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CLARK, Freeman Thomas, 1939-
DOCTORAL STUDENTS' INTEREST IN LESS THAN FULL-
TIME ACADEMIC APPOINTMENTS: RETHINKING SUPPLY
AND DEMAND IN THE LABOR MARKET.

The University of Michigan, Ph.D., 1976
Education, higher

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DOCTORAL STUDENTS' INTEREST IN LESS THAN FULL-TIME
ACADEMIC APPOINTMENTS: RETHINKING SUPPLY AND
DEMAND IN THE LABOR MARKET

by
Freeman Thomas Clark

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(Education)
in The University of Michigan
1976

Doctoral Committee:

Professor Marvin W. Peterson, Chairman
Associate Professor Zelda F. Gamson
Professor Gerald Gurin
Associate Professor Robert A. Hefner

A multiple dedication of the present paper is necessary because if it were not for those to whom it is dedicated, it would not be.

To my wife, friend, and colleague, Carol.
My first reader, best critic and ongoing sharer, without whose help the ideas contained herein might not have been developed. It was she who helped me learn:

Un centavo no gastado,
no hay que ganado.*

To my parents who wisely and constructively challenged me--one by saying I could do it, the other by saying I couldn't. It was they who enabled me to understand Seneca.

To be truly happy
increase not your possessions,
but decrease your desires.

To all those who have not had and will not have the opportunity to pursue formal higher education. Whether they raise and transport the food I eat, make the clothes I wear or deliver the paper this is printed on, they make it possible for me to work with ideas by enabling me to have time to do so. By taxing themselves, they make available the finances which support higher education. I recognize that my good fortune to a large extent derives from them. I include them as dedicatees with the hope that the essential support which they provide, for those of us who have the opportunity, might be better recognized, acknowledged, and appreciated. May the ideas which follow be worthy of the support they have provided.

*A penny not spent, is a penny you don't have to earn.

ACKNOWLEDGMENTS

I should like to convey deep and sincere appreciation to Dr. Marvin W. Peterson for his patient guidance and valuable assistance. As chairman and major advisor he has provided encouragement when I needed it and criticism when it was warranted. Likewise, I am grateful to Dr. Zelda F. Gamson, Dr. Gerald Gurin, and Dr. Robert A. Hefner for their assistance with this project. Their interest, suggestions, and criticisms were exceedingly helpful to me. I especially wish to thank all four of these individuals for their careful and patient reading of earlier drafts of what follows. Due to their insightful suggestions, the final outcome has been improved. I, however, am responsible for any errors which may be contained herein.

I wish to acknowledge the invaluable assistance which Carol Anne Maxwell Clark, my wife, has provided. She has spent untold hours discussing with me the ideas contained here. During the course of the project she has been not only an understanding and caring partner, but has been a true and valued colleague. In addition to this much appreciated help, she has also provided valuable assistance with the boring tasks of editing and proofreading.

I also wish to thank Dean Alfred S. Sussman, Horace H. Rackham School of Graduate Studies, for his encouragement with this research and for providing financial assistance which enabled me to carry it out.

I should further like to indicate appreciation to those persons in my sample who found the time to respond. Without the thousands of person-hours these individuals spent with my questionnaire, the project would not have been possible.

I am also grateful to my friends and colleagues in the Center for the Study of Higher Education for providing encouragement and intellectual stimulation. Similarly, I am appreciative of the assistance and encouragement the numerous co-ops at the Friends' International Co-op have provided throughout the course of this undertaking. Because of their active interest and insightful questions, I was able to sharpen my thinking considerably.

As indicated in the dedication, I especially acknowledge and appreciate the essential support from those who have not had and will not have the opportunity to pursue formal higher education.

Finally, I should like to thank Joann Knepper for her competent typing of the manuscript. Her patience with difficult copy, her suggestions for improving format, and her understanding cooperation are all gratefully appreciated.

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LIST OF ABBREVIATIONS AND SPECIALIZED TERMS

- CIIFAA (V801) - "Composite interest in fractional academic appointment." It is the unweighted linear combination of the three separate original measures next indicated. It is the general measure of interest in less than full-time academic appointment. (See pp. 72-75.)
- II 3/4 time AA (V850) - "Interest in 3/4 time academic appointment." One of three separate original measures of interest in less than full-time academic appointment.
- II 1/2 time AA (V856) - "Interest in 1/2 time academic appointment."
- II 1/4 time AA (V862) - "Interest in 1/4 time academic appointment."
- IILTFTAA - "Interest in less than full-time academic appointment." Throughout the paper this abbreviation refers to "interest" in the generic sense. This is in contrast to the four previous items, in that they refer to specific configurations of less than full-time academic appointment.
- "Married" - Having, or planning to, set up housekeeping with someone and this is likely to continue indefinitely.
- "Single" - Not having, and not planning to, set up housekeeping with another person.
- "Spouse" - Person with whom respondent has, or is planning to, set up housekeeping.
- N - Number
- R - Respondent

CHAPTER 1

PH. D. DEMAND: SUPPLY DISEQUILIBRIUM: A MULTIFACETED PROBLEM

In contrast to the past century of virtually continual growth in higher education, most observers are now projecting an extended period of slow or no growth (Carnegie Commission, 1973; Cartter, 1966 & 1971; Dresch, 1975; & Wolfe & Kidd, 1971). Whether one projects contraction, no growth or slow growth, an important aspect of this change is its impact upon the labor market demand:supply equilibrium for Ph. D. s. Projections of supply far exceed projections of current demand patterns (Carnegie Commission, 1975, p. 12).

Depending upon one's point of view, the projected Ph. D. demand:supply disequilibrium can be viewed as representing different problems, requiring different solutions. The disequilibrium can be viewed as a problem of overproduction and the obvious solution would be to actively reduce supply. The overproduction interpretation principally reflects a training view of the role of higher education. It suggests that the fundamental purpose of

doctoral programs is to prepare individuals to fulfill certain roles. It tends to assume that demand can be specified and if more than a sufficient number are being supplied, production should be curtailed.

In contrast, if the disequilibrium is interpreted as representing underutilization, different types of solutions are called for. The underutilization interpretation tends to assume that demand or utilization should respond to supply. It is also taken to reflect underlying assumptions that the purpose of doctoral education is more than simply training persons for existing roles. One such possible purpose is to contribute to the growth and improvement of society; doctoral education should lead society, not follow it.

In starkest terms, the overproduction interpretation implies that higher level education should only be available to a restricted number of individuals based on society's current demand. The underutilization interpretation implies that freedom of choice in a free market should apply and that doctoral education should be available to all qualified individuals who seek it. I believe that viewing doctoral education as "production" in response to demand is inimicable to the higher purposes of education. Acceptable arguments for reducing doctoral education might be made on other grounds, such as that financial resources might be better used elsewhere. But suggesting active reduction of

Ph.D. supply simply because projected supply exceeds projections based on current demand patterns fails to adequately specify the criteria upon which I think resource allocation decisions ought to be made. As Howard Bowen (1973) has aptly noted:

. . . the arguments concerning education and the labor market are mostly spurious, and better outcomes for both the economy and the society would derive from free student choice than from planning-based manpower goals. But support for this position rests more on philosophical than practical grounds. Like so many questions in higher education, the issues are ultimately matters of value (p. 13).

I reject active reduction of supply as an acceptable approach to addressing the Ph.D. demand:supply disequilibrium. In doing so I feel a responsibility to consider the implications for various groups since the disequilibrium may affect different groups of individuals differently. For persons holding or opting to hold a Ph.D. the problem might be seen as one of obtaining employment commensurate with attained skills and abilities. These individuals may feel underutilized, but they presumably could have ascertained the risks and made their choice. Of greater concern are the implications for persons with fewer educational credentials who presumably may be less able to compete in the employment market. If it is assumed that Ph.D. holders may be underemployed but only rarely unemployed, the ever-present danger of artificially raising minimum educational requirements for various types of employment is suggested. The underemployment of Ph.D.s may result in increased unemployment of persons who never really had any

choice regarding the Ph. D. demand:supply disequilibrium. In sum, this abbreviated discussion of an exceedingly complex area reflects my belief that possible courses of action in response to the Ph. D. demand:supply disequilibrium should not lead to increased difficulties for individuals already disadvantaged.

Having briefly discussed the projected Ph. D. demand:supply disequilibrium at the general level and touched upon some implications at the individual level, brief treatment of the implications at the institutional level is warranted. The National Board on Graduate Education (1973) clearly identified the potential threat of academic stagnation. They state that:

. . . a topic of intense concern to all who worry about the intellectual vitality of the nation's universities and the continued development of the academic disciplines is the impact of a prolonged period of slow (or no) growth on the age and composition of university faculties. The vitality of most academic disciplines requires the continuous renewal that new Ph. D.s bring to the university, and yet many universities are now staffed by a high proportion of tenured faculty, with relatively few retirements expected in the next decade. The nation can ill afford to lose the intellectual excitement and vigor that the brightest young professors provide on every campus.

University administrators and faculty should explore every avenue possible to ensure a continuing flow of young faculty members into academic departments. Several alternative means toward this end have been proposed, including earlier retirements, changes in tenure concepts, and reducing the proportion of undergraduate teaching that is done by graduate students. There is at present insufficient evidence and too much institutional variation to permit specific recommendations, except to call attention to the gravity of the problem in a new era of slow (or no) growth (pp. 20-21).

Implied in this statement is a parallel problem deserving separate mention. What happens to affirmative action? Just when programs for increasing the numbers of minority group members and women on faculties are beginning to take effect, we enter a period when new positions are virtually non-existent due to the end of growth. If new openings are scarce or non-existent, affirmative action becomes, at best, difficult.

A Complex Problem

The foregoing overview leads to the identification of a multifaceted problem. With the slowing of growth in higher education several related difficulties emerge. There is a projected Ph.D. demand:supply disequilibrium. In addition to being a problem for Ph.D.s themselves, this imbalance could impact more severely upon persons already disadvantaged. At the institutional level there is the threat to affirmative action as well as the possibility of academic stagnation. Stating the problem in this manner highlights the wisdom evidenced by Hudson and Sullivan (1974) in their essay on the "viciousness of easy solutions under limited growth," and hopefully enables avoidance of the dangers of which they speak.

The greatest danger of unemployment under slow-growth condition is not a lack of solutions to the problem. The danger is that the most obvious and least 'costly' solutions in the short run turn out to be particularly undesirable in their longer run consequences (p. 11).

The problems are complex and simple solutions are not likely to work.

Possible Solutions

The present inquiry does not presume to arrive at the most desirable or "best" solution. Rather, it is assumed that the "best" solution will likely entail a variety of approaches. The intent here is to: 1) briefly discuss some possible courses of action; 2) select one which is not likely to be readily examined, but which may be of substantial value as part of the response to the complex situation posed by slowed growth; and 3) to explore the views of prospective Ph.D.s regarding it. Since the intent is principally to sharpen the focus upon the alternative to be selected for exploratory study, discussion of the other possible courses of action will be limited.

Reduce the proportion of undergraduate teaching done by graduate students. -- This course of action would, for universities, enable some additional faculty to be employed. However, because of pay rate differentials it is assumed that the number of positions created would not be great. In terms of disadvantages, one of the most obvious would be the reduction of a source of financial support for graduate study. As other sources for support are diminishing, as is currently the case due to federal priorities, the importance of teaching assistantships as financial assistance increases in relative importance. If equality of opportunity to pursue doctoral study is to continue being a goal, diminution of an institution's ability to assist those not able to finance their studies

themselves should be avoided. On balance, the disadvantages appear not to warrant the limited advantage.

Early retirement. -- This approach might constitute a usable part of an overall response, particularly if done on a voluntary basis. To adopt it as a mandatory approach would border upon ageism and simply shift the problem from younger to older persons. If it is valid to assume that younger or newer Ph.D.s add "intellectual excitement" and "vitality" to institutions, it seems also valid to assume that older Ph.D.s may add "stability" or "continuity." Foreshortening the age spectrum at either end is assumed to be one of the "vicious easy solutions." It should be critically examined if it is to constitute a part of the overall response.

One variant of early retirement being tried by some institutions of higher education is that of "phased retirement." In general terms this involves making available, to faculty members nearing retirement, the option of accepting reduced appointment fractions as a way by which they can phase into retirement. For the purposes of the present paper, "phased retirement" is considered to be one type of less than full-time appointment, which itself is more fully treated in the following section.

Modify tenure. -- This possible course of action has numerous variants, including, but not limited to: a) fixed term non-renewable contracts, b) fixed term renewable contracts, c) lengthening the

time before tenure may be awarded, and d) granting tenure on less than full-time basis--"fractional tenure." Discussion will be limited to aspects of these variants which, in my opinion, are crucial.

Although quite different operationally, the first two variants entail elimination of tenure as it is currently employed. Due to the interdependence between tenure and academic freedom, I maintain that these approaches would create many more problems than they would solve. They would, as their adherents suggest, enable the "elimination of dead wood." However, they would also be assumed to exert a considerable "chilling effect" upon the ability of academic personnel to profess controversial or distasteful views. Thus, these approaches constitute threats to academic freedom and they should not be given serious consideration if alternatives with fewer disadvantages are available.

The third variant of modified tenure, delaying consideration for awarding tenure, would appear to entail fewer disadvantages than the first two variants. The principle shortcoming is: if non-tenured personnel are assumed to be less able or willing to profess controversial ideas or theories, the length of time during which this applied would be lengthened.

The fourth variant of modified tenure would be "fractional tenure." "Fractional tenure" denotes less than full-time academic appointments for which tenure, if granted, is for the appointment fraction held. For example, a position could be a one-half time

tenured position. Although it is not clear that part-time was being used as a modifier of tenure, the observations of the Commission on Tenure in Higher Education (1974) are germane:

On balance the Commission views tenure for regular part-time faculty members as desirable. It can enhance institutional and personal flexibility . . . by allowing for institutional expansion or reduction in given disciplines. . . . Part-time appointments with tenure can assure the institution of an experienced and professionally committed part-time faculty while assuring job continuity to the part-time faculty member (p. 80).

The Commission recommends that institutions . . . permit tenure positions to be held by faculty members who for family or other appropriate reasons cannot serve on a full-time basis (p. 81).

The "fractional tenure" variant does not entail the danger to academic freedom that removal of tenure is assumed to present. Incumbents of these positions would presumably be less subject to the earlier mentioned "chilling effect." As with the other approaches, though, there are actual and potential disadvantages. The most obvious actual disadvantage would be the increased complexity as a result of employing a greater number of faculty. These include: the difficulties involved in communicating with more people, increased paperwork, need for more careful scheduling of work and office space, etc. These are important considerations, but in my opinion they should not be the determining factors. Many of these difficulties would lend themselves to solutions which are largely administrative or technical in nature, and they do not constitute dangers of the magnitude that elimination of tenure would entail. There are potential

disadvantages which are deemed to be more crucial. These would include, but are not limited to: the possible change in the nature of persons who would seek and accept appointments under less than full-time and the possible decrement in the level of commitment persons appointed less than full-time might feel to the institution.

In view of the fewer threats to academic freedom entailed in the use of less than full-time academic appointments, I chose to focus upon this possible course of action as part of the response to the complex problem. Prior to more formally stating the research question, two concerns deriving from the nature of the problem and this course of action should be more fully noted.

The recommendation by the Commission on Tenure in Higher Education (1974), that part-time faculty be used by institutions of higher education to increase flexibility, is based upon the assumption that such an approach can assure the institution of committed faculty. The Commission presumably was referring only to a limited number of such appointments; presumably only for persons actively interested in part-time appointments. Adoption of policies whereby less than full-time appointments were made on a larger scale, such as for all new appointments, may stretch the stated assumption too far. If potential appointees are not interested in such appointments but only accept them unwillingly, they may not be committed to the institution. In essence what is needed is a test of the assumption; a sort of

feasibility study of whether potential appointees would be interested in less than full-time academic appointments.

It will also be recalled that one facet of the problem is the threat to affirmative action posed by slowed growth. Clearly, solutions adopted should not aggravate this potential threat. The use of less than full-time appointments must not result in less interest in academic appointments on the part of minority group members and women than on the part of white males. The present inquiry strives to keep these two concerns in focus.

The Research Question

Is interest in less than full-time academic appointment for one-self related to identifiable personal or situational characteristics? To the extent that this question can be clearly answered, it is assumed that better decisions can be made about the feasibility and desirability of incorporating the use of less than full-time appointments into the overall response to the current and projected situation of slow or no growth in higher education.

As noted above there are two foci within the overall research question: (1) Level of interest in less than full-time academic appointments, and (2) Whether women and minority group members evidence less interest than nonminority group members.

In addition to addressing these questions, the inquiry constitutes an opportunity to begin to explore the factors by which interest in less than full-time academic appointments might best be explained.

The following chapter develops a preliminary conceptual model which will be used for exploring interest in less than full-time academic appointments.

CHAPTER 2

CONCEPTUAL FRAMEWORK, MEASURED VARIABLES AND HYPOTHESES

Interest in Less Than Full-Time Employment as a Time Allocation Decision Within an Ends:Means Format

The question of why individuals might be interested in less than full-time employment can be viewed as a part of the more general question of how individuals choose to allocate their time. A basic assumption is that time will be allocated to activities or means by which the individual thinks desired end-states might best be attained. Explaining time allocation entails determining what is of importance to the individual. It also entails determining the individual's assessment of the relative effectiveness and/or efficiency of various possible uses of time for attaining what is of importance. Simply put, it is being assumed that the means an individual chooses are explainable by reference to the ends that individual is seeking and by reference to her/his assessment of the effectiveness/efficiency of various means. Stating the question in this means:ends terminology enables one to readily appreciate some of the difficulties involved in explaining human behavior.

This approach assumes that the individual knows or has decided what is important and has decided what uses of time best enable attainment of the desired ends. As such, this approach emphasizes rationality and purposeful behavior. It minimizes the non-rational components of human existence. To the extent that behavior is non-rational and/or non-purposive, attempts to explain time allocation decisions by reference to desired ends will be incomplete.

A second difficulty is posed by the possibility that an individual may view the same end being attainable by different means or by a combination of means. An example may clarify this. An individual seeking recognition by peers might assess this as being attainable by devoting much time and effort to career pursuits. (S)he might also assess recognition by the same peers to be equally attainable by devoting time to community service. It is conceivable, then, that time might be devoted to either or both activities. Without substantial information about the individual's assessments of the relative effectiveness/efficiency of various means to the desired end, attempts to explain time allocation decisions will again be incomplete.

A third difficulty with the means:ends approach is that some means may have become ends in themselves. For example, it is conceivable that for some individuals work, to some extent, may have become an end in itself. It may be engaged in without concern for either economic or non-economic payoffs. It has become good

unto itself. To the extent that a means is its own end, it cannot be explained by reference to other ends.

Despite these limitations, it is assumed that an ends:means approach to explaining human behavior is the best general approach. The remainder of this chapter develops a more specific conceptual framework, by which interest in less than full-time academic appointment will be explored.

Interest in Less Than Full-Time Academic Appointment Viewed
Within the Context of a General Theory of Choice

Subsequent to developing a preliminary conceptual framework for examining interest in less than full-time academic appointment, I located Bowen and Finegan's (1969) excellent work: The Economics of Labor Force Participation. Their model coincides to a large extent with my conceptual framework. Therefore, after presenting where my conceptualization differs from Bowen and Finegan's; the discussion draws upon their treatment of the subject since it was of substantial value in sharpening my views. The interested reader is referred to their work, to which I acknowledge sincere appreciation.

Bowen and Finegan start with the premise that ". . . the household is the basic decision-making unit--that the labor force status of each member of the household is determined by some kind of decision-making process which takes into account the circumstances of other members (1969, p. 16)." In contrast, the present

conceptualization views the individual as the decision-making unit. To be sure, as Bowen and Finegan note, the status and preferences of other household members are taken into account. In my opinion, one drawback of viewing decisions as being made by households is that it tends to reduce the focus upon possible differences between individuals on the basis of their ability to decide. Due to the possible existence of power differentials in households, the ". . . range within which each individual member is permitted to decide the allocation of his own time may vary (Bowen & Finegan, 1969, p. 17)." Bowen and Finegan obviously recognize this possible power differential. They view the decision range as affected by the aggregation of tastes in the household. Yet, by positing that decisions are made by the household, they tend to forego the possibility of using power differentials as a factor by which individual decisions may be examined. In contrast, the present conceptualization views the power differential as a possible constraint upon the various individuals as they make their decisions. The implications of this subtle, but important difference will become clearer as the discussion continues.

It should be noted that, despite this difference, the term household is used in the following. Where the term household appears, it should be understood to mean the aggregation of individuals and their pooled ideas and preferences. It is stressed, though, that decisions are viewed as being made by individuals, not by households.

For every individual in a household, ignoring financial considerations for the moment, time is taken to be the principal resource constraint. Two categories of possible expenditures of time are posited: (1) work in the market--use of time to obtain money income with which to purchase market goods, and (2) home or non-market work, consumption and leisure--use of time for non-market pursuits. An individual's decision-making task is to decide the number of hours (s)he will devote to work in the market and to all other pursuits. "This set of decisions can be thought of as determined by four broad classes of variables: (1) tastes, (2) expected market earnings rates, (3) expected non-market earnings rates . . . and (4) constraints . . . (Bowen & Finegan, 1969, p. 16)".

Tastes. --The individual as both a producer and consumer has tastes for market goods, non-market goods, leisure and the means by which these are obtained. Another important aspect of "tastes" are the mechanisms whereby the preferences of other members of the household enter the individual's decision-making process. It is presumed that an individual may be concerned about the preferences and well-being of other members of the household; have tastes for their happiness and/or tastes for harmony in the household. These tastes will be weighed along with other tastes when the individual is deciding her/his time allocation.

Expected market earnings rates. -- "In making labor force decisions, the . . . [individual] will have in mind, explicitly or implicitly,

an expected market earnings rate per hour . . . (Bowen & Finegan, 1969, p. 17, brackets mine)." "Earnings" are taken to include the net rates for both pecuniary and non-pecuniary returns versus costs.

Expected non-market earnings rates. --Here again the concept of net rates is relevant. Rates are imputed ". . . dependent on what are in effect non-market production functions addressed to the question: into how many units of various non-market goods can each successive hour of . . . [the individual's] time be transformed (Bowen & Finegan, 1969, p. 18, brackets mine)?"

Constraints. --Two types of constraints bear upon the individual's time utilization decisions: (1) resource constraints and (2) psychic constraints. The resource constraints are viewed as being largely embedded within the household resource constraint.

The total resource constraint of the household is a function of: (1) the total number of hours available to be allocated (24 per member), (2) the set of prospective market and non-market earnings rates, (3) whatever "other income" (gifts, earnings from previously accumulated assets, etc.) the household expects to receive during the period, and (4) the monetary value of the household's saleable assets (Bowen & Finegan, 1969, p. 18).

The psychic restraints require a little explanation. Bowen and Finegan (1969, p. 20 & p. 24) include a somewhat similar variable, "family rules and decision-making processes." Because of the posited power differential, though, it is suggested that such a variable might be better conceived of as a constraint rather than as a taste

variable as they suggest. An example may clarify this. In a given household a husband may forbid his wife to work. If he has the power to enforce this proscription, the wife's range of choice about labor force participation is essentially zero. To be sure, the proscription may be seen as arising due to the husband's tastes. With regard to the wife's decision-making, though, it represents a constraint.

It is interesting to note that this same situation can be conceived of as leading to a constraint on the husband's decision-making range. By forbidding his wife to work, her income potential falls to zero, thus leaving the husband with the burden of providing for all of the household's needed money income, unless other members of the household are permitted to work. This situation foreshortens the husband's range of decision-making by establishing a sort of lower limit regarding his labor force participation. A parallel lower limit constraint situation could also arise if the wife refused to work when the husband preferred that she did. In these instances it is suggested that preferences, which affect another individual's decision-making range, might be best viewed as constraints.

The Measurable Variables

Translation of these general propositions into a form that will enable comparison of individual's interest in less than full-time academic appointment requires that they be stated in measurable form. The following is not presumed to exhaust the ways they could

be measured, nor even to necessarily include the best measures for the conceptual variables stated. Rather it is assumed that they constitute adequate proxies for the underlying conceptual variables.

In a manner paralleling that used by Bowen and Finegan (1969, pp. 20-21), variables selected for inclusion in the present inquiry are summarized in outline form in Figure 1. The plus and minus signs appearing with each variable indicate the direction of expected relationship between that variable and interest in less than full-time academic appointment. Thus, each variable listed on the outline, together with its sign, is to be interpreted as a ceteris paribus hypothesis about the relationship between that variable and interest in less than full-time academic appointment.

It will be noted that some variables appear under more than one heading. This occurs since these variables may be viewed as proxies for more than one of the general categories of factors taken into consideration. For example, the Need for Time variable is assumed to reflect tastes for home goods, tastes for leisure and expected non-market earnings rates.

It will also be noted that the expected direction of relationship for some variables differs by heading. For example, Number of Children Anticipated appears under the category "tastes for goods" (I. A. 3.) with a negative sign. More children presumably generate greater money needs and thus, a negative influence on interest in less than full-time academic appointment is expected. Number of Children

FIGURE 1

OUTLINE OF VARIABLES TO BE USED IN ANALYZING INTEREST IN LESS THAN FULL-TIME ACADEMIC APPOINTMENT

(Signs in parentheses indicate expected association between each variable and interest in less than full-time academic appointment.)

I. Tastes

A. Tastes for goods

1. Estimate of Subsistence (absolute need for money) (-)
2. Net Need for Money (need for money beyond subsistence (-))
3. Number of Children Anticipated (-)

B. Tastes for market work per se

1. Change in Non-Economic Payoffs under Half-Time (+)

C. Tastes for "home" goods

1. Need for Time (+)
2. Number of Children Anticipated (+)
3. Age (curvilinear: -, -, +)

D. Tastes for work in the home

1. Need for Time (+)
2. Prior Part-Time Experience (+)

E. Tastes for leisure

1. Need for Time (+)
2. Prior Part-Time Experience (+)

II. Expected market earnings rates

A. General job prospects

1. Assessment of Job Market (+)
2. Estimated Academic Year Income (+)
3. Part-Time Job Prospects (-)
4. Change in Non-Economic Payoffs under Half-Time (-)

B. "Group" job prospects

1. Preferred Employment Activity (see text)
2. Division (?)

C. Personal job prospects

1. Other Skills (+)
2. Prior Part-Time Experience (+)

III. Expected non-market earnings rates

A. Productivity in home tasks

1. Need for Time (+)
2. Change in Non-Economic Payoffs under Half-Time (-)
3. Marital Status by Sex (see text)
4. Number of Children Anticipated (-)

IV. Constraints

A. Potential labor supply in household

1. "Spouse's" Income Potential (+)

B. "Other (non-labor) income"

1. Non-Salary Financial Resources (-)

C. All or nothing aspect of employment

1. Minimum Feasible Appointment Fraction (-)

D. Household power differentials

1. Preferences of household members which affect the range within which the individual feels able of make decisions (NM)

Anticipated also appears under the category "tastes for home goods" (I. C. 2.), but here a positive sign appears. As more children are anticipated it is assumed that the time needed for child care will increase and exert a positive influence upon interest in less than full-time academic appointment. Obviously, some individuals might choose to buy child care rather than provide it themselves. Such a decision would presumably require exchanging time for money in the market in order to have the money income to use for buying child care, and this would increase the relative importance of I. A. 3. Measurement at this level of detail, though, is beyond the scope of the present inquiry. The presence of possibly conflicting influences impounded in a single variable should be borne in mind.

Tastes. --The greater the tastes for goods, the greater the need for money income and therefore a negative relationship is expected between tastes for goods and interest in less than full-time academic appointment (IILTFTAA). It is expected that Estimate of Subsistence (I. A. 1.) will be negatively related with IILTFTAA. As subsistence estimates increase, more money income is needed and more time must be devoted to work in the market, thus IILTFTAA will be lower. Since individuals may vary in the considerations they include when estimating subsistence, it was decided to include a parallel measure, Net Need for Money. This is a measure of the difference between the individual's desired minimum income estimate and her/his estimate of subsistence.

A negative relationship is expected between Net Need for Money (I. A. 2.) and IILTFTAA.

The expected relationships between Number of Children Anticipated (I. A. 3. , I. C. 2. & III. A. 4) were discussed previously. The reader is reminded that only the net influence of this variable will be available for analyses. In general, an overall positive relationship is expected between Number of Children Anticipated and IILTFTAA.

Since the focus of the inquiry is on IILTFTAA it is possible to measure the tastes for market work per se in a generally direct manner by tapping the individual's assessment of the changes (s)he would expect in non-economic payoffs under half-time academic appointment (I. B. 1. , II. A. 4. & III. A. 2.). (Please see Appendix B for derivation of this and other measures.) If changes anticipated are positive, high IILTFTAA is expected. If changes anticipated are negative, low IILTFTAA is expected.

It is seen that the variable, Need for Time, appears under several of the tastes categories (I. C. 1. , I. D. 1. & I. E. 1.). The Need for Time measure (see Appendix B) is assumed to be a usable proxy for these several categories since it is a composite measure reflecting the importance to the individual of having time available for a variety of uses. A positive relationship between Need for Time and IILTFTAA is expected.

A positive relationship is expected between Prior Part-Time Experience and IILTFTAA. Prior Part-Time Experience appears under tastes categories I.D. 2. and I.E. 2. since it is taken as reflecting an individual's desires to have time available for both non-market purposes. It will be noted below, under expected market earnings rates, that the influence of prior part-time experience may also derive from an exposure effect.

The last variable included under tastes is Age. Although it only appears under tastes for "home" goods in Figure 1, it is implied under other tastes categories since its influence on IILTFTAA may be multifaceted. Younger individuals may need more time to start their family or to find a "spouse," mid-range age individuals may need more money income to support their household (mortgage, children, etc.), and older individuals may prefer more leisure. Overall, the relationship between Age and IILTFTAA is expected to be curvilinear; with younger and older persons evidencing more IILTFTAA than mid-range age individuals.

Expected market earnings rates. -- As noted by Bowen and Finegan (1969, p. 24), subdividing expected market earnings rates into three subcategories:

. . . has the important advantage of emphasizing that the labor market outlook for each member of the household depends partly on his own attributes . . . ; partly on the demand:supply situation in the [specific] . . . labor market for persons possessing his general characteristics; and

partly on general economic conditions in the labor market (brackets mine).

The Assessment of Job Market variable (II, A. 1.) refers to the individual's assessment of the "tightness" of the job market (see Appendix B). A positive relationship is expected between IILTFTAA and the individual's assessment of the "tightness" of the job market; the "tighter" an individual assesses the job market to be, the greater will be her/his IILTFTAA.

Some economic theories (Linder, 1970) would predict an inverse relationship between estimate of income and IILTFTAA, because as wage rates increase the price or opportunity cost of time increases. It may become too expensive to take non-work time. The individual may even seek to increase work time in order to be able to add more goods to leisure and thereby increase the utility of leisure time. The question of the labor-leisure tradeoff hinges on whether one assumes that the labor supply curve can be backward bending or not. At the margin, does an increase in wage rate result in decreased propensity on the part of an individual to offer an additional time unit of labor? If yes, at what point does the income effect begin to outweigh the substitution effect? At what wage rate does the individual prefer more non-work time as opposed to additional monetary income? Based upon the assumption that doctoral students are not goods oriented, that their leisure pursuits do not entail high level of goods input, it is posited that their labor supply curve will be backward bending at relatively low wage rates. A

positive relationship is expected between Estimated Academic Year Income (II. A. 2.) and IILTFTAA; as estimated income increases, IILTFTAA will also increase.

Although the principal focus of the inquiry is upon decisions between work time and non-work time, a measure of the individual's assessment of Part-Time Job Prospects (II. A. 3.) was included. It is assumed that less than full-time employment, unless offset by another member of the household increasing her/his time in the market, entails reduced income to the household. Reduced income can be viewed as increasing the risk of not being able to meet unanticipated major financial expenses to the household, such as medical costs for serious illnesses, if they should arise. If an individual assesses non-academic part-time job prospects to be good, this may affect her/his decision-making such that these risks do not seem as great. If necessary, non-academic part-time work could be sought and relatively easily obtained to provide the supplemental funds needed for the unanticipated expenses. It is expected that IILTFTAA will be inversely related to the individual's assessment of non-academic Part-Time Job Prospects; IILTFTAA will increase as non-academic part-time job prospects are seen to be less "tight."

In addition to reflecting tastes for market work per se, Change in Non-Economic Payoffs under Half-Time is assumed to measure the individual's expectations about earnings in the market (II. A. 4.). Since academic appointments are taken to be "professional" positions,

it is assumed that the non-economic payoffs are likely to be as important, if not more important, than the economic payoffs. Under less than full-time academic appointments some individuals may assess these non-economic payoffs as decreasing, some may assess them not to change, and others may assess them to increase. The expected positive relationship between Change in Non-Economic Payoffs under Half-Time and IILTFTAA is that IILTFTAA will increase as assessments of non-economic payoff changes go from negative, through no net change, to positive.

Other than by reference to variables already themselves included, such as sex and "tightness" of the job market, no clear bases are apparent for developing expectations about the possible relationship between Division and IILTFTAA. Division (II. B. 2.) is included primarily for exploratory purposes.

The predictions about the relationship between Preferred Employment Activity (II. B. 1.) and IILTFTAA were derived as follows, Persons primarily interested in teaching may tend to see a clearer distinction between work and non-work than persons primarily interested in research. As such it is assumed that the notions of full-time and less than full-time are more meaningful to persons interested in teaching. (Please note that only a difference in degree is being suggested, not a difference in kind. It is not being suggested that persons primarily interested in teaching are less "professional" than persons primarily interested in research. It is only being suggested that they are able

to differentiate work from non-work relatively more easily.) It is expected that persons primarily interested in teaching will evidence greater IILTFTAA than persons primarily interested in research, since it is more meaningful to them. No real basis exists for predicting the level, relative to teaching or research, of IILTFTAA for persons interested in activities other than teaching or research.

A positive relationship is expected between IILTFTAA and whether the individual has skills other than in academic field(s) of preparation (II.C.1.). This expectation is derived in a manner similar to that used in reference to the variable, Part-Time Job Prospects; presence of other skills may function as a sort of insurance factor. If a person accepts less than full-time employment and then for some reason needs to supplement this income, it is assumed that this will be relatively easier for persons with other skills than for persons without such skills.

As noted above a positive relationship is expected between IILTFTAA and Prior Part-Time Experience (II.C.2.). In addition to being a function of tastes being reflected by previous decisions, prior part-time experience might also influence IILTFTAA through a sort of practice effect. Persons who have had prior part-time experience in their field might be expected to more readily recognize the desirability of less than full-time academic appointments for themselves. Of course, the direction and amount of influence would depend somewhat on whether the prior experience had been satisfactory to the individual or not.

Expected non-market earnings rates. --The composite nature of the Need for Time measure reflects the simplification of the more complex time allocation question into the labor-leisure question; with leisure including both non-market activities and leisure. It is assumed that the Need for Time measure serves as an adequate proxy for the myriad of possible non-market and leisure uses of time. A positive relationship with IILTFTAA is expected (III. A. 1.).

It was noted earlier that an individual's assessment of the change in non-economic payoffs could be positive; that such payoffs increase under half-time. When this applies, change in non-economic payoffs is assumed to be principally a proxy for expected non-market earnings. It was also noted that the change in non-economic payoffs under half-time could be assessed to be negative. When it is negative, it is assumed to be operating relatively more as a proxy for expected market earnings. Despite this assumed differential mode of operation, as Change in Non-Economic Payoffs under Half-Time goes from negative to positive, IILTFTAA is expected to increase (III. A. 2.).

It is expected that IILTFTAA will vary according to an individual's sex and marital status (III. A. 3.). Based upon the results reported by Fogarty, Rapoport and Rapoport (1971) regarding career orientation, it is expected that IILTFTAA will increase across the following categories: single females, "married" males, single males and "married" females.

Anticipated Number of Children is expected to be positively related to IILTFTAA (III. A. 4.). As noted previously, this is the expected net relationship and is predicted despite the expectation of a negative relationship when anticipated number of children are considered under the category of tastes for goods. Brief elaboration of this is in order.

The expected non-market earnings from devoting time to child care may, in part, depend upon the costs of the alternatives such as costs of nursery schools and child care centers relative to foregone income. Additionally, both expected non-market earnings and costs of alternatives will vary by age. "Public schools are of course one kind of child care center usually available at zero (or near zero) cost . . . (Bowen & Finegan, 1969, p. 27)." Similarly, if children are in school the expected non-market earnings which derive from spending time with them may decrease. Thus, in addition to the number of children, their age(s) would be important regarding expected non-market earnings. For this exploratory endeavor, and in view of the design used, attempting to ascertain the age(s) or planned spacing of anticipated children would have constituted misplaced precision. The reader should bear in mind that the variable, Number of Children Anticipated, is but a crude measure of a potentially important factor regarding IILTFTAA and that predictions about the net relationship are, at best, highly tentative.

Constraints. --A positive relationship is expected between IILTFTAA and "Spouse's" Income Potential (IV. A. 1.). As an individual's "Spouse's" Income Potential increases, it is expected other things equal, that the individual will evidence greater IILTFTAA. It should be stressed that in the present inquiry preferences regarding "spouse's" employment have not been controlled for, since there was little variation among respondents regarding such preferences. It should also be borne in mind that this variable is a measure of potential income rather than actual income.

Another constraint upon an individual's IILTFTAA is assumed to be the Non-Salary Financial Resources (assets minus debts) available to her/his anticipated household (IV. B. 1.). A positive relationship is expected between Non-Salary Financial Resources and IILTFTAA.

A person's IILTFTAA is assumed to be contingent upon whether the individual assesses such appointments to be feasible or not (IV. C. 1.). This variable may operate principally as a conditional variable; other variables being able to exert influence upon IILTFTAA only when the person sees such appointments as feasible. Due to the limited number of cases available, though, separate analyses at different minimum feasible appointment fractions is not possible. For purposes of the present inquiry, Minimum Feasible Appointment Fraction will enter the analyses as simply another "independent" variable. It is expected that IILTFTAA will be inversely related

to it; interest will increase as the individual sees lower fractional appointments as being minimally feasible.

The last constraint posited, IV.D.1., "preferences of household members which affect the range within which the individual feels able to make decisions" appears in Figure 1 with (NM) designating its expected relationship with IILTFTAA. This inclusion is essentially to convey my view that this variable (or set of variables) may be important regarding IILTFTAA, but that it was not measured. As will be seen in the following chapter, the present design involved collection of data from individuals. Thus, measures of preferences of others which may affect the range of the individual's decision-making were not obtained. I readily acknowledge that even if measurement of others' preferences were possible, it would also be necessary somehow to measure the ability of others to impose their preferences on the individual and/or the individual's propensity to accept the decision range restriction implications of these others' preferences.

Limitations

A number of limitations exist when using the foregoing variables to explore interest in less than full-time academic appointment. "First, as desirable as it is on purely conceptual grounds to treat the labor force participation decisions of all members of a household as being determined simultaneously, it would have required a [high] degree of technical sophistication . . . (Bowen & Finegan, 1969, p. 29, brackets mine)." The present inquiry faces the same difficulty. Exploration

of the "ideal" model would require dynamic analysis of time-series data using simultaneous equations for every individual in the household. The data available is derived from one individual in a cross-sectional design. "One difficulty with this approach is that it forces us to assume that decisions concerning the participation of various members of the household are made in . . . sequence (Bowen & Finegan, 1969, p. 30)."

A related and yet much more general problem, which haunts all single equation models of this kind, is that many variables treated as exogenous ought really to be treated as endogenous. For example, we treat the number . . . of children . . . as given(s), when it is clear that these characteristics of a household are themselves influenced by decisions concerning the labor force status of each member (Bowen & Finegan, 1969, p. 30).

For the present inquiry this type of difficulty may apply to an even greater extent. Interest in less than full-time academic appointment is treated as the "dependent" variable. It is readily apparent, though, that IILTFATA may itself influence the "independent" variables. For example, if a person is very interested in not working full time, this may lead her/him to actively seek ways to reduce need for money.

Another limitation of the present inquiry is that some potentially important variables are not measured. These include, but are not limited to: age of children or the planned spacing of anticipated children, and the possible presence of power differentials in the household which influence the decision-making range of the various individuals.

Similarly, the reader will recall that for some variables only their net relationship with IILTFTAA will be available for analyses.

Measurement of Interest in Less Than Full-Time Academic Appointment

Thus far the discussion has proceeded as if IILTFTAA could be easily measured. Clearly, however, less than full-time academic appointment can take a great many different forms. The possibilities, in fact, are virtually limitless. For example, on a continuous basis for different time periods such as nine months or 12 months, there can be different fractional appointment times, e. g., $1/2$, $2/3$, $3/4$, etc. Fractional appointments could also be made on an intermittent basis, such as half-time appointments which in scheduling consists of six months at full-time and six months at zero time. In addition to this wide variety of possible time frames, there is the dimension of salary and other prerequisites. For example, does a person appointed half-time receive half-pay in relation to a full-time appointment? Does (s)he receive half of all other benefits, or are some, such as parking stickers, not readily divisible? Obviously, if one is interested in assessing IILTFTAA, it is necessary to specify exactly what is meant prior to asking whether someone is interested or not.

