditures, of income and of cancelled checks (Factor 3). Record keeping of all household expenditures and record keeping of cancelled checks met the criteria for inclusion in the final regression model. Both variables were significant at the .05 level in the preliminary regression.

Budgeting. The two budgeting variables included in the preliminary regression reflected the use of

a written or a mental budget by the families (Factor 4). Both variables had t statistics of more than 1.64 in the preliminary regression and were included in the final regression. The use of a written budget was significant at the .01 level in the preliminary regression.

Debt-to-income ratio. The debt-to-income ratio was the only variable which was included in the preliminary regression analysis (Factor 5). Because of a t statistic of more than 1.64 in the preliminary regression it was also included in the final regression.

Anticipated future income. The two variables included in the preliminary regression were changes in future income and bill payment problems (Factor 6). Bill payment problems met the criteria for inclusion in the final regression and was significant at the .05 level in the preliminary regression.

Combined Factors Regression Analysis

The results of the regression analysis of the combined factors are shown in Table 3. The coefficient of multiple determination (R^2) for the sample of married students was .31, a finding significant beyond the .01 level. As a group these items indicate that the financial management factors explain 31 percent of the variance in satisfaction/dissatisfaction with financial management practices.

With respect to the individual items, financial preparedness for small emergencies accounted for more of the differences in satisfaction/dissatisfaction with financial management than any of the other items. The beta for this item, .26, was significant beyond the .002 level. This finding suggests that the most important component of satisfaction/dissatisfaction with financial management for this sample of married students is the perception that the family is financially ready to meet small unexpected emergencies.

Several other items had betas that approached statistical significance near the .05 level. Betas for both items of the usefulness of budgeting factor were quite similar, .17 for the budget helped achieve family goals item ($p < .08$) and approximately .17 for the budget helped attain the desired standard of living ($p < .09$). These findings suggest that organized approaches to financial management may contribute more to overall satisfaction/dissatisfaction with financial management practices than less systematic or haphazard methods.

Interestingly, the record keeping of cancelled checks item (Factor 3) also approached the .05 level of significance. Beta for this item was .13 ($p < .08$). This finding may indicate that knowing where money was spent and being able to retrieve this information if required (i.e., for income tax purposes, etc.) may provide a more secure base for financial management, reducing uncertainty of concern, and thus increasing levels of satisfaction with financial management overall.

Two other items made marginal contributions to the overall regression, income adequacy and percentage of debt to income. These items had betas of .12 ($p < .13$) and $-.10$ ($p < .18$) respectively. It is surprising that income adequacy is not one of the primary items contributing to the comprehensive regression equation, but apparently level of income is less important than having sufficient funds on hand to deal with small emergencies or having a record of checks spent. The debt-to-income ratio also was less important for satisfaction/dissatisfaction with financial management than expected, though it nevertheless made a small contribution.

Variables that were not significant in the final regression and thus, contributing least to satisfaction/dissatisfaction with financial management, were follow a written budget (beta = .06, $p < .49$), record keeping of all household expenditures (beta = $-.01$, $p < .88$), and bill payment problems (beta = $-.01$, $p < .87$). These findings indicate that method of budgeting may be less important to overall satisfaction/dissatisfaction than perceived usefulness of budgeting whatever the approach. Also, keeping a record of every household expenditure may be more difficult and cumbersome than merely keeping tracks of checks, while at the same time not providing that much more of an advantage in financial management. It is interesting that bill payment problems are not perceived as components of satisfaction/dissatisfaction. Perhaps this is true just for this married student sample, which are typified by greatly reduced or "shoe-string" budgets. After graduation, when large ticket items such as appliances and furniture are purchased, or when student loan payments begin and possibly housing and car payments as well, it may be that bill payment patterns may become much more central to the issue of financial management.

In general, these findings from the combined factors regression analysis are consistent with those in other studies, where available. For instance, Sahlberg [15] reported that families with higher levels of net worth tended to formulate more spending plans. Net worth could be considered as an output or an outcome of the family managerial system. According to Sahlberg [15], a positive net worth (output) motivated the families in her study to engage in more planning of the family financial resources. The achievement of family financial goals and financial preparedness for small emergencies of the families in this study could also be considered as an output of the family managerial system. It is more likely that the families in this present study will continue financial management practices that bring them satisfaction into the future to attain the financial goals they establish.

Mullis and Schnittgrund [14], Heck [9], and Schnittgrund [16] have reported that families with spending plans were more satisfied with their financial management practices than those without spending plans. The families in the present study who were financially prepared for small emergencies and who attained their financial goals through the use of a budget (which is a plan for allocating family resources) were also those most satisfied

with their financial management practices.