For the purposes of this inquiry a relatively straightforward series of fractional appointment possibilities were presented for the respondent to consider and indicate her/his level of interest. Quite detailed and specific instructions about what should be assumed when

responding were presented (see questions 50, 56, 62 and related instructions, Appendix A). These were identical for the three fractional appointment possibilities. These fractional appointment possibilities: $3/4$, $1/2$ and $1/4$ time, were selected as representative of a series that would be comparable except for the appointment fraction and the monetary compensation. There are, then, three separate original measures of IILTFTAA. These are: interest in $3/4$ time academic appointment (II $3/4$ time AA, V850), interest in $1/2$ time academic appointment (II $1/2$ time AA, V856), and interest in $1/4$ time academic appointment (II $1/4$ time AA, V862). (It may be important to note that since full-time was defined to be on an academic year basis, itself a type of $3/4$ time appointment (nine months out of 12), $3/4$ time here might be viewed as being .56 time ($3/4$ of $3/4$), $1/2$ time viewed as .37 ($1/2$ of $3/4$), and $1/4$ viewed as .19 ($1/4$ of $3/4$).)

Since the focus of the inquiry is not upon interest in particular patterns of less than full-time appointments, but upon interest in less than full-time appointments in general, an index of overall IILTFTAA was created from the three original measures. This index, "composite interest in fractional academic appointment" (CIIFAA, V801), consists of the unweighted linear combination of the three separate original measures. This method of combining variables was adopted basically for its simplicity. More elaborate techniques for combining variables was deemed to be unwarranted because of the

largely exploratory nature of the inquiry. Also, as will be noted when discussing the limitations of the dependent variable, the original measures may not represent the "best" measures of IILTFTAA. Results supporting the creation and use of CIIFAA (V801) will be presented at the beginning of Chapter 4. Principal use will be made of CIIFAA (V801) for analyses, but where use of the original separate measures contributes to greater clarity they will also be used.

To summarize, then, four measures of interest in less than full-time academic appointment are used in the present inquiry. Three original measures, II 3/4 time AA (V850), II 1/2 time AA (V856) and II 1/4 time AA (V862) are derived from questions about specific fractional appointment possibilities. The fourth measure, CIIFAA (V801), is the unweighted linear combination of these three. The composite measure, CIIFAA (V801), is assumed to be tapping a more general IILTFTAA than the separate original measures.

Limitations Regarding Measures of Interest in Less Than Full-Time Academic Appointment

It is appropriate to briefly discuss two limitations which derive from the manner in which IILTFTAA is measured in the present inquiry. The first limitation derives from the fact that interest was measured only with regard to a limited number of possible patterns of less than full-time academic appointments. As noted above, less than full-time academic appointment could take a multitude of forms. Due to the complexity that would have been involved, only three

specific patterns were used. Brief discussion of another possible pattern may clarify this limitation.

Less than full-time academic appointments might be made on the basis of intermittent time frames. For example, a half-time appointment could entail the incumbent working full time for half of the time period and not working during the other half of the time period. This pattern might be of most interest to potential appointees because time "freed-up" might be more usable for other activities such as travel. Such a pattern might also be most feasible when considering the employer's point of reference, since it would presumably entail less complex administrative arrangements. Since such possibly more desirable and/or more feasible less than full-time possibilities were not included, it should be clear that the present composite measure of IILTFTAA is but a very rough index and is derived from a very limited number of less than full-time appointment possibilities.

The second limitation derives from the fact that IILTFTAA is measured in a "paper and pencil" fashion about a series of hypothetical possibilities. As such, somewhat "idealized" views may have been elicited. That is, it sounds good on paper. The reader is cautioned to bear in mind that what is measured in the present study is stated interest, not actual behavior.

Measured Variables and Hypotheses

This section briefly enumerates the variables actually

measured in the present inquiry and presents the ceteris paribus hypotheses regarding their relationships with interest in less than full-time academic appointment. Appendix A contains the instruments used. Appendix B, containing the variable dictionary, presents more detailed information about the creation of the variables and Chapter 3 discusses some of the limitations pertaining to the measures and thus to the variables themselves. Data regarding the hypotheses are presented in Chapters 4-6.

1. Minimum Feasible Appointment Fraction--R's estimates of the minimum feasible appointment fraction at which high professional standards can be maintained; controlled according to preferences for teaching, research or other employment activities. (See Appendix B, V719.)

It is expected that IILTFTAA will be inversely related to Minimum Feasible Appointment Fraction; as Minimum Feasible Appointment Fraction decreases, IILTFTAA will increase.

2. Change in Non-Economic Payoffs under Half-Time--Academic Appointment--a composite measure of R's estimate of the direction and amount the selected non-economic payoffs change under half-time academic appointments. (See Appendix B, V722.)

It is expected that IILTFTAA will be positively related to Change in Non-Economic Payoffs under Half-Time Academic Appointment; IILTFTAA will increase from most negative changes anticipated,

through no net change and be highest where most positive changes are anticipated.

3. Estimate of Subsistence--R's estimate of subsistence annual income (absolute need for money) for her/his anticipated household situation. (See Appendix B, V769.)

It is expected that IILTFTAA will be inversely related to Estimate of Subsistence; as estimates of subsistence increase, IILTFTAA will decrease.

4. Net Need for Money--R's estimate of desired minimum annual desired income for her/his anticipated household situation minus estimate of subsistence. (See Appendix B, V710.)

It is expected that IILTFTAA will be inversely related to Net Need for Money; as Net Need for Money increases, IILTFTAA will decrease.

5. Estimated Academic Year Income--R's estimate of the academic year (nine months, full-time) income (s)he would earn if (s) today received the Ph.D. degree and obtained a position at preferred type of institution with preferred type of activities. (See Appendix B, V707.)

It is expected that IILTFTAA will be positively related to Estimated Academic Year Income; as Estimated Academic Year Income increases, IILTFTAA will increase.

6. Need for Time--a composite measure of R's indication that it is important for her/him to have time available for selected

non-market and leisure purposes. (Note: time for children is not included. It is assumed to be impounded in the variable, Number of Children Anticipated.) (See Appendix B, V721.)

It is expected that IILTFTAA will be positively related to Need for Time; as Need for Time increases, IILTFTAA will increase.

7. Number of Children Anticipated--R's indication of the number of current children plus number of additional children anticipated. (See Appendix B, V725.)

It is expected that IILTFTAA will be positively related to Number of Children Anticipated; as Number of Children Anticipated increases, IILTFTAA will increase.

8. Marital Status by Sex--R's sex in conjunction with planned marital status. (See Appendix B, V708.)

It is expected that IILTFTAA will increase across the following categories: single female, "married" male, single male, and "married" female.

9. "Spouse's" Income Potential--R's estimate of the income potential of her/his current or anticipated "spouse." Respondents not planning to marry or to live with someone on an extended basis are assigned zero "spouse's" potential income. (See Appendix B, V701.)

It is expected that IILTFTAA will be positively related to "Spouse's" Income Potential; as "Spouse's" Income Potential increases, IILTFTAA will increase.

10. Non-Salary Financial Resources--R's estimate of positive non-salary financial resources minus debts for her/his anticipated household. (See Appendix B, V736.)

It is expected that IILTFTAA will be positively related to Non-Salary Financial Resources; as Non-Salary Financial Resources becomes less negative or more positive, IILTFTAA will increase.

11. Assessment of Job Market--combination of R's assessments of the "tightness" of both the non-academic and the academic job markets. (See Appendix B, V717.)

It is expected that IILTFTAA will be positively related to Assessment of Job Market; as the assessed "tightness" of the job market increases, IILTFTAA will increase.

12. Part-Time Job Prospects--R's assessment of the "tightness" of the non-academic part-time job market. (See Appendix B, V768.)

It is expected that IILTFTAA will be inversely related to non-academic part-time job prospects; as assessed "tightness" of the non-academic job market increases, IILTFTAA will decrease.

13. Prior Part-Time Experience--R's indication of whether (s)he has had prior part-time experience in her/his field. (See Appendix B, V714.)

It is expected that IILTFTAA will be higher for persons indicating that they have had Prior Part-Time Experience than for those who do not indicate such experience.

14. Other Skills--R's indication that (s)he has income-producing skills other than in her/his academic field(s) of preparation. (See Appendix B, V715.)

It is expected that IILTFTAA will be higher for persons having Other Skills than for those not having Other Skills.

15. Preferred Employment Activity--R's indication of first preference for teaching, research, or other employment activities. (See Appendix B, V728.)

It is expected that IILTFTAA will be greater for Rs who prefer teaching than for those who prefer research. No prediction about the level of IILTFTAA for Rs preferring activities other than teaching or research is warranted.

16. Division--The divisional categorizations are: life sciences, physical sciences, social sciences and humanities. (See Appendix B, V111.)

Predictions other than might be based upon other included variables are unwarranted. This variable is included for exploratory purposes.

17. Age--R's current age. (See Appendix B, V723.)

A curvilinear relationship is expected between Age and IILTFTAA; younger and older Rs will evidence greater IILTFTAA than mid-range age Rs.

In addition to the foregoing hypotheses derived during the development of the conceptual framework, from Chapter 1 it will be recalled

that an important focus of the overall question is whether women and minority group members may be less interested in less than full-time academic appointments than nonminority group members.

Stating these questions in null hypothesis form completes the ceteris paribus hypotheses which will guide the analyses.

18. It is expected that IILTFTAA will not differ significantly by sex. (See Appendix B, V1.)

19. It is expected that IILTFTAA will not differ significantly between minority and nonminority Rs. (See Appendix B, V100.)

CHAPTER 3

RESEARCH METHODOLOGY

Setting and Population

Due to the exploratory nature of the inquiry, cost considerations and the extensive follow-up to non-respondents, the study was carried out at a single, large Ph.D. granting institution; The University of Michigan. For the Winter term 1975, 1,831 doctoral students were enrolled in 39 Literature, Science and Arts doctoral programs. This represents approximately 5.2 per cent of the total enrollment at the University. Such a population was warranted, because in previous years these programs of the University have been the source of substantial numbers of persons entering the academic sector of the Ph.D. labor market. A recent study revealed that some 75-85 per cent of the Ph.D. recipients from these programs desired, as well as expected, to receive academic appointments upon entering the labor market. This percentage corresponds with actual placement of Ph.D. recipients from previous years.

Sample

The original sample consisted of all persons currently enrolled (N = 1430) in the doctoral programs of 17 departments during

the Winter term (Jan. - May) 1975. The departments were selected such that a minimum of 25 doctoral students per department was expected. The 17 departments represent 43.5 per cent of the doctoral programs in the population. The 1430 doctoral students represent 76.8 per cent of the students in the population. Table 1 summarizes the divisional categorization, departments included and the number of students enrolled in each program.

TABLE 1
ORIGINAL SAMPLE: BY DEPARTMENT AND DIVISION

Division	Department	N
Biological Sciences	Botany	55
	Zoology	<u>106</u>
		161
Physical Sciences	Chemistry	105
	Mathematics	102
	Physics	<u>62</u>
		269
Social Sciences	Anthropology	67
	Economics	91
	History	135
	Political Science	97
	Psychology	265
	Sociology	<u>80</u>
		735
Humanities	Classical Studies	23
	Comparative Literature	34
	English Language & Literature	101
	Germanic Languages & Literature	23
	History of Art	40
	Philosophy	<u>44</u>
		265
	Total	<u>1430</u>

Addresses were unavailable for 13 persons, thus the final sample N was 1417. Of this, 1166 (82%) were pre-candidacy doctoral students and 251 (18%) were students who had attained candidacy status.

Sample Limitations

The limitations of this sample revolve primarily around its representativeness, and thus the implications regarding generalizability. First, the sample was restricted to the 17 specified departments; it cannot be assumed to be representative of either departments or individuals not included. Second, the sample was restricted to a single institution; it cannot be assumed to be representative of doctoral students at institutions not included. Despite these limitations, this sample is assumed to be suitable for an exploratory inquiry since it consists of a subset of persons who are very likely to at some time enter or seek to enter the academic sector of the Ph.D. labor market.

Design

Since so little research has focused on voluntary less than full-time employment, this inquiry was designed to be largely exploratory. Thus, a simple cross-sectional study using a survey instrument was deemed to be appropriate.

Design Limitations

A cross-sectional design entails limitations. These deserve brief mention, but it may also be stated that they do not detract from the general value of such an exploratory study.

Relationships among variables, not causal patterns, might be detected. For example, level of IILTFTAA might logically be viewed as being a result of the level of "need for money." The direction of causation, though, might flow in the opposite direction with adjustments in "need for money" coming subsequent to the development of IILTFTAA. Likewise, both might be caused by some more basic variable such as a desire to live a life of contemplation.

In a related manner, the cross-sectional approach does not permit detection of changes over time. A person's level of IILTFTAA, though, is not assumed to be static. Rather, it is explicitly expected to vary according to the individual's changing situation and attitudes. Of substantial importance for the present inquiry is the fact that the "life-cycle" situation of many doctoral students may change considerably within a relatively short period of time. For example, many may proceed to "marry" or have children upon completion of their degree program. In designing the survey instruments this was accorded considerable attention. Specifically, I attempted to reduce the importance of current situational differences among Rs by asking them to anticipate their own likely future situation and to respond accordingly.

The use of survey instruments imposes a number of limitations which must be borne in mind. Respondents may be different from non-respondents in ways vitally affecting the results obtained. Of concern for the present inquiry is the possibility that non-respondents are systematically less interested in LTFTAA than Rs. Since alternative means of ascertaining this were not readily available, the decision was made to exert maximum feasible effort to assure a high response rate. Accordingly, two follow-ups to non-respondents were carried out. Three weeks after the mailing of the survey instruments a reminder letter was sent (see Appendix A). After a second three-week interval, a telephone follow-up to non-respondents was carried out. Two aspects of the results suggest that it was reasonably effective. First, the response rate of 58 per cent is considered to be moderately good for this type of inquiry. Second, the pattern and distribution of responses to questions measuring IILTFTAA (see Chapter 4) appear to reflect a range of opinion. It is still possible, though, that persons least interested in LTFTAA are underrepresented. Also, there may be crucial differences between respondents and non-respondents on other variables.

As Moser and Kalton (1971, pp. 260-261) noted: when a person is completing a mailed questionnaire (s)he can see all of the questions before answering any of them. Responses cannot be assumed to be independent of one another.

An additional limitation of mailed surveys noted by Moser and Kalton (1971, pp. 261-262) is that the researcher cannot be certain who actually has completed the questionnaire, or whether the person completing it consulted with anyone else.

Instruments

The survey instruments, transmittal letter and follow-up material are contained in Appendix A. Items included in the survey instrument were distilled from a wide ranging review of several lines of literature related to the subject of the present inquiry. Since I am indebted to numerous persons working in diverse areas, the following attempts to summarize for the interested reader partial lists of citations which contributed to my thinking and to the questionnaire development. Since bodies of literature seldom have clear and precise boundaries, the general categorization used is solely for convenience in attempting to clarify how I see various literature areas in relation to the subject of this inquiry.

1. Literature pertaining to career, occupation, and job choice contributed to the development of questions about compensations derived from employment. A few of the sources drawn upon were: Brown, D. G. (1965a, 1965b), Eckert & Stecklein (1961), Freeman (1971), Ginzberg et al. (1951), Glickman (1973), Gustad (1960), Herzberg (1966), Herzberg et al. (1967), Miller, J. (1962), Miller, N. (1963), Rosenberg (1957), Stecklein & Eckert (1958), Stecklein

& Lathrop (1960), and Super (1973). (See Appendix A, particularly questions G, H and 42-27.)

2. Questions about employment pay-offs were also influenced by the literature dealing with job satisfaction and motivation to work. In addition to several of the sources cited previously, the following were influential in the development and selection of questions:

Cuvillier (1974), Parsons & Platt (1974), Sharp (1970) and Wilensky (1966). (See Appendix A, particularly questions 42-47.)

3. The diverse literature dealing with work, leisure and the trade-offs between them contributed to my overall approach when designing the questionnaire. Although citations are numerous, they may be of value to the interested reader. They include the following: Anderson (1967), Bailyn (1971), Becker (1957), Best (1973), Cain (1966), Dahlström & Liljestrom (1971), de Grazia (1962), Dumas-zedier (1967), Eskola (1960), Ginzberg et al. (1966), Holmstrom (1972), Kim et al. (1972), Kreps (1968, 1972), Kreps & Spengler (1973), Kreps et al. (1974), Lamour & Chalendar (1974), Levitan (1964), Myrdal & Klein (1956), O'Toole (1974), Owen (1970), Parker (1972), Rapoport & Rapoport (1971), Rotwein (1973), Sandlund (1968), Santayana (1950), Schumacher (1973), Shea et al. (1970), Sobol (1973), and Veroff & Feld (1970). In addition to the contribution to the overall approach adopted, these sources contributed greatly to the distillation of items pertaining to dual-career households, labor-leisure trade-offs, and interrelationships between family and work.

(See Appendix A, particularly questions 31-41, 51-55, 57-61, and 63-67.)

4. The literature dealing with retirement decisions and experience was helpful in sharpening questions regarding finances and in establishing the dollar ranges presented for replies. Sources here included, Barfield & Morgan (1970), Mulanaphy (1974), and TIAA-CREF (1972). (See Appendix A, particularly questions 7, 13, 16, 20-22 and 69.)

In January 1975 a preliminary form of the questionnaire was pre-tested with 20 doctoral students. Based on this, several revisions were made when developing the final instruments. Despite the revisions, upon analyzing the actual results a number of possible improvements which could be made became apparent. Highlighting them may be of value to future research endeavors.

Instrument Shortcomings

1. Questions regarding current and future dependents (Nos. 17, 18, & 19) could be improved upon. The literature on "family life cycle" has repeatedly shown that age of dependent children is related to the labor force participation of women (Fogarty, Rapoport, & Rapoport, 1971; & Groneau, 1975). Due to the exploratory nature of the inquiry, I sought to simplify this by using a measure of total number of dependents. Preliminary analyses revealed that total number of anticipated dependents, was not significantly related to

ILTFTAA either for males or females. Other preliminary analysis revealed, however, that males appeared to include "spouse" more frequently as a dependent than females. I decided to include number of dependent children anticipated as a variable in the multivariate analyses. As is noted in the variable dictionary (see Appendix A) this measure is not completely satisfactory since question 19 does not ask R to distinguish between dependent children and other dependents. In future endeavors this area of difficulty might best be resolved by expanding the number of questions about dependents. Two series of questions might be advisable: (a) one dealing with dependent children, including ages, and (b) one concerning other dependents, using particular care to separate the view of "spouse" as a dependent from other non-children dependents.

2. The questions regarding "spouse's" income potential, (Nos. 13 and 16) are phrased in somewhat extreme terms. (See Appendix A.) It may be advisable in the future to devise a method whereby potential income is distinguished from actual income. Asking solely about potential income of "spouse" tends to oversimplify the variable of other income to the individual's household. I had intended to adjust for this by using the results from questions 12 and 15, which inquired about preference regarding "spouse's" employment. Questions 12 and 15, however, failed to differentiate among Rs. Of persons responding to each of these questions virtually all replied with category (4) or (5), "spouse" should have a career or "spouse" should

have a career if wants to. The percentages for each by sex were as follows: Question 12, replies (4) or (5), female, 94%; male, 90%. Question 15, replies (4) or (5), female, 97%; male, 86%. It is the author's suspicion that these two replies constitute what R may view as being the "socially acceptable" answer.

3. On question 20, household debts, an oversight was made when preparing the final questionnaire. An instruction to: "Ignore mortgage debts, if applicable," was not included. This was intended to result in having persons with mortgages be more comparable to those not facing mortgage payments; treating purchase of a home as an investment rather than as a debt. Although some with mortgage debts may have responded in other categories, only 14 Rs indicated the highest debt category. It is assumed that the effect of this error in this study is limited.

4. Due to budget constraints it was necessary to use a standard op-scan reply sheet. It would have been preferable to design an op-scan sheet that conformed more closely with the format of the questionnaire, thus making it easier for R to follow.

Validity

As with any questionnaire, the question of validity is of importance: Did the questions measure what they were designed to measure? Validating replies by reference to other measures was deemed to be unwarranted for the purposes of the present inquiry. Face validity

is being assumed. Brief mention is warranted of four areas where validity may be somewhat questionable.

1. For some of the questions seeking to measure economic variables, such as questions 22 and 69, a few Rs indicated that they had some difficulty in responding since they had become accustomed to living on student budgets. Data from these questions may not be as firm as from others, such as age or sex.

2. Questions were asked about future marital plans and estimates of future "spouse's" income. Clearly, answers to such questions entail considerable margin for error, and data derived therefrom should be viewed as being quite "soft."

3. It should be pointed out that a number of questions were clearly intended as measures of opinion. These included: assessments of job markets (Nos. 5, 6 & 68) and views toward possible courses of action (Nos. 23-30). With reference to the job market questions it could be asked: How well does this correspond with the real situation? For the purposes of the present study, though, the hypotheses pertain to perceptions; whether they are supported by the external situation or not. For present purposes, then, asking about the validity of an opinion is not appropriate. It is legitimate, though, to question the validity of how it is measured. It is being assumed that the scalar reply categories enabled Rs to reply adequately. Provision was not made to assess the strength of opinions. It was felt that this would have constituted misplaced precision in an exploratory study.

4. Data was obtained from only one member of the household and these replies may not fully reflect the views of others in the household. It is well known that what people say they would do if an hypothetical future set of circumstances were to arise and what they actually do in the situation may bear little resemblance to one another. In this case a person may indicate a high level of IILTFTAA, but if actually confronted with such an option in real life, (s)he may not accept such a position. It is assumed that some of this difference between intention and performance may be due to the fact that many decisions and actions of this nature might entail constraints imposed by other members of the household, thus R's individual response will be somewhat at variance with actual performance. Although full discussion of this dimension of validity, predicting future performance, is well beyond the scope of the present inquiry, reference to it may serve to highlight the problematic nature of data collection. Even though the individual may be the focus of inquiry, data obtained only from the individual may be insufficient due to dynamics assumed to be operating in the larger context.

Reliability

As was true regarding the validity of the measures used, the question of reliability also needs to be discussed. Would the measures used yield consistent results under constant conditions?

Moser and Kalton (1971, pp. 317-318) note that several limitations accrue when assessing attitudes or opinions: 1) the meaning of the questions may be different to the same person at different times; the connotations and denotations of various words may change, 2) since a view toward a complex question is many-sided, the person may at different times respond differently depending on which aspect or dimension of the question is most salient, and 3) there is the dimension of intensity, whereby responses may vary according to the amount that the implications are seriously weighed and considered. I clearly recognize these limitations and caution the reader about them. I simply submit that due consideration was given to them when designing the survey instruments and that I attempted to minimize their effects by having questions simply and clearly stated and by providing extensive instructions. The interested reader is referred to Appendix E where some data regarding the internal consistency of replies pertaining to less than full-time academic appointments is presented.

CHAPTER 4

DEVELOPMENT AND DESCRIPTION OF THE FINAL DATA SET, CREATION OF PRINCIPAL DEPENDENT VARIABLE, AND PRELIMINARY ANALYSES

Summary of Response

The overall response and adjustments to the original sample are presented in Table 2.

TABLE 2
THE ORIGINAL SAMPLE, ADJUSTMENTS AND
THE FINAL DATA SET

		N
a.	Original population	1831
b.	Original sample	1430
c.	No addresses available	13
d.	Survey instruments mailed	1417
e.	Assumed undelivered (see text)	100
f.	Survey instruments presumed delivered	1317
g.	Survey instruments returned	761
h.	Replies not used in analyses (see text)	92
i.	Final data set (g-h)	669

Overall response. -- Replies were received from 761 persons.

Based upon the telephone follow-up it was ascertained that approximately 300 surveys were not delivered due to postal service difficulty. It was possible to hand deliver approximately 200 surveys to persons who had not received them. An adjustment to the original number distributed is deemed to be warranted. This adjustment is estimated to be (-100). Total returns, then, were 58 per cent, 761 of 1317.

Replies removed from analyses. -- Among replies received, 63 were from persons who indicated that they were not a U.S. citizen. Due to the assumption that these people will likely face diverse and different job market situations if they return to their country of origin upon completion of the Ph.D., it was decided to remove them from further analyses. Also, 14 replies were from persons not pursuing a Ph.D. degree. Lastly, 15 replies were not usable for analyses; four were returned without the Demographic Data Sheet, seven were largely incomplete, and four were received too late to be coded. A total of 92 replies were removed from analyses. The final data set consists of replies from 669 Rs.

Comparison of Respondents to be Used in Analyses with
the Original Sample

Data available permitted comparisons between Rs in the data set with the sample on the basis of sex, division and level in program. Tables 3-5 summarize these comparisons.

TABLE 3
SEX DISTRIBUTION

Sex	Sample		Data Set	
	N	%	N	%
Female	418	29.5	218	32.6
Male	999	70.5	451	67.4
Total	1417		669	

A Pearsons $\chi^2 = 2.08$ (df. = 1) with Yates' correction reveals that the sex proportions in the data set do not differ significantly from the sex proportions of the original sample.

TABLE 4
DISTRIBUTION BY DIVISION

Division	Sample		Data Set	
	N	%	N	%
Life Sciences	160	11.3	75	11.2
Physical Sciences	265	18.7	113	16.9
Social Sciences	731	51.6	361	54.0
Humanities	261	18.4	120	17.9
Total	1417		669	

A Pearsons $\chi^2 = 3.15$ (df. = 3) reveals that the data set divisional proportions do not differ significantly from sample divisional proportions.

TABLE 5
DISTRIBUTION BY LEVEL

Level	Sample		Data Set	
	N	%	N	%
Precandidates	1166	82.3	553	82.7
Candidates	<u>251</u>	17.7	<u>116</u>	17.3
Total	1417		669	

A Pearsons $\chi^2 = .274$ (df. = 1) with Yates correction reveals that data set distribution by level does not differ significantly from distribution by level of the sample.

Based upon these limited comparisons, the data set is taken to be representative of the sample on the basis of sex, division and level in program.

Description of the Data Set

In this section some basic descriptive statistics are presented to enable the reader to more easily grasp the composition of the data set. Rather than duplicate the inclusion of univariate statistics for variables which will be presented in greater detail below when discussing the multivariate analyses, this section will only include some basic demographic variables. The reader is referred to the section on multivariate analyses for the univariate statistics from other variables. Also, Appendix B contains the variable dictionary, which includes the source and description of all variables, univariate statistics for all

variables and a table summarizing the treatment of missing data. For clarity of presentation all variables will include their index numbers; a summary of which appears in Appendix B.

The univariate statistics for sex (V1), division (V111) and level in program (V124) were presented in the previous section.

Time to degree. -- Table 6 summarizes the distribution regarding time to degree.

TABLE 6
TIME TO DEGREE

Time to Degree	N	%
Degree obtained	14	2.1
0-5 months	87	13.0
6-11 months	114	17.0
12-17 months	100	14.9
18-23 months	90	13.5
24-29 months	88	13.2
30-35 months	49	7.3
More than 35 months	100	14.9
Missing	<u>27</u>	4.0
Total	669	

Mean Time to Degree = 19.1 months

It is seen that Rs are fairly evenly distributed across the eight categories. It might be assumed, however, that in actuality a pyramidal shape exists; fewer students being close to receiving the degree than further from the degree. This suggests that returns may have been received in somewhat greater proportion from students further along

in their program than from students just starting their program. This does not represent a problem. It merely suggests that the response rate may have been somewhat higher among those for whom employment will sooner be a consideration.

Age. -- Table 7 summarizes the age distribution.

TABLE 7

AGE

Age	N	%
Less than 25 years	88	13.2
25-29 years	396	59.2
30-34 years	133	19.8
35-39 years	29	4.3
More than 39 years	17	2.5
Missing	<u>6</u>	.9
Total	669	

Mean age = 28.6 years

In a manner paralleling that suggested with regard to time to degree, it might be assumed that the age distribution in actuality is pyramidal; with greater number of Rs in the lowest age category. If it is also assumed that younger Rs would tend to be further from the degree, the low percentage (13.2%) in the lowest age category may further suggest lower proportional representation of persons early in their program.

Ethnic or minority status. --The distribution on the basis of ethnic or minority status is summarized in Table 8. Information concerning the actual minority percentages for the sample were not available, but overall percentage of minority enrollment is estimated to be approximately nine to ten per cent.

TABLE 8
ETHNIC OR MINORITY STATUS

Ethnic/Minority Status	N	%
Black	33	4.9
Other minority	25	3.7
Non-minority (Caucasion)	608	90.9
Missing	<u>3</u>	.4
Total	669	

The percentage of minority group Rs, 8.6 per cent, is taken to be generally comparable to the estimate of minority group enrollment percentage for Literature, Sciences and Arts.

Marital status. --In Table 9 it is seen that 86.6 per cent are "married" or plan to "marry." Obviously the earlier noted limitation that data was obtained from only one individual in multiple-person households will apply, since few (13.3%) single person households are represented in the data set.

TABLE 9
MARITAL STATUS

Marital Status	N	%
"Married"	390	58.3
Likely to "marry"	189	28.3
Not likely to "marry"	89	13.3
Missing	<u>1</u>	.1
Total	669	

Prior part-time experience. -- Respondents were asked whether they had had occasion to do any consulting or similar part-time work in their field (see Appendix A, question E). Despite the fact that teaching and research assistantship work, if indicated, was coded as prior experience, only 29.8 per cent indicated that they had any prior part-time experience in their field. The wording of the question, though, may have led to under-reporting of on-campus experience.

TABLE 10
PART-TIME EXPERIENCE IN FIELD

Part-Time Experience	N	%
None	455	68.0
Some	200	29.8
Missing	<u>14</u>	2.1
Total	699	

Other skills. --Table 11 presents data regarding R's indication whether (s)he possessed any special or particular income producing skills other than in her/his academic field(s) of preparation (see Appendix A, question F).

TABLE 11
OTHER SKILLS

Other Skills	N	%
None	403	60.2
Some	265	39.6
Missing	<u>1</u>	.1
Total	669	

Despite the fact that coding here was quite generous, any skill reported was counted, only 39.6 per cent indicated that they possessed other skills. If it is assumed that only desirable or readily acceptable other skills tended to be reported, the results in Table 11 might be interpreted as suggesting that many doctoral students have "put all of their eggs in one basket." If they are unable to locate employment in their field, they do not have other skills which they would enjoy using. In view of the projected demand:supply disequilibrium this may suggest an area vitally in need of further research. If Ph. D. s cannot find employment doing what they have specialized to do, will they be severely frustrated due to the lack of other skills?

This will be further discussed in the final chapter when implications for further research are presented.

Analyses of Preferred Employment

In addition to being of interest descriptively, preliminary analyses of employment preferences was called for since it had been suspected that a number of controls would be necessary when analyzing interest in less than full-time academic appointment. This section treats employment preferences in some detail.

Type of Employer Preferred

Table 12 summarizes preferences for type of employer.

TABLE 12
TYPE OF EMPLOYER PREFERRED

Type of Employer	Preference				
	1st	Tied 1st	2nd	3rd	Not 1st, 2nd, or 3rd
University	61.1	1.5	20.3	8.1	9.0
Four Year College	14.3	.9	48.9	10.6	24.8
Two Year College	2.1	--	2.8	22.3	72.8
Proprietary School	.1	--	.1	.9	98.8
Secondary or Primary School	--	--	.3	1.3	98.4
Business or Industry	5.2	.1	6.1	14.1	74.4
Government	4.2	.1	8.5	25.4	61.7
Private Professional Practice	2.4	.6	5.1	7.2	84.8
Clinic or Hospital ^a	3.0	.1	1.3	1.5	94.0
Research Institute ^a	2.1	--	1.3	1.8	94.8
Other	3.1	--	1.6	2.8	92.4

^aThe categories "clinic or hospital" and "research institute" were not included in the list presented to R, but arise from coding replies to "other, please specify." Thus, percentages reported for these categories may underrepresent interest.

It is readily seen that doctoral students in this study express clear preferences for employment by a university, with 82.9 per cent indicating "university" as their first or second preference. Several implications of these results will be discussed below. Here it is simply noted that these results support the earlier stated assumption that the sample consists of persons likely to at some time enter or seek to enter the academic sector of the Ph.D. labor market.

Preference for type of employer was analyzed by a series of chi square tests to ascertain whether employer preference was related to other variables. Results reveal that a significant relationship obtains only with division (V111). This is summarized in Table 13 which presents, by division, the per cent of Rs who indicate the designated type of employer as their first or tied-for-first preference.

The chi square = 167.45 (df. = 24, N = 666, $p < .001$) with contingency coefficient = .4482 reveals a small association between division (V111) and preferred type of employer (V127).

The following aspects of the results in Table 13 are noteworthy. Traditional academic employment, university and four year college, is most preferred by Rs in all divisions: Life Sciences (92%), Physical Sciences (73.4%), Social Sciences (73.6%) and Humanities (85.7%). Business and industry is a preferred employer of substantial importance only in the Physical Sciences. Here it is the second most preferred employer (21.2%). Although the percentage of Rs in the Social Sciences preferring university employment is comparable to the percentage in

TABLE 13

EMPLOYER PREFERRED (V127) BY DIVISION (V111)

Type of Employer	Division			
	Life Sciences	Physical Sciences	Social Sciences	Humanities
University	66.7	56.6	64.1	63.0
Four Year College	25.3	16.8	9.5	22.7
Two Year College	--	--	.8	9.2
Business & Industry	1.3	21.2	2.8	--
Government	2.7	.9	6.7	.8
Private Professional Practice	--	.9	4.2	--
Clinic or Hospital ^a	--	--	5.6	--
Research Institute ^a	1.3	2.7	2.8	--
Other ^b	2.7	.9	3.6	4.2
Missing	--	--	.7	.8

Note: Due to ties, per cent can exceed 100.

^aThe categories "clinic or hospital" and "research institute" were not included in the list presented, but arise from coding of "other, please specify." Thus percentages for these categories may underrepresent interest in this type of employer.

^bSince only one R indicated "proprietary school" as first preference and none indicated "secondary or primary school" as first preference, these two categories were combined with "other."

other divisions preferring such employment, there is greater dispersion in the Social Sciences over the other categories of employer preference. It would appear that the job market pressures coming from the anticipated decline in enrollments at institutions of higher education may press more heavily upon the Life Sciences and Humanities than upon the Social and Physical Sciences. One qualification to this possible interpretation, though, needs to be noted. In this study preferences were requested and no attempt was made to solicit

views about possibilities. The potential importance of this distinction will be more fully noted in the final chapter when discussing implications for further research.

When designing the study I planned to control for employer preferences when analyzing IILTFTAA, since I expected that interest might vary according to preferred employer. I suspected that persons preferring academic employers might evidence greater IILTFTAA than persons preferring other employers, possibly due to differential "tightness" in the job markets. To test this, two categories were formed: (1) Rs preferring university and four year college employment (N = 518) and (2) Rs preferring government or business and industry (N = 63). These two groups were then compared regarding IILTFTAA (see later section of this chapter for measures of IILTFTAA). Of the three original measures of IILTFTAA, only interest in three-quarter time academic appointment was found to have a significant association with these categories of employer preference ($\chi^2 = 10.153$, df. = 4, sig. @ .025). Slightly more interest was evidenced by Rs preferring academic employers. The strength of predictive association, though, was very low. The Goodman-Kruskal lamda for predicting level of interest in three-quarter time academic appointment with category of employer preference known was only .015. Because of this low level of association, I decided to forego controlling for employer preference when carrying out multivariate analyses of IILTFTAA.

Type of Employment Activities Preferred

In addition to examining type of employer preferred, it was felt to be necessary to examine preferences regarding type of employment activities. It is appropriate here to present some descriptive results for two reasons. First, the preferred employment activities variable (V728) to be used in the multivariate analyses was developed by combining some categories from the original measure. Second, when creating the variable, minimum feasible appointment fraction (V719), control was exercised based upon preferred employment activity (see Appendix B for derivation of variables).

TABLE 14
TYPE OF EMPLOYMENT ACTIVITIES PREFERRED

Preferred Activities	Preference				
	1st	Tied 1st	2nd	3rd	Not 1st, 2nd, or 3rd
Teaching	50.2	5.1	34.4	8.1	2.2
Research	32.4	4.6	42.6	13.8	6.6
Administration	2.4	--	11.5	46.6	39.5
Clinical Practice ^a	6.7	.6	1.3	1.0	90.3
Consulting ^a	.9	.4	.7	3.7	94.2
Other	1.9	.1	2.7	5.8	89.4

^aThe categories "clinical practice" and "consulting" were not included in the list presented, but arise from the coding of "other, please specify." Thus, percentages for these categories may underrepresent interest in these employment activities.

As would be expected for this population of Rs, most of whom prefer employment by a university or four year college, the most preferred employment activities are teaching and research. Preference for type of employment activities was analyzed by a series of chi square tests to ascertain whether it was related to other variables being used in this study. Results of these tests reveal that employment activity preference is significantly related only to division and to IILTFTAA. The relationship with IILTFTAA will be treated below when discussing the multivariate analyses. Table 15 presents, by division, the per cent indicating the designated type of employment activity as their first or tied-for-first preference. Since a number of Rs (N = 27) expressed teaching and research jointly as their first preference, such a category was included in the bivariate analyses.

TABLE 15
EMPLOYMENT ACTIVITIES PREFERRED (V128)
BY DIVISION (V111)

First Preference Activities	Division			
	Life Sciences	Physical Sciences	Social Sciences	Humanities
Teaching	40.0	41.6	44.3	83.3
Teaching-Research	10.7	1.8	4.2	1.7
Research	48.0	54.0	30.1	10.0
Administration	--	1.8	3.6	.8
Clinical Practice ^a	--	--	13.6	--
Consulting ^a	1.3	--	2.2	--
Other	--	.9	1.9	4.2

$$\chi^2 = 141.83, \text{ df.} = 18, N = 667, p. < .001$$

^aThe categories "clinical practice" and "consulting" were not included in the list presented, but arise from the coding of "other, please specify." Thus, percentages for these categories may under-represent interest in these employment activities.

Note: Due to ties, per cent can exceed 100.

It is seen that teaching is clearly the preferred employment activity for Humanities Rs, with 83.3 per cent giving it first preference. Only in the Social Sciences do more than five per cent express first preference for employment activities other than teaching or research; yet even here a large percentage (78.6%) indicate teaching or research as their first preference employment activity. These results are consistent with those reported previously regarding employer preference.

Creation of Principal Dependent Variable--Composite Interest in Fractional Academic Appointment

When constructing the variables pertaining to $3/4$, $1/2$ and $1/4$ time, level of interest was coded 1-5 in descending numerical order, with 1 indicating greatest interest and 5 indicating least interest. This pattern was continued when creating the composite variable. The reader is advised to bear in mind, then, that for the four dependent variables higher value numbers represent lower levels of interest.

Table 16 presents the basic results from questions measuring interest in $3/4$, $1/2$ and $1/4$ time academic appointments. The response categories for level of interest were designed to range from active interest ([1] "very interested"), through successively more stringent levels of conditional interest ([3] "only if other options not too good" and [4] "only if nothing else is available"), to complete absence of interest ([5] "not interested under any circumstances"). Examination

TABLE 16
INTEREST IN SPECIFIC LESS THAN FULL-TIME
ACADEMIC APPOINTMENT POSSIBILITIES

Level of Interest	3/4 Time		1/2 Time		1/4 Time	
	N	%	N	%	N	%
1) Very interested	211	31.6	100	15.0	19	2.8
2) Somewhat interested	185	27.7	144	21.6	41	6.1
3) Interested only if other options not too good	146	21.9	116	17.4	73	10.9
4) Interested only if nothing else is available	109	16.3	237	35.5	295	44.2
5) Not interested under any circumstances	17	2.5	70	10.5	239	35.8
Missing	1	.1	2	.3	2	.3
Mean =	2.3054		3.0495		4.0390	
Std. Dev. =	1.1510		1.2612		2.9521	

of the pattern of response percentages and the changes across 3/4, 1/2 and 1/4 time in Table 16 suggests that the measures apparently did work in this manner. The percentage indicating active interest decreases while the percentages for more stringent conditional interest and absence of interest increase as the fractional appointment being considered becomes smaller. Based upon this pattern of replies it was decided that combination of these separate measures into an overall index of IILTFTAA was warranted.

The unweighted linear combination of replies to each of the three separate fractional time measures will be referred to as "composite interest in fractional academic appointment" (CIIFAA, V801). The value of CIIFAA is obtained by summing the codes of

R's responses on each of the separate measures. For example, if "very interested" in all three fractional appointment possibilities, CIIFAA = 3; if "very interested" in one fractional possibility and "somewhat interested" in the other two, CIIFAA = 5.

Table 17 summarizes the relationships among the three original fractional appointment measures and CIIFAA. This table also contains the basic descriptive results for CIIFAA (V801). Additional results which demonstrate that CIIFAA (V801) constitutes a usable overall index of IILTFTAA are presented in Chapter 5 (p. 88, Table 23) when discussing the results of the multivariate analyses.

It is seen in Table 17 that all of the simple correlation coefficients among the four measures of IILTFTAA are significant. Although

TABLE 17
RELATIONSHIPS AMONG MEASURES OF INTEREST IN
LESS THAN FULL-TIME ACADEMIC APPOINTMENT

	CIIFAA (V801)	3/4 Time (V850)	1/2 Time (V856)
3/4 Time (V850)	.8617		
1/2 Time (V856)	.9365	.7445	
1/4 Time (V862)	.7954	.4640	.6602
CIIFAA (V801)	N = 669; Range = 3 - 15; Mean = 9.3931; Std. Dev. = 2.9521		

Note: Correlation coefficients R at .01 level = .0997.

CIIFAA (V801) is seen to be most highly correlated with interest in 1/2 time academic appointment (V856), it is also highly correlated with interest in 3/4 time (V850) and interest in 1/4 time (V862). Thus, as noted above, CIIFAA (V801) will be used to reduce duplication of analyses. Where increased clarity obtains from use of the original separate measures, these results will be presented.

Selected Bivariate Analyses

Although the chapters dealing with multivariate analyses will treat the hypothesized relationships to IILTFTAA in greater detail, it is appropriate to present here the results from two specific planned analyses and one fortuitous analysis using Rs' current employment status. Preliminary analyses by sex are presented since separate multivariate analyses are reported in Chapter 6 and presentation of the results of preliminary analyses enhances understanding of the differences between the sexes.

Comparisons by Sex

Table 18 summarizes female and male response percentages for the interest categories regarding 3/4, 1/2 and 1/4 time fractional appointments. The most striking aspect of Table 18 is the large percentage of both females and males who indicate they are "very interested" or "somewhat interested" in 3/4 and 1/2 time academic appointments. If these two categories are taken to be a sort of "unconditioned interest" it is seen that 69.7 per cent of the

TABLE 18
INTEREST IN LESS THAN FULL-TIME ACADEMIC
APPOINTMENT BY SEX

Level of Interest	Appointment Fraction					
	3/4 Time		1/2 Time		1/4 Time	
	Female	Male	Female	Male	Female	Male
Very interested	43.1	26.0	21.6	11.8	3.2	2.7
Somewhat interested	26.6	28.2	31.2	16.9	8.3	5.1
Interested only if other options not too good	17.9	23.8	12.4	19.8	12.9	10.0
Interested only if nothing else is available	11.0	18.9	28.9	38.8	50.2	41.3
Not interested under any circumstances	1.4	3.1	6.0	12.7	25.3	40.9

females and 54.2 per cent of the males indicate such interest in 3/4 time. For 1/2 time the percentages are 52.8 per cent for females and 28.7 per cent for males. To some extent interest might be taken as reflecting desire for more information about such possibilities. If it is assumed, though, that the specifications accompanying the questions (see Appendix A) were clear, the applicability of this dimension of desiring more information might not be extensive.

Females appear to indicate greater interest than males. To test whether these differences are significant, t-tests were performed using the three original dependent variables (V850, V856 and V862) and the composite index, CIIFAA (V801). Results of these tests are presented in Table 19.

TABLE 19
BETWEEN SEX T-TESTS

Variable	Female	Male	T	df	Signif.
V850 3/4 Time	Mean = 2.0092	2.4489	4.7021	666	< .0001
V856 1/2 Time	Mean = 2.6651	3.2361	5.6079	665	< .0001
V862 1/4 Time	Mean = 3.8618	4.1267	3.2786	665	.0011
V801 CIIFAA	Mean = 8.5321	9.8093	5.3522	667	< .0001

It is seen that females in this study indicate significantly greater IILTFTAA than males, and that this difference holds for each of the three fractional types of appointments as well as for the composite index. Use of less than full-time academic appointments would not appear to threaten affirmative action programs for increasing the number of females on faculties.

When discussing the conceptual model it was posited that an interaction variable, "Marital Status by Sex," would be preferable to the use of either sex or marital status separately when analyzing IILTFTAA. Results of an analysis of variance of CIIFAA (V801) using this interaction variable are presented in Table 20.

From Table 20 it is seen that the results from the use of this interaction variable, in the main, confirm the hypothesized pattern of relationships. "Married" females are most interested. "Married" males appear to be less interested than "single" males, but this

TABLE 20
ANALYSIS OF VARIANCE OF COMPOSITE INTEREST IN
LESS THAN FULL-TIME ACADEMIC APPOINTMENT
FOR "MARITAL STATUS BY SEX"

Category	Strata	N	Mean	Variance	Std. Dev.
Single Female	(1)	23	9.5217	6.6245	2.5738
"Married" Female	(2)	195	8.4154	8.2956	2.8802
Single Male	(3)	66	9.6364	9.9580	3.1556
"Married" Male	(4)	384	9.8255	8.1601	2.8566

Source	DF	Sum of Sqrs.	Mean Sqr.	F
Between	3	262.45	87.483	10.509
Within	664	5527.2	8.3248	
Total	667	5790.1		p < .001

Pairwise Strata	Diff.	F-Stat.	Signif.
(1)			
(2)	1.1064	3.0250	.0825
(3)	- .1146	.0269	.8697
(4)	- .3038	.2405	.6240
(2)			
(3)	-1.2210	8.8304	.0031
(4)	-1.4101	30.8910	< .0001
(3)			
(4)	- .1892	.2421	.6229

difference is not significant. Interest evidenced by "single" females was not lowest as had been expected, and it is not significantly different from "married" females or males whether "married" or "single." This departure from the hypothesized pattern of interest may be in part due to the small number (N = 23) of "single" female Rs in the data set.

This brief examination does not exhaust treatment of sex differences in IILTFTAA. Additional differences between the sexes will be discussed in subsequent chapters.

Comparisons by Ethnic/Minority Status

It was hypothesized that minority group Rs would not evidence different IILTFTAA from nonminority Rs. To test this hypothesis a series of parallel t-tests were carried out comparing minority group Rs (Black, Spanish surnamed, Asian and Native American) with non-minority Rs (Caucasian American). Results from these tests are presented in Table 21.

TABLE 21
MINORITY VERSUS NONMINORITY T-TESTS

Variable	Minority	Non-minority	T	DF	Signif.
V850 3/4 Time	Mean = 2.3276 N = 58	2.2993 608	.1785	664	.8584
V856 1/2 Time	Mean = 2.7759 N = 58	3.0724 608	1.7134	664	.0871
V862 1/4 Time	Mean = 3.9483 N = 58	4.0444 608	.7088	664	.4787
V801 CIIFAA	Mean = 9.0517 N = 58	9.4167 608	.8973	664	.3699

From the t-tests it is seen that the null hypothesis, no difference between nonminority Rs, cannot be rejected at the .05 level for any of the four measures of IILTFTAA. Since females were found to

evidence significantly greater IILTFTAA than males, though, the question of whether this result may have arisen from overrepresentation of females among minority Rs should be assessed. Chi square analysis reveals that the percentage of females among minority group Rs (37.9%) was not significantly greater than would be expected given the female percentage (32.6%) in the entire data set.

The reader's attention is called to the small number ($N = 58$) of minority group Rs, with the caution that this result may be less stable than if a larger N were available. It was earlier noted, though, that the percentage of minority group Rs in the data set, 8.6 per cent, corresponds reasonably well with the estimate of minority group enrollment percentage (9-10%) in the original population.

Based upon the absence of significant difference in IILTFTAA between minority and nonminority Rs and upon the presence of only a small number ($N = 58$) of minority group Rs, it was decided not to include ethnic/minority status as a separate variable in the multivariate analyses.

Results from the analyses by minority status are deemed to be sufficient to warrant the following tentative interpretation. From present data it appears that minority group doctoral students are neither more nor less interested in less than full-time academic appointments than nonminority group doctoral students. Use of less than full-time academic appointments in response to the Ph.D. demand:supply disequilibrium would apparently not be likely to

result in a change in the minority:nonminority makeup of persons seeking academic employment. (There may however be demographic differences within groups.) Due to the small N of minority group Rs in the present study and to the level of importance of the question, further research should be carried out regarding possible minority:nonminority differences in IILTFTAA.

Comparisons Between "Currently Employed" and "Not Currently Employed" Doctoral Students

As the reader will recall the sample consisted of all currently enrolled doctoral students in 17 departments. When coding replies to question 3 (see Appendix C), it became apparent that a number of Rs (N = 56) were "currently employed." Since it was suspected that Rs "currently employed" might evidence less IILTFTAA than Rs "not currently employed," parallel t-tests were carried out comparing these two groups. Table 22 summarizes the results of these tests.

TABLE 22
"CURRENTLY EMPLOYED" VERSUS "NOT CURRENTLY
EMPLOYED" T-TESTS

Variable		Currently Employed	Not Currently Employed	T	DF	Signif.
V850	Mean = 2.5536		2.2760	1.7346	659	.0833
3/4 Time	N = 56		605			
V856	Mean = 3.1636		3.0364	.7165	658	.4739
1/2 Time	N = 55		605			
V862	Mean = 4.000		4.0414	.3009	658	.7636
1/4 Time	N = 56		604			

It is seen that, with the exception of 1/4 time, Rs "currently employed" indicated less interest than Rs "not currently employed," but the mean interest was not significantly different between these two groups. Further research, using a sample of persons currently employed, may be warranted since the feasibility of using less than full-time academic appointments as part of a solution to the Ph. D. demand:supply disequilibrium may depend most upon this group of Ph. D. s. This will be further treated when discussing implications for further research in Chapter 7.

CHAPTER 5

OVERALL MULTIVARIATE ANALYSES

One purpose of the multivariate analyses is to provide a preliminary test of the conceptual model developed in Chapter 2. However, due to the largely exploratory nature of this inquiry, another purpose of comparable or larger importance is to enable examination of the relationships between the explanatory variables and the dependent variable. With these two purposes in mind, the multivariate analysis technique selected was that of Multiple Classification Analysis (MCA), which is ". . . a technique for examining the interrelationships between several predictor variables and a dependent variable within the context of an additive model (Andrews, et al., 1973, p. 1)."

Analyses Technique: Multiple Classification Analysis

Since multicollinearity among explanatory variables is often problematic in additive multiple factor models, it is desirable to examine the relationships with the dependent variable for each explanatory variable both separately and in conjunction with the other explanatory variables. "A key feature of the MCA technique is its

ability to show the effect of each predictor [explanatory variable] on the dependent variable both before and after taking into account the effects of all other variables (Andrews, et al., 1973, p. 5, brackets mine). " A major advantage of using MCA for the present inquiry derives from the presence of categorical variables such as sex, division, and preferred employment activity. "The usual way of dealing with non-numerical variables in regression is to convert them into a series of dummy variables (Andrews, et al., 1973, p. 6). " However, ". . . the MCA technique can be considered the equivalent of a multiple regression using dummy variables. . . . There is no need to recode the predictor variables prior to making an analysis. And the coefficients for all categories are obtained . . . (Andrews, et al., 1973, p. 47). "

The MCA technique assumes that the relationship between all of the explanatory variables taken together and the dependent variable is additive. "In other words, it assumes that the average score [on the dependent variable] for a set of individuals is predictable by adding together the 'effects' of several predictors. An important implication of this is that the results can be distorted by interaction (Andrews, et al., 1973, p. 18, brackets mine). " Based upon this, where explanatory variables were expected to evidence interaction effects in their relationship with IILTFTAA these variables, sex and marital status, enter the analyses as a single interaction variable-- "Marital Status by Sex. " The other area of largest possible difficulty

would be the possible operation of a contingency effect, whereby if less than full-time academic appointments were not viewed as being feasible at various fractions the "effects" of the other explanatory variables may be suppressed or inoperable. Unfortunately, sufficient data is not available to permit partitioning the data set into different subsets on the basis of minimum feasible appointment levels and performing separate analyses. It is being assumed, then, that possible interactions, other than "Marital Status by Sex," if present, are not sufficiently strong to severely distort the results. It is also being assumed that if a contingency or suppressor effect applies, it will not invalidate the analyses.

Another limitation of the MCA techniques is the minimum number of cases appropriate for use of the program, ". . . there should be substantially more cases than there are degrees of freedom [total number of categories-number of predictors] in the predictive model (Andrews, et al., 1973, p. 27, brackets mine)." For overall analyses of the data set ($N = 669$, d.f. = 48), this is not problematic. As will be noted more fully below, this limitation does impose constraints upon the separate female and male MCAs.

The dependent variable. --For principal analyses the dependent variable used is the Composite Index of Interest in Fractional Academic Appointment (CIIFAA, V801), which is the unweighted linear summation of R's interest in each of the three separate fractional

appointment measures. At the outset a table containing summary results from four parallel MCAs using each of the four measures of ILTFTAA will be presented to substantiate the use of CIIFAA (V801) for subsequent analyses.

Interpreting MCA Results

Several results from the MCAs will be presented. For each MCA the following summary statistics will be presented:

- (a) Grand arithmetic mean for the dependent variable.
- (b) R^2 unadjusted. "This coefficient indicates the proportion of variance explained by this run of the program (Andrews, et al., 1973, p. 7)." This is the proportion of variance explained by the fitted additive model.
- (c) R^2 adjusted. "This coefficient indicates the proportion of variance in the dependent variable explained by all predictors taken together [adjusted for degrees of freedom] (Andrews, et al., 1973, p. 7, brackets mine)."

For each predictor the following will be presented:

- (a) Eta^2 , which ". . . is the correlation ratio and indicates the proportion of the total sum of squares explainable by the predictor [using the categories given] (Andrews, et al., 1973, p. 7, brackets mine)." It is equivalent to the R^2 derived from a simple regression equation in which CIIFAA is regressed on the one predictor alone.
- (b) Beta^2 . "These are directly analogous to the eta statistics, but are based on the adjusted means rather than the raw mean. Beta provides a measure of the ability of the predictor to explain variation in the dependent variable after adjusting for the effects of all other predictors. This is not in terms of the per cent of variance explained (Andrews, et al., 1973, p. 7). "The B² coefficients are a measure of the relative importance of the various predictors (Williams, et al., 1974, p. 252)."

(c) An F and its level of significance; level of the gross relationship between the predictor and CIIFAA. This test answers the question: ". . . does this predictor all by itself explain a significant portion of the variance of the dependent variable (Andrews, et al., 1973, p. 34)?"

(d) An F and its level of significance; level of the net relationship between the predictor and CIIFAA. This test answers the question: Does this predictor explain a significant proportion of the variation in CIIFAA over and above that which can be explained by the other predictors?

For each category of each predictor the following will be presented:

- (a) The number of cases.
- (b) The percentage of cases in that category.
- (c) The unadjusted mean CIIFAA.
- (d) The adjusted mean CIIFAA. "This indicates what the mean would have been if the group [cases in this category] had been exactly like the total population with respect to its distribution over all the other predictor classifications (Andrews, et al., 1973, p. 7, brackets mine)." The difference between the actual or unadjusted mean and the adjusted mean reflects the amount of intercorrelation among the predictors. However, since these can more easily be seen from correlation matrices, such matrices will be included.

Summary and Comparison of MCA Results Which Obtain When Using the Separate and Composite Measures of Interest in Less than Full-Time Academic Appointment as the Dependent Variable

Table 23 presents a summary of the significance levels for the gross and net relationships between the explanatory variables and each of the measures of IILTFTAA. The table also includes the beta squared rank of importance of the predictors in their joint explanation of the dependent variable. It is seen that there are slightly different

TABLE 23

SUMMARY OF GROSS AND NET RELATIONSHIPS BETWEEN PREDICTORS AND INTEREST IN LESS THAN FULL-TIME ACADEMIC APPOINTMENT

Predictor	r	II 3/4 Time AA VB50			II 1/2 Time AA VB56			II 1/4 Time AA VB62			CHPAA VB01		
		Gross Sig. Level	Net Sig. Level	Rank	Gross Sig. Level	Net Sig. Level	Rank	Gross Sig. Level	Net Sig. Level	Rank	Gross Sig. Level	Net Sig. Level	Rank
Min. Possible Non-Economic Change	719	.001	.001	2	.001	.001	1	.001	.001	1	.001	.001	1
Part-Time Job Prospects	722	.001	.001	1	.001	.001	2	.001	.001	3	.001	.001	2
Subsistence Est.	768	.001	.001	3	.001	.01	5	.001	.001	2	.001	.001	3
Marital x Sex	769	.01	.001	5	.025	.001	4	.001	.001	4	.01	.001	4
Preferred Emplmt.	768	.001	.001	4	.001	.001	3	.001	NS	11	.001	.01	5
Activity	728	.001	.025	11	.001	.01	6	.001	.001	5	.001	.05	7
Net Need for Money	710	NS	.01	6	NS	NS	11	NS	.05	9	NS	NS	6
Est. Acad. Year Income	707	.025	.025	8	.01	.05	7	.001	.001	6	.01	NS	8
Nonsalary Fin.	736	NS	NS	10	NS	NS	8	.01	NS	15	NS	NS	9
Resources "Springs" Income	701	.025	.01	7	NS	NS	15	.05	.01	8	.05	NS	10
Potential Need for Time	721	.001	NS	12	.001	NS	10	.001	NS	14	.001	NS	11
Assessment of Job Market	717	NS	NS	14	NS	NS	9	NS	.001	7	NS	NS	12
Age	723	NS	.025	9	NS	NS	12	NS	NS	17	NS	NS	13
Division	111	NS	NS	15	.01	NS	14	.001	NS	13	.01	NS	14
Prior Part-Time	714	NS	NS	16	.01	.05	13	.01	NS	16	.01	NS	15
Other Skills	715	NS	NS	17	NS	NS	17	.01	.01	12	.05	NS	16
No. Children Auto-upted	725	.01	NS	13	NS	NS	16	.05	.05	10	NS	NS	17
		R ² unadjusted = .328	R ² unadjusted = .348		R ² unadjusted = .348	R ² unadjusted = .251		R ² unadjusted = .251	R ² unadjusted = .374		R ² unadjusted = .374		
		R ² adjusted = .272	R ² adjusted = .293		R ² adjusted = .293	R ² adjusted = .198		R ² adjusted = .198	R ² adjusted = .322		R ² adjusted = .322		

Notes: (1) NS = relationship not significant at .05 level.

(2) F-tests performed assume: (a) cases are drawn randomly and independently from k normally distributed populations, and (b) variances are equal. The latter has not been tested; both are assumed.

importance rankings among the predictors when the different dependent variables are used; particularly for the ranks of lesser importance (rank 7 or greater). However, the five most important predictors, except rank 5 for "II 1/4 time AA," are common across all four dependent variables. It is also seen that the highest multiple R^2 obtains when CIIFAA (V801) is the dependent variable. This is not surprising since a three-item index would be expected to be more reliable than single item variables. Because of these results, CIIFAA (V801) will be used as the dependent variable in the multivariate analyses.

Results from MCA Using the Entire Data Set

Table 24 presents the basic MCA results obtained when using CIIFAA (V801) as the dependent variable. It is seen from the unadjusted multiple R^2 that 37.4 per cent of the variation in CIIFAA is explained by the fitted additive model with 17 explanatory variables.

The F statistics for predictor η^2 reveal that significant gross relationships obtain between CIIFAA and 12 explanatory variables. The F statistics for predictor β^2 show that only six explanatory variables attain significance for their net relationship with CIIFAA.

Table 25 presents for each predictor: the number and percentage of Rs in each category, actual mean CIIFAA and the adjusted mean for each category. For the interested reader, a matrix of product-moment correlation coefficients summarizing the linear relationships between variables is presented in Appendix D (see Table 34).

TABLE 24

IMPORTANCE OF PREDICTORS IN EXPLAINING VARIATION IN INTEREST IN
LESS THAN FULL-TIME ACADEMIC APPOINTMENT

Predictor	Gross Relationship				Net Relationship			
	β	Eta Square	F	Sig. Level	Beta Square	F	Sig. Level	
Minimum Feasible Appointment Fraction	719	.1827	49.52	.001	.0673	23.86	.001	
Change in Non-Economic Payoffs Under 1/2 Time	722	.1873	38.25	.001	.0618	16.42	.001	
Part-Time Job Prospects	768	.0625	11.07	.001	.0212	5.62	.001	
Estimate of Subsistence	769	.0225	5.10	.01	.0204	7.24	.001	
Marital Status by Sex	708	.0505	8.83	.001	.0157	4.16	.01	
Preferred Employment Activity	728	.0690	24.67	.001	.0065	3.43	.05	
Net Need for Money	710	.0036	.59	NS	.0072	1.92	NS	
Est. Academic Year Income	707	.0199	4.50	.01	.0060	1.45	NS	
Nonsalary Financial Resources	736	.0083	1.40	NS	.0055	1.45	NS	
"Spouse's" Income Potential	701	.0123	2.76	.05	.0046	1.62	NS	
Need for Time	721	.0519	12.14	.001	.0044	1.58	NS	
Assessment of Job Market	717	.0023	.51	NS	.0038	1.34	NS	
Age	723	.0008	.18	NS	.0032	1.14	NS	
Division	111	.0178	4.03	.01	.0024	.86	NS	
Prior Part-Time Experience	714	.0122	8.21	.01	.0021	2.26	NS	
Other Skills	715	.0064	1.29	.05	.0014	1.49	NS	
No. of Children Anticipated	725	.0068	1.51	NS	.0007	.26	NS	
		R ² unadjusted	.374					
		R ² adjusted	.322					
		N	669					
						Significant at .001 level		

Notes: (1) NS = relationship not significant at the .05 level.

(2) F-tests performed assume: (a) cases are drawn randomly and independently from normally distributed populations, and (b) variances are equal. The latter has not been tested; both are assumed.

TABLE 25

RELATIONSHIP BETWEEN SPECIFIED PREDICTORS AND
INTEREST IN LESS THAN FULL-TIME
ACADEMIC APPOINTMENT

Predictor Category	N	%	Unadjusted Mean	Adjusted Mean
Minimum Feasible Appointment Fraction (V719)				
Less than 1/2 time	150	22.4	7.920	8.517
1/2 time	288	43.0	8.858	9.044
5/8 or 3/4 time	148	22.1	10.682	10.250
More than 3/4 time	83	12.4	11.615	10.660
Change in Non-Economic Pay-offs under 1/2 time (V722)				
Most positive change	84	12.6	7.155	8.088
Positive change	119	17.8	8.504	8.830
No net change	181	27.1	9.039	9.211
Negative change	167	25.0	10.144	9.910
Most negative change	118	17.6	11.364	10.436
Part-Time Job Prospects (V768)				
Very good	73	10.9	8.082	8.651
Good	98	14.6	8.888	9.100
Fair	156	23.3	8.910	9.121
Poor	245	36.6	9.837	9.620
Non-existent	97	14.5	10.546	10.114
Estimate of Subsistence (V769)				
Less than \$6,000	191	28.6	9.131	9.020
\$6,000-\$8,000	184	27.5	8.902	9.034
\$8,001-\$10,000	144	21.5	10.021	9.731
More than \$10,000	150	22.4	9.727	9.984
Marital Status by Sex (V708)				
Single females	23	3.4	9.522	9.730
"Married" female	195	29.1	8.415	8.857
Single males	66	9.9	9.636	9.520
"Married" males	384	57.4	9.826	9.614
Not ascertained	1	0.1	15.000	12.988

Note: Lower numerical values on the dependent variable represent greater interest in less than full-time academic appointment.

TABLE 25 (continued)

Predictor Category	N	%	Unadjusted Mean	Adjusted Mean
Preferred Employment Activity (V728)				
Teaching	336	50.2	9.241	9.418
Other	89	13.3	7.764	8.815
Research	244	36.5	10.197	9.570
Net Need for Money (V710)				
Less than \$3,000	73	10.9	9.575	9.113
\$3,000-\$6,000	280	41.9	9.211	9.203
\$6,001-\$9,000	113	16.9	9.460	9.473
\$9,001-\$12,000	132	19.7	9.644	9.826
More than \$12,000	71	10.6	9.352	9.499
Estimated Academic Year Income (V707)				
Less than \$11,000	138	20.6	8.746	9.163
\$11,001-\$13,000	270	40.4	9.774	9.569
\$13,001-\$15,000	175	26.2	9.526	9.517
More than \$15,000	86	12.9	8.965	8.957
Nonsalary Financial Resources (V736)				
Less than -\$3,000	76	11.4	9.026	9.076
-\$3,000-\$0.00	164	24.5	9.341	9.439
\$1.00-\$3,000	208	31.1	9.707	9.654
\$3,001-\$10,000	134	20.0	9.463	9.318
More than \$10,000	87	13.0	8.954	9.075
"Spouse's" Income Potential (V701)				
\$00.00-\$9,000	153	22.9	9.641	9.580
\$9,001-\$13,000	273	40.8	9.542	9.363
\$13,001-\$17,000	164	24.5	9.317	9.506
More than \$17,000	79	11.8	8.557	8.903
Need for Time (V721)				
Most	164	24.5	8.482	9.125
Second most	194	29.0	9.155	9.312
Second least	192	28.7	9.771	9.532
Least	119	17.8	10.429	9.670

Note: Lower numerical values on the dependent variable represent greater interest in less than full-time academic appointment.

TABLE 25 (continued)

Predictor Category	N	%	Unadjusted Mean	Adjusted Mean
Assessment of Job Market (V717)				
Best	79	11.8	9.278	9.629
Second best	232	34.7	9.246	9.469
Second worst	288	43.0	9.476	9.199
Worst	70	10.5	9.671	9.673
Age (V723)				
Less than 25 years	88	13.2	9.341	9.207
25-29 years	402	60.1	9.343	9.316
30-34 years	133	19.9	9.534	9.693
More than 34 years	46	6.9	9.522	9.557
Division (V111)				
Life Sciences	75	11.2	9.373	9.040
Physical Sciences	113	16.9	10.257	9.494
Social Sciences	361	54.0	9.211	9.472
Humanities	120	17.9	9.142	9.282
Prior Part-Time Exp. (V714)				
None	469	70.1	9.606	9.482
Some	200	29.9	8.895	9.185
Skills other than academic field(s) of preparation (V715)				
None	404	60.4	9.584	9.482
Some	265	39.6	9.102	9.257
Number of Children Anticipated (V725)				
None	301	45.0	9.186	9.396
One	91	13.6	9.209	9.337
Two	235	35.1	9.655	9.359
More than two	42	6.3	9.810	9.689
Number in sample = 669				
Grand arithmetic mean = 9.393				
R ² unadjusted = .374				
R ² adjusted = .322				

Note: Lower numerical values on the dependent variable represent greater interest in less than full-time academic appointment.

Explanatory Variables Having Significant Net
Relationship with Composite Interest in
Fractional Academic Appointment

This section presents results for the six explanatory variables for which a significant net relationship with CIIFAA (V801) obtains; that is, the relationship is significant when the 16 other explanatory variables are taken into account. Presentation is in decreasing order of strength of the net relationship.

Minimum Feasible Appointment Fraction (V719). --As hypothesized, CIIFAA (V801) decreases as assessments of the Minimum Feasible Appointment Fraction (V719) increase. The net relationship is significant at the .001 level and the β^2 (.0673) reveals that, of the 17 explanatory variables, Minimum Feasible Appointment Fraction (V719) has the strongest net relationship with CIIFAA (V801).

Change in Non-Economic Payoffs under 1/2 Time (V722). --As expected, CIIFAA (V801) is highest for Rs who perceive 1/2 time academic appointments resulting in most positive change in non-economic payoffs and lowest for Rs who perceive the non-economic changes to be most negative. The change in CIIFAA (V801) across all categories is consistent with expectations. From the β^2 (.0618, sig. @ .001) it is seen that Change in Non-Economic Payoffs under 1/2 Time (V722) has the second highest net relationship with CIIFAA (V801) and is only slightly less important than Minimum Feasible Appointment Fraction (V719) in explaining variation in CIIFAA (V801).

Part-Time Job Prospects (V768). --It is seen in Table 25 that CIIFAA (V801) varies according to assessment of non-academic Part-Time Job Prospects (V768), with Rs who assess their prospects as being better tending to indicate greater CIIFAA (V801) than those seeing the prospects as poorer. It is seen in Table 24 that Part-Time Job Prospects (V768) has the third highest net relationship ($\text{beta}^2 = .0212$, sig. @ .001) with CIIFAA (V801).

Estimate of Subsistence (V769). --The results indicate that, as hypothesized, CIIFAA (V801) is inversely related to R's estimate of subsistence for her/his planned household situation. In Table 25 it is seen that Rs who estimate subsistence to be higher, tend to evidence lower CIIFAA (V801) than those giving lower subsistence estimates. From Table 24 it is seen that Estimate of Subsistence (V769) has the fourth highest ($\text{beta}^2 = .0204$, sig. @ .001) net relationship with CIIFAA (V801).

Marital Status by Sex (V708). --From Table 24 it is seen that Marital Status by Sex (V708) is the fifth most important ($\text{beta}^2 = .0157$, sig. @ .01) variable for explaining variation in CIIFAA (V801). From Table 25 it is seen that this relationship is attributable mostly to the difference in CIIFAA (V801) between "married" females and other Rs, with "married" females evidencing greatest CIIFAA.

Preferred Employment Activity (V728). --From Table 25 it is seen that the expectation that persons preferring teaching would evidence greater IILTFTAA than persons preferring research is not substantiated. Instead it is seen that the significant net relationship between CIIFAA (V801) and Preferred Employment Activity (V728) arises principally due to the high CIIFAA on the part of Rs preferring "other" activities. Doctoral students who express first preference for clinical practice, consulting, and administration evidence greater CIIFAA than those preferring teaching or research.

Explanatory Variables Having Significant Gross Relationship
but Not Significant Net Relationship with Composite Interest
in Fractional Academic Appointment

This section presents results for the six explanatory variables which have significant gross relationship but not significant net relationship with CIIFAA (V801). These six variables considered alone are significantly related to CIIFAA (V801), but when all 17 explanatory variables are considered simultaneously their net relationship with CIIFAA (V801) fails to attain significance at the .05 level. Presentation is in descending order of the strength of the gross relationship with CIIFAA (V801).

Need for Time (V721). --It is seen from Tables 24 and 25 that the gross relationship between Need for Time (V721) and CIIFAA (V801), as predicted, is a significant ($\eta^2 = .0519$, sig. @ .001) and inverse relationship. When other predictors are taken into account

the net relationship is not significant, but the inverse pattern remains. From Table 34 (Appendix D) it is seen that Need for Time (V721) is strongly related to both non-economic change under 1/2 time (V722), $R = .2875$, and minimum feasible appointment fraction (V719), $R = .1754$, both of which are important in explaining variation in CIIFAA (V801). A suggested interpretation of the absence of significant net relationship between Need for Time (V721) and CIIFAA (V801) would be that it is overshadowed by the relationship of CIIFAA (V801) with Minimum Feasible Appointment Fraction (V719) and/or Change in Non-Economic Payoffs under 1/2 Time (V722).

Estimated Academic Year Income (V707). --From Tables 24 and 25 it is seen that the relationship between Estimated Academic Year Income (V707) and CIIFAA (V801) is more complex than was hypothesized; CIIFAA (V801) does not simply increase as Estimates of Academic Year Income (V707) increase. The gross relationship, which is significant ($\eta^2 = .0199$, sig. @ .01), is essentially curvilinear; with CIIFAA (V801) being greater for the highest and lowest Estimates of Academic Year Income than for the two middle categories. This curvilinear pattern also holds, but is somewhat attenuated, for the net relationship which is not significant. Interest initially decreases and then begins to increase as estimates of academic year income increase. This pattern is taken to reflect the backward bending labor supply curve referred to in Chapter 2; as wage rate passes a certain

point, the individual's propensity to supply another hour of labor decreases.

Division (V111). --It is seen from Tables 24 and 25 that the gross relationship between Division (V111) and CIIFAA (V801) is significant ($\eta^2 = .0178$, sig. @ .01), with Rs in the physical sciences evidencing lowest CIIFAA (V801) and Rs in the humanities evidencing highest CIIFAA. When other predictors are considered jointly with Division, the net relationship between Division (V111) and CIIFAA (V801) is not significant. The absence of significance for the net relationship is most likely attributable to overshadowing of the importance of Division (V111) by the relationship between "Marital Status by Sex" (V708) and CIIFAA (V801). The reader will recall that females evidenced significantly greater IILTFTAA than males. Female percentages by division were as follows: physical sciences--9.7 per cent, life sciences--26.7 per cent, social sciences--36.8 per cent, and humanities--45.0 per cent. From Table 25 it can be seen that the level of unadjusted mean CIIFAA for divisional categories corresponds with the percentage of females in that division. Divisional differences, then, are most likely attributable to the sex composition differences between divisions.

"Spouse's" Income Potential (V701). --The gross relationship between "Spouse's" Income Potential (V701) and CIIFAA (V801) is seen from Table 24 to be significant ($\eta^2 = .0123$, sig. @ .05). From

Table 25 it is seen that, as hypothesized, CIIFAA (V801) increases as "Spouse's" Income Potential (V701) increases. For the net relationship, seen not to be significant, no clear explanation of the overshadowing warrants suggestion since "Spouse's" Income Potential (V701) is seen in Table 34 to have moderately strong correlations with several of the other explanatory variables. Also, as will be more fully noted below when presenting suggestions for further research, "Spouse's" Income Potential may be too simplistic a measure.

Prior Part-Time Experience (V714). --Tables 24 and 25 reveal that the gross relationship between Prior Part-Time Experience (V714) and CIIFAA (V801) is significant ($\eta^2 = .0122$, sig. @ .01). Persons who indicate that they have had prior part-time experience in their field evidence higher CIIFAA than those not indicating such experience. It is seen in Table 24 that the net relationship between Prior Part-Time Experience (V714) and CIIFAA (V801) is not significant. Since Prior Part-Time Experience (V714) is seen from Table 34 (Appendix D) to be most strongly related to Part-Time Job Prospects (V768), $R = -.1258$, the relationship between Part-Time Job Prospects (V768) and CIIFAA (V801) is the probable source of the overshadowing of the relationship between Prior Part-Time Experience (V714) and CIIFAA (V801).

Other Skills (V715). --Table 24 reveals a significant gross relationship ($\eta^2 = .0064$, sig. @ .05) between Other Skills (V715) and

CIIFAA (V801). Table 25 reveals that, as predicted, Rs indicating that they have skills other than in their academic field(s) of preparation evidence greater CIIFAA than Rs not indicating such other skills. It is seen from Table 24 that the net relationship between Other Skills (V715) and CIIFAA (V801) is not significant. This overshadowing may be attributable to the fact that Other Skills (V715) is moderately correlated with Change in Non-Economic Payoffs under 1/2 Time (V722), $R = .0747$, and Part-Time Job Prospects (V768), $R = -.0744$ (see Table 34, Appendix D), both of which have significant net relationships with CIIFAA (V801).

Explanatory Variables Which Appear Not to be Related with Composite Interest in Fractional Academic Appointments

The previous two sections treated the 12 explanatory variables for which significant gross relationships with CIIFAA (V801) obtained. This section presents results for the five explanatory variables for which significant relationships with CIIFAA (V801) did not obtain at the .05 level of significance.

Number of Children Anticipated (V725). --From Table 24 it is seen that neither the gross nor net relationship between Number of Children Anticipated (V725) and CIIFAA (V801) attain significance. When discussing this variable in Chapter 2 it was noted that it was a somewhat crude measure since ages of children were not taken into account. Also, as will be noted in Chapter 6 when discussing results of separate analyses for females and males, it will be noted that the

direction of the relationship between CIIFAA (V801) and Number of Children Anticipated (V725) is opposite for women and men. It is suspected that these two factors best explain the absence of significance between CIIFAA (V801) and Number of Children Anticipated (V725).

Net Need for Money (V710). --Table 24 reveals that neither the gross nor the net relationships between CIIFAA (V801) and Net Need for Money (V710) are significant. It is seen from Table 25 that the pattern for the net relationship, with the exception of the highest category (more than \$12,000), tends to be consistent with the pattern expected; as net need for money increases, CIIFAA (V801) decreases. It will be noted below when comparing the separate, by sex, analyses that Net Need for Money (V710) does attain significance for its net relationship with CIIFAA (V801) for females.

Age (V723). --It is seen from Table 24 that neither the gross nor net relationships between Age (V723) and CIIFAA (V801) are significant. It is of interest to note in Table 25, though, that the pattern for the net relationship coincides with expectations; younger and older Rs tend to evidence greater interest than mid-range age Rs. The absence of significance may be due to the constricted age range coming from the way in which the population was defined.

Nonsalary Financial Resources (V736). --Table 24 reveals that neither the gross nor net relationships between Nonsalary Financial

Resources (V736) and CIIFAA (V801) are significant. Household nonsalary financial resources do not appear to be important regarding doctoral students' IILTFTAA. Despite this lack of association, I suggest that such a variable should continue to be included in examinations of IILTFTAA since it may be important to other populations. For example, to older persons nonsalary financial resources may be an important consideration regarding phased retirement.

Assessment of Job Market (V717). --From Table 24 it is seen that neither the gross nor the net relationship between Assessment of Job Market (V717) and CIIFAA (V801) are significant. Doctoral students' IILTFTAA does not appear to be strongly related to their assessments of the "tightness" of the job market. At the risk of placing undue emphasis upon non-significant results, it may be of interest to note from Table 25 that CIIFAA is lowest for Rs assessing the job market as "tightest." This may reflect a very realistic outlook since recent events suggest that persons on part-time appointments tend to be released first when institutions of higher education reach the unhappy situation of having to reduce personnel. This will be more fully discussed below when the apparent dilemmas posed by slow or no growth are treated.

Two Hypothetical Types of Interest in Less Than Full-Time Academic Appointment

The previous sections presented results from the multivariate analyses of the entire data set. During the process of examining

them, several results suggested that IILTFTAA may be more complex than originally conceived. It appeared that interest may have been evidenced for different reasons. Some Rs may have evidenced interest because they wish to trade off monetary income for time. Others may be interested because they wish to combine an academic appointment with other activities. This section examines results pertaining to the possible existence of two hypothetical types of IILTFTAA and discusses the implication this has for the development of a general theory for explaining IILTFTAA. In the interest of clarity, descriptions of the two hypothetical types of IILTFTAA are given prior to presenting the results which suggested their existence.

"Type 1 IILTFTAA" is that evidenced by persons who are interested in less than full-time academic appointments so that they will have more time available for purposes other than work. They essentially desire to trade off monetary income for time.

"Type 2 IILTFTAA" is that evidenced by persons who wish to combine employment in the academic sector with other income-producing activities.

Results Which Suggest that Two Types of IILTFTAA May Exist

It was seen in Table 25 that CIIFAA (V801) was significantly greater on the part of Rs assessing their Part-Time Job Prospects (V768) to be good than for Rs giving poorer assessments of their non-academic part-time job prospects. There was a significant

positive relationship between Rs' assessments of the "tightness" of the non-academic part-time job market and CIIFAA. From Table 24 it was seen that Part-Time Job Prospects (V768) was the third most important variable for explaining variation in CIIFAA (V801). It was this result which initially led me to focus on the possible existence of two types of IILTFTAA. The direction of the relationship was in accord with expectations, but the importance of Part-Time Job Prospects (V768) appeared greater than I would have expected if, as suggested in Chapter 2, it was serving only as an indicator regarding risks. An alternative interpretation of the functioning of Part-Time Job Prospects (V768) would be that some Rs may evidence high CIIFAA, not because they desire to trade off monetary income for time, but because they hope to utilize the time "freed up" under less than full-time academic appointments to pursue additional part-time work. The relationship between Part-Time Job Prospects (V768) and CIIFAA (V801) could reflect both "type 1 IILTFTAA" and "type 2 IILTFTAA."

From the MCA results it was seen that CIIFAA was highest for Rs preferring activities other than teaching or research. The simplest interpretation of this would be that persons preferring "other" activities may also not want to forego completely the traditional academic activities of teaching or research. They evidence high CIIFAA so that they can engage in both types of activities. For example, some Rs whose first preference is for administration may not want to

abandon the possibility of receiving tenure. However, tenure is traditionally only awarded to persons holding academic appointments. Less than full-time academic appointments would make it easier for them to engage in their preferred activities while at the same time making it possible for them to receive tenure.

It was seen that the gross relationship between Estimated Academic Year Income (V707) and CIIFAA (V801) was significant and curvilinear. Both lowest and highest estimated income categories evidenced greater CIIFAA than the two middle income estimate categories. Respondents in the lowest category, less than \$11,000, may feel that the income provided by academic employment would be insufficient in providing for their needs. They may evidence high CIIFAA in the hope that this would enable them to seek additional income. This would be "type 2 IILTFTAA." The interest evidenced by Rs in the highest category of estimated income, more than \$15,000, could derive from either type 1 or type 2 IILTFTAA. Some may feel that their income would be at a high enough level to permit them to trade off some monetary income for more time, be evidencing "type 1 IILTFTAA." It is also possible that some Rs in the highest estimated income category could be evidencing "type 2 IILTFTAA." They may feel that they would be in high demand elsewhere and thus evidence high CIIFAA hoping to enrich their career or themselves by combining an academic appointment with other income-producing activities.