In conclusion, the purpose of financial management is to get the greatest satisfaction for the resources at hand. Included in such satisfaction is the achievement of the family financial goals. Deacon and Firebaugh's [5] management model could be used for assessing the effectiveness of family financial management. Goals and resources are inputs to the management system. The throughput function of the management system is to plan and implement actions to achieve family financial goals with the available resources. The results of the managerial activity is represented by the outputs of achieved goals and used resources. Financial preparedness to meet small emergencies and record keeping practices of the families in this study indicate that through the managerial process a level of satisfaction has been achieved. This satisfaction with financial management outcome (output) may be identified as an accomplishment of these families as a result of their financial behavior, or in other words, an expression of their satisfaction with their financial management techniques.

SUMMARY

This study was concerned with satisfaction/dissatisfaction with financial management among married students living at Iowa State University Housing Community. Satisfaction/dissatisfaction with financial management included the wife's response to the question: What is your overall satisfaction with your financial management techniques? The response categories consisted of "Very Dissatisfied," "Dissatisfied," "Somewhat Dissatisfied," "Neutral," "Somewhat Satisfied," "Satisfied," and "Very Satisfied."

Financial preparedness for small emergencies was the most important variable contributing to satisfaction with financial management in the final regression model, followed by keeping a record of cancelled checks and perceived usefulness of budget items in achieving family goals and attaining the desired standard of living. The financial management items collectively explained 31 percent of the variance in the dependent variable, satisfaction/dissatisfaction with financial management.

The findings of this study indicate that families may follow the Deacon and Firebaugh managerial system model as they evaluate the effectiveness of their managerial behavior. This is accomplished by comparing the actual outputs of the family system with the anticipated outcomes in meeting family demands and is indicated by the degree of satisfaction with the family management procedures. The more consistent the actual outputs with what was anticipated, the more effective the management system is. It might be anticipated that the greater the effectiveness of the management system, the greater the level of satisfaction with the system. Therefore, it will be important to examine in future research not just factors contributing to satisfaction with financial management among married students, but factors among other type families. In so doing, a picture of the continui-

ties and changes in family management patterns can be identified across the life-span.

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WORK AFTER RETIREMENT: INTENTIONS OF PERSONS ELIGIBLE
FOR AN EARLY RETIREMENT INCENTIVE

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ABSTRACT

Between 16 and 33 percent of respondents in this study expected to work after retiring from their current job. Age, life expectancy, perceived retirement income adequacy, marital status, health, sex, area of residence and education were found to be determinants of intentions to work after retirement, as measured by number of hours of work per week or number of weeks per year respondents desired.

As a response to the economic climate in the early 1980s many private and public employers offered selected groups of employees special incentives for early retirement. This helped the employers pare down payrolls and prevented the layoff or firing of younger workers. However, at the same time, Congress was preparing legislation to increase the age of "full benefit" retirement for Social Security purposes from age 65 to 67. These two countervailing forces--employer incentives for early retirement and public policy incentives for postponing retirement--create a difficult environment for household decision making related to labor force activity and retirement.

Data from such surveys as the Survey of Consumer Finances, the Longitudinal Retirement History Study, and New Beneficiary surveys of the Social Security Administration provide information on the level of assets and income resources households have in retirement [2, 3, 19, 20]. However, even moderate levels of inflation coupled with the fixed income nature of most pensions can erode asset values. And the continued decline in labor force participation rates for men over age 55 combined with increasing longevity trends implies that these households are facing longer periods of retirement over which they must stretch their assets. Working for pay during retirement provides one way to supplement retirement benefits and keep up with the effects of inflation.

Much of the research on retirement has focused on the timing of retirement. There is a large body of literature on the subject, of which Barfield and Morgan (1969), Parnes et. al. (1979), and Fields and Mitchell (1984) are representative. Some attention has been paid to the phenomena of partial retirement and "post-retirement" work; that is, continuing to work after retiring from a main job (usually defined as the job held at age 55) [1, 5, 9, 10, 21]. This research made use of longitudinal surveys to track persons prior to and during retirement.

However, changes in the public's awareness of interest and inflation rates, of the solvency of Social Security trust funds, and of new financial products and services may mean that the cohort of persons currently aged 55 and over differ somewhat from those aged 55 and over in the late 1960s when most of the longitudinal studies began. Thus it may be helpful for policy makers, consumer educators, and other financial and personnel professionals to consider the retirement expectations and intentions to continue working of persons still in the labor force.

The research questions addressed in this paper are: Do persons offered an early retirement incentive expect to continue working after receiving retirement benefits? If so, what level of labor force participation do they desire? What factors affect their intention to continue work?

PREVIOUS STUDIES

"Retirement" is a common concept, but it is difficult to measure. Various researchers have used receipt of pension or Social Security benefits, level of labor force activity (e.g. under 1000 hours per year), and self-definitions to determine if a respondent is retired. Each of these pose problems when interpreting results, since each creates its own bias. Similarly, when studying post-retirement work, one must be careful so as not to confound retired workers with older persons continuing to work.

Wentworth (1968) examined data from Social Security recipients from a number of regional and national studies ranging from 1941 to 1963. Employment rates among retirement beneficiaries ranged from 15.7 percent in 1941-42 (in a Philadelphia-Baltimore study) to 40.7 percent (1944 in Ohio). She found that retirees returned to work primarily because of need for income, that employment decreased with age, that health status affected employment, and that the unemployment rate and postretirement employment rates were negatively correlated.