Although a significant net relationship did not obtain between Net Need for Money (V710) and CIIFAA (V801), its beta square was sixth most important. Also, Net Need for Money was seen to be significantly related to II 3/4 time AA (V850) and II 1/4 time AA (V862). The pattern of the relationship between Net Need for Money (V710) and all four measures of IILTFTAA tends to be curvilinear. Interest initially decreases as need for money increases and then appears to increase again for Rs in the highest Net Need for Money (V710) categories. This result can also be interpreted as indicative of the presence of two types of IILTFTAA. Respondents having low net need for money may feel that they are able to trade off money for time; evidence "type 1 IILTFTAA." Respondents in the highest Net Need for Money category may be evidencing "type 2 IILTFTAA" because they hope to obtain more income by combining an academic appointment with other income-producing activities. Unfortunately, this study was not designed with two hypothetical types of IILTFTAA in mind. In particular, measures of Rs' estimates of potential income from employment in the non-academic sector were not included. In future inquiries such measures would be advisable since they would permit fuller exploration of how income expectations may be related to IILTFTAA.

In order to explore the hypothetical two types of IILTFTAA I looked at the results from questions 52, 58 and 64, which asked R to indicate the likelihood that time "freed up" under each of the separate fractional appointment possibilities would be used to seek other regular

employment. Table 26 presents, for each fractional appointment option, the percentage of Rs "very interested" in such an appointment who responded in each likelihood category that the time "freed up" would be used to seek other regular employment.

TABLE 26

LIKELIHOOD THAT TIME "FREED UP" WOULD BE USED TO
SEEK OTHER REGULAR EMPLOYMENT BY RESPONDENTS
INDICATING THAT THEY ARE "VERY INTERESTED"
IN THE DESIGNATED APPOINTMENT FRACTION

Likelihood that time "freed up" would be used to seek other regular employment	3/4 Time AA V850	1/2 Time AA V856	1/4 Time AA V862
	N = 209	95	19
Very Likely	4.8	15.8	78.9
Somewhat Likely	10.0	23.2	0.0
Somewhat Unlikely	25.4	16.8	15.8
Very Unlikely	59.8	44.2	5.2

Table 26 is important for clarifying a potentially crucial dimension of the hypothetical existence of two types of IILTFTAA. Although the two types are discussed as if they were constant phenomena, in fact, a person's type of IILTFTAA may vary according to the exact LTFTAA situation being considered. If "very unlikely to seek other regular employment" is considered to be idealized "type 1 IILTFTAA," it is seen that under 3/4 time AA 59.8 per cent of the "very interested" Rs evidence "type 1 IILTFTAA" whereas only 5.2 per cent evidence "type 1 IILTFTAA" under 1/4 time AA. Conversely, if "very likely

to seek other regular employment" is considered to be idealized "type 2 IILTFTAA," it is seen that 4.8 per cent of the "very interested" evidence idealized "type 2 IILTFTAA" under 3/4 time AA compared with 78.9 per cent under 1/4 time AA. This poses a sort of dilemma for the explanation of IILTFTAA since it appears to be somewhat situation specific. The dilemma is this. Can one develop a theory of IILTFTAA by including measures which tap both hypothetical types of interest? Or, must one develop theories for different less than full-time situations?

Implications for the Development of a General Theory about IILTFTAA

The attempt in the present inquiry has been to move toward the beginnings of a general theory of IILTFTAA. It was initially assumed that IILTFTAA would vary on a single dimension; level of interest. The results, however, suggest that a second dimension is operative. There are not only differences in interest level to be explained, but there also are differences in the type of interest. Furthermore, although two types of IILTFTAA have been hypothesized, the following hypothetical example suggests that the two types may not be mutually exclusive.

When considering a 3/4 time academic appointment a person may be very interested so that (s)he can have more time available for purposes other than work. (S)he may evidence "type 1 IILTFTAA." When considering a 1/4 time academic appointment the same person

may still be very interested, but here might be evidencing both types of IILTFTAA. (S)he may assess her/his non-academic part-time job prospects as being excellent and conceivably be interested in the 1/4 time appointment intending to work another 1/4 time in the non-academic sector and still have more time available for non-work purposes. This hypothetical example illustrates two crucial points. First, the same person conceivably might evidence different types of IILTFTAA in response to different less than full-time appointment possibilities. Second, for any particular less than full-time situation, the interest evidenced might represent a mixture of types of IILTFTAA.

Brief examination of results from MCA's using interest in the separate fractional academic appointment measures as the dependent variable may more specifically convey the difficulties entailed in developing a general theory of IILTFTAA. In particular, it is instructive to compare the pattern of relationships for explanatory variables with II 3/4 time AA (V850) and with II 1/4 time AA (V862).

In Table 23 (p. 88), although the rankings differ somewhat, it is seen that II 3/4 time AA (V850) and II 1/4 time AA (V862) have in common the three most important predictors. Minimum Feasible Appointment Fraction (V719) is rank 2 for 3/4 time and rank 1 for 1/4 time. Change in Non-Economic Payoffs (V722) is rank 1 for 3/4 time and rank 3 for 1/4 time. And, Part-Time Job Prospects (V768) is rank 3 for 3/4 time and rank 2 for 1/4 time. As noted earlier a person's assessment of the feasibility of less than full-time

academic appointments may function as a conditional variable. If less than full time is not assessed to be feasible, other factors influencing interest may have little, if any, effect. It seems logical that this would apply regardless of type of IILTFTAA. As also noted earlier, Part-Time Job Prospects (V768) may "work" for either type of IILTFTAA. It may serve as an indicator of risk reduction for "type 1 IILTFTAA" and as an indicator regarding other income-producing possibilities for "type 2 IILTFTAA." Lastly, as noted in Chapter 2, due to the "professional" nature of academic positions it was assumed that non-economic considerations would be as important or more important than economic considerations regarding IILTFTAA. I would expect this assumption to apply regardless of type of IILTFTAA. The foregoing suggests that, at the core, the models for explaining each type of IILTFTAA are similar. It is primarily on variables of lesser importance that they begin to differ. This, in addition to the earlier noted greater reliability of a three-item index as a dependent variable, may explain why explanatory power is not lost when using CIIFAA (V801) instead of either separate measure of IILTFTAA. The explanatory variables may "work" reasonably well for both types of IILTFTAA. Overall, though, some explanatory power may be lost because of the possible presence of two types of IILTFTAA.

Infeasibility of Adequately Exploring the Models for the Two Types of IILTFTAA with the Present Data Set

It might be suggested that separate analyses for each type of IILTFTAA ought to be performed. Careful consideration was given this, but I decided that it would not be feasible to adequately test how the models for each type of IILTFTAA might be different. It would appear to be possible to carry out a two-phase partitioning of the data set to sort Rs evidencing "type 1 IILTFTAA" from "type 2 IILTFTAA" and then to proceed to test for differences. First, Rs interested in less than full-time academic appointments could be separated from those not interested or only conditionally interested. Second, interested Rs could be partitioned as to whether they would likely seek a second job or not. This approach, however, would not be adequate for several reasons. First, partitioning on the basis of the dependent variable would substantially reduce the amount of variation to be explained. This could only be done if another separate dependent variable were available to be analyzed. Second, such a two-phase partitioning would substantially reduce the number of cases remaining for analyses of each type of IILTFTAA. Third, the types of IILTFTAA may not be mutually exclusive. Finally, since this study was not designed with these two hypothetical types of IILTFTAA in mind, it is not possible now to verify how particular explanatory variables may be functioning. For example, it has been suggested that the variable, Part-Time Job Prospects (V768), "works" in explaining both types of IILTFTAA. It was also suggested, though, that

it may function somewhat differently for each type of IILTFTAA. From this, I concluded that adequate exploration of the two types of IILTFTAA was not possible with the present data set. Suggestions of how to provide for this will be presented in Chapter 7 when discussing suggestions for further research.

Summary of Discussion Regarding Two Hypothetical Types of IILTFTAA

Results of the present inquiry suggest that two modal types of IILTFTAA should be hypothesized. "Type 1 IILTFTAA" is evidenced by persons wishing to trade off monetary income for time. That is, they are interested in less than full-time academic appointments so that they can have more time available for purposes other than work. "Type 2 IILTFTAA" is evidenced by persons interested in combining academic employment with other income-producing pursuits. The types of IILTFTAA are not assumed to be mutually exclusive. Nor do they appear to be constant for any individual. They appear to be situation specific. An individual may evidence one type under certain less than full-time situations and the other type under different less than full-time situations. Also, it is suggested that in some instances a combination of the two types of IILTFTAA may be applicable.

Since it is assumed that the models by which each type of IILTFTAA would be best explained are somewhat different, the attempt to explain both types by reference to a single set of variables is expected to suffer diminished explanatory power. However, in

view of the fact that the same variables may be most important for both types and that some variables may "work" in the models by which each type can be explained, the possible presence of two types of IILTFTAA is not viewed as being detrimental to this exploratory endeavor. In any event, it is assumed to be useful to work toward the beginnings of a general theory of IILTFTAA.

Summary of Overall Multivariate Results

In the foregoing pages the relationships between 17 explanatory variables, comprising 65 categories, and CIIFAA were examined. Based upon the fact that the conceptual model upon which the study was designed may have been too simplistic, in that there may be two types of IILTFTAA, the explanatory power of the model (R^2 adjusted = .322) is taken to be moderately high.

It was seen that the two most important variables for explaining variation in CIIFAA (V801) were: assessment of the Minimum Feasible Appointment Fraction at which high professional standards could be maintained (V719) and assessment of the Changes in Non-Economic Payoffs under 1/2 time academic appointments (V722). Composite interest in fractional academic appointment (CIIFAA) increased as Rs' assessment of the fraction at which less than full-time appointments would be feasible decreased. And, CIIFAA increased as Rs' assessments of the non-economic changes that would be expected under 1/2 time academic appointments went from most negative to most positive change.

The third most important variable in explaining variation in CIIFAA was found to be assessment of non-academic Part-Time Job Prospects. The "tighter" Rs' assessments of the non-academic part-time job market, the lower was CIIFAA. It was this result, supported by the pattern of relationships between other predictors and CIIFAA, that led to the suggestion that there may be two modal types of IILTFTAA. These types being: "type 1 IILTFTAA," evidenced by persons desiring to trade off monetary income for time, and "type 2 IILTFTAA," evidenced by persons seeking to combine academic employment with other income-producing pursuits. Due to design limitations it was not feasible to partition the data set to explore the possibility that there are different models for each hypothetical type of IILTFTAA. Thus, it is taken that some explanatory power is sacrificed in the interest of developing the beginnings of a general theory of IILTFTAA.

Level of CIIFAA, as predicted, was found to be inversely related to estimates of subsistence; with greater interest being evidenced as subsistence estimates decreased. Estimate of Subsistence (V769), an "economic" measure, was less important in explaining variation in CIIFAA than Rs' assessments of the non-economic changes under 1/2 time. Doctoral students appear to base IILTFTAA less upon economic than upon non-economic considerations.

As predicted, CIIFAA was highest for "married" females. Due to the significant difference in interest level between females and males,

separate analyses for each sex were warranted and these results are reported in the following chapter.

The relationships between CIIFAA and the categories within each explanatory variable were generally in accord with predictions derived from the conceptual framework developed in Chapter 2. There were, however, a few notable exceptions.

Level of CIIFAA was found to be highest for Rs preferring employment activities other than teaching or research. This was taken as additional evidence of the possible presence of "type 2 IILTFTAA."

It was expected that CIIFAA would increase as Rs' assessments of the "tightness" of the job market increased. This relationship was seen not to be significant. Interest in less than full-time academic appointment does not appear to be a response to the poor job market situation.

CHAPTER 6

FEMALE AND MALE MULTIVARIATE ANALYSES

The previous chapter presented MCA results obtained when using the entire data set for analysis. It was seen that "Marital Status by Sex" was the fifth most important predictor for explaining variation in CIIFAA. It had also been seen in Chapter 4 that "married" females evidenced significantly higher CIIFAA than males. Based upon these findings, it was decided that separate analyses for each sex should be carried out. This chapter presents the results of such analyses and compares these results with each other and with the results from the overall analysis.

Selection of Variables for Female and Male Analyses

Performance of separate analyses results in substantial reduction of the number of cases in each subset of the data: $N = 218$ for females and $N = 450$ for males. Due to the constraints of the MCA technique, whereby the total number of categories minus the number of predictors ($C - P$) should not exceed ten per cent of the N , it was not possible to include all of the 17 original explanatory variables in the analyses. Given this constraint, with only 218 female cases it was estimated that only approximately seven explanatory variables could

be included. With this estimate in mind a two part goal was established: first, to select a subset of explanatory variables such that, insofar as possible, parallel analyses could be carried out; second, to include, for each sex, the variables likely to have the highest net relationships with CIIFAA.

Based upon this two part goal, variables were selected for inclusion by the following procedure. For each sex correlation matrices, including explanatory variables and the dependent variable, CIIFAA (V801), were created (see Appendix D). These were examined to ascertain the variables having the highest gross linear relationships (highest product-moment correlation coefficients) with CIIFAA (V801). These are presented in Table 27. It should be clearly noted that selection on the basis of highest gross linear relationship does not guarantee inclusion of explanatory variables having the highest net relationships.

Table 27 reveals that five of the explanatory variables have significant gross linear relationships with CIIFAA for both females and males. It is also seen that: (a) Prior Part-Time Experience (V714) is significant for females but not for males, (b) Estimate of Subsistence (V769) is significant for males but not for females, and (c) although significance does not obtain for either sex, the direction of the relationship between Net Need for Money (V710) and CIIFAA ((V801) is opposite for females and males. The foregoing suggests that the eight variables listed in Table 27 should be used in the separate

TABLE 27

PRODUCT-MOMENT CORRELATION COEFFICIENTS AND
THEIR RANK BETWEEN SELECTED EXPLANATORY
VARIABLES AND CIIFAA FOR EACH SEX

Explanatory Variable	#	R with CIIFAA			
		Female	Rank	Male	Rank
Minimum Feasible Appointment Fraction	719	.4373	1	.3882	2
Non-Economic Change under 1/2 time	722	.3491	2	.4459	1
Need for Time	721	.2751	3	.1814	5
Part-Time Job Prospects	768	.2167	4	.2594	3
Prior Part-Time Experience	714	-.2093	5	-.0356	7 NS
Number of Children Anticipated	725	-.1505	6	.1754	6
Net Need for Money	710	.1242	7 NS	-.0215	8 NS
Estimate of Subsistence	769	.0051	8 NS	.1980	4

Notes: (1) Simple correlation coefficients measure the gross linear relationship between each explanatory variable and the dependent variable. A high gross relationship does not guarantee that the net relationship will be significant.

(2) NS = not significant at the .05 level.

(3) Complete correlation matrices appear in Appendix D.

analyses for each sex. As earlier noted, though, only seven variables can be used in the female MCA. Since a significant relationship did not obtain between Estimate of Subsistence (V769) and CIIFAA (V801) for females, it will not be included. Thus, the female and male MCA's will be carried out using the set of explanatory variables in Table 27; the only difference being that Estimate of Subsistence (V769) is not included for the female analysis.

Comparing these subsets of explanatory variables with the results from analysis of the entire data set (p. 90, Table 24) reveals that only two of the explanatory variables found to have significant net relationship with CIIFAA (V801) are not included. These are: "Marital Status by Sex" (V708) and Preferred Employment Activities (V728). Thus, two possibly important variables are not included: Preferred Employment Activities (V728) and marital status.

Consideration was given to combining "single" females with males since their level of IILTFTAA is more comparable to males than to "married" females. The question being addressed, however, is whether there are female-male differences in the importance and/or pattern of relationships of the explanatory variables with CIIFAA. Similarly, since there were only 23 "single" females, separate analyses of them was not warranted. In the future, particularly if larger data sets are available, separate analyses for each "Marital Status by Sex" category may yield important differences.

Based upon this strategy for selecting explanatory variables for inclusion in the separate analyses, the reader is cautioned that the resultant model for each sex thus constitutes a "selected" model and results need to be validated upon separate data. Additionally, the resultant model cannot be assumed to be the "best" since potentially important explanatory variables are not included in the analyses.

Female Multivariate Results

Table 28 presents the basic MCA results for the gross and net relationships of the explanatory variables with CIIFAA (V801) for females. The seven predictors used explain 36.3% of the total variation in CIIFAA (V801) with a fitted additive model.

The relationships between the categories of the specified predictors and CIIFAA are presented in Table 29. Since many of the relationships are consistent with those obtained and previously discussed when presenting the results of the overall MCA, discussion here will focus primarily upon the differences detected.

Minimum Feasible Appointment Fraction (V719). --The most important variable for explaining variation in CIIFAA (V801) for females is Minimum Feasible Appointment Fraction (V719), ($\beta^2 = .0731$, sig. @ .001). Female CIIFAA is positively related to the minimum fractional appointment assessed to be feasible; females who assess lower fractional appointments as being feasible evidence higher CIIFAA than those giving higher assessments as the minimum feasible appointment fraction.

Need for Time (V721). --For females Need for Time (V721) obtains a significant net relationship with CIIFAA (V801), ($\beta^2 = .0651$, sig. @ .001), and is the second most important variable for explaining variation in CIIFAA. As predicted from the original conceptual framework, the relationship is positive; females who indicate greater need for time, evidence higher CIIFAA.

TABLE 28

IMPORTANCE OF PREDICTORS IN EXPLAINING VARIATION IN INTEREST IN LESS
THAN FULL-TIME ACADEMIC APPOINTMENT FOR FEMALES

Predictor	Gross Relationship			Net Relationship			
	#	Eta Square	F	Sig. Level	Beta Square	F	Sig. Level
Minimum Feasible Appointment Fraction Need for Time Net Need for Money Change in Non-Economic Payoffs under 1/2 time Prior Part-Time Experience Number of Children Anticipated Part-Time Job Prospects	719	.1930	17.06	.001	.0731	8.19	.001
	721	.0952	7.51	.001	.0651	7.29	.001
	710	.0276	1.51	NS	.0385	3.24	.05
	722	.1299	7.95	.001	.0315	2.65	.05
	714	.0438	9.90	.001	.0188	6.33	.001
	725	.0254	1.86	NS	.0171	1.92	NS
	768	.0516	2.90	.05	.0138	1.16	NS
	R ² unadjusted = .363 R ² adjusted = .292 N = 218						
Significant at .001 level							

Notes: (1) NS = relationship not significant at the .05 level.

(2) F-tests performed assume (a) cases are drawn randomly and independently from k normally distributed populations, and (b) variances are equal. The latter has not been tested; both are assumed.

(3) Since this is a second analysis, df for the F-tests strictly should have been recalculated. This has not been attempted. Results presented require testing upon another set of data.

TABLE 29

RELATIONSHIP BETWEEN SPECIFIED PREDICTORS
AND INTEREST IN LESS THAN FULL-TIME
ACADEMIC APPOINTMENT FOR FEMALES

Predictor Category	N	%	Unadjusted Mean	Adjusted Mean
Minimum Feasible Appointment Fraction (V719)				
Less than 1/2 time	56	30.3	7.136	7.613
1/2 time	95	43.6	8.379	8.518
5/8 or 3/4 time	39	17.9	10.077	9.382
More than 3/4 time	18	8.3	11.111	10.133
Need for Time (V721)				
Most	63	28.9	7.698	7.731
Second most	70	32.1	8.414	8.393
Second least	57	26.1	8.562	8.538
Least	28	12.8	10.543	10.170
Net Need for Money (V710)				
Less than \$3,000	29	13.3	8.448	8.394
\$3,000-\$6,000	81	37.2	8.086	8.134
\$6,001-\$9,000	37	17.0	8.351	8.089
\$9,001-\$12,000	42	19.3	9.333	9.566
More than \$12,000	29	13.3	8.931	8.850
Change in Non-Economic Payoffs under 1/2 time (V722)				
Most positive change	35	16.1	7.171	7.911
Positive change	49	22.5	7.918	8.290
No net change	56	25.7	8.268	8.256
Negative change	51	23.4	9.235	9.007
Most negative change	27	12.4	10.630	9.470
Prior Part-Time Experience (V714)				
None	140	64.2	8.979	8.825
Some	78	35.8	7.731	8.007
Number of Children Anticipated (V723)				
None	98	45.0	8.969	8.938
One	37	17.0	8.622	8.250
Two	72	33.0	7.944	8.137
More than two	11	5.0	9.182	8.452
Part-Time Job Prospects (V758)				
Very good	22	10.1	7.453	7.965
Good	36	16.5	8.111	8.481
Fair	55	25.2	8.145	8.312
Poor	69	31.7	8.812	8.582
Non-existent	36	16.5	9.667	9.021
Number in sample = 218				
Grand arithmetic mean = 8.532				
R ² unadjusted = .363				
R ² adjusted = .292				

Note: Lower numerical values on the dependent variable represent greater interest in less than full-time academic appointment.

Net Need for Money (V710). --Net Need for Money (V710) is seen from Table 28 to have a significant net relationship with CIIFAA (V801), ($\beta^2 = .0385$, sig. @ .05). The pattern of the relationship seen in Table 29 reveals that the relationship does not conform very well with the expectation that CIIFAA would decrease as net need for money increased. Females in the two highest categories of Net Need for Money, \$9,001-\$12,000 and more than \$12,000, do evidence less CIIFAA than females in the three lowest categories, but the progressive change in CIIFAA as Net Need for Money increases is not as regular as expected. Although all differences may not be significant, it appears that interest may initially increase across the first three categories, then be lowest for the fourth category, and increase again in the fifth category. This pattern is not easily interpreted.

In Chapter 3, when discussing the instruments the "softness" or crudeness of the economic measures used in the present study was noted. Since the differences in adjusted mean CIIFAA between categories one and two (.16) and between categories two and three (.045) are not large, this reversal may be partially attributable to the "softness" of the Net Need for Money variable. Alternatively, it is possible that explanation of the pattern might reside in differences on variables such as "Spouse's" Income Potential (V701) or Nonsalary Financial Resources (V736) which, because of sample size, were not included in the MCA and, thus, are not controlled for. Thirdly, since the difference in mean CIIFAA between the lowest and highest Net Need

for Money categories is only .456, the possible presence of the two types of IILTF TAA (see Chapter 5) may explain the general curvilinear pattern of the relationship.

Change in Non-Economic Payoffs under 1/2 time (V722). --

As expected from the conceptual model, CIIFAA (V801) is greatest for females who perceive the non-economic changes under 1/2 time to be most positive and lowest for those who see these changes as being most negative. This predictor is the fourth most important ($\beta^2 = .0315$, sig. @ .05), for explaining variation in CIIFAA (V801).

Prior Part-Time Experience (V714). -- A significant net relationship obtains between Prior Part-Time Experience (V714) and CIIFAA (V801), ($\beta^2 = .0188$, sig. @ .001). As expected from the conceptual framework, females who indicate that they have had some prior part-time experience evidence higher mean CIIFAA than those who did not indicate that they had prior part-time experience.

With the data available it is not possible to completely analyze how particular variables exert their influence. Examination of the interrelationships among explanatory variables, however, does permit some tentative suggestions. From the female correlation matrix (see Appendix D) a moderately strong relationship, $R = -.2277$, between Prior Part-Time Experience (V714) and Part-Time Job Prospects (V768) is revealed. It appears that for female Rs Prior Part-Time Experience (V714) may in part be related to CIIFAA (V801)

perhaps because they feel that such experience improves their part-time job prospects. In other words, if it is assumed that some female Rs are evidencing "type 2 IILTFTAA," prior part-time experience may be influencing their CIIFAA because they think the prior experience improves their ability to combine academic employment with other income-producing pursuits. It might also be assumed, though, that some female Rs are evidencing "type 1 IILTFTAA" and that the relationship between Prior Part-Time Experience (V714) and CIIFAA (V801) obtains by virtue of reflecting taste for part-time employment. It is suggested, then, that Prior Part-Time Experience (V714) may attain net significance with CIIFAA by being a moderately useful measure for both types of IILTFTAA.

Number of Children Anticipated (V725). --Although the net relationship is seen in Table 28 not to be significant, it is seen from Table 29 that CIIFAA (V801) tends to increase as the Number of Children Anticipated (V725) increases. For the adjusted means: (a) female Rs anticipating one child evidence higher CIIFAA than those not anticipating any children, (b) female Rs anticipating two children evidence higher CIIFAA than those anticipating one child, and (c) female Rs anticipating more than two children evidence lower CIIFAA than females anticipating one or two children, but still higher CIIFAA than females not anticipating children. Although a definitive explanation of this pattern is beyond the scope of the present inquiry, a brief possible interpretation is in order.

The category "no children anticipated" contains most (19 of 23) of the female Rs not likely to "marry;" they constitute 20 per cent of the category. Since "single" female Rs were seen (see Chapter 4) to evidence lowest CIIFAA of all Rs, their presence doubtless contributes to explaining the result that females not anticipating children evidence lowest CIIFAA. With regard to the remainder of the pattern of the relationship a somewhat more complex interpretation is suggested since continually increasing CIIFAA was expected.

The addition of children to a household may be assumed to increase the household's need for money and its need for time. As can be noted from the correlation matrices for each sex (see Appendix D) a measure of need for money, Estimate of Subsistence (V769), is positively related with Number of Children Anticipated (V725) for both females ($R = .275$) and for males ($R = .225$). The increased time needs as children are anticipated is assumed to be impounded in the variable, Number of Children Anticipated (V725). (See Appendix B for explanation of why the Need for Time [V721] measure used in this study does not tap time needs for children.) Up to a point these increased needs for money and for time may be accommodated by a division of labor in the household. As will be noted below when discussing male MCA results, male CIIFAA decreases as Number of Children Anticipated (V725) increases, suggesting that male Rs may view their role as providing for the increased monetary needs. Here, though, it is seen that up to "two children anticipated" female CIIFAA

increases, which suggests that females may be continuing to view their role as providing for the increased time needs of the household. The category "more than two children anticipated" contains only 11 cases and may be of dubious value. It is seen from Table 29, though, that both the unadjusted and adjusted means fail to conform to the expected pattern; where this category would be expected to evidence greatest CIIFAA. Brief discussion of a possible interpretation is deemed to be warranted.

When "more than two children" are planned, it is possible that the financial needs surpass the time needs in importance for females, and their CIIFAA decreases. A number of factors could conceivably be suggested to explain this possible shift of the balance between time and money needs. For example, older children can perhaps care for younger children, but they cannot provide monetary income to the household. By having the time need distributed over more persons in the household, the female parent then could devote more time to providing for the financial need. Both need for money and need for time increase as additional children are anticipated. However, due to differential economies of scale the rate of increase is greater for need for money than need for time, and it is when more than two children are anticipated that need for money overtakes need for time.

Clearly an adequate test of such interpretations is well beyond the scope of the present inquiry. They nevertheless have been sketched in some detail with the intent of assisting future endeavors.

A major improvement might entail ascertaining plans about the spacing of children which would enable children's ages to be incorporated in the analyses.

In sum, then, for female Rs as the number of children anticipated increases from none to one to two, CIIFAA increases. This is interpreted as suggesting that females tend to view their role as providing for the increased time needs attendant to the household when children are planned. Results which suggest that this may be based upon economic rationality will be presented below when comparing the female and male results.

Part-Time Job Prospects (V768). --For females the gross relationship between assessment of Part-Time Job Prospects (V768) and CIIFAA (V801) is significant ($\eta^2 = .0516$, sig. @ .05), but the net relationship is not. As suggested above, if it is assumed that some of the females are evidencing "type 2 IILTFTAA," this result might be attributable to an overshadowing by the significant relationship between Prior Part-Time Experience (V714) and CIIFAA (V801). The simplest interpretation of this would be that assessment of part-time job prospects is important to females in their decisions about CIIFAA, but since females tend to view their part-time job prospects in terms of their prior part-time experience variation in CIIFAA is better explained in terms of prior part-time experience.

Composite Portrayal of Females with Most and Least CIIFAA

As noted above, the female MCA did not include all potentially important variables. Thus, the results reported do not necessarily constitute the "best" model for explaining variation in CIIFAA for females. Rather, the intent was to examine a selected set of variables seeking to identify explanatory variables that may be of differential importance and/or pattern for explaining female compared to male CIIFAA. Taking only those variables, then, that were included in the female MCA there is an additional descriptive technique by which the factors influencing female CIIFAA can be highlighted. This is by using the categories of explanatory variables included in the MCA to create composite portrayals of females likely to be most and least interested in less than full-time academic appointments.

If one takes the unadjusted grand mean for the entire data set on CIIFAA (V801), 9.393, it is seen in Table 29 that only four of the 29 categories for females evidence lower adjusted mean CIIFAA. The four categories of female Rs found to evidence lower CIIFAA than the overall average of the entire data set are: 1) least Need for Time (V721:4), 2) Minimum Feasible Appointment Fraction more than 3/4 time (V719:4), 3) Net Need for Money \$9,001-\$12,000 (V710:4), and most negative Change in Non-Economic Payoffs under 1/2 time (V722:5). This enables a composite portrayal of females

who evidence least CIIFAA. They are those who: evidence little need for time, assess fractional academic appointments at less than $3/4$ time as not being feasible, have a moderately high net need for money, and feel that $1/2$ time academic appointments result in substantial diminution of non-economic payoffs.

A composite portrayal of female Rs evidencing most CIIFAA can be developed by taking for each predictor, found to have a significant net relationship with CIIFAA, the category evidencing highest CIIFAA. They are females who: view academic appointments as feasible below $1/2$ time, feel that $1/2$ time academic appointments result in substantial increase in non-economic payoffs, have most need for time, and have had some prior part-time experience in their field.

Male Multivariate Results

Table 30 presents the basic MCA results for the gross and net relationships of the explanatory variables with CIIFAA (V801). The eight predictors used explain 33.5 per cent of the total variation in CIIFAA with a fitted additive model. The relationships between the categories of the specified predictors and CIIFAA are presented in Table 31. As in the previous section, since results are largely consistent with results previously discussed, discussion will be brief. Treatment of differences between the female and male results will be discussed in the closing section of this chapter.

TABLE 30

IMPORTANCE OF PREDICTORS IN EXPLAINING VARIATION IN INTEREST IN LESS
THAN FULL-TIME ACADEMIC APPOINTMENT FOR MALES

Predictor	Gross Relationship			Net Relationship			
	<i>r</i> ²	Eta Square	F	Sig. Level	Beta Square	F	Sig. Level
Change in Non-Economic Payoffs under 1/2 time Minimum Feasible	722	.2015	28.07	.001	.0931	22.57	.001
Appointment Fraction	719	.1591	28.12	.001	.0590	19.08	.001
Part-Time Job Prospects	768	.0696	8.33	.001	.0306	7.42	.001
Estimate of Subsistence	769	.0567	8.94	.001	.0209	6.76	.001
Number of Children							
Anticipated	725	.0349	5.38	.01	.0056	1.81	NS
Net Need for Money	710	.0053	.62	NS	.0052	1.27	NS
Need for Time	721	.0348	5.36	.01	.0019	.63	NS
Prior Part-Time Experience	714	.0011	.50	NS	.0001	.14	NS
R ² unadjusted = .335							
R ² adjusted = .296 Significant at the .001 level							
N = 450							

Notes: (1) NS = relationship not significant at the .05 level.

(2) F-tests performed assume (a) cases are drawn randomly and independently from k normally distributed populations, and (b) variances are equal. The latter has not been tested; both are assumed.

(3) Since this is a second analysis, df for the F-tests strictly should have been recalculated. This has not been attempted. Results presented require testing upon another set of data.

TABLE 31

RELATIONSHIP BETWEEN SPECIFIED PREDICTORS AND
INTEREST IN LESS THAN FULL-TIME ACADEMIC
APPOINTMENT FOR MALES

Predictor Category	N	%	Unadjusted Mean	Adjusted Mean
Change in Non-Economic Payoffs under 1/2 time (VT22)				
Most positive change	49	10.9	7.143	7.987
Positive change	70	15.6	8.914	9.011
No net change	125	27.8	9.384	9.573
Negative change	116	25.8	10.543	10.284
Most negative change	90	20.0	11.544	10.943
Minimum Feasible Appointment Fraction (VT19)				
Less than 1/2 time	84	18.7	9.536	9.073
1/2 time	193	42.9	9.093	9.336
3/8 or 3/4 time	108	24.0	10.861	10.303
More than 3/4 time	55	14.4	11.754	10.931
Part-Time Job Prospects (VT68)				
Very good	51	11.3	8.353	8.932
Good	62	13.8	9.339	9.494
Fair	101	22.4	9.327	9.396
Poor	176	39.1	10.232	10.097
Non-existent	60	13.3	11.000	10.829
Estimate of Subsistence (VT59)				
Less than \$6,000	141	31.3	9.248	9.530
\$6,000-\$8,000	123	27.3	9.135	9.361
\$8,001-\$10,000	29	22.0	10.737	10.240
More than \$10,000	37	19.3	10.471	10.345
Number of Children Anticipated (VT25)				
None	202	44.9	9.252	9.594
One	54	12.0	9.511	9.537
Two	163	36.2	10.411	10.013
More than two	31	6.9	10.237	10.183
Net Need for Money (VT10)				
Less than \$3,000	44	9.3	10.313	9.583
\$3,000-\$6,000	198	44.0	9.641	9.534
\$6,001-\$9,000	76	16.9	10.000	10.147
\$9,001-\$12,000	30	20.0	9.730	9.286
More than \$12,000	42	9.2	9.543	9.732
Need for Time (VT21)				
Most	101	22.4	9.270	9.617
Second most	124	27.6	9.573	9.730
Second least	134	29.9	10.246	9.944
Least	91	20.2	10.363	9.576
Prior Part-Time Experience (VT14)				
None	328	72.9	9.357	9.312
Some	122	27.1	9.639	9.741
Number in sample = 450				
Grand arithmetic mean = 9.702				
R ² unadjusted = .335				
R ² adjusted = .295				

Note: Lower numerical values on the dependent variable represent greater interest in less than full-time academic appointment.

Change in Non-Economic Payoffs under 1/2 time (V722). --

From Table 30 it is seen that the net relationship between Change in Non-Economic Payoffs under 1/2 time (V722) and CIIFAA (V801) is significant ($\beta^2 = .0931$, sig. @ .001), and most important for males. Table 32 reveals that the pattern of this relationship conforms to expectations derived from the conceptual model; CIIFAA increases as changes expected under 1/2 time go from most negative to most positive.

Minimum Feasible Appointment Fraction (V719). --For males

the net relationship between Minimum Feasible Appointment Fraction (V719) and CIIFAA (V801) is significant ($\beta^2 = .0590$, sig. @ .001), and second most important for explaining variation in CIIFAA. Table 31 reveals that the pattern of the relationship conforms with expectations; CIIFAA decreases as assessment of the minimum feasible appointment fraction increases.

Part-Time Job Prospects (V768). --For males assessment of

Part-Time Job Prospects (V768) is the third most important variable for explaining variation in CIIFAA (V801), and the net relationship is significant ($\beta^2 = .0306$, sig. @ .001). Table 31 reveals that CIIFAA increases as males assess their part-time job prospects as being better.

Estimate of Subsistence (V769). --A significant net relationship

obtains between CIIFAA (V801) and Estimate of Subsistence (V769)

($\beta^2 = .0209$, sig. @ .001), and that Estimate of Subsistence is the fourth most important variable for explaining variation in CIIFAA. As expected from the conceptual framework, the relationship is generally inverse; Rs giving higher estimates of subsistence tend to evidence lower CIIFAA than those giving lower estimates. There is one possible reversal, though, between the first two categories in that the adjusted mean CIIFAA for the lowest subsistence category does not reflect the highest CIIFAA. This may reflect the "softness" of the economic measures used in the present inquiry.

Number of Children Anticipated (V725). --Although the net relationship between Number of Children Anticipated (V725) and CIIFAA (V801) for males is not significant, in contrast to expectations and in contrast to results from analyses of females CIIFAA (V801) is inversely related to Number of Children Anticipated (V725). For males, as the number of children anticipated increases, CIIFAA (V801) decreases. As suggested earlier when discussing female results, one possible interpretation of this result would be that as household need for money increases with more children, the male parent may view his role as that of providing the needed finances and thus evidence less CIIFAA. The section comparing female and male results presented below will treat this interpretation more fully.

Net Need for Money (V710). --Neither gross nor net relationship between Net Need for Money (V710) and CIIFAA (V801) is significant.

Although not significant it is of interest to note in Table 31 that the pattern of the relationship does not correspond with expectations derived from the original conceptual model. The adjusted means reflect lowest CIIFAA for males in the middle category, \$6,001-\$9,000 of Net Need for Money (V710); male CIIFAA appears to decrease across the first three categories and then begin to increase across the last two categories. As suggested earlier, this might be taken to reflect the presence of the two hypothetical types of IILTFTAA; with males in the two lower categories of Net Need for Money (V710) possibly evidencing "type 1 IILTFTAA" since they feel that they are better able to trade off income for time, those in the two upper categories possibly evidencing "type 2 IILTFTAA" because they hope to improve their prospects for earning higher income by combining less than full-time academic employment with other income-producing activities.

Need for Time (V721). --For male Rs the gross relationship between Need for Time (V721) and CIIFAA (V801) is significant ($\eta^2 = .0348$, sig. @ .01) and in the expected direction, but the net relationship is not significant. As was noted with regard to the overall MCA results, the lack of significance for this net relationship may be due to overshadowing of it by the relationships of CIIFAA (V801) to Minimum Feasible Appointment Fraction (V719) and/or Change in Non-Economic Payoffs (V722) under 1/2 time, both of which are moderately correlated with Need for Time (V721). (V722 x V721 $R = .2828$; V719 x V721 $R = .1678$, see Appendix D, Table 36.)

Prior Part-Time Experience (V714). --Neither the gross nor the net relationships between Prior Part-Time Experience (V714) and CIIFAA (V801) attain significance. Table 31, though, suggests that the pattern tends to be in the expected direction; males indicating prior part-time experience tend to evidence higher CIIFAA than those not indicating such experience.

Composite Portrayal of Males With Most and Least CIIFAA

In a manner paralleling that used above for females, developing composite portrayals of male Rs likely to be most and least interested in CIIFAA serves well to summarize the explanatory variables for which significant net relationships with CIIFAA obtained. The reader is cautioned again that only variables included in the MCA performed are used. Thus the composite generated is only a "selected" model and does not necessarily represent the "best" model for explaining variation in CIIFAA for males.

Taking the overall arithmetic mean for CIIFAA (V801) for the entire data set, 9.393, it is seen that only six of the 33 categories for males evidence higher adjusted mean CIIFAA. These are:

- 1) most positive Change in Non-Economic Payoffs under 1/2 time (V722:1), 2) Part-Time Job Prospects very good (V768:1), 3) positive Change in Non-Economic Payoffs under 1/2 time (V722:2), 4) Minimum Feasible Appointment Fraction less than 1/2 time (V719:1), 5) Minimum Feasible Appointment Fraction 1/2 time

(V719:2), and 6) Estimate of Subsistence \$6,000-\$8,000 (V769:2).

The composite of male Rs evidencing greater CIIFAA than the overall average interest, then, is as follows. They are males who: feel that 1/2 time academic appointments result in positive or somewhat positive change in non-economic payoffs, think their part-time job prospects are very good, view academic appointments as feasible at 1/2 time or below 1/2 time, and estimate subsistence to be moderately low--\$6,000-\$8,000.

The contrasting composite of male Rs least interested in CIIFAA is generated by taking the categories which have lowest adjusted mean CIIFAA, using only variables having significant net relationship with CIIFAA. They are males who: feel that 1/2 time academic appointments result in substantial diminution of non-economic payoffs, view academic appointments as feasible only when greater than 3/4 time, think their part-time job prospects are non-existent, and estimate subsistence income for their anticipated household situation to be high--more than \$10,000.

Comparison Between Females and Males
With Regard to Explanatory Variables
Which Explain Variation in CIIFAA

Table 32 summarizes the importance and rank of explanatory variables which attained significant net relationship with CIIFAA for the overall, the female, and the male MCAs. The reader is reminded that these do not necessarily represent the "best" models for explaining

TABLE 32

SUMMARY OF EXPLANATORY VARIABLES FOR WHICH THE NET RELATIONSHIP WITH
CIIFAA ATTAINED SIGNIFICANCE FOR ANY OF THE MCAs PERFORMED

Predictor	Entire data set		Female Rs		Male Rs	
	#	beta ²	Rank	beta ²	Rank	Rank
Minimum Feasible						
Appointment Fraction	719	.0673	1	.0731	1	.0590 2
Change in Non-Economic						
Payoffs under 1/2 time	722	.0618	2	.0315	4	.0931 1
Part-Time Job Prospects	768	.0212	3	.0138	NS	.0306 3
Estimate of Subsistence	769	.0204	4	--	--	.0209 4
Marital Status by Sex	708	.0157	5	--	--	-- --
Preferred Employment						
Activity	728	.0065	6	--	--	-- --
Need for Time	721	.0044	NS	.0651	2	.0019 NS
Net Need for Money	710	.0072	NS	.0385	3	.0052 NS
Prior Part-Time						
Experience	714	.0021	NS	.0188	5	.0001 NS

Notes: (1) (-) indicates this variable was not included in the MCA.

(2) NS = relationship not significant at the .05 level.

variation in CIIFAA for each sex since sample size precluded inclusion of all possibly important explanatory variables.