Fillenbaum (1971) used multidiscriminant analysis to analyze the ways in which working retirees differed from their nonworking counterparts in the Piedmont region. Between 31 and 41 percent of white males interviewed had returned to work after retirement. She found workers to have more schooling, to be healthier, to have less financial need to work, to have more memberships in associations, to have been more "successful" in their work, and to receive a sense of recognition from work. In a similar study on university faculty, she found workers to be healthier, to be facing greater financial pressures (e.g. a larger family size or a large proportional drop in income at retirement) and to be less accepting of retirement

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[8]. She also found that faculty in the sciences (biology, chemistry, engineering) were more likely than their social science or humanities colleagues to work after retirement.

In a descriptive study of post-retirement work based on National Longitudinal Survey data, Parnes *et al* (1979) found that 80 to 82 percent of the retirees (identified by self-report) were not in the labor force; approximately 5 percent had worked year round the previous year and 10 percent had worked at least 6 months.

Analysis of data from the Social Security Administration's Retirement History Study revealed that of those who retired from 1970 to 1972, only 6 percent returned to work, implying a high degree of stability in the retirement decision. Grad (1978) found that of those returning to work, 50 percent did so within 3 months of retirement and 80 percent returned within one year.

A second study using the Retirement History data focused on the availability of retirees for work. Those who indicated they were not available for work out numbered those who were, providing further evidence of the stability of the retirement decision. Those who retired at age 62 were no more likely to be available for work than those who retired at 65. Of the retirees who stated they were available, greater proportions of those who retired from blue collar jobs, who had less than high school educations, and who had lower pre-retirement incomes were available for work [16].

Studies done by Social Security Administration staff on retirees indicate that on the average, 23 percent of households with at least one person over 65 have income from earnings [20]. However, percentages range from 6 percent of those households reporting incomes under \$5000 in 1980 to 58 percent of households reporting incomes over \$20,000. In a recent survey of new Social Security beneficiaries, 43 percent of couples and 27 percent of unmarried individuals reported income from earnings [15]. Again, percentages varied by income, with households at the lower end of the distribution reporting a lower percentage of income from earnings.

Using the Longitudinal Retirement History Study, Gustman and Steinmeier (1984) determined that partial retirement (defined as working after age 55 in some job other than the main job held at age 55) is an important phenomenon which may be confounding the results of many of the retirement studies which focus on the timing of the retirement decision. Due to labor market constraints (e.g. the ability to cut back hours of work as one approaches retirement), they hypothesized that persons would leave their main job and partially retire for a short period of time (one to two years) before becoming fully retired. They found that, depending on age, 23 to 38 percent of persons aged 64 or over were partially retired at some point during the survey years. The determinants of partial retirement included pension coverage, mandatory retirement provisions, wage offers in main and partial retirement jobs,

health, marital status, presence of dependent children, parental support (i.e. elderly parents requiring financial support), and age.

Anderson, Burkhauser, and Butler (1984) used the same data set to study reentry into the labor market after retirement. Their results indicate that changes in flows of income from Social Security, pensions, or SSI affected labor market reentry. They concluded that changes designed to affect the retirement timing decisions of workers (e.g. levels of retirement benefits) may also affect the labor market activity of those already retired.

Beck (1985) used the National Longitudinal Survey's Older Male Cohort to study the determinants of labor force activity among retired men. He focused primarily on occupational groups and their propensity to work after retirement, although he concluded that any differences could be explained by other factors related to occupation (e.g. commitment to work, intrinsic satisfaction of job). Other significant factors were health and level of retirement benefits.

Another study using NLS data indicates that Social Security benefits, pension benefits, other household income, level of education, health status, and size of the area labor force are significant determinants of post-retirement work [13]. This study also found that the post-retirement work behaviors of men who held low income jobs prior to retirement differed significantly from the behaviors of men not in low income jobs.

It is important to note that most of these studies were conducted on primarily male samples. Little is known about the retirement decisions of women, including their inclinations for partial retirement or post-retirement work. Also, as was indicated earlier, the current cohort of persons age 55 and over may behave quite differently than earlier cohorts. Finally, it would be helpful to know the intentions of persons with regard to their preferred combination of work and retirement, although it is recognized that intentions and actual behaviors may not necessarily correlate.

LABOR SUPPLY DECISIONS

Labor supply theory predicts the effect of the availability of retirement benefits on labor supply. Households supply labor based on the level of goods they want to consume, the amount of leisure they desire, and the wage rate they can receive. When nonemployment income such as Social Security and pension benefits become available, household labor supply may be reduced because individuals can maintain their desired level of consumption and increase leisure while working less. What, then, does theory indicate with regard to re-entry into the labor market after retirement?

Life cycle labor supply theorists suggest that persons optimize their labor efforts across their lifetimes [12]. That is, people plan their level