From Table 32 it is seen that the pattern for males corresponds most closely with results obtained when using the entire data set. This is not surprising since males constitute 67.4 per cent of the entire data set. The major difference between the results obtained from the male MCA and the overall MCA is that for males Change in Non-Economic Payoffs (V722) is most important for explaining variation in CIIFAA (V801), whereas for the overall analysis Minimum Feasible Appointment Fraction (V719) is most important. This difference doubtless comes because Minimum Feasible Appointment Fraction (V719) is most important for females and is also second most important for males.

For clarity of presentation of female-male differences on a number of variables it is expedient to establish one group as a point of reference and to compare the other group to the reference group. This approach will be followed, using females as the reference group. The discussion will sequentially treat variables in their order of importance for the reference group.

Minimum Feasible Appointment Fraction (V719). --It is seen from Table 32 that for females Minimum Feasible Appointment Fraction (V719) is the most important predictor for explaining variation in CIIFAA (V801), and for males it is second most important.

Examination of the correlation matrices for each sex (see Appendix D), though, suggests that the factors which are considered when indicating assessment of the minimum feasible appointment fraction may vary between the sexes. For example, the simple correlation coefficients between Minimum Feasible Appointment Fraction (V719) and Number of Children Anticipated (V725) are: $R = -.1586$ for females and $R = .0960$ for males. These results suggest that as more children are anticipated, females tend to indicate lower fractions as being minimally feasible while males tend to indicate higher fractions as being minimally feasible. Likewise, the simple correlation coefficients between Minimum Feasible Appointment Fraction (V719) and Estimated Academic Year Income (V707) are: $R = -.0638$ for females and $R = .0826$ for males. Although these are not significant for either sex separately, they suggest that as estimates of academic year income increase, females tend to indicate lower fractions as being minimally feasible whereas males tend to indicate higher fractions as being minimally feasible. Thus, estimates of minimum feasible appointment fraction, seen to be important for both females and males when deciding upon their CIIFAA, appear to be based upon different factors or differential weighting of the same factors. More detailed exploration of differences between the sexes as to how they arrive at their assessments of the minimum feasible appointment fraction is beyond the scope of the present inquiry; it might prove to be a fruitful area for further research. This difference between

sexes, then, is that: for females assessment of the "minimum appointment fraction at which high professional standards can be maintained" is the most important predictor for explaining variation in CIIFAA, whereas for males this predictor is second most important, being superseded as most important by "assessment of changes in non-economic payoffs that would be expected under 1/2 time academic appointment."

Need for Time (V721). --From Table 32 it is seen that Need for Time (V721) is the second most important predictor for explaining variation in female CIIFAA. For females, Need for Time (V721) is related to CIIFAA (V801) over and above the relationship of other predictors with CIIFAA, but for males this is not the case. Females appear to weigh other possible uses of time more heavily, relative to the other factors, than males when deciding upon their level of CIIFAA.

Net Need for Money (V710). --From Table 32 it is seen that for females Net Need for Money (V710) appears as the third most important predictor for explaining variation in CIIFAA (V801), while for males net need for money did not attain significance for either its gross or net relationship with CIIFAA. It is seen from Table 32, though, that for males Estimate of Subsistence (V769) is the fourth most important predictor for explaining variation in CIIFAA (V801). If it is recalled that Net Need for Money (V710) was created by taking the difference between R's Estimate of Subsistence (V769) and R's

"estimate of desired minimum income for her/his anticipated household situation" (V22) (see Appendix B), it is clear that both females and males weigh economic considerations when deciding upon their CIIFAA. It appears that males tend to focus upon estimates of the household's absolute need for money when deciding upon their CIIFAA, whereas females tend to focus upon the difference between desired income and subsistence, "net need for money," when deciding upon their CIIFAA.

In view of the assumed "softness" of the economic variables, very detailed possible interpretations of these apparent differences between females and males are not warranted. A suggested interpretation from the present results would be that males appear to continue to view their economic role in the household as that of "breadwinner," while females appear to view their household financial role as contributing to the income needs for the household to attain its desired minimum income--for purposes such as education of children. Additional research regarding the influence of economic factors upon both female and male interest in less than full-time employment would seem to be warranted since present results suggest that these variables are important but the data currently available does not permit adequate examination of these relationships.

Change in Non-Economic Payoffs under 1/2 time (V722). --

From Table 32 it is seen that for females Change in Non-Economic

Payoffs under 1/2 time (V722) is the fourth most important predictor for explaining variation in CIIFAA (V801), whereas for males this predictor has the strongest net relationship with CIIFAA. Perceptions of the change in non-economic payoffs that would be expected under 1/2 time academic appointment are most important in explaining variation in CIIFAA for males. For females it is also important, but less so relative to other factors.

Since this variable, Change in Non-Economic Payoffs under 1/2 time (V722), is a composite index created from five questions (see Appendix B) the hazards of interpretation are manifold. One suggested interpretation might be that females, to an extent greater than males, see the non-economic payoffs foregone or diminished under 1/2 time as: 1) either less important relative to other considerations, and/or 2) more easily replaceable from other sources--that adequate substitutes are available.

Prior part-time experience (V714). --From Table 32 it is seen that Prior Part-Time Experience (V714) has a significant net relationship with CIIFAA (V801) for females, but not for males. It is also seen from Table 32 that for males Part-Time Job Prospects (V768) is the third most important predictor for explaining variation in CIIFAA, while for females it does not attain significance for its net relationship with CIIFAA. When discussing the female MCA results earlier in this chapter it was suggested that, because of the correlation

($R = -.2277$) between Prior Part-Time Experience (V714) and Part-Time Job Prospects (V768), the relationship between V714 and CIIFAA (V801) may be overshadowing the relationship between V768 and CIIFAA.

In a manner paralleling that used in the previous chapter where the possible existence of two types of IILTFTAA was suggested, Table 33 presents the percentages for the idealized type of IILTFTAA for each sex. All entries in the table are derived from cases where R

TABLE 33

LIKELIHOOD THAT TIME "FREED UP" WOULD BE USED TO
SEEK OTHER REGULAR EMPLOYMENT BY FEMALES
AND MALES INDICATING THAT THEY ARE "VERY
INTERESTED" IN THE APPOINTMENT FRACTION

Likelihood that time "freed up" would be used to seek other regular employment	3/4 Time AA V850		1/2 Time AA V856		1/4 Time AA V862	
	Female	Male	Female	Male	Female	Male
Very Likely	3.2	6.0	9.1	21.6	71.4	83.3
Very Unlikely	72.0	50.0	59.1	31.4	14.3	0.0
N "Very Interested"	93	116	44	51	7	12

Note: Not all levels of likelihood that time "freed up" would be used to seek other regular employment are included, thus percentages do not total 100.

indicated that (s)he was "very interested" in the designated fractional appointment. Those "very likely" to use time "freed up" to pursue other regular employment are taken to represent idealized "type 2 IILTFTAA" and those "very unlikely" to use the "freed up" to pursue

other regular employment are taken to represent idealized "type 1 IILTFTAA."

It is seen from Table 33 that for all three fractional appointment options a higher percentage of females than males evidence idealized "type 1 IILTFTAA," and that for all three fractional appointment options a higher percentage of males than females evidence idealized "type 2 IILTFTAA." Since CIIFAA (V801) is derived from these three fractional measures, it is clear that the female data set contains a higher percentage of Rs evidencing "type 1 IILTFTAA" than the male data set.

The sex differences between Prior Part-Time Experience (V714) and Part-Time Job Prospects (V768), then, might best be interpreted as follows. Assessment of Part-Time Job Prospects (V768) is an important consideration for both females and males in deciding upon their CIIFAA. Both sexes evidence both types of IILTFTAA. However, since a larger proportion of females than males evidence "type 1 IILTFTAA" and since Prior Part-Time Experience (V714) is related to Part-Time Job Prospects (V768) for females, Prior Part-Time Experience (V714) is a better predictor for explaining variation in female CIIFAA.

Number of Children Anticipated (V725). --In addition to examining explanatory variables for which significant net relationships obtained, it is instructive to look briefly at an explanatory variable which appears

to operate differently in its relationship with CIIFAA between females and males. From Table 29 (p. 122) it is seen that for females, except for the category "more than two children anticipated," CIIFAA (V801) increases as Number of Children Anticipated (V725) increases. In contrast, from Table 31 (p. 132) it is seen that as Number of Children Anticipated (V725) increases, CIIFAA (V801) for males decreases. Although the net relationship between Number of Children Anticipated (V725) and CIIFAA (V801) is not significant for either sex considered separately, it is clear that Number of Children Anticipated (V725) relates with CIIFAA (V801) differently for females than males. As suggested earlier, this result might most simply be interpreted as reflecting differing views of their household role between females and males; with females focusing upon the household's time needs and males focusing upon the financial needs--traditional notions about division of labor in the household. Brief examination of Rs' estimates of academic year income in response to question 7 and Rs' estimates of "spouse's" income potential in response to questions 13 and 16 suggests that such differential views toward household roles may be traceable to economic considerations and be consistent with economic rationality.

For both females and males the median Estimate of Academic Year Income (V707) was \$11,001-\$13,000, but more females (25.2%) than males (18.4%) gave estimates below the median (less than \$11,001) and more males (41.9%) than females (33.3%) gave estimates above the median (more than \$13,000). Females tend to expect lower academic

year income than males. With regard to estimates of "Spouse's" Income Potential (V701), for females "married" or planning to "marry" the median estimate was \$13,001-\$15,000, whereas for males "married" or planning to "marry" the median estimate was \$11,001-\$13,000. Females tend to view their "spouse's" income potential as greater than males estimate their "spouse's" income potential.

Since the size of the present data set precludes more rigorous analysis of these results, the following interpretation, based upon descriptive results, must be viewed as tentative and in need of validation. If a household develops increased needs for both money and time as more children are anticipated, for Rs in the present data set it would in general be economically rational for the male parent to assume the role of providing for the increased monetary needs since he is likely to feel that his income potential is greater than his "spouse's." Similarly, it would be economically rational for the female parent to assume the role of providing for the increased time needs since she is likely to estimate her "spouse's" income potential as being greater than her own and thus the income foregone would be less than if the male parent attended to the increased time needs of the household.

Summary of Comparisons Between Females and Males

When comparing the results from MCAs for females and males it was seen that there are both similarities and differences for the

relationships between the explanatory variables and CIIFAA. With regard to the similarities, it was seen that for both females and males assessments of the minimum feasible appointment fraction, although apparently arrived at by considering different factors or considering the same factors differently, is of substantial importance in explaining variation in CIIFAA. Perception of changes in non-economic payoffs to be expected under 1/2 time also is of importance for both females and males, but appears to be somewhat more important for males. Both females and males appear to take economic considerations into account when deciding upon their CIIFAA. Current results are far from definitive, but it appears that males tend to focus upon subsistence or absolute need for money whereas females appear to focus upon net need for money--the difference between subsistence and desired minimum income for purposes such as children's education. It was suggested that lack of closer agreement between the expected and actual relationships between economic variables and CIIFAA may be attributable to the presence of two types of IILTFTAA. It was also seen that both sexes appear to weigh assessments of their non-academic part-time job prospects when deciding upon CIIFAA, but for females this appears to be viewed in terms of their prior part-time experience in their field.

Two major differences between the sexes were found. Need for time for purposes other than employment is a major consideration, second most important, for females, but it is not important for males

relative to other explanatory variables. This is taken to reflect the finding that a higher percentage of females than males appear to be evidencing "type 1 IILTFTAA;" desiring to trade off current monetary income for time. Second, number of children anticipated, although not a significant predictor for either sex taken separately, has an opposite relationship with CIIFAA for females than for males. As number of children anticipated increases, male CIIFAA decreases whereas; for the most part, female CIIFAA increases. This is most simply interpreted as reflecting the acceptance of the traditional sex roles in the household, whereby the male assumes the role of "breadwinner" while the female provides for the increased time demands in the household resulting from additional children. Results which suggest that this division of household role may be reflecting economic rationality were reported.

Due to limited data set size, when partitioning on sex (female N = 218, male N = 450) it was not possible to include all of the 17 original explanatory variables in the analyses. Selection was based upon a two-part strategy that attempted to include both the most important variables for each sex and variables which might best differentiate between sexes. Due to this selection, and thus the exclusion of potentially important variables, the female and male models are not necessarily the "best" for explaining variation in CIIFAA. They can, however, be assumed to be reasonably good models for each sex.

For females, using seven predictors, 36.3 per cent of the variation in CIIFAA is explained by the fitted additive model. For males, using eight predictors, 33.5 per cent of the variation in CIIFAA is explained by the fitted additive model. If it is borne in mind that there may be two types of IILTFTAA, the explanatory power of the models can be viewed as being moderately high.

CHAPTER 7

SUMMARY, SUGGESTED REVISIONS, IMPLICATIONS, A POSSIBLE DILEMMA, AND CONCLUDING REMARKS

Slowed growth in higher education results in a demand:supply disequilibrium in the Ph.D. labor market. This constitutes a multifaceted problem consisting of: a threat of academic stagnation, impediments to affirmative action, and difficulties regarding the societal distribution of employment. A number of possible institutional responses to this situation are examined. It is concluded that use of less than full-time academic appointments may represent one of the best solutions since it speaks to several dimensions of the problem, without threatening academic freedom. Level of interest and the characteristics of persons interested will partially determine the feasibility of this approach. Such considerations underlie the research question which guides this inquiry: Is interest in less than full-time academic appointments related to identifiable personal or situational characteristics?

This is explored within a general theory of choice, in which interest is taken to reflect time-allocation decisions. Interest serves as the dependent variable. It is measured by a series of

questions regarding $3/4$, $1/2$, and $1/4$ time academic appointments. The independent variables include economic, personal, and life-cycle factors. The design was a cross-sectional survey of persons likely to seek academic appointments. Of 1,831 students enrolled in literature, science, and arts doctoral programs at The University of Michigan during March, 1975, 1,417 were surveyed using a mailed questionnaire. A 58 per cent response rate permitted multivariate analyses of the factors related to interest.

Amount of interest is substantial: 69.7 per cent of females and 54.2 per cent of males evidence "unconditioned interest" in a $3/4$ time academic appointment. A composite measure, based on the three appointment fractions, shows that female interest is related to the following factors, in order of importance: assessed feasibility, need for time, need for money, expected change in non-economic payoffs, and prior part-time experience. For males the factors are: expected change in non-economic payoffs, assessed feasibility, perceived non-academic part-time job prospects, and estimate of subsistence. The differences may be attributable to the possible existence of two types of interest. More females than males may be interested in trading off monetary income for time. Proportionally more males may be interested in combining academic employment with other income-producing activities. Minority group persons did not differ from nonminority group persons in level of interest; nor did persons "currently employed" differ from those "not currently

employed." Interest was found to be unrelated to: perceived "tightness" of the job market, age, or household non-salary financial resources.

It is concluded that use of less than full-time academic appointments ought to be seriously considered. Their use would not seem to impede affirmative action for minority group persons and might even enhance it for women. The level of interest evidenced by persons "currently employed" indicates that further research on other populations is warranted. Also, since interest in less than full-time employment appears to be predictable, current methods of assessing labor supply and demand should be rethought. If some people are "overemployed" while millions are involuntarily unemployed, it seems imperative to begin to differentiate "effective" from "potential" supply and to conceive of demand both in terms of total amount and the extent to which positions can be fractionated. Other implications for theory, further research, policy, and practice are discussed.

Suggested Revisions

Background to the conceptual model. --The conceptual framework for this inquiry was developed with a view that interest in less than full-time employment would vary in level or amount. In part, it was based on an alternative to the classic economic assumption that more goods and services are better, by positing that more time is also better. Its focus, then, was to seek to ascertain how these two

propositions might interact when considering decisions about labor force participation; why some individuals may be interested in trading off money for time. (Please see Chapter 2 for discussion of the conceptual model.)

Review of the dependent variable. --One of the most problematic aspects of the inquiry consisted of developing a measure of interest in less than full-time academic appointment. The patterns of less than full-time are virtually limitless. Assuming that full-time can be adequately specified, there are at least three dimensions along which less than full-time can be considered. First, fraction of full-time can be considered; such as $3/4$, $1/2$ or $1/3$ time. Second, there is the question of time frames, continuous or intermittent. For example, $1/2$ time could be $1/2$ time continuously, or it could be one-half of a time period at full-time and one-half at zero time. Third, there is the question of salary and other prerequisites, some of which may not be easily fractionated such as parking stickers. In view of this complexity it was decided to take three comparable less than full-time patterns and to assess interest in these. The specific patterns were continuous fractional appointments of $3/4$, $1/2$ and $1/4$ time of an academic (nine month) year. (It should be noted that the definitions selected may not be those most desirable for potential appointees or most feasible for institutions.) Measured interest in each of these specific fractional appointment situations was then

combined into a composite index of interest in fractional academic appointment. This composite index, which assumedly is a usable measure of general interest in less than full-time academic appointment, was used as the dependent variable for most analyses.

Limitations detected. --Results suggested that interest may vary not only in amount, but may also vary by type. Some persons do seem to evidence interest because they want to trade off monetary income for time; evidence "Type 1 IILTFTAA." Others, however, appear to be interested so that they can combine an academic appointment with other income-producing activities; "Type 2 IILTFTAA." Fortunately, a number of variables appear to "work" regarding both types of IILTFTAA. It was the results for these variables which suggested that interest may be two-dimensional; vary by type and amount.

Suggested revisions. --In my opinion, recommendations for changes to the basic theoretical framework, using the four categories of variables, are not warranted at this time. Rather, the results suggest that the two main areas for improvement would be: (1) to develop better measures of the dependent variable, taking into account its two-dimensional nature, and (2) to devote more attention to the two-dimensional nature of interest when specifying the independent variables to be measured.

I do not suggest that a separate conceptual framework be developed for each type of interest since I think there are distinct advantages to considering interest to be two-dimensional rather than two separate variables. As was earlier suggested, it is possible that the same person might be evidencing both types of interest at the same time. Similarly, the pragmatics of attempting to measure each type separately would seem to pose extremely large difficulties. I suggest, though, that more adequate measurement of each hypothetical type of interest would permit the construction of better models for explaining each type of interest.

I also suggest that additional measurable variables be specified within the overall conceptual model. In particular, variables should be specified with "Type 2 IILTFTAA" in mind. For example, a useful measure might be that of income expectations from non-academic part-time employment.

Combining these two suggested revisions would appear to enable more adequate analyses of IILTFTAA. The explanatory/predictive models for each type of interest may be different; but by using the common conceptual framework consisting of tastes, expected market earnings rates, expected non-market earnings rates, and constraints comparisons of the explanatory models would be facilitated.

The last suggestion here is that a process be established to determine whether IILTFTAA can be explained by a general model or if the model must be specific to the pattern of less than full time. In

presenting suggestions for further research, it will be noted that research may be warranted to ascertain whether some possible patterns of less than full time elicit greater interest than others. The question here, though, is whether the models by which interest in various patterns is best explained may be different. It may be tempting to use a mixture of separate measures of interest, e. g. , intermittent and continuous, to develop a general composite index of interest. Considerable care should be exercised here, since a general theory of IILTFTAA could prove to be misleading. A general model might be developed that did not apply to any possible real situation. For example, some people may be interested in 1/2 time continuous appointments but not interested at all in 1/2 time intermittent. The reverse could also hold. If both of these were mixed in the same analysis, the resultant model may not apply very well to either. The suggestion, then, is that systematic attention needs to be paid to the dependent variable.

Implications for Theory

The inquiry reported here constituted an exploratory endeavor into the question of whether interest in less than full-time academic appointment could be explained by reference to a number of explanatory variables or predictors.

Interest in Less Than Full-Time Employment May Be Predictable

The results of this inquiry suggest that it may be possible to predict interest in less than full-time academic appointment. To be sure, a rather limited type of employment and particular population/sample was used for this inquiry. It would appear to be possible, with careful specification of the predictors, to use the conceptual framework for predicting interest in less than full-time employment on the part of a more heterogeneous population. Alternatively, slightly different adaptations of the general model may be useful with reference to other types of employment.

During the course of the discussion it was pointed out that measurement of interest by questionnaire may have been a limitation and may have led to somewhat higher levels of interest being evidenced than would be the case with actual behavior. It is appropriate to note, though, that measurement of actual labor force participation also can be assumed to entail limitations. As most positions are currently structured, less than full-time employment is often not possible and interest cannot be evidenced by actual decisions. In essence, it is not currently possible to assess interest by measuring behavior. This poses a problem of validating measured interest and thus fully ascertaining the usefulness of the theoretical conceptualization. In a sense, then, the present study represents a sort of feasibility study into whether persons would apply for or accept less than full-time employment.

The present results are taken to have implications regarding the definitions currently used when discussing labor supply and demand.

Possible Need to Redefine Labor Supply

At the outset it was noted that projections of supply of Ph. D. s far exceed projections of current demand patterns; a demand:supply disequilibrium is projected. To date most of the complexities of the demand:supply projections have received thorough discussion. In my opinion, though, one dimension of the complexity of the projections has received inadequate treatment. Virtually all projections of Ph. D. supply treat persons with a Ph. D. as a unit, and supply is most usually presented as an aggregation of the numbers of Ph. D. s by field. It may be important to distinguish between "potential supply" and actual or "effective supply. "

"Potential supply, " aggregate numbers of persons with the Ph. D. , may indeed be the appropriate measure for certain purposes or in many instances may be the only measure possible with existing data. A measure of "effective supply" should take into account volitional aspects of supply. All Ph. D. s may not necessarily plan to participate in the labor market. In addition to absolute participation, in or out, the amount of participation may vary among individuals.

The present study represents a tentative step in the process of developing measures of "effective supply;" or perhaps more accurately, suggesting ways in which the current supply calculations might be

adjusted. The results suggest that many future Ph.D. holders may themselves prefer not to constitute a full unit of supply. If it were possible to not be employed full time, some percentage of Ph.D.s would appear to opt for such employment. In essence, "effective supply" may be somewhat lower than "potential supply." However, as will be noted below when discussing implications for practice, it may be necessary to rethink the demand side of the ratio in order to take advantage of the difference between "potential supply" and "effective supply."

Possible Need to Redefine Concepts of Labor Demand:
Are Some Individuals Overemployed?

It is deemed appropriate to briefly generalize the principle just posited; that "effective supply" may be lower than "potential supply." Various methods are currently used to define a person who is fully employed. It is usually assumed that a person is fully employed if (s)he is working full time at a position in her/his field. To my knowledge very little attempt has been made to ascertain whether persons employed full time actually wish to be so employed. It is conceivable that some persons working full time may feel forced to do so. There may be a variety of pressures which lead to this situation. A person may feel that his colleagues would not take him seriously if he did not work full time. There may be major pecuniary pressures, such as having fringe benefits available only to full-time personnel, forcing people to work full time. Based on

this brief treatment, it is posited that some individuals may be "overemployed"--the current structure of positions, rather than other considerations, forces them to work more than they would prefer.

The level of "overemployment" clearly has implications regarding labor supply and demand. If structural changes were made such that persons who prefer not to work full time could do so, it is obvious that some changes in the demand:supply relationship would occur. Although this is essentially an implication for practice and will be discussed more fully below, it is also taken to be of theoretical importance. The theoretical question is whether definitions and measurement of labor demand could be improved by including consideration of the extent to which position can be fractionated. For example, two half-time positions equal one full-time position. The question is whether the reverse applies to the particular demand being discussed. Can one full-time position equal two half-time positions? Stated slightly differently, can 50,000 full-time positions also be 25,000 full-time positions and 50,000 half-time positions? If the answer to this is yes, it is seen that adding consideration of the extent to which positions can be fractionated could change the number of individuals potentially employable from 50,000 to 75,000.

Clearly such an approach would add a large measure of complexity to the measurement of labor demand. In our post-industrial

society, though, where "full employment" is often defined as involving three to four million persons involuntarily unemployed, such complexity may be warranted.

Implications for Further Research

At various points in the foregoing chapters, I noted areas in which further research may be warranted. In addition to briefly restating these, this section will also outline other areas of further research suggested by the results of the present inquiry. At least two types of more extensive inquiries are suggested. These are: 1) further research regarding the Ph.D. labor market, and 2) research regarding other labor markets.

Research Regarding the Ph.D. Labor Market

In this general category a host of possibilities emerge. These can be subdivided into two subcategories: 1) research focused on employers of Ph.D.s, and 2) further research focused on (future) Ph.D.s as employees or potential employees.

Counterpart inquiry into employers' views toward less than full-time appointments. --Although this area of possible research could include both academic and non-academic employers, the ideas briefly outlined here will principally treat academic employers. The approaches could obviously be adapted with regard to non-academic employers.

A number of different strategies might be used to assess employers' views toward less than full-time employment. Benefit:cost approaches may be of potential value for exploring the feasibility and/or desirability of less than full-time appointments. Prior to such an undertaking it may be advantageous to do some preliminary research into the factors which employers focus upon or would likely focus upon when considering such appointments. Another obvious possibility would be evaluative research where such appointments currently exist. In all instances care should be exercised to assure that clear and precise definitions of less than full time are specified since the virtually limitless patterns would pose the danger of ending up with non-comparable results.

Further research regarding Ph.D.'s views toward less than full-time appointments. --With regard to possible further research regarding Ph.D.s as employees or potential employees, reference to the limitations of the present inquiry serves as a useful starting point. The interested reader is referred to Appendix G for a summary of these limitations. The following major improvements could be made:

- (a) Inclusion of variables from the conceptual model which were not measured in the present study, e. g. , constraints.
- (b) Inclusion of variables more specifically related to "Type 2 ILTFTAA. "
- (c) More broadly defined population.
- (d) Random sampling.

- (e) Larger data set.
- (f) Possible collection of data on household basis (may permit comparison of present conceptual framework with that suggested by Bowen and Finegan [1969]).
- (g) Corrections and/or changes in the present instruments, such as measurement of ages of children and expectations of income from non-academic employment.
- (h) Inclusion of other patterns of less than full time, e. g., intermittent pattern of less than full time.
- (i) Attempt to develop ways of measuring type of interest.
- (j) Analyses within feasibility categories.
- (k) Longitudinal study permitting time series analyses.

In addition to this outline list, some possibilities warrant further brief discussion.

Longitudinal inquiry needed. --First, and most important, would be to carry out a longitudinal study. Only this approach enables one to begin sorting out possible causal paths. In my opinion the area of major theoretical importance and value would be to explore the factors which lead to interest in less than full-time employment. Rather than tax the reader's patience with several complex and value-laden arguments, it will suffice to simply state a pragmatic rationale for this assertion. If less than full-time employment promises to be an important strategy for dealing with slow or no growth, it will be imperative to ascertain the factors which lead people to be interested in such employment. Is interest a result of critical incidents? Is it

a result of a constellation of necessary factors? Is interest susceptible to being increased by ethical means? Such questions warrant careful inquiry.

Other possible patterns of less than full time. --A second possible focus for further research would be to assess interest in other possible patterns of less than full-time employment. As noted in Chapter 2 the patterns used in the present inquiry may not be those in which some individuals would be most interested. Intermittent patterns, which would provide larger blocks of "freed up" time, may elicit greater interest as well as be more feasible for institutional considerations.

Usage of "freed up" time. --A third area for research would be the use of the time "freed up" under less than full-time employment. Although this was briefly inquired into using present data and is reported in Appendix F, substantially more focused research into time use under less than full-time employment is warranted. There are several dimensions to this, but one principal question is whether the time would be used for paid employment or for other purposes--discussed in Chapter 5 as type 1 and type 2 interest in less than full-time academic appointment.

For universities, better information about both overall level of interest and type of interest would be valuable since these institutions are both producers and consumers of Ph.D.s. As consumers, universities and other institutions of higher education might focus

principally upon level or amount of interest since this is the dimension which relates to staffing questions. This will be more fully discussed under implications for practice. As producers, universities ought to be concerned about both level and type of interest since it is this two-dimensional nature which is most pertinent to the overall Ph.D. demand:supply ratio. Even if interest is widespread, if only type 2 exists, there will be little effect upon the projected Ph.D. demand:supply disequilibrium.

(In passing it is worth noting that this dual nature of universities as both producers and consumers of human resources may suggest a possibly fertile area for research. For example, if it is assumed that various departments, e. g. , administrative opposed to academic, focus differentially upon production and consumption; it might be useful to conceive of this as a point of departure for analyzing conflict within the institution.)

Another dimension of the question about the usage of time "freed up" that might be a fruitful area for further inquiry is the larger question of time usage as an indicator of social change. As will be noted more fully in Appendix F, inquiring into interest in less than full-time employment provides an opportunity for collecting time use data in a manner which I believe may be an improvement upon traditional techniques since it may be more realistic to respondents than asking them to assume a 26 hour day. It is suggested that the two lines of inquiry, interest in less than full-time employment and

use of time "freed up," are complementary. Focusing upon them simultaneously may yield considerable benefits in both areas.

More detailed examination of variables found in the present study to be important regarding composite interest in fractional academic appointment. --The three previous suggestions imply that more extensive inquiry into interest in less than full-time employment is warranted. It was emphasized that a longitudinal approach should be taken, a larger population should be used, and refinement and additions to the variables measured in the present inquiry should be made. Three questions which need attention are:

1. Is assessed feasibility of less than full-time employment an exogenous or endogenous variable? "Assessment of the minimum feasible appointment fraction at which high professional standards could be maintained" was an important variable regarding both female and male CIIFAA. It was reported, though, that the factors which underlie the assessment of minimum feasible appointment fraction may be different for females than for males. Complete exploration of this was beyond the scope of the present inquiry, but further research regarding how assessments of minimum feasible appointment fractions are arrived at may be necessary if one seeks to fully understand interest in less than full-time employment. It was implied that interest was influenced by assessed feasibility. It is conceivable, though, that assessed feasibility may be influenced by interest; as

interest increases, an individual's assessment of feasibility may increase. It is also conceivable that both interest and assessed feasibility are co-determined by other factors. Obviously, time series data is needed to answer these questions, since causal relationships would need to be ascertained.

2. If the measures herein treated as composite variables, need for time and change in non-economic payoffs under 1/2 time, were treated as separate variables; would explanatory power be increased? Due to data set limitations no attempt was made to ascertain whether some of the several separate measures, used to create the composite indices, were more important than others in explaining variation in CIIFAA. If one were to be interested in taking steps to provide substitutes for payoffs foregone under less than full time, it would be important to have more precise information about the relative importance to individuals of the various non-economic payoffs.

3. What are the precise interrelationships between time, non-economic payoffs and economic payoffs? For example, does an income threshold exist below which other variables do not influence interest in less than full-time employment? Do different thresholds exist at which different tradeoffs would be made?

Overall, the results of the present inquiry suggest that interest in less than full-time employment is a complicated phenomenon and carefully planned research is needed. It is hoped that the present

exploratory endeavor has scratched the surface a bit and will make a small contribution to further efforts.

Research Regarding Other Labor Markets

Most of the foregoing suggestions could also apply to research focused upon labor markets other than those for Ph. D. s. Obviously some adjustments in the exact variables used would be necessary, but it is suggested that the basic conceptual framework used in the present study could be applied to other labor markets. To the extent that research was carried out using persons other than (future) Ph. D. s, and focused on other types of employment, two advantageous outcomes would be expected. First, refinements of the general conceptual model and information about its applicability would accrue. Second, as comparative information was developed, specific models for various populations might emerge. For example, it is conceivable that the relative importance among time, non-economic payoffs and economic payoffs may be found to vary considerably between different professions or occupations.

As suggested earlier, cost:benefit approaches may be desirable. A question of particular concern will likely be the productivity level of less than full-time appointees, since this may be found to be somewhat occupation specific.

Related Research Possibilities Suggested

Other skills. --Of the Rs in the present inquiry, 60.4 per cent

did not indicate that they possessed income-producing skills other than in their field(s) of academic preparation. It was suggested that this might be interpreted as reflecting a high percentage of Ph.D.s not having other skills that they would enjoy using if they were unable to use their academic skills. The question was posed: If Ph.D.s cannot find employment doing what they have specialized to do, will they be severely frustrated due to the lack of "other skills?" In addition to this simple question, this result suggests a number of other possible research questions:

1. a. Are Ph.D.s with "other skills" better prepared to cope with or adapt to tight employment markets than those who lack other skills?

1. b. Are particular "other skills" more useful than others?

1. c. Should the presence of "other skills" be taken into account when admitting persons to doctoral study? If so, which ones?

2. a. If "other skills" are not present, should some provision be made to enable people to develop them? If so, which ones? How?

2. b. If opportunities for developing "other skills" should be made available, who should provide these opportunities?

Clearly a long shopping list of research possibilities could be developed. The intent is simply to underscore the obvious implication about the current structure which leads to the Ph.D. At issue may be the pressures for people to go right through the educational system (Heard, 1963 & Wilson, 1965) and not take time to develop other skills. As Mayhew (1972) has noted:

One can only speculate at the beginning of a period of retrenchment on what changes may transpire, but several implications seem reasonable to suggest. An oversupply of rather narrowly trained Ph.D. recipients may suggest that a broader based education would allow for greater career flexibility. At the same time, demands by recently trained Ph.D.s for career orientation may force graduate schools into some variant of continuing education (p. 19).

But program changes are not enough. New options will succeed only if better methods are developed for identifying appropriate candidates, and graduate education has done very little with respect to this matter (p. 169).

Ph.D.'s views of employment possibilities. --It was noted that data from the present inquiry does not lend itself to examination of doctoral students' views about employment possibilities; data was collected only with regard to their employment preferences. The individual's assessment of employment possibilities presumably constrain her/his employment preferences; if a form of employment is not viewed as possible, it surely will not be preferred. An area of possibly fruitful research, then, would be to ascertain how knowledge about employment possibilities is acquired and the relationship between perceived possibilities and preferences. Since the projections indicate that the traditional academic labor market for Ph.D.s is likely to be depressed for an extended period of time, it may be advantageous to more fully understand how preferences for other forms of employment are developed.

Interest in less than full-time employment on the part of Ph.D.s currently employed. --Based upon a limited number (N = 56) of

"currently employed" Rs in the present data set, it was reported that their interest was not significantly lower than those "not currently employed." This suggests that research regarding interest in less than full-time employment on the part of currently employed Ph.D.s is warranted. This is particularly important for at least two reasons if the use of less than full-time academic appointments is to be feasible as part of a solution to the Ph.D. demand:supply disequilibrium. First, if a high percentage of currently employed Ph.D.s were to be interested, the number of new openings might be substantially increased. Second, it seems safe to assume that currently employed Ph.D.s control the norms and thus set the tone for the possible legitimization of less than full-time appointments for Ph.D.s just entering the labor market.

Interest in less than full-time employment on the part of minority group members. --The limited number (N = 58) of minority group Rs in the present data set did not differ significantly from non-minority group persons in level of interest in less than full-time academic appointment. Because of the affirmative action dimension of the original problem (see Chapter 1) and the limited N available here, it is strongly suggested that additional research regarding possible differences between minority and nonminority Ph.D.s is needed. Such research might well include both current and future Ph.D.s.

Further research regarding sex differences in interest in less than full-time employment. --Although female-male differences in interest were analyzed somewhat in the present inquiry, between and within sex differences warrant substantially more attention. The previous suggestions regarding a longitudinal inquiry with a substantially larger sample would permit this. A number of questions merit more intensive study. If there are two types of interest, within each type are there differences by sex? Is the model for "single" females different from that for "married" females? These are but two of many questions in need of further research.

Implications for Practice

As noted previously, universities operate as both producers and consumers of Ph.D. s. Results of the present inquiry would appear to have implications for both of these functions.

Implications Regarding Ph.D. Production

At the outset projections for a Ph.D. demand:supply disequilibrium were noted. In response to these projections several institutions have substantially reduced their admission of students to doctoral programs and numerous others are seriously considering this and other means for reducing production. For example, institutions and governmental agencies are discussing the possibility of greatly reducing the amount of financial assistance available for doctoral study. This entails all the usual dangers of drifting toward "elitism."

Results from the present inquiry suggest that such action may be being based upon incomplete information; the disequilibrium may not be as large as current projections indicate if a distinction is drawn between "potential supply" and "effective supply."

Base policy on more complete information. --The principal implication for practice in the area of production is that universities as well as governmental agencies should resist the temptation to use simplistic and short run data as the basis for their policies and planning. As the National Board on Graduate Education (1973) has noted: "The lengthy process of building graduate programs can be undone very rapidly, and when these programs need to be built again, as some of them surely will, the costs will be enormous (p. 20)." The present study suggests that by adjusting aggregate supply figures on the basis of the percentage of persons interested in less than full-time employment, it may be possible to relatively easily incorporate notions of "effective supply" into the projections used when planning Ph.D. production. Clearly, capitalizing upon the difference between "potential supply" and "effective supply" is predicated upon adjustments regarding the utilization of Ph.D.s. This will be discussed in the following section. Overall, the implication for production is that action should be taken to assure that more complete information is used when deciding upon policy.

Implications Regarding Ph. D. Utilization

Increase use of less than full time personnel. --As consumers of Ph.D.s, universities and other institutions of higher education might beneficially focus on overall level of interest in less than full-time academic appointment. As suggested in Chapter 2, institutions of higher education might be able to reduce the magnitude of some of their problems by adopting policies whereby academic appointments are made on a less than full-time basis, if the following conditions apply: 1) potential appointees are interested in such appointments, 2) such appointments would not lead to major changes in the characteristics of persons seeking and accepting positions, 3) that talented and dedicated personnel will be attracted to such positions, 4) that such positions will enable necessary production or output to be realized, and 5) that the marginal benefits of such policies would not exceed the marginal costs.

Results of the present inquiry do not speak to all of these conditions. They do suggest that some future Ph.D.s would be interested and that it does not appear that major changes would occur in the type of person seeking appointment. If it is assumed that people are committed or develop commitment commensurate with their interest, the results suggest that this would not be a major difficulty. This would particularly be the case if less than full-time appointments were made available on an optional basis. Regarding

production; present results suggest that persons interested in such appointments see them as feasible while maintaining high professional standards. The benefit:cost question was not addressed by the present inquiry.

Adopting policies whereby appointments were made on a less than full-time basis would not in itself be assumed to be sufficient since a complex situation is being discussed. Areas in need of attention would include, but not be limited to: (a) the posture of existing unions; (b) the potential implications regarding unionization; and (c) assuring that such positions were accorded the legitimacy they deserve, such as by providing assurances that such appointments would provide compensation commensurate with the work to be performed. It is beyond the scope of the present discussion to completely discuss the numerous factors which may need to be considered. The following simply attempts to briefly treat some of the presumed advantages by first focusing upon institutions and then upon individuals currently staffing these institutions.

Reduce threat of academic stagnation and the threat to affirmative action. --The major implication of the results for institutions would be that they should give careful consideration to the possibility of using less than full-time academic appointments as one means to reduce the threat of academic stagnation and the threat to affirmative action. Such a course of action would in a sense "multiply" the positions which are

or become available. Use of such appointments might be considered with regard to both present and future appointments.

Reduce pressure to eliminate current personnel. --A second implication for institutions entails focusing upon present appointees. It is well known that many institutions are currently or will soon be in the process of retrenchment; reducing current staff due to financial pressures. It appears that institutions are inclined to first eliminate part-time faculty. Based upon the rationale developed in Chapter 1, this is taken to be a short-sighted way of proceeding. If, instead of discriminating against part-time faculty, institutions were to increase the legitimacy and use of less than full-time positions, they might find that they do not have to eliminate any (or at least fewer) of the talented personnel they now have. By adjusting appointment fractions, necessary financial reductions might be accomplished. The implication is clear. Institutions might be able to retain the talented human resource they have by carefully considering the use of less than full-time appointments.

If one assumes that other faculty members, whose families have been raised and who have greater financial reserves or need less monetary income, may evidence interest in less than full-time appointments, it is suggested that such an approach might reveal considerable interest. It is also conceivable that many current appointees might prefer this approach to an alternative whereby

their colleagues are told that they are no longer needed. The possible advantage for faculty morale is clear. In a sense some institutions are doing this by adopting policies of phased retirement.

Attract personnel less interested in money: regain the sense of "profession". --It was implied earlier that institutions may be operating such that part-time appointments are not accorded equal legitimacy with full-time appointments. It is suspected that one factor underlying this is the view that persons desiring to work part-time are not serious professionals. Although the results from the present inquiry are surely not definitive, they might be interpreted as suggesting that this view perhaps should be rethought. It was found that the individual's assessment of the "minimum appointment fraction at which high professional standards can be maintained" was one of the explanatory variables most highly related with interest in less than full-time academic appointment. If the individual thinks high standards cannot be maintained at lower fractional appointment levels, her/his interest tends to be low. It was also found that economic considerations, for males absolute need for money and for females net need for money, although of lesser importance were significantly related to level of interest. Although these relationships were interpreted as being confounded by the presence of two types of interest, the general pattern was that interest was higher on the part of persons indicating lower need

for money. Taken together these two findings might be interpreted as follows. In deciding upon interest in less than full-time academic appointment the question of standards appears to be weighed more heavily than economic considerations, but economic considerations are also weighed. Individuals who feel that it is possible to maintain high professional standards and who indicate low need for money tend to evidence high interest in less than full-time academic appointments.

At one time the term "professional" was used to refer to a person pursuing a calling. It was usually implied that the person performed certain work more because of its importance than for monetary gain. Metzger (1976) suggests that this sense of "profession" has largely been lost by the academic profession because of the recent history of rapid growth and salary gains. The present results might be interpreted as suggesting that if an institution is interested in attracting persons who are "professionals," in the sense of pursuing a calling, it may find that it attracts a greater number of such individuals by the use of less than full-time appointments.

A Possible Dilemma

For expediency, the foregoing discussion has tended to ignore or set aside other obvious implications of a Ph.D. demand:supply disequilibrium. For example, the disequilibrium will likely have

several impacts upon currently employed Ph.D.s. Full treatment of the following would entail extensive discussion. At the risk of giving only incomplete treatment to an area where very serious consideration is needed, the following attempts to briefly outline a potentially major complicating factor regarding the possible use of less than full-time academic appointments.

Disequilibrium may lead to pressures to unionize. --Where labor supply exceeds demand, wage rates tend to fall or be eroded relative to wage rates in general. It might be assumed that the Ph.D. demand:supply disequilibrium will lead to erosion of Ph.D. compensation in general. As this occurs one response may likely be an increase in unionizing efforts on the part of current faculty.

Pressures to force out part-time faculty may increase. --In the interest of brevity, three highly simplified assumptions about faculty unions are posited. First, faculty unions tend not to include part-time personnel. Second, unions tend to focus upon the self-interest of current members. Finally, faculty unions, because of the difficulties of specifying what constitutes full-time employment, tend to focus relatively more upon aggregate compensation than upon compensation rates per unit time.

As compensation erosion occurs, particularly if retrenchment is also taking place, faculty may attempt to have part-time personnel

released. This approach, though, does nothing to reduce the disequilibrium and in fact may aggravate the related problems regarding affirmative action and stagnation which were outlined in Chapter 1. This could occur because as part-time faculty are released, an increasing number of people will be competing for a more slowly increasing (or possibly declining) number of positions. An example may clarify this.

An institution has two persons appointed half-time filling one full-time position. It releases both of these people and, at best, has one full-time position available. The aggregate supply and demand statistics, as currently calculated, are unchanged and the disequilibrium is unaffected. (See previous section, "Implications for Theory," regarding "effective" versus "potential" supply, also amount and fractionability of demand.) If the position will only be refilled on a full-time basis, the result is that the number of people seeking positions has increased by two while the number of vacant positions has only increased by one. The implications for affirmative action and stagnation are clear. There are even fewer positions into which younger and/or minority group persons can be hired.

The dilemma is this. Salary erosion coming from the Ph. D. demand:supply disequilibrium may lead to pressures to unionize. Unions tend not to include part-time faculty and if retrenchment is necessary, tend to advocate release of part-time personnel. This approach, though, does not reduce the demand:supply disequilibrium.

Since the disequilibrium is unchanged and related problems may have been aggravated, pressures to find solutions may increase. What, then, can be done?

An individual choice: lower total compensation with less eroded compensation rate per unit time versus erosion of both total compensation and compensation rate per unit time. -- If "effective supply" were brought into balance with demand by use of less than full-time personnel, it might be assumed that compensation erosion might not be as great. Viewed in this manner the question of compensation erosion might be viewed as one of total compensation versus compensation rates per unit time. Faculty may need to decide whether they prefer lower total compensation by opting for less than full-time appointments and bringing "effective supply" into balance with demand or accept erosion of both total compensation and compensation rate per unit time by clinging to full time. The latter applies since erosion of the total implies erosion of the part. Clearly, under either alternative lower financial compensation is the likely scenario.

A second aspect of the above noted dilemma is this. In the process of having part-time faculty released, the full-time (unionized by now?) faculty may have purged the system of individuals who may be vitally needed resources to the problem at hand. This is not to say that only persons interested in less than full-time employment are capable of recognizing the difference between total compensation and compensation rate per unit time. Rather, it is suggested to

convey the notion that these individuals, who presumably have figured out how to adjust to lower total compensation might serve a valuable function. If compensation erosion occurs, full-time faculty will have to learn to live on less anyhow. Presumably their now departed former part-time colleagues had learned some things about this that they might have been able to share.

Concluding Remarks

The projected Ph.D. demand:supply disequilibrium constitutes a complex problem with implications for individuals, institutions of higher education and the society in general. I submit that the use of less than full-time academic appointments might serve as a valuable part of a solution to the problem. Such a course of action would appear to speak to the threat to affirmative action and to the threat of academic stagnation. It would entail fewer threats to academic freedom than some other alternatives currently being discussed. It may reduce the amount of competition between the highly educated and persons with fewer educational credentials. Such a course of action may also have other advantages. It may provide institutions faced with retrenchment with a means to forestall laying off some of the talented human resources they now have. Rather than having faculty be forced to tell some of their colleagues that they are no longer needed, it may provide an approach whereby at least some of the skills of all talented personnel can be utilized.

It may mitigate against possible drift toward elitism or ageism. It may enable some persons currently "overemployed" to be employed at the level they would prefer. Finally, it may enable higher education to regain the sense of "profession."

Two of the largest questions, though, would be: 1) whether potential appointees would be interested in less than full-time academic appointments? and 2) whether such appointments would lead to changes in the characteristics of persons seeking or accepting academic appointments?

Results from the present inquiry reveal that for 3/4 time academic appointments, 69.7 per cent of the females and 54.2 per cent of the males indicate "unconditioned interest." For 1/2 time the percentages are 52.8 per cent for females and 28.7 per cent for males. Despite the limitations of the study, these percentages can safely be taken to reflect a substantial amount of interest in less than full-time academic appointments at 3/4 and 1/2 time.

These results suggest that affirmative action for increasing the percentage of females on faculties of institutions of higher education might be enhanced by such a course of action. It was also tentatively suggested that use of less than full-time academic appointments would not appear to impede affirmative action for minority group representation on faculties.

The principal policy conclusion from the foregoing is that institutions of higher education ought to very seriously consider the use of

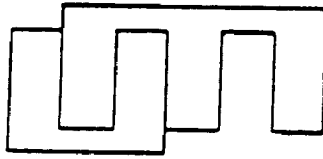
less than full-time academic appointments.

In a more theoretical vein, it was suggested that a rethinking of traditional concepts of labor supply and demand may be warranted. With regard to demand, it is urged that it be viewed as two dimensional; involving both total amount and the extent to which positions can be fractionated. On the supply side, considerable clarity might be gained by differentiating between "potential" and "effective" supply. Clearly, such revisions would add a large measure of complexity regarding the concepts and measurement of labor supply and demand. Such complexity, though, may be more than warranted in our post-industrial society since "full employment" is often defined such that millions of individuals are involuntarily unemployed while at the same time others may be "overemployed."

Results from the present study suggest that use of these revised concepts of labor supply and demand may be both feasible and desirable. Doctoral students evidence considerable interest in less than full-time academic appointments. It appears to me that the multifaceted problem discussed at the outset need not necessarily be of the magnitude that the projections would suggest. The threat of academic stagnation could be reduced. Affirmative action need not be abandoned. Highly educated individuals do not have to be forced to compete so heavily with persons who have had fewer educational opportunities. And, fewer individuals need to be underutilized. The challenge lies in finding ways for demand to be modified in a

manner more responsive to "effective supply." To be sure, use of less than full-time academic appointments can not cure all ills. It might, however, speak to a situation which I believe is currently existing. Some people are being forced to work more than they prefer or need to, while others are being prevented from working at all.

APPENDIX A
INSTRUMENTS AND FORM LETTERS



THE UNIVERSITY OF MICHIGAN
CENTER FOR THE STUDY OF HIGHER EDUCATION
School of Education
Carreras East and South University Avenue
Ann Arbor, Michigan 48104

March 20, 1975

Dear Colleague:

In light of the current job market situation for Ph.D. level personnel there is considerable discussion taking place about what can or should be done. Since it is my view that changes made should take into consideration the views of persons likely to be affected by them, I have decided to do my dissertation on students' views toward the job market, particularly views toward some of the alternatives being discussed.

Although completion of the enclosed survey will not constitute direct input into decision-making processes, I will be attempting to make the results readily available to persons who may be making decisions about the current situation. You are thus encouraged to use this as one of the ways by which your views can be made known.

Your name is requested only to verify returns. It will be removed before any of your replies are examined, thus providing anonymity for your replies. Also complete confidentiality will be maintained.

If you are interested in the results, a summary will be available for inspection at the Center for The Study of Higher Education, 2007 School of Education Building in 10-12 weeks.

General instructions for completing the survey are summarized on the reverse side of this letter. You should be able to complete everything in 20-25 minutes.

As a fellow student I know this may not be the best time of the year to ask you to complete the survey. But, as noted, it can be completed in 20-25 minutes and a study break would provide enough time.

Your assistance by completing the survey will be appreciated.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Freeman T. Clark'.

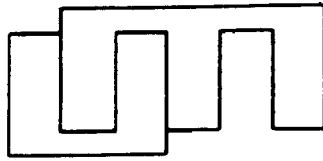
Freeman T. Clark, Doctoral Student
Center for The Study of Higher Education

GENERAL INSTRUCTIONS

1. Please answer the questions on the Demographic Data Sheet first.
2. Please answer, in order, all questions in the Survey of Student Views on Employment selecting the one reply which best coincides with your view or estimate and enter the number corresponding with your view or estimate on the enclosed op-scan "reply sheet".
3. Indicate your answers on the op-scan "reply sheet" by blackening between the lines with a pencil (a pen will not suffice) the number which corresponds with your reply to the question. (The op-scan sheet is being used to reduce our errors when tabulating your replies). Please blacken only one reply per question.
4. When entering answers on the op-scan reply sheet, please check that the number on the reply sheet corresponds with the number of the question in the Survey. Please note that on the reply sheet #1 is top left, then #2 is at the top of the right hand column, then #3 is back in the left column, etc.
5. Some of the questions ask for your estimates of dollar figures. For these extreme accuracy is not crucial. Please simply enter the number which corresponds with your best estimate. Please make all dollar estimates in current year, before taxes, dollars.
6. Even though you may think you do not have all the relevant facts with regard to a particular question, please give the best answer you can to all questions.
7. If a question seems inappropriately stated for your particular circumstances, please answer as best you can.
8. If you wish to explain, clarify or elaborate on any reply, particularly if you think this will help us understand your meaning, please write your comments on the reverse side of the Demographic Data Sheet. Indicate the question number(s) or letter(s) to which your comments refer. PLEASE DO NOT WRITE ON EITHER SIDE OF THE OP-SCAN "REPLY SHEET".
9. Please do not discuss the questions with others before completing the survey. We want your views, not theirs.
10. Upon completion please place BOTH the op-scan reply sheet AND the Demographic Data Sheet in the return envelope provided and mail as soon as possible, preferably within one week.
If your "spouse" (as explained in the survey) received a copy of this questionnaire, after separately completing them, please place both of your replies in one envelope to return.

If you are on campus and it is convenient, the envelope may simply be placed in campus mail. Otherwise, simply place it in regular mail.

Thank you in advance for your assistance.



THE UNIVERSITY OF MICHIGAN
 CENTER FOR THE STUDY OF HIGHER EDUCATION
 School of Education
 600 East and South University Avenues
 Ann Arbor, Michigan 48104

April 10, 1976

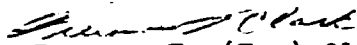
Dear Fellow Student:

On March 20th a questionnaire requesting your views toward future employment was sent to you. Our records indicate that a reply has not yet been received from you. If you have already sent a reply, please disregard this letter. However, if you have not replied, please take 20-25 minutes to complete the questionnaire and mail your reply as soon as possible. If you did not receive the questionnaire or if you have misplaced it, please call me at 662-6083 (7:00pm-10:00pm) so I can send one to you.

As indicated in my letter which accompanied the questionnaire, in addition to helping with my dissertation, completion of the questionnaire might be viewed as one means by which your views can be made known since I will be attempting to make the results readily available to persons who may be making decisions about the current situation.

Since only a limited number of persons were included in the sample, it is important to have as many replies as possible. Your assistance in this regard will be greatly appreciated.

Sincerely,


 Freeman T. (Tom) Clark
 Doctoral Student, CSHE

DEMOGRAPHIC DATA SHEET

Your name is requested below only to verify returns.

It will be removed before any of your replies are examined.

- A. When were you born? Month ____ Year ____
- B. What degree are you currently working toward? Ph. D. ____
 Doctor of Arts ____
 If "other", please specify here _____ Masters Degree ____
 Other ____
- C. What is your field of concentration or department? _____
- D. When do you expect to receive your degree? Month ____ Year ____
- E. Have you had occasion to do any consulting or similar part time work in your field? If yes, please briefly describe the activities and the length of time engaged in _____
- F. Other than your academic field(s) of preparation, do you have any special or particular income producing skills such as cabinet making, landscape planning, dress making, pottery, or the like? If yes, please briefly describe these skills _____
- G. Upon completion of your degree (or whenever you would like to begin employment in your field) what would be your preferences regarding employment by the following types of employing institutions?
 Please indicate, in order, your first three preferences; by placing a one (1) next to your first preference, a two (2) next to your second preference, and a three (3) next to your third preference.
- | | |
|-------------------------------|-------|
| University | _____ |
| Four year college | _____ |
| Two year college | _____ |
| Proprietary School | _____ |
| Secondary or primary school | _____ |
| Business or industry | _____ |
| Government | _____ |
| Private professional practice | _____ |
| Other, Please specify at left | _____ |
- H. Upon completion of your degree (or whenever you would like to begin employment in your field), what would you prefer to be engaged in?
 Please indicate, in order, your first three preferences, by placing a one (1) next to your first preference, a two (2) next to your second preference, and a three (3) next to your third preference.
- | | |
|------------------------|-------|
| Teaching | _____ |
| Research | _____ |
| Administration | _____ |
| Other (please specify) | _____ |

 FOR VERIFYING RETURNS ONLY. WILL BE REMOVED PRIOR TO EXAMINING ANY REPLY SHEETS

Your name?

 Last, First, Middle

SURVEY OF STUDENT VIEWS ON EMPLOYMENT

Please enter your replies on the op-scan reply sheet.

Reply sheet numbers coincide with question numbers.

Please enter a reply for every question.

Please blacken only one reply per question.

- #1. What is your sex? Female 1 Male 2
- #2. Which of the following best reflects your citizenship and racial or ethnic status?
- | | | | |
|---------------------------|---|--------------------|---|
| Black or Negro American | 1 | Asian American | 4 |
| Native American Indian | 2 | Caucasian American | 5 |
| Spanish Surnamed American | 3 | Not a U.S. Citizen | 6 |
| | | Other | 7 |
- #3. What is your current situation regarding employment in your field?
- | | | |
|--|---|---|
| Currently employed on other than an assistantship or fellowship basis | 0 | } For question #4
please blacken
reply 8. |
| Currently on leave of absence from a position I will likely return to | 1 | |
| Actively seeking employment for Sept. 1975 or sooner | 2 | |
| Looking around, but would only accept a very good offer for Sept. 75 or sooner | 3 | |
| Not yet actively seeking employment | 4 | |
- #4. At what point in your program were you when you began (or will you be when you begin) actively looking for employment?
- | | |
|---|---|
| Degree completed | 0 |
| Dissertation completed | 1 |
| Dissertation in progress | 2 |
| Upon receipt of candidacy | 3 |
| Upon completion of course work | 4 |
| When nearing end of course work | 5 |
| Not applicable (on leave or already employed) | 8 |
- #5. What is your assessment of your job prospects for academic employment?
(If already employed, please give your assessment of the academic job market.)
- | | |
|--------------|---|
| Very good | 0 |
| Good | 1 |
| Fair | 2 |
| Poor | 3 |
| Non-existent | 4 |
- #6. What is your assessment of your job prospects for non-academic employment?
(If already employed, please give your assessment of the non-academic job market.)
- | | |
|--------------|---|
| Very good | 0 |
| Good | 1 |
| Fair | 2 |
| Poor | 3 |
| Non-existent | 4 |
- #7. Regardless of whether you would prefer academic or non-academic employment, please assume that you today completed the degree you are currently working toward and that you obtained an academic year (9 month) full time position at the type of institution and with the type of duties you would most prefer. Under this set of assumed circumstances, what is your best estimate of the amount of annual, before taxes, income you think you would be earning?
(If you are already employed, please estimate your current income adjusted to an academic year basis.)
- | | |
|---------------------|---|
| less than \$ 9,000 | 0 |
| \$ 9,001 - \$11,000 | 1 |
| \$11,001 - \$13,000 | 2 |
| \$13,001 - \$15,000 | 3 |
| \$15,001 - \$17,000 | 4 |
| \$17,001 - \$19,000 | 5 |
| \$19,001 - \$21,000 | 6 |
| \$21,001 - \$23,000 | 7 |
| more than \$23,000 | 8 |

8-16 This section asks about marital status and related matters. For the sake of brevity, please take the terms "marry", "married", and "spouse" to mean either married to someone or to set up housekeeping with someone and that this is likely to continue indefinitely.

For questions not applicable to your situation, you are asked to blacken reply 8 on the op-scan reply sheet.

- #8. What is your current or likely future marital or housekeeping status?
- | | | |
|--|---|--|
| Currently "married" | 0 | { Please blacken reply 8 for questions 9,10,11,12, & 13 |
| Currently not "married", but will likely "marry" | 1 | |
| Not "married" and will likely not "marry" | 2 | { Please blacken reply 8 for questions 9,10,11,12,13, 14,15, & 16. |

9-13 are for persons who are currently "married".

- #9. What is your "spouse's" current level of completed education?
- | | |
|--|---|
| Ph.D. or equivalent (e.g. J.D.) or more | 0 |
| Ph.D. Candidacy or equivalent | 1 |
| Masters (including teaching certificate) | 2 |
| Bachelors Degree or equivalent | 3 |
| Associates Degree or equivalent | 4 |
| High School Diploma(or equivalent) or less | 5 |
| Not applicable - not "married" | 8 |
- #10. If your "spouse" is pursuing or definitely plans to pursue a higher level of education, What is the definitely planned highest level?
- | | |
|--|---|
| Ph.D. or equivalent (e.g. J.D.) or more | 0 |
| Ph.D. Candidacy or equivalent | 1 |
| Masters (including teaching certificate) | 2 |
| Bachelors Degree or equivalent | 3 |
| Associates Degree or equivalent | 4 |
| High School Diploma(or equivalent) or less | 5 |
| Not applicable - not "married" | 8 |
- #11. In relation to your professional field, do you consider your "spouse" to be in:
- | | |
|--------------------------------------|---|
| the same field? | 0 |
| a different field? | 1 |
| "Spouse" not in a professional field | 2 |
| Not applicable - not "married" | 8 |
- #12. Whether your "spouse" is now employed or not, upon receiving your degree, What would be your preference regarding "spouse's" employment?
- | | |
|--|---|
| Prefer "spouse" not be employed | 0 |
| Prefer "spouse" not be employed, unless absolutely necessary to make ends meet | 1 |
| Don't really care | 2 |
| "Spouse" should have a career if wants to | 3 |
| Important for my "spouse" to have a career | 4 |
| Not applicable - not "married" | 8 |
- #13. If your "spouse" were to be employed full time or if you were to become ill and were not able to be employed yourself for an extended period of time, presumably your "spouse" would need to be employed full time - (If in your answer to question #10, you indicated that a higher level of education was definitely planned, please assume that this level has already been attained.)
- | | |
|----------------------------------|---|
| less than \$ 9,000 | 0 |
| \$ 9,001 - \$11,000 | 1 |
| \$11,001 - \$13,000 | 2 |
| \$13,001 - \$15,000 | 3 |
| \$15,001 - \$17,000 | 4 |
| \$17,001 - \$19,000 | 5 |
| \$19,001 - \$23,000 | 6 |
| more than \$23,000 | 7 |
| Not applicable - (not "married") | 8 |
- Please estimate in current year dollars the amount of annual, before taxes, income you think your "spouse" would likely earn.

Persons currently "married" please blacken reply 8 for questions 14, 15, & 16.

14-16 are for persons who are not "married" but will likely "marry".

- | | | |
|---|--|---|
| | Ph.D. or equivalent (e.g. J.D.) or more | 0 |
| | Ph.D. Candidacy or equivalent | 1 |
| #14. What level of education would you prefer your future "spouse" to have? | Masters (including teaching certificate) | 2 |
| | Bachelors Degree or equivalent | 3 |
| | Associates Degree or equivalent | 4 |
| | High School Diploma(or equivalent) or less | 5 |
| | Not applicable - likely not to "marry" | 8 |
| | Prefer "spouse" not be employed | 0 |
| #15. What would be your preference regarding your future "spouse's" employment? | Prefer "spouse" not be employed, unless absolutely necessary to make ends meet | 1 |
| | Don't really care | 2 |
| | "Spouse" should have a career if wants to | 3 |
| | Important for my "spouse" to have a career | 4 |
| | Not applicable - will likely not "marry" | 8 |
| #16. If your future "spouse" were to be employed full time or if you were to become ill subsequent to "marrying" and were unable to be employed yourself for an extended period of time, presumably your "spouse" would need to be employed full time- Although it is difficult to project, What would you realistically hope your future "spouse" would be able to earn as annual, before taxes, income? | less than \$ 9,000 | 0 |
| | \$ 9,001 - \$11,000 | 1 |
| | \$11,001 - \$13,000 | 2 |
| | \$13,001 - \$15,000 | 3 |
| | \$15,001 - \$17,000 | 4 |
| | \$17,001 - \$19,000 | 5 |
| | \$19,001 - \$23,000 | 6 |
| | more than \$23,000 | 7 |
| | Not applicable-not likely to "marry" | 8 |
| | Please estimate in current year dollars. | |

THE REMAINDER OF THE QUESTIONS ARE FOR ALL PERSONS REGARDLESS OF MARITAL STATUS.

- | | | | |
|---|---------|---------------|---------------|
| #17. How many dependent children under age 18 do you <u>currently</u> have? | none 0 | two 2 | four 4 |
| | one 1 | three 3 | five 5 |
| | | | six or more 6 |
| #18. How many dependents age 18 and above (e.g. "spouse", parents) do you <u>currently</u> have? | none 0 | two 2 | four 4 |
| | one 1 | three 3 | five 5 |
| | | | six or more 6 |
| #19. In addition to current dependents indicated in #17 & 18. how many <u>more</u> do you expect to have within a few years after completing your degree? (e.g. how many more children do you plan to have or adopt?) | none 0 | four 4 | |
| | one 1 | five 5 | |
| | two 2 | six or more 6 | |
| | three 3 | | |

The next three questions are about personal finances. PLEASE REMEMBER THAT YOUR NAME WILL HAVE BEEN REMOVED FROM THE QUESTIONNAIRE, THUS YOUR REPLIES WILL BE ANONYMOUS.

- | | | |
|---|---------------------|---|
| #20. Graduate study sometimes entails incurring debts. Please estimate, in current year dollars, the total amount of debts you (and if applicable your "spouse") will have upon completion of your <u>own</u> degree program? | \$000 (no debt) | 0 |
| | less than \$ 1,000 | 1 |
| | \$ 1,001 - \$ 2,000 | 2 |
| | \$ 2,001 - \$ 4,000 | 3 |
| | \$ 4,001 - \$ 6,000 | 4 |
| | \$ 6,001 - \$ 8,000 | 5 |
| | \$ 8,001 - \$10,000 | 6 |
| | \$10,001 - \$12,000 | 7 |
| | more than \$12,000 | 8 |

- #21. In addition to wages and salaries most households have other financial resources such as: stocks, bonds, other securities, equity in real estate, and checking and savings accounts at banks, savings & loan associations or credit unions.
- Please estimate, in current year dollars, the total amount of financial resources other than wages and salaries your household will have when you complete your own degree program?
- | | |
|---------------------|---|
| less than \$ 1,000 | 0 |
| \$ 1,001 - \$ 3,000 | 1 |
| \$ 3,001 - \$ 5,000 | 2 |
| \$ 5,001 - \$ 7,000 | 3 |
| \$ 7,001 - \$10,000 | 4 |
| \$10,001 - \$15,000 | 5 |
| \$15,001 - \$20,000 | 6 |
| \$20,001 - \$25,000 | 7 |
| more than \$25,000 | 8 |

- #22. People differ in the amount of income which they feel is the minimum they need because of factors such as desired style of life, number of children and the type of education they want for their children. These are but three of a great number of considerations often taken into account regarding minimum desired income.
- Upon receipt of your degree, taking into account your plans for the future such as perhaps "marrying" and raising a family- Please indicate, in current year dollars, the average annual income to your household that you would consider to be your desired, before taxes, minimum for the first few years after completion of your own degree program?
- | | |
|---------------------|---|
| less than \$ 9,000 | 0 |
| \$ 9,001 - \$11,000 | 1 |
| \$11,001 - \$13,000 | 2 |
| \$13,001 - \$15,000 | 3 |
| \$15,001 - \$17,000 | 4 |
| \$17,001 - \$19,000 | 5 |
| \$19,001 - \$22,000 | 6 |
| \$22,001 - \$25,000 | 7 |
| more than \$25,000 | 8 |

23-30 There is considerable discussion taking place about what can or should be done about the current job market situation for Ph.D. level personnel. These 8 questions seek your view toward some possible courses of action being discussed. After deciding how you view each statement, enter the corresponding number on the reply sheet.

- | | OPPOSED | SOMEWHAT
OPPOSED | DON'T KNOW
OR
UNCERTAIN | SOMEWHAT
IN FAVOR | IN FAVOR |
|---|---------|---------------------|-------------------------------|----------------------|----------|
| #23. Set higher standards for admission to Ph.D. programs? | 0 | 1 | 2 | 3 | 4 |
| #24. Set higher standards for awarding the Ph.D.? | 0 | 1 | 2 | 3 | 4 |
| #25. Reduce the amount of financial assistance available to persons pursuing the Ph.D.? | 0 | 1 | 2 | 3 | 4 |
| #26. Reduce the amount of teaching of undergraduates done by graduate assistants? | 0 | 1 | 2 | 3 | 4 |
| #27. Reduce the age of mandatory retirement for faculty? | 0 | 1 | 2 | 3 | 4 |
| #28. Eliminate part time faculty and hire only full time faculty? | 0 | 1 | 2 | 3 | 4 |
| #29. Reduce the appointment fraction for all academic appointees to less than full time? | 0 | 1 | 2 | 3 | 4 |
| #30. Make no changes, simply rely on the free choices of individuals to bring supply and demand into balance? | 0 | 1 | 2 | 3 | 4 |

31-41 The importance to people of various activities outside their professional and work life varies considerably. When you complete your degree, and if applicable set up your household, how important will it be for you to have?:

	VERY IMPORTANT	SOMEWHAT IMPORTANT	SLIGHTLY IMPORTANT	NOT IMPORTANT
#31. Time for social interaction, other than for professional purposes?	0	1	2	3
#32. Time to spend with children?	0	1	2	3
#33. Time for reading, other than professional reading?	0	1	2	3
#34. Time for travel, other than for professional purposes?	0	1	2	3
#35. Time to spend on do-it-yourself projects or repairing things at home yourself?	0	1	2	3
#36. Time for voluntary work for organizations, service, religious, political, etc.?	0	1	2	3
#37. Time for cultural activities?	0	1	2	3
#38. Time for outdoor recreation, sports or simply communing with nature?	0	1	2	3
#39. Time to spend in the yard or garden?	0	1	2	3
#40. Time to spend with "spouse" or other close friends?	0	1	2	3
#41. Time for hobbies, crafts or avocations?	0	1	2	3

42-47 In many fields some persons hold 1/2 time academic appointments for various reasons. In medicine or law, for example, a person may want a 1/2 time appointment to be able to have time to pursue a private practice. The next 6 questions, though, seek your view about a slightly different situation - where the person holding a 1/2 time academic appointment devotes the rest of their time to activities unrelated to their academic appointment such as a carpentry business, home and family, travel, leisure, or other activities. The questions seek your view about the possible effects of this type of 1/2 time academic appointment upon some aspects of a professional career.

What is your view about the effect of a 1/2 time academic appointment, where the incumbent devotes the rest of their time to activities unrelated to the academic appointment, upon:

	INCREASED	SOMEWHAT INCREASED	NOT CHANGED	SOMEWHAT DECREASED	DECREASED
#42. Likelihood of making an important contribution to the field?	0	1	2	3	4
#43. Opportunity to apply special abilities and aptitudes?	0	1	2	3	4
#44. Opportunity for intellectual stimulation?	0	1	2	3	4
#45. Professional status & prestige?	0	1	2	3	4
#46. Opportunity to derive enjoyment or gratification from work?	0	1	2	3	4
#47. Opportunity to improve professional competence?	0	1	2	3	4

48-49 The previous 6 questions focused upon some specific aspects of a professional academic career. The next 2 questions seek your general view of the minimum appointment fraction at which high professional standards can be maintained. That is, the appointment fraction below which you think it is not possible to maintain high professional standards.

Since the feasibility of maintaining high professional standards on a fractional academic appointment may vary according to the principal duties being performed, two modal types are presented. Please assume that the activity specified is the principal activity engaged in by the incumbent and that the remainder of the time is not devoted to professional activity.

PLEASE BLACKEN ONLY ONE REPLY FOR EACH QUESTION.

- #48. In my field, for a person on an academic appointment who is primarily teaching, the minimum appointment fraction at which high professional standards can be maintained is:?
- | | | | |
|---------------------|---|----------|---|
| 1/8 time | 0 | 5/8 time | 4 |
| 1/4 time | 1 | 3/4 time | 5 |
| 3/8 time | 2 | 7/8 time | 6 |
| 1/2 time | 3 | 8/8 time | 7 |
| more than full time | 8 | | |
- #49. In my field, for a person on an academic appointment who is primarily doing research, the minimum appointment fraction at which high professional standards can be maintained is:?
- | | | | |
|---------------------|---|----------|---|
| 1/8 time | 0 | 5/8 time | 4 |
| 1/4 time | 1 | 3/4 time | 5 |
| 3/8 time | 2 | 7/8 time | 6 |
| 1/2 time | 3 | 8/8 time | 7 |
| more than full time | 8 | | |

Please read instructions carefully. Only about 5 minutes to the end.

50-67 One course of action that might be taken by institutions of higher education would be to adopt policies whereby all new academic appointments are made on a less than full time basis. By reducing the volume of work for each individual, the limited number of new openings would in a sense be expanded.

In the following questions you are asked your view toward three alternative possibilities: 3/4, 1/2, & 1/4 time appointments and, regardless of whether you would actively choose to hold such a fractional appointment, what you think you would likely do with the other time if you were to hold such a fractional appointment. You are asked to reply regardless of your preferences for academic or non-academic employment.

For each of the three alternative fractions, please assume that:

- Full time academic appointments consist of full time appointments for 9 months.
- The position is with an institution of the type you would most prefer and is in a location acceptable to you.
- The position entails the type of duties you would most prefer.
- Necessary schedules & procedures, such as time of day are satisfactory.
- Eligibility for tenure consideration would be on the same basis as is currently the case for full time positions, but that tenure, if granted, would be for the appointment fraction held, i.e. 3/4 time tenure, 1/2 time tenure, & 1/4 time tenure.

50-55 Three-fourths time (3/4) academic appointment:

For questions 50-55 please assume that you would be compensated at 3/4 the median amount you estimated in response to question #7. To locate the amount to assume, use the number of your reply to question #7 to enter the following table in the top row. Assume that your compensation with a 3/4 time appointment would be the corresponding number in the bottom row.

0	1	2	3	4	5	6	7	8
\$6,000	\$7,500	\$9,000	\$10,500	\$12,000	\$13,500	\$15,000	\$16,500	\$18,000

Other compensation considerations, such as eligibility for parking stickers, etc., are comparable to full time appointees; except that insurance and pension benefits are calculated on the basis of annual salary at 3/4 time.

- #50. Which of the following best reflects your view toward a 3/4 time appointment for yourself?
- | | |
|---|---|
| Very interested | 0 |
| Somewhat interested | 1 |
| Interested only if other options not too good, such as at lower preference institutions | 2 |
| Interested only if nothing else is available | 3 |
| Not interested under any circumstances | 4 |

51-55 Whether you would choose to hold such a 3/4 time position or not, please assume that for some reason you were to have one. Please indicate the likelihood that you would use a substantial amount of the additional time (assume an average of 10 hours per week or 2 hours per day) for each of the following.

	VERY LIKELY	SOMEWHAT LIKELY	SOMEWHAT UNLIKELY	VERY UNLIKELY
#51. Use time for other regular employment, try to obtain a second job?	0	1	2	3
#52. Use time for professional remunerative activities such as consulting?	0	1	2	3
#53. Use time to pursue interests not related to your professional career, e.g. crafts, travel?	0	1	2	3
#54. Use time for service type activities such as community service, volunteer work, etc.?	0	1	2	3
#55. Use time to enable "spouse" to pursue a career or prepare for a career by taking on more household chores, or if applicable more care of the children, yourself?	0	1	2	3

56-61 One-half (1/2) time academic appointment:

For questions 56-61 please assume that you would be compensated at 1/2 the median amount you estimated in response to question #7. To locate the amount to assume, use the number of your reply to question #7 to enter the following table in the top row. Assume that your compensation with a 1/2 time appointment would be the corresponding number in the bottom row.

0	1	2	3	4	5	6	7	8
\$4,000	\$5,000	\$6,000	\$7,000	\$8,000	\$9,000	\$10,000	\$11,000	\$12,000

Other compensation considerations, such as eligibility for parking stickers etc., are comparable to full time appointees; except that insurance and pension benefits are calculated on the basis of annual salary at 1/2 time.

	Very interested	0
#56. Which of the following best reflects your view toward a 1/2 time appointment for yourself?	Somewhat interested	1
	Interested only if other options not too good, such as at lower preference institutions	2
	Interested only if nothing else is available	3
	Not interested under any circumstances	4

57-61 Whether you would choose to hold such a 1/2 time position or not, please assume that for some reason you were to have one. Please indicate the likelihood that you would use a substantial amount of the additional time (assume an average of 20 hours per week or 4 hours per day) for each of the following.

	VERY LIKELY	SOMEWHAT LIKELY	SOMEWHAT UNLIKELY	VERY UNLIKELY
#57. Use time for other regular employment, try to obtain a second job?	0	1	2	3
#58. Use time for professional remunerative activities such as consulting?	0	1	2	3
#59. Use time to pursue interests not related to your professional career, e.g. crafts, travel?	0	1	2	3
#60. Use time for service type activities such as community service, volunteer work, etc.?	0	1	2	3
#61. Use time to enable "spouse" to pursue a career or prepare for a career by taking on more household chores, or if applicable more care of the children, yourself?	0	1	2	3

62-67 One-quarter (1/4) time academic appointment:

For questions 62-67 please assume that you would be compensated at 1/4 the median amount you estimated in response to question #7. To locate the amount to assume, use the number of your reply to question #7 to enter the following table in the top row. Assume that your compensation with a 1/4 time appointment would be the corresponding number in the bottom row.

0	1	2	3	4	5	6	7	8
\$2,000	\$2,500	\$3,000	\$3,500	\$4,000	\$4,500	\$5,000	\$5,500	\$6,000

Other compensation considerations, such as eligibility for parking stickers, etc., are comparable to full time appointees; except that insurance and pension benefits are calculated on the basis of annual salary at 1/4 time.

	Very interested	0
#62. Which of the following	Somewhat interested	1
best reflects your view	Interested only if other options not too good,	2
toward a 1/4 time appoint-	such as at lower preference institutions	3
ment for yourself?	Interested only if nothing else is available	4
	Not interested under any circumstances	

63-67 Whether you would choose to hold such a 1/4 time position or not, please assume that for some reason you were to have one. Please indicate the likelihood that you would use a substantial amount of the additional time (assume an average of 30 hours per week or 6 hours per day) for each of the following.

	LIKELY	SOMEWHAT LIKELY	SOMEWHAT UNLIKELY	UNLIKELY
#63. Use time for other regular employment, try to obtain a second job?	0	1	2	3
#64. Use time for professional remunerative activities such as consulting?	0	1	2	3
#65. Use time to pursue interests not related to your professional career, e.g. crafts, travel?	0	1	2	3
#66. Use time for service type activities such as community service, volunteer work, etc.?	0	1	2	3
#67. Use time to enable "spouse" to pursue a career or prepare for a career by taking on more household chores, or if applicable more care of the children, yourself?	0	1	2	3
#68. What is your assessment of the non-academic part time job prospects in your field which would be commensurate with your education and experience?		Very good	0	
		Good	1	
		Fair	2	
		Poor	3	
		Non-existent	4	
#69. Lastly, for your anticipated household situation (including "spouse"?, children? other dependents?, etc.), we would like you to estimate what would constitute bare minimum subsistence annual income. We are not requesting an estimate of what you would settle for, but what you estimate it would take simply to survive?	less than \$ 2,000	0		
	\$ 2,001 - \$ 4,000	1		
	\$ 4,001 - \$ 6,000	2		
	\$ 6,001 - \$ 8,000	3		
	\$ 8,001 - \$10,000	4		
	\$10,001 - \$12,000	5		
	\$12,001 - \$14,000	6		
	\$14,001 - \$16,000	7		
Please estimate in current year dollars and assume no savings or other financial reserves.	more than \$16,000	8		

THANK YOU VERY MUCH FOR YOUR ASSISTANCE.

Please place BOTE the op-scan reply sheet AND the Demographic Data Sheet in the return envelope and return via campus or regular mail as soon as possible.

APPENDIX B

VARIABLE DICTIONARY

Index to Variables

<u>Variable #</u>	<u>Variable Name</u>	<u>Question #</u>
V1	Sex	1
V2	Ethnic/minority status	see V100
V3	Current employment situation	3
V4	Progress in program	4
V5	Assessment of academic job market	5
V6	Assessment of non-academic job market	6
V7	Estimated academic year income	see V707
V8	Marital status	8
V13		see V701
V16		see V701
V17		see V725
V19		see V725
V20	Household debts	20
V21	Household positive nonsalary income	21
V22	Desired minimum annual household income	22
V23	Raise standards for admission to Ph.D. programs	23
V24	Raise standards for awarding the Ph.D.	24
V25	Reduce financial assistance available to Ph.D. students	25
V26	Reduce amount of teaching done by graduate students	26
V27	Reduce age of mandatory retirement for faculty	27
V28	Eliminate part time faculty	28
V29	Make all academic appointment on less than full time basis	29
V30	Make no changes	30
V31	Time for social interaction	see V721
V32	Time to spend with children	"
V33	Time for reading	"
V34	Time for travel	"
V35	Time to spend on do-it- yourself projects	"
V36	Time for voluntary/service work	"
V37	Time for cultural activities	"
V38	Time for outdoor recreation	"
V39	Time to spend in yard or garden	"
V40	Time to spend with "spouse" or friends	"
V41	Time for hobbies, crafts or avocations	"
V42	Contribution to field	see V722
V43	Opportunity to apply special abilities	"
V44	Opportunity for intellectual stimulation	"
V45	Professional status & prestige	"
V46	Opportunity to derive enjoyment from work	"
V47	Opportunity to improve professional competence	"

<u>Variable #</u>	<u>Variable Name</u>	<u>Question #</u>
V48	Minimum feasible appointment fraction for teaching	see V719
V49	Minimum feasible appointment fraction for research	"
V50	Interest in 3/4 time academic appointment	50 (see also V850)
V51-55	See Appendix F	
V56	Interest in 1/2 time academic appointment	56 (see also V856)
V57-61	See Appendix F	
V62	Interest in 1/4 time academic appointment	62 (see also V862)
V63-67	See Appendix F	
V68	Assessment of non-academic part time job prospects	see V768
V69	Estimate of annual subsistence income for expected household situation	see V769
V100	Ethnic/Minority status	2
V111	Division	C
V113	Time to degree	D
V127	Employer preferred	G
V128	Employment activities preferred	H
V701	"Spouse's" income potential	13 & 16
V707	Estimate of academic year income	7
V708	"Marital status by sex"	1 & 8
V710	Household net need for money	22 & 69
V714	Prior part time experience in field	E
V715	Income producing skills other than in academic fields of preparation	F
	"Other skills"	
V717	Assessment of overall job market	5 & 6
V719	Minimum feasible appointment fraction	48, 49, H
V721	Need for time	31 - 41
V722	Change in non-economic payoffs under 1/2 time academic appointment	42 - 47
V723	Age	A
V725	Number of children anticipated	17 & 19
V728	Employment activities preferred	H
V736	Household net nonsalary financial resources	see also V128 21 & 20
V768	Part time job prospects	68
V769	Estimate of subsistence	69
V801	Composite interest in fractional academic appointment (CIIFAA)	50, 56 & 62
V850	Interest in 3/4 time academic appointment	50
V856	Interest in 1/2 time academic appointment	56
V862	Interest in 1/4 time academic appointment	62

Creation of Variables Used in Analyses

- V1= Sex-As measured by question #1: (1)=female, (2)=male
- V100= Ethnic/Minority status - From question #2: coded (1)=Black, (2)=Other minority, (3)=Non-minority
- V111= Division - From question C on the Demographic Data Sheet. Coded (1)=Life Sciences: Botany & Zoology; (2)= Physical Sciences: Chemistry, Mathematics & Physics; (3)= Social Sciences: Anthropology, Economics, History, Political Science, Psychology & Sociology; and (4)= Humanities: Classical Studies, Comparative Literature, English Language and Literature, Germanic Languages and Literature, History of Art & Philosophy.
- V127= Employer preferred - From question G on the Demographic Data Sheet. Coded: (1)= university first preference or tied for first preference; (2)= four year college first preference; (3)=two year college first preference; (4)= business or industry first preference; (5)=government first preference; (6)=private professional practice first preference; (7)= clinic or hospital first preference; (8)= research institute first preference; and (9)= other first preference.
- V128= Employment activities preferred - From question H on the Demographic Data Sheet. Coded: (1)= teaching first preference; (2)=teaching and research tied for first preference; (3)=research first preference; (4)= administration first preference; (5)= clinical practice first preference; (6)= consulting first preference; and (7) other first preference. (See also V728.)
- V701= "Spouse's" income potential - From questions #8, 13 & 16. For Rs currently "married" (V8=0) use response to question #13, for Rs likely to "marry" use response to question #16, and for Rs not likely to "marry" (V8=2) assign zero "spouse's" income potential. V701 coded: (1)= \$00.00 - \$9,000; (2)= \$9,001 - \$13,000; (3)= \$13,001 - \$17,000; (4)= More than \$17,000.
- V707= Estimated academic year income - From question #7. Coded: (1)= Less than \$11,000; (2)= \$11,001 - \$13,000; (3)= \$13,001 - \$15,000; (4)= More than \$15,000.
- V708= "Marital status by sex" - From questions #1 & 8. For Rs currently "married" (V8=0) and Rs likely to "marry" (V8=1) treat as "married". For Rs not likely to "marry" (V8=2) treat as "single". V708 coded: (1) "single" female; (2)= "married" female; (3)= "single" male; (4)= "married" male.

V710= Net need for money - Created from questions #22 & 69 as follows:

- a. V107 was created by assigning midrange values from response categories to question #22 and extrapolating the upper and lower categories. Values assigned were: \$8,000; \$10,000; \$12,000; \$14,000; \$16,000; \$18,000; \$20,500; \$23,500; \$26,500.
- b. V108 was created by assigning midrange values from response categories to question #69 and extrapolating the upper and lower categories. Values assigned were: \$1,000; \$3,000; \$5,000; \$7,000; \$9,000; \$11,000; \$13,000; \$15,000; \$17,000.
- c. V109 was created by subtracting V108 from V107.
- d. V710 was created by partitioning V109 into the following categories: (1)= Less than \$3,000; (2)= \$3,000 - \$6,000; (3)= \$6,001 - \$9,000; (4)= \$9,001 - \$12,000; (5)= More than \$12,000.

V714= Prior part time experience - From question E on the Demographic Data Sheet. Although some preliminary analyses were carried out using the amount of experience (not significant results obtained), final coding was: (1)= No prior part time experience; (2)= some prior part time experience in field.

V715= Other skills (skills other than in academic fields of preparation) - From question F on the Demographic Data Sheet. Although some preliminary analyses were carried out using the number of other skills (not significant results obtained), final coding was: (1)= no other skills; (2)= some other skills.

V717= Assessment of overall job market - From questions #5 & 6. Responses to questions #5 and #6 were summed; range= 1-9. V717 coded: (1)= Best (1 or 2); (2)= 2nd best (3 or 4); (3)= 2nd worst (5 or 6); (4)= worst (7 - 9).

V719= Minimum feasible appointment fraction - From questions #48, 49 and question H on the Demographic Data Sheet. For Rs indicating teaching first preference not tied with research use response to question #48. For Rs indicating research first preference not tied with teaching use response to question #49. For Rs with teaching and research tied for first preference and for Rs with first preference not teaching or research use average of responses to questions #48 & 49. V719 coded: (1)= Less than 1/2 time; (2)= 1/2 time; (3)= 5/8 or 3/4 time; (4) More than 3/4 time.

V721= Need for time - From questions #31 - 41. An index was created based upon factor analysis of responses to these questions. Results of same are presented on the following two pages.

Correlation Matrix for Questions 31 - 41

N = 646 DF = 644 Sig. 0.0500 = .0771 Sig. 0.0100 = .1013

VARIABLE	31	32	33	34	35	36
	TSOCIAL	TKIDS	TTOREAD	TTTRAVEL	TTFORPHONE	TTTOVCLU
31.TSOCIAL	1.0000					
32.TKIDS	.1726	1.0000				
33.TTOREAD	.2915	.0547	1.0000			
34.TTRAVEL	.3720	-.0076	.3540	1.0000		
35.TTFORPHONE	.1652	.0826	.1660	.2687	1.0000	
36.TTOVCLU	.2142	.0900	.1951	.1930	.2162	1.0000
37.TCULTURE	.2424	-.0060	.3644	.3220	.1457	.1927
38.TOUTDOOR	.2048	.0566	.2124	.2843	.3320	.1396
39.TTFORYARD	.1097	.0828	.1910	.2442	.5251	.1992
40.TTSPOUSE	.2631	.2620	.1693	.1671	.1434	.1503
41.TTHOBBY	.1783	-.0124	.3022	.2364	.4930	.1766
37.TCULTURE	1.0000					
38.TOUTDOOR	.3235	1.0000				
39.TTFORYARD	.2097	.3505	1.0000			
40.TTSPOUSE	.1951	.1772	.1409	1.0000		
41.TTHOBBY	.2588	.3389	.4161	.1250	1.0000	
	37	38	39	40	41	
	TCULTURE	TOUTDOOR	TTFOR	TTSPOUSE	TTHOBBY	
			YARD			

Factor Analysis for Questions 31 - 41

FACTOR ANALYSIS

FACTOR ANALYSIS NEED FOR TIME

PRINCIPAL AXIS N= 646 #FACTORS= 5 KAISER'S STAT=.50036

Maximum % Change in Communality Estimates= 22.71 after
3 Iterations.

VARIABLE	INITIAL VALUES	STEP= 3 COMMUNAL.	RESCALED FACTOR LOADINGS	
			(1)	(2)
TSOCIAL	1.1101	.56626	.42182	.37714
TKIDS	1.1101	.56721	.18334	.34475
ITOREAD	1.1101	.29642	.46652	.11531
ITRAVEL	1.1101	.43513	.56356	.56532 -1
TEORHOME	1.1101	.53344	.61332	-.42176
TEOVOLUN	1.1101	.95677	.48921	-.46665
TCULTURE	1.1101	.67297	.55286	.12632
TOUDDOOR	1.1101	.31632	.52742	-.13597
TEOYARD	1.1101	.43492	.57332	-.34461
TSPOUSE	1.1101	.27527	.35504	.25913
THOBBY	1.1101	-.43333	.56665	-.32254
EIGENVALUE			2.8243	.91764
% VARIANCE			25.7	34.1

VARIABLE	(3)	(4)	(5)
TSOCIAL	.19288	.12725	-.35473
TKIDS	-.22563	.53353	.16534
ITOREAD	.20751	-.72669 -1	-.95521 -2
ITRAVEL	.23799	-.31655 -1	-.22755
TEORHOME	-.25173	.14224	-.96531 -1
TEOVOLUN	-.58771	-.45713	.21572 -1
TCULTURE	.38408	-.20392	.40124
TOUDDOOR	.82601 -1	.47227 -1	.10254
TEOYARD	-.17787	.10212	.71322 -1
TSPOUSE	.11772 -1	.27171	.52634 -1
THOBBY	-.15637 -1	-.77321 -2	-.35527 -1
EIGENVALUE	.73295	.72313	.41232
% VARIANCE	41.1	47.3	51.1

Based upon the factor loadings it is seen that the 11 questions do reflect a general underlying factor. It is seen, however, that questions 32 and 36 obtain higher loading on factors other than the first. Additionally it is seen that the loading for question 40 on the first factor is .40.

V721 (continued)

Based upon the results of the factor analysis it was decided to simply sum the replies to eight of the questions regarding the importance of time. Questions used in creating the index, need for time, were: #31, 33 - 35, 37 - 39, & 41. (Note: "Time to spend with children" is not included when creating the index. Such time need may be assumed to be imrouded in the variable, anticipated number of children V725.) This summation resulted in a single continuous variable (Min.= 8, Max.= 31, Mean= 15.1, Std. Dev.= 4.5). V721 was created from this variable, coded: (1)= Most (less than 12); (2)= 2nd most (12 - 15); (3)= 2nd least (16 - 19); (4)= least (more than 19).

V722= Change in non-economic payoffs under 1/2 time - From questions #42 - 47. An index was created based upon factor analysis of responses to these questions. Results of same are presented on the following page.

Based upon the factor loadings it is seen that the six questions do reflect a general underlying factor. It is seen, however, that question #45 obtains a higher factor loading as a separate second factor. With these results it was decided to simply sum the responses to five of the original six questions. Questions used in creating the index, change in non-economic payoffs under 1/2 time, were: #42 - 44, 46 & 47. This summation resulted in a single continuous variable (Min.= 3, Max.= 25, Mean= 14.6, Std. Dev.= 4.3). V722 was created from this variable, coded: (1)= Most positive change (less than 10); (2)= Positive change (10 - 12); (3)= No net change (13 - 15); (4)= Negative change (16 - 18); (5)= Most negative change (More than 18).

V723= Age - From question A on the Demographic Data Sheet. Coded: (1)= less than 25; (2)= 25 - 29; (3)= 30 - 34; (4)= More than 34 years of age.

V725= Number of children anticipated - From questions #17 & 19. (Note: It had been the author's intent to use a measure of total number of dependents. However, by not having "spouse" as a possible dependent as a separate question and an apparent sex differential in considering "spouse" as a dependent - male Rs with one dependent over age 18, 26.2%, female Rs, 13.2%, it was decided to simply focus upon dependent children. This alternative, though, also is not without some degree of problem. Question #19 does not inquire only about children, thus some Rs may have included future "spouse" when replying. Unfortunately there is no way to rectify this and the reader's attention is called to this possible shortcoming.)

V725 was created from the sum of responses to questions #17 & 19, coded: (1)= 1.0 children anticipated; (2)= One; (3)= Two; (4)= More than two children anticipated.

Correlation Matrix for Questions 42 - 47

N= 662 DF= 660 R2.0500= .0762 R2.0100= .1001

VARIABLE	42	43	44	45	46
	GIVTOFLD	USESKILL	INTSTIM	PRESTIGE	ENJOYWRK
42.GIVTOFLD	1.0000				
43.USESKILL	.4300	1.0000			
44.INTSTIM	.4295	.6421	1.0000		
45.PRESTIGE	.4313	.2347	.2796	1.0000	
46.ENJOYWRK	.3300	.5244	.6278	.3138	1.0000
47.GROWPROF	.6497	.4828	.5180	.4365	.5071

Factor Analysis for Questions 42 - 47

FACTOR ANALYSIS--CHANGE IN NON-ECONOMIC PAYOFFS UNDER $\frac{1}{2}$ TIME
 PRINCIPAL AXIS N= 662 #FACTORS= 5 KAISER'S MEAT= .74180

Maximum % Change in Communality Estimates= 15.17 after
 3 Iterations

VARIABLE	INITIAL VALUES	STEP= 3 COMMUNAL.	RESCALED FACTOR LOADINGS	
			(1)	(2)
GIVTOFLD	1.1111	.95931	.75050	-.29174
USESKILL	1.1111	.91739	.74812	.41593
INTSTIM	1.1111	.84376	.73999	.29311
PRESTIGE	1.1111	.39365	.56286	-.67245
ENJOYWRK	1.1111	.57634	.74491	.27367
GROWPROF	1.1111	.94284	.31532	-.14798
EIGENVALUE			3.2239	.83565
% VARIANCE			52.3	65.6
VARIABLE	(3)		(4)	(5)
GIVTOFLD	-.46471		.43275 -1	.35536
USESKILL	.27812 -1		.43133	-.72492 -1
INTSTIM	.28376 -1		.55237 -2	.23527 -1
PRESTIGE	.43763		.13572	-.12177 -1
ENJOYWRK	.28432		-.35533	.16777
GROWPROF	-.26727		-.21355	-.35567
EIGENVALUE	.56690		.38459	.27226
% VARIANCE	73.1		48.5	45.2

- V728= Employment activities preferred - From question H on the Demographic Data Sheet, using V128. V728 coded:
 (1)= Teaching -first preference; (2)= Other (first preference for activities other than teaching or research);
 (3)= Research-first preference (30 cases where 2 indicated dual first preference for both teaching and research where included here.)
- V736= Household net nonsalary financial resources - From questions #21 & 20 as follows:
- V103 was created by assigning midrange values from response categories to question #20 and extrapolating the upper category. Values assigned were: \$00; \$500; \$1,500; \$3,000; \$5,000; \$7,000; \$9,000; \$11,000; and \$13,000.
 - V104 was created by assigning midrange values from response categories to question #21 and extrapolating the upper and lower categories. Values assigned were: \$00; \$2,000; \$4,000; \$6,000; \$8,500; \$12,500; \$17,500; \$22,500; and \$27,500.
 - V105 was created by subtracting V103 from V104.
 - V736 was created by partitioning V105 into the following categories: (1)= Less than -\$3,000 (larger negative nonsalary resources than debt of \$3,000); (2)= -\$3,000 - \$00.00; (3)= \$1.00 - \$3,000; (4)= \$3,001 - \$10,000; and (5)= More than \$10,000.
- V768= Part time job prospects - From question #68. Coded:
 (1)= Very good; (2)= Good; (3)= Fair; (4)= Poor; and (5)= Non-existent.
- V769= Estimate of subsistence - From question #69. Coded:
 (1)= Less than \$6,000; (2)= \$6,001 - \$8,000; (3)= \$8,001 - \$10,000; and (4)= More than \$10,000.
- V801= Composite interest in fractional academic appointment (CIIFAA) - From questions #50, 56 & 62 using V850, V856, and V862). Responses to question #50, 56 & 62 were summed: (Min.= 3, Max.= 15, Mean= 9.3931, Std. Dev.= 2.95). (See also Ch. 5 for correlations among these four variables.)
- V850= Interest in 3/4 time academic appointment - From question #50. (Min.= 1, Max.= 5, Mean= 2.3054, Std. Dev.= 1.1510)
- V856= Interest in 1/2 time academic appointment - From question #56. (Min.= 1, Max.= 5, Mean= 3.0495, Std. Dev.= 1.2612)
- V862= Interest in 1/4 time academic appointment - From question #62. (Min.= 1, Max.= 5, Mean= 4.0390, Std. Dev.= 2.9521)

Treatment of Missing Data

Prior to carrying out the multivariate analyses some adjustments were made where data was missing. The following summarizes the treatment of missing data by indicating the N initially missing on a particular variable, the treatment of same, and giving the N of final missing data.

<u>Variable #</u>	<u>N Initially Missing</u>	<u>Treatment</u>	<u>N Finally Missing</u>
V8	1	Deleted from analyses	1
V708	1	Deleted from analyses	1
V701	10	1 deleted with deletion of V8 (V708) case #2128, 8 of remaining 9 are "likely to marry" and 1 "married" thus modal value for V701 (3) assigned.	0
V707	1	Modal reply to question #7 (3) assigned	0
V710	9	Modal value for V710 (3) assigned	0
V714	14	Since no response was given, "no prior part time experience (1) was assigned	0
V715	1	"No other skills" (1) assigned	0
V717	4	Modal value for V717 (5) assigned	0
V719	15	Modal value for V719, $\frac{1}{2}$ time (4) assigned	0
V721	15	Assign code (3) for questions 33 - 35, 37 - 39, 41. For 6 cases total on V721 does not change by this procedure, 9 cases shift one level on V721.	0
V722	7	Assign code (3) for questions 42 - 44, 46, 47. Two cases missing on all five original questions	0
V723	6	Modal value on V723 (2) assigned	0

<u>Variable #</u>	<u>N Initially Missing</u>	<u>Treatment</u>	<u>N Finally Missing</u>
V725	5	Modal value on V725, "no children anticipated" (1) assigned. Three of the five are not currently "married" but are likely to "marry", case #s 74, 518, 2107.	0
V728	2	"Other" category (2) on V728 assigned	0
V736	13	Modal value on V736 assigned	0
V768	13	Modal reply to question # 68, "poor" (4) assigned	0
V769	8	Modal value on V769 (4) assigned	0
V850	1	Deleted from separate MCA	1
V856	2	Deleted from separate MCA	2
V862	2	Deleted from separate MCA	2
V801		For cases missing data on V850, V856 and V862 mid-range value (3) was assigned prior to summing	0

APPENDIX C

BASIC DESCRIPTIVE STATISTICS

(all entries in percent)

# 1. What is your sex?	Female	32.6		
	Male	67.4		
#2. Ethnic/Minority status	Black		<u>Female</u>	<u>Male</u>
			6.0	4.4
	Other minority		4.1	3.6
	Non-minority		89.9	92.0
	missing		-	.7
			<u>Female</u>	<u>Male</u>
	Currently employed on other than an assistantship or fellowship basis		6.4	5.8
#3. What is your current situation regarding employment in your field?	Currently on leave of absence from a position I will likely return to		1.8	2.0
	Actively seeking employment for Sept. 1975 or sooner		10.6	13.3
	Looking around, but would only accept a very good offer for Sept. 75 or sooner		8.3	7.5
	Not yet actively seeking employment		72.0	69.4
	Have accepted a position, but not yet begun work		.5	.7
	missing		.5	1.3
#4. At what point in your program were you when you began (or will you be when you begin) actively looking for employment?			<u>Female</u>	<u>Male</u>
	Degree completed		6.9	6.2
	Dissertation completed		14.7	15.5
	Dissertation in progress		53.7	57.0
	Upon receipt of candidacy		6.4	3.1
	Upon completion of course work		3.2	3.1
	When nearing end of course work		2.8	2.4
	Not applicable (on leave or already employed)		11.5	11.3
	missing		.9	1.3
#5. What is your assessment of your job prospects for academic employment? (If already employed, please give your assessment of the academic job market.)			<u>Female</u>	<u>Male</u>
	Very good		8.3	7.3
	Good		26.6	22.6
	Fair		41.7	39.0
	Poor		22.0	27.9
	Non-existent		.9	2.9
	missing		.5	.2

#6. What is your assessment of your job prospects for non-academic employment?

(If already employed, please give your assessment of the non-academic job market.)

	<u>Female</u>	<u>Male</u>
Very good	14.2	15.5
Good	28.4	30.6
Fair	37.6	32.2
Poor	14.7	18.6
Non-existent	4.1	2.9
missing	.9	.2

#7. Regardless of whether you would prefer academic or non-academic employment, please assume that you today completed the degree you are currently working toward and that you obtained an academic year (9 month) full time position at the type of institution and with the type of duties you would most prefer. Under this set of assumed circumstances, what is your best estimate of the amount of annual, before taxes, income you think you would be earning? (If you are already employed, please estimate your current income adjusted to an academic year basis.)

	<u>Female</u>	<u>Male</u>
less than \$ 9,000	2.3	2.0
\$ 9,001 - \$11,000	22.9	16.4
\$11,001 - \$13,000	41.3	39.7
\$13,001 - \$15,000	22.5	27.9
\$15,001 - \$17,000	7.8	3.9
\$17,001 - \$19,000	1.4	3.1
\$19,001 - \$21,000	.5	.9
\$21,001 - \$23,000	.5	.7
more than \$23,000	.5	.4
missing	.5	-

#8. What is your current or likely future marital or housekeeping status?

	<u>Female</u>	<u>Male</u>
Currently "married"	56.0	59.4
Currently not "married", but will likely "marry"	33.5	25.7
Not "married" and will likely not "marry"	10.6	14.6
missing	-	.2

9 - 13 are for persons who are currently "married"
(percentage of those responding)

#9. What is your "spouse's" current level
of completed education?

	<u>Female</u>	<u>Male</u>
Ph.D. or equivalent (e.g. J.D.) or more	19.3	4.0
Ph.D. Candidacy or equivalent	30.6	10.7
Masters (including teaching certificate)	22.3	26.9
Bachelors Degree or equivalent	19.8	42.4
Associates Degree or equivalent	2.5	8.1
High School Diploma(or equivalent) or less	4.9	7.7
N=	121	271

#10. If your "spouse" is
pursuing or definitely
plans to pursue a higher
level of education, What
is the definitely planned
highest level?

	<u>Female</u>	<u>Male</u>
Ph.D. or equivalent (e.g. J.D.) or more	74.3	35.1
Ph.D. Candidacy or equivalent	.9	4.3
Masters (including teaching certificate)	17.8	39.3
Bachelors Degree or equivalent	4.0	15.0
Associates Degree or equivalent	2.0	2.4
High School Diploma(or equivalent) or less	.9	.5
N=	101	211

#11. In relation to your professional
field, do you consider your
"spouse" to be in:

	<u>Female</u>	<u>Male</u>
the same field?	30.3	14.1
a different field?	61.7	77.0
"Spouse" not in a professional field	7.5	6.9
N=	120	270

#12. Whether your "spouse" is
now employed or not,
upon receiving your
degree, What would be
your preference regard-
ing "spouse's" employ-
ment?

	<u>Female</u>	<u>Male</u>
Prefer "spouse" not be employed	.9	2.3
Prefer "spouse" not be employed, unless absolutely necessary to make ends meet	.8	2.6
Don't really care	4.1	4.4
"Spouse" should have a career if wants to	29.2	43.9
Important for my "spouse" to have a career	65.0	41.1
N=	120	270

- #13. If your "spouse" were to be employed full time or if you were to become ill and were not able to be employed yourself for an extended period of time, presumably your "spouse" would need to be employed full time - (If in your answer to question #10, you indicated that a higher level of education was definitely planned, please assume that this level has already been attained.)

Please estimate in current year dollars the amount of annual, before taxes, income you think your "spouse" would likely earn.

	<u>Female</u>	<u>Male</u>
less than \$ 9,000	3.3	14.8
\$ 9,001 - \$11,000	9.9	30.6
\$11,001 - \$13,000	24.0	26.2
\$13,001 - \$15,000	23.1	16.2
\$15,001 - \$17,000	11.6	4.3
\$17,001 - \$19,000	9.1	3.3
\$19,001 - \$23,000	3.3	1.5
more than \$23,000	10.7	2.6
N=	121	271

- 14 - 16 are for persons who are not "married" but will likely "marry"
(percentage of those responding)

- #14. What level of education would you prefer your future "spouse" to have?

	<u>Female</u>	<u>Male</u>
Ph.D. or equivalent (e.g. J.D.) or more	76.8	30.6
Ph.D. Candidacy or equivalent	4.3	6.3
Masters (including teaching certificate)	8.7	26.1
Bachelors Degree or equivalent	10.1	34.2
Associates Degree or equivalent	--	2.7
High School Diploma(or equivalent) or less	--	--
N=	70	111

- #15. What would be your preference regarding your future "spouse's" employment?

	<u>Female</u>	<u>Male</u>
Prefer "spouse" not be employed	-	2.6
Prefer "spouse" not be employed, unless absolutely necessary to make ends meet	-	2.6
Don't really care	2.3	8.3
"Spouse" should have a career if wants to	12.6	50.4
Important for my "spouse" to have a career	24.5	35.4
N=	68	111

- #16. If your future "spouse" were to be employed full time or if you were to become ill subsequent to "marrying" and were unable to be employed yourself for an extended period of time, presumably your "spouse" would need to be employed full time- Although it is difficult to project, What would you realistically hope your future "spouse" would be able to earn as annual, before taxes, income?

Please estimate in current year dollars.

	<u>Female</u>	<u>Male</u>
less than \$ 9,000	-	8.1
\$ 9,001 - \$11,000	6.9	24.3
\$11,001 - \$13,000	14.7	27.0
\$13,001 - \$15,000	26.5	25.2
\$15,001 - \$17,000	19.1	9.0
\$17,001 - \$19,000	8.8	4.5
\$19,001 - \$23,000	10.3	-
more than \$23,000	11.8	1.8
N=	63	111

The remainder of the questions are for all persons regardless of marital status

#17. How many dependent children under age 18 do you <u>currently</u> have?		<u>Female</u>	<u>Male</u>
none		54.4	53.6
one		9.6	8.9
two		4.6	6.7
three		.9	.7
four		-	.2
missing		.5	-
#18. How many dependents age 18 and above (e.g. "spouse", parents) do you <u>currently</u> have?		<u>Female</u>	<u>Male</u>
none		54.4	72.7
one		13.3	26.2
two		.9	1.1
missing		.5	-
#19. In addition to current dependents indicated in #17 & 18, how many <u>more</u> do you expect to have within a few years after completing your degree? (e.g. how many more children do you plan to have or adopt?)		<u>Female</u>	<u>Male</u>
none		53.2	52.5
one		15.6	17.1
two		27.1	25.7
three		1.8	3.5
four		1.4	.4
five		-	-
six or more		-	.2
missing		.9	.4

		Female	Male
#20. Graduate study sometimes entails incurring debts. Please estimate, in current year dollars, the total amount of debts you (and if applicable your "spouse") will have upon completion of your <u>own</u> degree program?	\$000 (no debt)	44.0	51.4
	less than \$ 1,000	14.2	10.0
	\$ 1,001 - \$ 2,000	10.6	9.3
	\$ 2,001 - \$ 4,000	14.7	13.5
	\$ 4,001 - \$ 6,000	7.8	7.8
	\$ 6,001 - \$ 8,000	2.8	3.8
	\$ 8,001 - \$10,000	1.8	.7
	\$10,001 - \$12,000	1.8	.9
	more than \$12,000	2.3	2.0
missing		-	.7
		Female	Male
#21. In addition to wages and salaries most households have other financial resources such as: stocks, bonds, other securities, equity in real estate, and checking and savings accounts at banks, savings & loan associations or credit unions. Please estimate, in current year dollars, the total amount of financial resources other than wages and salaries your household will have when you complete your <u>own</u> degree program?	less than \$ 1,000	41.7	41.7
	\$ 1,001 - \$ 3,000	18.8	20.4
	\$ 3,001 - \$ 5,000	9.8	10.9
	\$ 5,001 - \$ 7,000	5.5	7.1
	\$ 7,001 - \$10,000	6.9	5.1
	\$10,001 - \$15,000	5.5	6.0
	\$15,001 - \$20,000	3.2	2.2
	\$20,001 - \$25,000	1.4	.9
	more than \$25,000	5.5	4.1
	missing	1.8	1.6
#22. People differ in the amount of income which they feel is the minimum they need because of factors such as desired style of life, number of children and type of education they want for their children. These are but three of a great number of considerations often taken into account regarding minimum desired income. Upon receipt of your degree, taking into account your plans for the future such as perhaps "marrying" and raising a family Please indicate, in current yr. dollars, the <u>average</u> annual income to your household that you would consider to be your <u>desired</u> , before taxes, <u>minimum</u> for the first few years after completion of your own degree program?		Female	Male
	less than \$ 9,000	5.0	6.7
	\$ 9,001 - \$11,000	15.6	18.8
	\$11,001 - \$13,000	22.2	21.1
	\$13,001 - \$15,000	15.1	20.0
	\$15,001 - \$17,000	10.6	13.5
	\$17,001 - \$19,000	6.0	6.9
	\$19,001 - \$22,000	9.6	5.3
	\$22,001 - \$25,000	5.0	2.9
	more than \$25,000	10.1	4.9
missing		.9	-

23-30 There is considerable discussion taking place about what can or should be done about the current job market situation for Ph.D. level personnel. These 8 questions seek your view toward some possible courses of action being discussed. After deciding how you view each statement, enter the corresponding number on the reply sheet.

	DON'T KNOW			
	SOMEWHAT OPPOSED	SOMEWHAT OR UNCERTAIN	SOMEWHAT IN FAVOR	SOMEWHAT IN FAVOR
#23. Set higher standards for admission to Ph.D. programs?	22.4 (36.1)	13.7	12.6	26.9 (51.4)
#24. Set higher standards for awarding the Ph.D.?	27.8 (44.5)	16.7	12.3	25.3 (43.2)
#25. Reduce the amount of financial assistance available to persons pursuing the Ph.D.?	76.3 (90.3)	14.0	3.3	3.9 (6.5)
#26. Reduce the amount of teaching of undergraduates done by graduate assistants?	49.6 (62.2)	12.6	11.8	12.6 (26.0)
#27. Reduce the age of mandatory retirement for faculty?	46.2 (64.7)	18.5	14.4	12.5 (20.9)
#28. Eliminate part time faculty and hire only full time faculty?	57.4 (74.5)	17.1	17.4	5.7 (8.1)
#29. Reduce the appointment fraction for all academic appointees to less than full time?	55.1 (69.9)	14.8	14.5	12.5 (15.7)
#30. Make no changes, simply rely on the free choices of individuals to bring supply and demand into balance?	30.5 (49.7)	19.2	14.1	25.7 (36.2)

(Note: Entries in parentheses combine percentages from the two adjacent columns.)

31-41 The importance to people of various activities outside their professional and work life varies considerably. When you complete your degree, and if applicable set up your household, how important will it be for you to have:?

	<u>VERY IMPORTANT</u>	<u>SOMEWHAT IMPORTANT</u>	<u>SLIGHTLY IMPORTANT</u>	<u>NOT IMPORTANT</u>	<u>MISSING</u>
#31. Time for social interaction, other than for professional purposes?	72.9 (60.5)	15.1 (22.8)	11.0 (12.0)	.9 (4.7)	- (-)
#32. Time to spend with children?	62.8 (69.2)	12.8 (10.4)	3.7 (5.5)	20.6 (14.2)	- (.7)
#33. Time for reading, other than professional reading?	65.6 (51.4)	26.1 (29.9)	7.3 (15.3)	.9 (3.3)	- (-)
#34. Time for travel, other than for professional purposes?	53.7 (45.9)	33.9 (31.0)	10.6 (16.0)	1.8 (6.9)	- (.2)
#35. Time to spend on do-it-yourself projects or repairing things at home yourself?	28.4 (27.5)	29.8 (27.7)	23.9 (27.0)	17.9 (17.5)	- (.7)
#36. Time for voluntary work for organizations, service, religious, political, etc.?	14.2 (17.7)	21.6 (19.5)	29.8 (30.1)	33.9 (31.3)	.5 (2.0)
#37. Time for cultural activities?	50.9 (41.2)	33.0 (36.1)	13.3 (16.2)	2.8 (6.2)	- (.2)
#38. Time for outdoor recreation, sports or simply communing with nature?	58.3 (61.2)	22.5 (27.7)	14.7 (8.6)	4.6 (2.4)	- (-)
#39. Time to spend in the yard or garden?	25.7 (18.2)	26.1 (22.2)	27.1 (27.3)	20.2 (30.2)	.9 (2.2)
#40. Time to spend with "spouse" or other close friends?	93.1 (89.6)	5.5 (8.4)	1.4 (.9)	- (1.1)	- (-)
#41. Time for hobbies, crafts or avocations?	42.2 (39.9)	31.2 (29.0)	18.3 (20.6)	8.3 (9.8)	- (.7)

(Note: Entries not in parantheses represent female percentages, entries in parantheses represent male percentages.)

42-47 In many fields some persons hold 1/2 time academic appointments for various reasons. In medicine or law, for example, a person may want a 1/2 time appointment to be able to have time to pursue a private practice. The next 6 questions, though, seek your view about a slightly different situation - where the person holding a 1/2 time academic appointment devotes the rest of their time to activities unrelated to their academic appointment such as a carpentry business, home and family, travel, leisure, or other activities. The questions seek your view about the possible effects of this type of 1/2 time academic appointment upon some aspects of a professional career.

What is your view about the effect of a 1/2 time academic appointment, where the incumbent devotes the rest of their time to activities unrelated to the academic appointment, upon:

	SOMEWHAT		NOT	SOMEWHAT	
	INCREASED	INCREASED	CHANGED	DECREASED	DECREASED
#42. Likelihood of making an important contribution to the field?	5.5 (4.4)	5.0 (7.1)	32.6 (20.4)	34.4 (35.0)	21.6 (32.6)
#43. Opportunity to apply special abilities and aptitudes?	23.9 (19.3)	23.9 (23.6)	35.3 (31.3)	11.9 (12.9)	3.7 (7.1)
#44. Opportunity for intellectual stimulation?	30.7 (19.5)	17.0 (25.7)	38.5 (35.9)	10.6 (13.7)	1.4 (4.9)
#45. Professional status & prestige?	.9 (1.1)	.9 (3.5)	18.3 (20.4)	44.0 (40.8)	34.9 (33.9)
#46. Opportunity to derive enjoyment or gratification from work?	33.5 (25.9)	24.8 (24.4)	30.7 (31.9)	8.7 (12.4)	.9 (5.1)
#47. Opportunity to improve professional competence?	9.2 (7.5)	12.4 (8.9)	40.4 (28.8)	26.1 (33.7)	11.0 (20.6)

(Note: Entries not in parentheses represent female percentages, entries in parentheses represent male percentages.)

Missing data summary:		Female	Male
#42		.5	.4
#43		.5	.9
#44		.9	.2
#45		.5	.2
#46		.5	.2
#47		.5	.4

#48 - 49 The previous 6 questions focused upon some specific aspects of a professional academic career. The next 2 questions seek your general view of the minimum appointment fraction at which high professional standards can be maintained. That is, the appointment fraction below which you think it is not possible to maintain high professional standards.

Since the feasibility of maintaining high professional standards on a fractional academic appointment may vary according to the principal duties being performed, two modal types are presented. Please assume that the activity specified is the principal activity engaged in by the incumbent and that the remainder of the time is not devoted to professional activity.

		<u>Female</u>	<u>Male</u>
#48. In my field, for a person on an academic appointment who is primarily teaching, the minimum appointment fraction at which high professional standards can be maintained is:?	1/8 time	10.1	6.2
	1/4 time	18.3	11.1
	3/8 time	7.3	7.1
	1/2 time	45.4	46.3
	5/8 time	.9	2.4
	3/4 time	9.2	17.7
	7/8 time	-	1.1
	8/8 time	5.5	5.1
	more than full time	-	1.1
	missing	3.2	1.3
#49. In my field, for a person on an academic appointment who is primarily doing research, the minimum appointment fraction at which high professional standards can be maintained is:?	1/8 time	6.4	5.1
	1/4 time	14.7	10.0
	3/8 time	3.7	5.1
	1/2 time	40.6	38.1
	5/8 time	4.6	4.7
	3/4 time	14.7	16.4
	7/8 time	1.4	2.2
	8/8 time	9.2	11.8
	more than full time	1.8	4.9
	missing	2.8	1.9

	<u>Female</u>	<u>Male</u>
Very interested	43.1	25.9
Somewhat interested	26.6	28.2
Interested only if other options not too good, such as at lower preference institutions	17.9	23.7
Interested only if nothing else is available	11.0	18.8
Not interested under any circumstances	1.4	3.1
missing	-	.2

#50. Which of the following best reflects your view toward a 3/4 time appointment for yourself?

51-55 Whether you would choose to hold such a 3/4 time position or not, please assume that for some reason you were to have one. Please indicate the likelihood that you would use a substantial amount of the additional time (assume an average of 10 hours per week or 2 hours per day) for each of the following.

	VERY LIKELY	SOMEWHAT LIKELY	SOMEWHAT UNLIKELY	VERY UNLIKELY
#51. Use time for other regular employment, try to obtain a second job?	8.7 (14.0)	11.5 (22.0)	33.4 (29.3)	55.5 (33.9)
#52. Use time for professional remunerative activities such as consulting?	21.6 (27.7)	28.0 (30.2)	20.2 (23.1)	28.4 (18.4)
#53. Use time to pursue interests not related to your professional career, e.g. crafts, travel?	47.7 (27.9)	30.3 (40.6)	14.2 (17.3)	7.3 (12.6)
#54. Use time for service type activities such as community service, volunteer work, etc.?	10.1 (9.3)	27.1 (23.7)	25.7 (27.5)	36.7 (37.9)
#55. Use time to enable "spouse" to pursue a career or prepare for a career by taking on more household chores, or if applicable more care of the children, yourself?	34.9 (37.7)	24.8 (38.1)	13.3 (12.6)	25.7 (9.1)

Note:	Missing data summary:	<u>Female</u>	<u>Male</u>
Entries not in parentheses represent female percentages.	#51	.9	.9
Entries in parentheses represent male percentages.	#52	1.8	.7
	#53	.5	1.6
	#54	.5	1.6
	#55	1.4	2.4

	<u>Female</u>	<u>Male</u>
Very interested	21.6	11.8
Somewhat interested	31.2	16.9
Interested only if other options not too good, such as at lower preference institutions	12.4	19.7
Interested only if nothing else is available	28.9	38.6
Not interested under any circumstances	6.0	12.6
missing	-	.4

#56. Which of the following best reflects your view toward a 1/2 time appointment for yourself?

57-61 Whether you would choose to hold such a 1/2 time position or not, please assume that for some reason you were to have one. Please indicate the likelihood that you would use a substantial amount of the additional time (assume an average of 20 hours per week or 4 hours per day) for each of the following.

	<u>VERY LIKELY</u>	<u>SOMEWHAT LIKELY</u>	<u>SOMEWHAT UNLIKELY</u>	<u>VERY UNLIKELY</u>
#57. Use time for other regular employment, try to obtain a second job?	29.4 (45.9)	28.0 (28.6)	17.4 (12.0)	23.4 (12.2)
#58. Use time for professional remunerative activities such as consulting?	42.7 (42.8)	23.4 (27.1)	11.5 (14.9)	20.6 (14.4)
#59. Use time to pursue interests not related to your professional career, e.g. crafts, travel?	33.5 (20.6)	32.1 (36.1)	20.6 (18.8)	13.3 (22.4)
#60. Use time for service type activities such as community service, volunteer work, etc.?	10.1 (8.4)	29.8 (19.7)	20.6 (23.1)	38.5 (47.0)
#61. Use time to enable "spouse" to pursue a career or prepare for a career by taking on more household chores, or if applicable more care of the children, yourself?	33.9 (39.9)	25.2 (32.8)	12.8 (11.5)	25.7 (13.1)

Note:

Entries not in parentheses represent female percentages
 Entries in parentheses represent male percentages

Missing data summary: #57
 #58
 #59
 #60
 #61

	<u>Female</u>	<u>Male</u>
#57	1.8	1.3
#58	1.8	.9
#59	.5	2.0
#60	.9	1.8
#61	2.3	2.7

	Female	Male
	<u>3.2</u>	<u>2.7</u>
	8.3	5.1
	12.9	10.0
	50.0	41.2
	25.2	40.8
	.5	.2

#62. Which of the following
 best reflects your view
 toward a 1/4 time appoint-
 ment for yourself?
 Very interested
 Somewhat interested
 Interested only if other options not too good,
 such as at lower preference institutions
 Interested only if nothing else is available
 Not interested under any circumstances
 missing

63-67 Whether you would choose to hold such a 1/4 time position or not, please
 assume that for some reason you were to have one. Please indicate the likeli-
 hood that you would use a substantial amount of the additional time (assume an
 average of 30 hours per week or 6 hours per day) for each of the following.

	LIKELY	SOMEWHAT LIKELY	SOMEWHAT UNLIKELY	UNLIKELY
#63. Use time for other regular employment, try to obtain a second job?	71.1 (84.9)	18.3 (9.3)	4.6 (2.4)	5.0 (2.2)
#64. Use time for professional remunerative activities such as consulting?	56.4 (56.3)	19.7 (16.9)	5.0 (10.9)	16.1 (14.2)
#65. Use time to pursue interests not related to your professional career, e.g. crafts, travel?	27.1 (21.5)	30.3 (26.4)	20.2 (16.0)	20.6 (33.5)
#66. Use time for service type activities such as community service, volunteer work, etc.?	6.9 (9.1)	25.7 (15.1)	19.3 (18.4)	46.8 (54.1)
#67. Use time to enable "spouse" to pursue a career or prepare for a career by taking on more household chores, or if applicable more care of the children, yourself?	29.4 (39.2)	24.8 (25.1)	13.8 (14.2)	29.4 (18.0)

	Female	Male
Missing data summary:		
#63	.9	1.1
#64	2.8	1.3
#65	1.8	2.7
#66	1.4	3.3
#67	2.8	3.5

Note:
 Entries not in parentheses
 represent female percentages.
 Entries in parentheses
 represent male percentages.

762. What is your assessment of the non-academic part time job prospects in your field which would be commensurate with your education and experience?		<u>Female</u>	<u>Male</u>
Very good		10.1	11.3
Good		16.5	13.7
Fair		25.2	22.4
Poor		28.4	37.7
Non-existent		16.5	13.5
missing		3.2	1.3

763. Lastly, for your anticipated household situation (including "spouse"?, children?, other dependents?, etc.), we would like you to estimate what would constitute bare minimum subsistence annual income. We are not requesting an estimate of what you would settle for, but what you estimate it would take simply to survive?		<u>Female</u>	<u>Male</u>
less than \$ 2,000		-	.4
\$ 2,001 - \$ 4,000		3.7	3.3
\$ 4,001 - \$ 6,000		13.5	22.9
\$ 6,001 - \$ 8,000		26.5	26.7
\$ 8,001 - \$10,000		20.9	22.2
\$10,001 - \$12,000		14.0	9.4
\$12,001 - \$14,000		6.0	4.9
\$14,001 - \$16,000		4.2	2.9
more than \$16,000		5.1	2.2
Please estimate in current year dollars and assume no savings or other financial reserves.		(percents above are for Rs responding)	
missing		1.4	1.1

7123 Age		<u>Female</u>	<u>Male</u>
19 - 20 years		-	.2
(Note: age was categorized by months with base month being June 1975 and categories include given years up to 11 months, e.g. upper age in category (1) is 20 years & 11 months.)			
21 - 24 years		13.3	12.9
25 - 29 years		61.0	58.3
30 - 34 years		16.1	21.7
35 - 39 years		4.6	4.2
more than 40		4.6	1.6
missing		.5	1.1

7113 Time to degree		<u>Female</u>	<u>Male</u>
Degree obtained		1.8	2.2
0 - 5 months		9.6	14.6
6 - 11 months		13.3	18.8
12 - 17 months		11.9	16.4
18 - 23 months		15.6	12.4
24 - 29 months		17.0	11.3
30 - 35 months		8.3	6.9
more than 35		19.7	12.6
missing		2.8	4.7

Descriptive statistics for other variables are presented in chapters 5 and 6.

Summary of Marginal Comments

1. For questions 23 - 30 regarding possible courses of action 12 Rs indicated that courses of action not specified should be taken. The courses of action suggested, and the number of Rs indicating same, were:

<u>Suggested course of action</u>	<u>Rs</u>
Change or eliminate tenure	4
Expand the market for Ph.D.'s	6
Close lower quality programs	2

2. For questions 51 - 55, 57 - 61, and 63 - 67, 12 Rs indicated that they would be likely to use the time "freed up" for independent research and/or professional reading.
3. For questions 50, 56 and 62, two (2) Rs indicated that they would be interested in intermittent appointments; "similar to sabbaticals". There was no indication as to whether they saw such appointments as being paid or unpaid during the non-work periods. Given the context of the questions (see Appendix A regarding the instructions Rs received) it might be assumed that these Rs were thinking in terms of unpaid periods. However, when the term sabbatical is used this may not be the case.
4. Several notes were enclosed with returns. Approximately six (6) of these conveyed appreciation to the author for "asking these questions at this time". Conversely, approximately three (3) of the notes were in a negative vein; "your notions about part time are stupid".

APPENDIX D CORRELATION MATRICES

TABLE 3/4
Correlation Matrix--explanatory Variables and CIIFAA

N = 669 DF= 667 R ² .0500= .0758 R ² .0100= .0095		Notes: 1. See Appendix E for description of variables. 2. V728, Teaching--other--research, not coded in sequential order of interest. 3. V708, "marital status by sex", and V111, divination, not included in matrix.	
Variable			
V801 CIIFAA	1.000		
V701 SPINCH	-.0006		
V707 ESTHCH	.0209 .2051		
V710 HETTERED	.0220 .1698 .2110		
V716 WILLOWT	-.1101 .0538 .0782 -.0316		
V715 OSKILL	-.0800 .0262 .0462 .0492 .0719		
V717 JOHNKT	.0436 -.0442 -.2689 -.1062 -.0796 -.0089		
V719 HILPHAC	.4212 -.0261 .0504 .0083 -.0418 .0066 -.0182		
V721 N TIME	.2278 -.1775 .0105 -.0872 -.0298 -.0000 .0383 .1754		
V722 DE CHG	.4289 -.0393 .0461 -.0125 -.0168 -.0747 .0191 -.3337		
V723 AGE	.0237 .0178 .0682 .1970 .0176 .0071 .0729 -.0417		
V725 PKIRG	.0785 .1031 -.0413 -.0585 -.0458 -.0362 -.0112 .0226		
V728 TCHORES	.1360 .0678 .1601 .0871 -.0089 .0546 -.1129 .2464		
V736 FOLELLY	-.0012 .0035 .0530 .1704 -.0757 .0286 -.0200 -.0136		
V768 PTHEBIS	.2018 -.0560 -.2869 -.0642 -.1258 -.0746 .4446 .1511		
V769 SUFFEST	.1084 .2630 .1759 -.2286 .0515 -.0142 -.0166 .0805		
V801 CIIFAA	V701 V707 V710 V716 V719 V721 V722 V723 V725 V728 V736 V768 V769	V801 V701 V707 V710 V716 V719 V721 V722 V723 V725 V728 V736 V768 V769	V801 V701 V707 V710 V716 V719 V721 V722 V723 V725 V728 V736 V768 V769

APPENDIX E

SECONDARY RESEARCH QUESTION

Do Doctoral Students' Opinions about Possible Courses of Action That Might be Taken to Reduce the Ph.D. Demand:Supply Disequilibrium Vary by Selected Personal or Situational Characteristics?

As noted in Chapter 1 when framing the primary research question, one possible response to the disequilibrium might be to reduce the retirement age of currently employed Ph.D.s. During one of the only other times in history when widespread unemployment of Ph.D.s was the case, the International Labor Organization (1936) noted: "one of the measures most urgently demanded by young professional workers is the lowering of the retirement age . . . (p. 320)." It was deemed to be desirable to ascertain whether such views hold today.

In similar manner it was felt to be advantageous to have some information about doctoral students' views toward other possible courses of action and whether the views are related to selected personal or situational characteristics such as age, sex, and family situation. Therefore, a section was included in the questionnaire

which solicited opinions about some possible courses of action (see Appendix A, questions 23-30). In this section two questions pertaining to less than full time were included: "eliminate part-time faculty," and "hire only part-time faculty." Comparing responses to these with measures of IILTFTAA represents a modicum of internal validation of the dependent variables used in the principal analyses.

Table 37 presents the basic summary statistics for replies to questions 23-30.

The following aspects of Table 37 are deemed to be noteworthy:

1. The alternative, "reduce the amount of financial assistance to persons pursuing the Ph.D.," has the largest percentage (90.3%) "against" and the smallest percentage (6.5%) "for."

2. The alternative, "eliminate part-time faculty and hire only full-time faculty," has the second largest percentage (74.5%) "against" and the second smallest percentage (8.1%) "for."

3. The alternative, "reduce the age of mandatory retirement for faculty," has a substantially higher percentage "against" (64.7%) than "for" (20.9%).

4. Only one alternative, "set higher standards for admission to Ph.D. programs," has a higher percentage "for" (51.4%) than "against" (36.1%).

TABLE 37

RESPONDENTS' OPINIONS ABOUT SOME POSSIBLE COURSES OF ACTION
(ENTRIES IN PER CENT)

	Don't Know or Uncertain			Somewhat Opposed		Somewhat In Favor		In Favor
	Opposed							
#23. Set higher standards for admission to Ph.D. programs?	36.1		12.6					51.4
#24. Set higher standards for awarding the Ph.D.?	44.5		12.3					43.2
#25. Reduce the amount of financial assistance available to persons pursuing the Ph.D.?	90.3		3.3					6.5
#26. Reduce the amount of teaching of undergraduates done by graduate assistants?	62.2		11.8					26.0
#27. Reduce the age of mandatory retirement for faculty?	64.7		14.4					20.9
#28. Eliminate part-time faculty and hire only full-time faculty?	74.5		17.4					8.1
#29. Reduce the appointment fraction for all academic appointees to less than full time?	69.9		14.5					15.7
#30. Make no changes, simply rely on the free choices of individuals to bring supply and demand into balance?	49.7		14.1					36.2

Note: Left hand column combines "opposed" and "somewhat opposed," right hand column combines "somewhat in favor" and "in favor."

Reference to the results of bivariate analyses facilitates greater understanding of these basically descriptive results.

Taking first the alternative of "setting higher standards for admission," Table 38 presents the results of ethnic/minority group.

TABLE 38

ETHNIC/MINORITY STATUS DIFFERENCES IN VIEW TOWARD
SETTING HIGHER STANDARDS FOR
ADMISSION TO PH.D. PROGRAMS

View Toward Setting Higher Standards for Admission to Ph.D. Progs.	Ethnic Status (V100)					
	Black		Other Minority		Caucasian	
	N	%	N	%	N	%
Opposed	20	60.6	11	44.0	118	19.6
Somewhat Opposed	5	15.2	1	4.0	85	14.1
Don't Know/Uncertain	6	18.2	4	16.0	74	12.3
Somewhat in Favor	1	3.0	2	8.0	176	29.2
In Favor	1	3.0	7	28.0	152	25.2
	33		25		605	
Tests of Independence df = 8; N = 663	Statistic		Signif.			
Maximum Likelihood	51.703		.0000			
Chi-Square	49.636		.0000			
Cramer's Phi	.1935					
Contingency Coeff.	.2639					
Measures Predicting:	Admit Few		Ethnic YN		Combined	
Goodman-Kruskal Lambda	.0579		0.		.0517	
Goodman-Kruskal Tau	.0222		.0514		.0272	

It is clearly seen from Table 38, when combining "black" and "other minority," that a larger percentage of minority group Rs (63.8%) than nonminority group Rs (33.7%) are "against" this alternative.

The converse also holds; a lower percentage of minority group Rs (18.9%) than nonminority group Rs (54.4%) are "for" this alternative. It would appear that minority group persons may see this course of action as perhaps once again making it more difficult for affirmative action to occur. One question, though, might be: What standards should be raised? As implied earlier in Chapter 7 when discussing implications for further research, perhaps a standard regarding the possession of "other skills" should be adopted. Adoption of such a standard may not have a discriminatory effect. The implication of the basic result of views toward this alternative is clear. If discussion of raising standards for admission is undertaken, it is likely to be opposed by minority group members, unless "standards" used do not result in increased discrimination.

A small, but statistically significant ($x^2 = 27.716$, sig. @ .006) difference by division was found regarding views toward the alternative of "setting higher standards for admission." Table 39 summarizes these results.

TABLE 39

DIVISIONAL DIFFERENCES IN VIEW TOWARD SETTING
HIGHER STANDARDS FOR ADMISSION
TO PH.D. PROGRAMS

Division	% "For"	% "Against"
Social Sciences	44.8	41.3
Humanities	50.8	35.9
Physical Sciences	62.6	28.0
Life Sciences	65.2	25.0

Note: With "Uncertain" not included, percent does not equal 100.

Physical sciences has the largest percentage "for" (65.2%) and smallest percentage "against" (25.0%) this alternative, while social sciences has the smallest percentage "for" (44.8%) and the largest percentage "against" (41.3%). To some extent, the divisional differences may be a result of the distribution of minority group Rs across divisions, since of this data set social sciences has the highest percentage (12.0%) of minority group Rs and physical sciences has the second lowest percentage (4.5%).

A similar pattern of results was obtained regarding the alternative to "set higher standards for awarding the Ph.D." Table 40 presents the results by ethnic/minority group.

It is seen from Table 40 that a larger percentage of minority group Rs (74.1%) than nonminority group Rs (42.2%) are "against" this alternative. ("Minority group" here combines Black and Other Minority.) The converse also holds: a lower percentage of minority group Rs (10.3%) than nonminority group Rs (46.4%) are "for" this alternative. Here again, though, it may be important to ask: What standards?

Again, significant differences ($\chi^2 = 55.27$, sig. @ .0001) between divisions on view toward this alternative were detected. These are summarized in Table 41.

As was the case for the alternative of "setting higher standards for admission" it is seen that the social sciences has the highest

TABLE 40

ETHNIC/MINORITY STATUS DIFFERENCES IN VIEW TOWARD
SETTING HIGHER STANDARDS FOR
AWARDING THE PH.D.

View Toward Setting Higher Standards for Awarding the Ph. D.	Ethnic Status (V100)					
	Black		Other Minority		Caucasian	
	N	%	N	%	N	%
Opposed	20	60.6	12	48.0	153	25.5
Somewhat Opposed	7	21.2	4	16.0	100	16.7
Don't Know/Uncertain	5	15.5	4	16.0	73	12.2
Somewhat in Favor	1	3.0	2	8.0	163	27.2
In Favor	--	--	3	12.0	115	19.2
Tests of Independence df = 8; N = 663	Statistic		Signif.			
Maximum Likelihood	42.691		.0000			
Chi-Square	35.637		.0000			
Cramer's Phi =	.1641					
Contingency Coeff. =	.2260					
Measures Predicting	Degree few		Ethnic YN		Combined	
Goodman-Kruskal Lambda	.0210		0.		.0187	
Goodman-Kruskal Tau	.0171		.0388		.0208	

TABLE 41

DIVISIONAL DIFFERENCES IN VIEW TOWARD SETTING
HIGHER STANDARDS FOR
AWARDING THE PH.D.

Division	% "For"	% "Against"
Social Sciences	34.2	54.6
Humanities	46.3	41.1
Life Sciences	56.0	36.0
Physical Sciences	59.8	21.4

Note: With "Uncertain" not included, per cent does not equal 100.

percentage "against (54.6%) and the lowest percentage "for" (34.2%) while the physical sciences has the lowest percentage (against" (21.4%) and the highest percentage "for" (59.8%). For this alternative the logic of the situation may be somewhat the reverse of that suggested regarding the alternative of "setting higher standards for admission." Instead of divisional differences being attributable to the distribution of minority group Rs, it is possible that differences between minority group status may arise because of the divisions they are in. Since Rs may have interpreted "standards" here as being academic standards rather than perhaps slightly different standards pertinent to non-academic pursuits, the finding that social sciences Rs are most opposed may derive from such an interpretation of "standards" for awarding the degree. Partial support for this derives from the results reported about preferences regarding preferred employment activities (see Chapter 4). It was noted that the percentages preferring activities other than teaching and/or research were: social sciences, 21.3 per cent; humanities, 5.0 per cent; physical sciences, 2.7 per cent, and life sciences, 1.3 per cent. If Rs interpreted "standards" here to mean "academic standards," the social sciences Rs would be expected to be less in favor of setting them higher. And, since the highest percentage of minority group Rs (12.0%) in the data set are in the social sciences, the finding that a higher percentage of minority group Rs are "against"

setting higher standards for awarding the Ph.D. may largely be because of their presence in the social sciences division.

Views toward the alternative, "reduce the amount of financial assistance available to persons pursuing the Ph.D.," were found to be significantly related to the variable, Time to Degree (V113).

The chi square = 65.537, sig. @ .0001, revealed that Rs with greater time to degree were more opposed to this alternative. It is of interest to note that of the 17 "in favor" of reducing financial assistance, four (23.5%) were Rs who had already received the degree. Self interest may be operating.

Views toward the alternative, "make no changes, simply rely on the free choice of individuals to bring supply and demand into balance," were found to be significantly related with division.

Table 42 summarizes this result.

TABLE 42

DIVISIONAL DIFFERENCES IN VIEW TOWARD THE
ALTERNATIVE OF MAKING NO CHANGES

Division	% "For"	% "Against"
Humanities	27.7	57.1
Life Sciences	38.6	53.3
Social Sciences	36.7	49.4
Physical Sciences	41.9	40.1

Note: With "Uncertain" not included, per cent does not equal 100.

In Table 42 it is seen that the highest percentage "against" (57.1%) and the lowest percentage "for" (27.7%) is in the humanities

whereas the lowest percentage "against" (40.1%) and the highest percentage "for" (41.9%) is in the physical sciences. If it is borne in mind that being "against" this alternative represents a posture that some action should be taken, this result is understandable since it is in the humanities where the largest disequilibrium is being projected. Also, it was seen in Chapter 4 that it was the physical sciences that had the largest percentage (26.6%) indicating preferred employment outside the academic sector; perhaps suggesting that they see their options to be wider than Rs in other divisions.

Views toward the alternative to "eliminate part-time faculty and hire only full-time faculty" were found to be significantly related to sex. The chi square = 42.99, sig. @ .0001, reveals that a significantly higher percentage of females (75.1%) than males (48.9%) were "opposed" to this alternative. This is consistent with the results reported in Chapter 4 where females evidenced significantly higher IILTFTAA than males.

A Modicum of Internal Reliability Estimation

It is not appropriate to suggest that relationships between measures within a single instrument establish the validity of such measures. Validation of measures should be established on the basis of comparison with separate, preferably behavioral, criteria. It is deemed appropriate, though, to examine the internal consistency of measures assumed to be tapping similar views. By comparing responses to

questions 28 and 29 with responses to questions 50, 56 and 62 it is possible to partially assess the consistency of responses since these five questions relate to less than full-time employment. Interest in each of the fractional appointment options is expected to be positively related with (increasing) opposition to "eliminating part-time faculty" and negatively related with (increasing) opposition to "reducing the appointment fraction for all academic appointees to less than full time." Tables 43 through 48 present the results of these chi squares. It is seen that for all six chi squares the relationships are significant and in the expected direction. That is, persons evidencing greater interest in less than full-time academic appointments tend to oppose the elimination of part-time faculty and to favor making all academic appointments on a less than full-time basis.

Table 43

Interest in 3/4 Time (V50) X Eliminate Part
Time Faculty and Hire Only Full Time Faculty (V28)

(Note: Higher category numbers on V50 represent lower interest in LTFT; higher number categories on V28 represent less opposition or more in favor.)

28.		50.WTC34TIME					
ONLYFT		MISS	(1)	(2)	(3)	(4)	(5)
N=	666						
TOTAL=	669	1	211	135	144	139	17
COL%							
MISS	2	0	0	0	2	0	0
COL%							
(1)	333	0	154	97	78	44	10
COL%	57.5		73.0	52.4	54.2	40.4	58.8
(2)	114	0	20	44	25	22	3
COL%	17.1		9.5	23.8	17.4	20.2	17.6
(3)	116	0	26	34	29	20	1
COL%	17.4		12.3	18.4	20.1	23.9	5.9
(4)	37	1	7	9	8	12	1
COL%	5.6		3.3	4.9	5.6	11.0	5.9
(5)	16	0	4	1	4	5	2
COL%	2.4		1.9	.5	2.8	4.6	11.8

TESTS OF INDEPENDENCE STATISTIC SIGNIF DF= 16 N= 666

MAXIMUM LIKELIHOOD 53.199 .0000 GAMMA'S PHI= .1438
CHI-SQUARE 55.068 .0000 CONTINGENCY COEFF= .2754

MEASURES PREDICTING:	WTC34TIME	ONLYFT	COMBINED
GOODMAN-KRUSKAL LAMBDA	.0235	0.	.0515
GOODMAN-KRUSKAL IAU	.0246	.0325	.0281

ORDINAL MEASURES

GOODMAN-KRUSKAL GAMMA = .2545 (STANDARD ERROR = .0470)
KENDALL'S TAU-B = .1920 (STANDARD ERROR = .0225)

Table 44

Interest in 1/2 Time (V56) X Eliminate Part
Time Faculty and Hire Only Full Time Faculty (V28)

(Note: Higher number categories on V56 represent
lower interest in LTFT; higher number categories
on V28 represent less opposition or more in favor.)

28. ONLYFT		56.V5624TME					
		MISS	(1)	(2)	(3)	(4)	(5)
N=	665						
TOTAL=	669	2	130	144	115	236	71
COL%							
MISS	2	0	0	0	1	1	0
COL%							
(1)	332	1	76	100	97	114	35
COL%	57.4		76.0	69.4	58.3	44.1	50.0
(2)	114	0	9	20	19	54	12
COL%	17.1		3.0	13.9	16.5	22.9	17.1
(3)	116	0	8	20	25	54	3
COL%	17.4		8.0	13.9	21.7	22.0	12.3
(4)	37	1	5	2	3	17	10
COL%	5.6		5.0	1.4	2.0	7.2	14.3
(5)	16	0	2	2	1	7	4
COL%	2.4		2.0	1.4	.9	3.0	5.7

TESTS OF INDEPENDENCE STATISTIC SIGNIF DF= 16 N= 665

MAXIMUM LIKELIHOOD 61.836 .0000 CRAMER'S PHI= .1521
CHI-SQUARE 61.569 .0000 CONTINGENCY COEFF= .2911

MEASURES PREDICTING:	V5624TME	ONLYFT	COMBINED
GOODMAN-KRUSKAL LAMBDA	0.	0.	0.
GOODMAN-KRUSKAL TAU	.1255	.0370	.0326

ORDINAL MEASURES

GOODMAN-KRUSKAL GAMMA = .2365 (STANDARD ERROR = .0471)
KENDALL'S TAU-B = .2314 (STANDARD ERROR = .0221)

Table 45

Interest in 1/4 Time (V62) X Eliminate Part
Time Faculty and Hire Only Full Time Faculty (V28)

(Note: Higher number categories on V62 represent
lower interest in LTFT; higher number categories
on V28 represent less opposition or more in favor)

28.		62.HTC14TNE					
ONLYFT		MISS	(1)	(2)	(3)	(4)	(5)
N= 665							
TOTAL= 569		2	19	41	72	235	238
COL%							
MISS	2	0	0	0	1	0	1
COL%							
(1)	383	0	11	31	50	178	113
COL%	57.6		57.9	75.6	69.4	60.3	47.5
(2)	114	0	1	2	12	48	51
COL%	17.1		5.3	4.3	16.7	16.3	21.4
(3)	115	1	3	5	9	51	48
COL%	17.3		15.8	12.2	12.5	10.9	20.2
(4)	37	1	2	3	1	12	19
COL%	5.6		10.5	7.3	1.4	4.1	8.0
(5)	16	0	2	0	0	7	7
COL%	2.4		10.5			2.4	2.9

TESTS OF INDEPENDENCE	STATISTIC	SIGNIF	DF= 16	N= 665
MAXIMUM LIKELIHOOD	37.329	.0019	CRAMER'S PHI=	.1139
CHI-SQUARE	34.512	.0046	CONTINGENCY COEFF=	.2221

MEASURES PREDICTING:	HTC14TNE	ONLYFT	COMBINED
GOODMAN-KRUSKAL LAMBDA	.0270	0.	.0153
GOODMAN-KRUSKAL TAU	.0137	.0184	.0160

ORDINAL MEASURES

GOODMAN-KRUSKAL GAMMA	= .2207	(STANDARD ERROR = .0544)
KENDALL'S TAU-B	= .1396	(STANDARD ERROR = .0215)

Table 46

Interest in 3/4 Time (V50) X Reduce The Appointment Fraction for All Academic Appointees to LTFT(V29)

(Note: Higher number categories on (V50) represent lower interest in LTFT; higher number categories on V29 represent less opposition or more in favor.)

29.		50. WTC34TME					
ONLYFT		MISS	(1)	(2)	(3)	(4)	(5)
N=	663						
TOTAL=	669	1	210	155	142	109	17
COL%							
MISS	5	0	1	0	4	0	0
COL%							
(1)	365	1	95	86	96	37	11
COL%	55.1		40.5	46.5	67.6	79.8	64.7
(2)	98	0	27	41	23	6	1
COL%	14.8		12.9	22.2	16.2	5.5	5.9
(3)	96	0	32	35	13	12	4
COL%	14.5		15.2	18.9	9.2	11.0	23.5
(4)	83	0	54	13	8	2	1
COL%	12.5		25.7	9.7	5.6	1.8	5.9
(5)	21	0	12	5	2	2	0
COL%	3.2		5.7	2.7	1.4	1.8	

TESTS OF INDEPENDENCE STATISTIC SIGNIF DF= 16 N= 663

MAXIMUM LIKELIHOOD 103.66 .0000 CRAMER'S PHI= .1964
CHI-SQUARE 102.34 .0000 CONTINGENCY COEFF= .3657

MEASURES PREDICTING:	WTC34TME	ONLYFT	COMBINED
GOODMAN-KRUSKAL LAMBDA	.0618	0.	.0373
GOODMAN-KRUSKAL TAU	.0504	.0571	.0535

ORDINAL MEASURES

GOODMAN-KRUSKAL GAMMA = -.3957 (STANDARD ERROR = .0445)
KENDALL'S TAU-B = -.2734 (STANDARD ERROR = .0220)

Table 47

Interest in 1/2 Time (V56) X Reduce The Appointment Fraction for All Academic Appointees to LTFT (V29)

(Note: Higher number categories on V56 represent lower interest in LTFT; higher number categories on V29 represent less opposition or more in favor.)

29.		56.4TC24T2E					
ONLYFT		MISS	(1)	(2)	(3)	(4)	(5)
N=	662						
TOTAL=	669	2	99	144	114	235	70
COL%							
MISS	5	0	1	0	2	2	0
COL%							
(1)	364	2	35	64	59	155	55
COL%	55.0		30.4	44.4	51.8	63.4	78.6
(2)	98	0	15	20	17	41	4
COL%	14.6		16.2	13.9	14.9	17.4	5.7
(3)	96	0	14	25	22	26	9
COL%	14.5		14.1	17.4	19.3	11.1	12.9
(4)	83	0	24	32	13	12	2
COL%	12.5		24.2	22.2	11.4	5.1	2.9
(5)	21	0	9	3	3	6	0
COL%	3.2		9.1	2.1	2.6	2.6	0

TESTS OF INDEPENDENCE STATISTIC SIGNIF DF= 16 N= 662

MAXIMUM LIKELIHOOD 81.293 .0000 CRAMER'S PHI= .1750
CHI-SQUARE 81.262 .0000 CONTINGENCY COEFF= .3303

MEASURES PREDICTING: WTC24T2E ONLYFT COMBINED

GOODMAN-KRUSKAL LAMBDA .0539 0. .0317
GOODMAN-KRUSKAL TAU .0314 .2413 .0359

ORDINAL MEASURES

GOODMAN-KRUSKAL GAMMA = -.3503 (STANDARD ERROR = .0423)
KENDALL'S TAU-B = -.2446 (STANDARD ERROR = .0228)

Table 48

Interest in 1/4 Time (V62) X Reduce The Appointment Fraction for All Academic Appointees to LTFT (V29)

(Note: Higher number categories on V62 represent lower interest in LTFT; higher number categories on V29 represent less opposition or more in favor.)

29.		62.	WTC14TME				
ONLYPT		MISS	(1)	(2)	(3)	(4)	(5)
N=	662						
TOTAL=	669	2	19	41	71	204	237
COL%							
MISS	5	0	3	0	2	1	2
COL%							
(1)	364	2	11	16	22	140	168
COL%	55.0		57.9	39.0	40.8	47.6	71.9
(2)	98	0	1	3	11	46	30
COL%	14.8		5.3	19.5	15.5	16.3	12.7
(3)	96	0	2	9	10	49	26
COL%	14.5		10.5	22.0	14.1	16.7	11.0
(4)	83	0	3	7	15	47	8
COL%	12.5		15.8	17.1	23.4	16.0	3.4
(5)	21	0	2	1	3	10	5
COL%	3.2		10.5	2.4	4.2	3.4	2.1

TESTS OF INDEPENDENCE STATISTIC SIGNIF DF= 16 N= 662

MAXIMUM LIKELIHOOD 52.290 .0000 Cramer's PHI= .1497
CHI-SQUARE 59.323 .0000 CONTINGENCY COEFF= .2458

MEASURES PREDICTING:	WTC14TME	ONLYPT	COMBINED
GOODMAN-KRUSKAL LAMBDA	.0761	0.	.0420
GOODMAN-KRUSKAL TAU	.0362	.0354	.0358

ORDINAL MEASURES

GOODMAN-KRUSKAL GAMMA = -.3277 (STANDARD ERROR = .0403)
KENDALL'S TAU-B = -.2173 (STANDARD ERROR = .0208)

APPENDIX F

SECONDARY RESEARCH QUESTION

Likely Usage of Time "Freed Up" Under Less than Full-Time.

As noted with regard to the primary research question, how people choose to utilize their time is assumed to reflect what is important to them. Based upon this view there has been increasing interest in studying time use as a means by which social change might be measured (Robinson & Converse, 1972; Szalai, 1966). The interested reader is referred to Robinson and Converse (1972) for their excellent treatment of the history of this approach and discussion of its dangers and limitations.

Inclusion of questions about the likely use of "freed up" time as a secondary research question is warranted for two reasons. First, it helps "flesh out" data about interest in less than full-time employment. Second, the opportunity is available to obtain some time use data by what I believe may be an improvement upon traditional approaches. Robinson and Converse (1972) indicate that:

One approach toward the measurement of . . . [preferences about time use] is to ask the respondent hypothetically what he would do if suddenly awarded some extra hours in his

day. There is reason to believe, however, that such an approach tends to draw highly idealized answers (p. 68, brackets mine).

In the main, the extra hours approach has generally been: If you had two extra hours in the day, please indicate how you would use it. A list of alternatives for the time use was presented. From my review of the literature, other than attempts to measure actual time use, which itself is problematic, this extra hours approach seems to have predominated. If it is assumed that the less than full-time employment situations, as used in the present inquiry, are "more real" to Rs than being awarded extra hours in a day (more than 24 hour day?), I assume that answers may tend to be somewhat less idealized. I do not assume that the idealization is completely removed, but simply that it is diminished.

For each less than full-time appointment possibility, five alternative uses of time were presented (see Appendix A, questions 51-55, 57-61 and 63-67) requesting R to indicate the likelihood that the time "freed up" would be used for the specified activity or purpose. Tables 49-53 present summary results from these questions. Two considerations should be borne in mind when examining these tables. First, the instructions were: "Whether you would choose to hold such a . . . position or not, please assume that for some reason you were to have one." Because of this, responses to this set of questions include both Rs interested in such positions and not interested in such positions. Second, entries in the tables are the per cent responding

in each question. Both "married" and "single" are included. This may be particularly important regarding the responses to questions 55, 61 and 67 since "spouse" is referred to. However, since time use was not the principal concern of the present inquiry, more detailed analyses were not performed.

TABLE 49

LIKELIHOOD THAT TIME "FREED UP" UNDER FRACTIONAL
APPOINTMENT WOULD BE USED FOR OTHER
REGULAR EMPLOYMENT

Likelihood	3/4 Time		1/2 Time		1/4 Time	
	Female	Male	Female	Male	Female	Male
Very Likely	8.8	14.1	29.9	46.5	71.8	85.9
Somewhat Likely	11.6	22.1	28.5	29.0	18.5	9.4
Somewhat Unlikely	23.6	29.5	17.8	12.1	4.6	2.5
Very Unlikely	56.0	34.2	23.8	12.4	5.1	2.2
N =	216	447	214	445	216	446

TABLE 50

LIKELIHOOD THAT TIME "FREED UP" UNDER FRACTIONAL
APPOINTMENT WOULD BE USED FOR PROFESSIONAL
REMUNERATIVE ACTIVITIES SUCH AS CONSULTING

Likelihood	3/4 Time		1/2 Time		1/4 Time	
	Female	Male	Female	Male	Female	Male
Very Likely	22.0	27.9	43.5	43.2	58.0	57.5
Somewhat Likely	28.5	30.4	23.8	27.3	20.3	17.1
Somewhat Unlikely	20.6	23.2	11.7	15.0	5.2	11.0
Very Unlikely	29.0	18.5	21.0	14.5	16.5	14.4
N =	214	448	214	447	212	445

TABLE 51

LIKELIHOOD THAT TIME "FREED UP" UNDER FRACTIONAL
APPOINTMENT WOULD BE USED TO PURSUE INTERESTS
NOT RELATED TO PROFESSIONAL CAREER

Likelihood	3/4 Time		1/2 Time		1/4 Time	
	Female	Male	Female	Male	Female	Male
Very Likely	47.9	28.4	33.6	21.0	27.6	22.1
Somewhat Likely	30.4	41.2	32.3	36.9	30.8	27.1
Somewhat Unlikely	14.3	17.6	20.7	19.2	20.6	16.4
Very Unlikely	7.4	12.8	13.4	22.9	21.0	34.4
N =	217	444	217	442	214	439

TABLE 52

LIKELIHOOD THAT TIME "FREED UP" UNDER FRACTIONAL
APPOINTMENT WOULD BE USED FOR SERVICE TYPE
ACTIVITIES SUCH AS COMMUNITY SERVICE,
VOLUNTEER WORK, ETC.

Likelihood	3/4 Time		1/2 Time		1/4 Time	
	Female	Male	Female	Male	Female	Male
Very Likely	10.1	9.5	10.2	8.6	7.0	9.4
Somewhat Likely	27.2	24.1	30.1	20.1	26.0	15.6
Somewhat Unlikely	25.8	27.9	20.8	23.8	19.5	19.0
Very Unlikely	36.9	38.5	38.9	47.9	47.4	56.0
N =	217	444	216	443	215	436

TABLE 53

LIKELIHOOD THAT TIME "FREED UP" UNDER FRACTIONAL APPOINTMENT WOULD BE USED TO ENABLE "SPOUSE" TO PURSUE A CAREER OR TO PREPARE FOR A CAREER BY TAKING ON MORE HOUSEHOLD CHORES, OR IF APPLICABLE MORE CARE OF CHILDREN

Likelihood	3/4 Time		1/2 Time		1/4 Time	
	Female	Male	Female	Male	Female	Male
Very Likely	35.3	38.6	34.7	41.0	30.2	40.7
Somewhat Likely	25.1	39.1	25.8	33.7	25.5	26.0
Somewhat Unlikely	13.5	13.0	13.1	11.8	14.2	14.7
Very Unlikely	26.0	9.3	26.3	13.4	30.2	18.6
N =	215	440	213	439	212	435

Since detailed statistical tests were not performed only very tentative suggestions are warranted regarding the results presented in Tables 49-53. From Table 53 it appears that for each fractional appointment a higher percentage of females than males are "very unlikely" to use the time "freed up" to enable "spouse" to pursue a career. This may possibly reflect females as already seeing their "spouses" as pursuing careers and thus they do not need to use the time "freed up" to enable them to do so.

From Table 51 it appears that for each fractional appointment a higher percentage of females than males are "very likely" to use time "freed up" to pursue interests not related to their professional career. If this difference were found to be significant, it might be interpreted as suggesting that females may have a richer or more diverse set of interests than males.

From Table 49 it appears that for each fractional appointment a higher percentage of males than females are "very likely" to use time "freed up" for other regular employment. As suggested in Chapter 6 a higher percentage of males than females seem to be evidencing "type 2 IILTFTAA" at each fractional appointment level.

Turning from apparent differences between sexes to differences within sexes across the three fractional appointment levels, three apparent trends are noted. From Table 49 it appears that for both females and males the likelihood that time "freed up" would be used for other regular employment increases as appointment fraction goes from $3/4$ to $1/2$ to $1/4$ time. A similar pattern is also apparent in Table 50 regarding the likelihood that time "freed up" would be used for remunerative professional activities. Table 51 reveals that a reverse pattern appears to hold regarding the likelihood that time "freed up" would be used to pursue interests not related to professional career. As appointment fraction goes from $3/4$ to $1/2$ to $1/4$ the percentage indicating "very likely" decreases. Clearly, however, substantially more detailed analyses would be necessary to fully discuss these apparent time use trends. These results suggest that Rs in the present inquiry attend to the fractional appointment levels when indicating how they would be likely to use the time "freed up." As suggested in Chapter 7 it may be beneficial to consider carrying out time use research at the same time that

one is exploring interest in less than full-time employment since the two areas appear to complement one another.

Finally, it is of interest to examine Tables 49-53 to ascertain, for females and males, the time use with highest percentages "very likely" and "very unlikely" for each fractional appointment level. For $3/4$ time it is seen that the use with highest percentage "very likely" for females is to use time "freed up" to pursue interests not related to professional career (47.9%) and the highest percentage "very likely" for males is to use time "freed up" to enable "spouse" to pursue a career (38.6%). For $3/4$ time the usage with highest percentage "very unlikely" for females (56.0%) is to use time for other regular employment and the highest percentage "very unlikely" for males is to use time "freed up" for service type activities (38.5%).

At $1/2$ time it is seen that the usage with the highest percentage "very likely" for females is to use time for remunerative professional activities (43.5%) and the highest percentage "very likely" for males is to use time for other regular employment (46.5%). For $1/2$ time the usage with the highest percentage "very unlikely" for females is to use time "freed up" for service type activities (38.9%) and for males the highest percentage "very unlikely" is to use time for service type activities (47.9%).

At $1/4$ time it is seen that the usage with the highest percentage "very likely" for females is to use time for other regular employment

(71.8%) and this usage also has the highest percentage "very likely" for males (85.9%). For $1/4$ time the usage with the highest percentage "very unlikely" is also the same for females and males; to use time "freed up" for service type activities; females (47.4%), and males (56.0%).

From the foregoing it is suggested that: (1) at $1/4$ time the pattern of replies for females and males is most similar; it does not appear that there are major differences by sex in likely time usage at $1/4$ time. (2) At $1/2$ time a fairly large percentage of both sexes indicate that they are likely to use the time "freed up" to seek additional income but that females appear to be likely to seek the income by remunerative professional activities such as consulting while males will be likely to do so either by seeking other regular employment or by remunerative professional activities. (3) The differences between females and males appear to be greater at $3/4$ time than at $1/2$ or $1/4$ time: (a) a greater percentage of females than males indicate that they are "very likely" to use time "freed up" to pursue interests not related to professional career, (b) a greater percentage of females than males indicate that they are "very unlikely" to use time "freed up" to seek other regular employment. (4) For both females and males the likelihood that time "freed up" would be used for service type activities is relatively low at all three fractional appointment levels.

It must be stressed that the foregoing are only very tentative suggested interpretations. Only a very limited number of time usage options were presented. Also, only descriptive results, not statistical analyses, are the basis for the suggestions. At best, these results may perhaps be useful when considering further research regarding time usage. It appears clear, though, that responses about the likelihood of time usage may be a complex question requiring careful research.

APPENDIX G

SUMMARY OF LIMITATIONS FOR THE PRESENT INQUIRY

Conceptual Framework Limitations

1. Rationality and purposeful behavior are emphasized; with non-rational components of human behavior minimized. For example, it is conceivable that, to some extent, work may be a habit. Similarly, there is currently discussion of the phenomenon of the "workoholic;" an individual addicted to work. Full explanation of interest in less than full-time employment may require some means of measuring non-rational components of human behavior (see p. 14).

2. Desired end states may be sought through a variety of means, thus the means:ends approach may not fully suffice for explaining ILTFTAA (See p. 14).

3. Work or employment may be an end in itself and thus seeking to explain interest in employment as a means to other desired ends may be incomplete (see p. 14).

Design Limitations

1. A cross-sectional study does not permit exploration of causal patterns (see pp. 47 & 164-165).

2. Data was obtained from only one member of a household. This was discussed on pp. 1²-19 (p. 55).
3. Non-respondents may be different from Rs (see p. 48).
4. Responses to questions in a single instrument cannot be assumed to be independent of one another (see p. 48).
5. It is not possible to know who actually completed the questionnaire; e. g., R her/himself or with assistance from "spouse" (see p. 49).
6. Since this was an exploratory endeavor, some potentially important variables were not included. Two variables which may be of particular interest are: (1) possible power differentials in the household which represent constraints upon the individual's decision-making range, and (2) age of children and other dependents (see pp. 33-34).
7. Only a very limited pattern of less than full-time academic appointments, continuous fractional appointment, were included. It is possible that intermittent patterns may be more feasible for institutions and/or elicit greater interest on the part of potential appointees (see pp. 36-37).
8. Interest in less than full-time academic appointment is measured in a "paper and pencil" fashion, and thus, may reflect somewhat higher interest than would be the case if actual behavior were measured. However, see pp. 37 and 158 about the infeasibility of using behavioral measures.

9. For doctoral students employment is primarily a future consideration. To the extent deemed possible the questions attempted to obtain R's responses about her/his "likely future situation," such as whether (s) he planned to "marry." This approach, though, leads to "soft" data; e. g., desired income potential for a possible future "spouse." (see pp. 52-54).

Population/Sample Limitations

1. Only a single Ph.D. granting institution was included (see pp. 44-46).
2. Only selected doctoral programs were included (see pp. 45 - 46).

The sample used was not randomly selected. Rather, the selection of the sample was based upon the fact that a high percentage of previous Ph.D. recipients from this institution had taken positions in the academic sector of the Ph.D. labor market (see p. 44).

Instrument Limitations

1. Face validity is assumed (see pp. 53-55).
2. Reliability of measures was not expressly tested (see pp. 55-56 ; except see pp. 237 - 244).
3. There was a possible confounding of the variable, "Number of Children Anticipated (V725), due to the wording of question 19 (see pp. 51-52, and p. 127).

4. Use of "Spouse's" Income Potential (V701) may not be the best measure for explaining/predicting IILTFTAA. It may be better to use a measure of "spouse's" actual income (see p. 52). However see previous limitation deriving from the assumption that for doctoral students employment may be primarily a future consideration.

5. An instruction to exclude mortgage debts when responding to the question of household debts was omitted when typing the final questionnaire (see p. 53).

Analyses Limitations

1. Due to the small number (N = 58) of minority group Rs in the data set, only limited analyses of possible differences between minority group and nonminority Rs was warranted (see pp. 90 - 91).

2. Due to the small number (N = 23) of "single" female Rs in the data set, only limited analyses of differences according to "sex by marital status" was warranted (see pp. 77 - 78).

3. Based upon the results it was suggested that there may be two hypothetical types of IILTFTAA. Due to the design of the present inquiry it was not possible to perform separate analyses for these two types of IILTFTAA (see pp. 111 - 115).

4. Because of limitations deriving from the size of the data set when partitioned by sex, it was not possible to include all potentially important variables in the separate MCAs for each sex. Thus the models for each sex should not be considered to be the "best." Rather, they should be considered to be "selected" models (see pp. 116-119).

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