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ABSTRACT

The report examines the multiplicity of factors which influence the labor market activity of the population and explores the implications of changes in those influential factors with regard to manpower and educational planning policy. The first section contains the introduction to the problem, summary of factors affecting labor force participation, and implications for manpower and occupational education planners. In the second section, the authors outline two alternative models of labor market functioning and present an historical accounting of manpower and educational planning. Some manpower forecasting methods are reviewed as attempts to understand labor force behavior over time. The third section reviews the literature with particular reference to factors influencing the work decisions of: (1) women (marital status, earnings, education, presence of children, school attendance, training, education, and labor demand), (2) whites and minority groups (Negro and Spanish American), (3) older persons, and (4) people of varying educational attainment. Labor force turnover is examined briefly and conclusions are drawn concerning those variables most influential in the decision to participate in the work force. Policy implications of changes in labor market behavior are explored in the context of manpower and educational planning. A bibliography and technical appendix complete the report. (Author/JB)

MANPOWER PLANNING, OCCUPATIONAL EDUCATION, AND THE DECISION TO PARTICIPATE IN THE LABOR FORCE

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and
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center for
occupational education

DASP

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Dynamic Analysis and Strategic Planning is a Program Division of the Center for Occupational Education at North Carolina State University. DASP is committed to a systematic application of information technology to the identification, collection and provision of management information for educational decision-makers. The program currently has two major thrusts: (1) research and development aimed at improved information technology and strategies for agency implementation, supported by an NIE contract; (2) application of the developed information technology to field generated problems, supported by independent contracts with interested client groups.

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MANPOWER PLANNING, OCCUPATIONAL EDUCATION, AND THE DECISION TO PARTICIPATE IN THE LABOR FORCE

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Dynamic Analysis and Strategic Planning Program
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PREFACE

The DASP Program Division of the Center for Occupational Education is committed to assisting vocational education decision-makers in the identification, collection and use of policy-relevant information. As a part of the programmatic efforts to identify informational areas of policy relevance, Dr. Jacob Kaufman, a noted labor economist renowned for his work in vocational education research, and his distinguished colleague, Dr. John Sumansky, have been commissioned to examine the factors associated with decisions to participate in the labor force as they relate to manpower and occupational planning. In this paper, the authors outline two alternative models of labor market functioning, followed by a historical accounting of manpower and educational planning. Some manpower forecasting methods are reviewed as attempts to understand labor force behavior over time. The authors then overview the literature with particular reference to factors influencing the work decisions of women, racial minorities and older persons. Conclusions are drawn concerning those variables most influential in the decision to participate in the work force. Finally, policy implications of changes in labor market behavior are explored in the context of manpower and educational planning.

D. W. Drewes, Director
DASP Program Division
Center for Occupational Education

TABLE OF CONTENTS

	Page
PREFACE	ii
LIST OF TABLES	iv
LIST OF FIGURES	vi
INTRODUCTION TO THE PROBLEM, SUMMARY OF THE FACTORS AFFECTING THE DECISION TO PARTICIPATE IN THE LABOR FORCE, AND IMPLICATIONS FOR MANPOWER AND OCCUPATIONAL EDUCATION PLANNERS	1
THE MARKET MODEL, IMPERFECTIONS, AND SOME ALTERNATIVES	8
The Market System	8
Command Model--Central Control	10
MANPOWER AND EDUCATIONAL PLANNING IN THE UNITED STATES	11
Historical Background	11
The Manpower Requirements Approach--Tomorrow's Manpower Needs	13
Comparative Analysis and Evaluation of Predictive Methodologies	15
REVIEW OF THE LITERATURE	19
The Supply of Labor	19
Factors Influencing the Labor Force Participation of Women	25
Factors Influencing the Labor Force Participation of Minority Groups	44
Sex Discrimination and Labor Force Participation	55
Factors Influencing the Labor Force Participation of the Elderly	57
Educational Attainment and Labor Force Participation	62
LABOR FORCE ATTRITION	67
CONCLUSION	70
BIBLIOGRAPHY	75
TECHNICAL APPENDIX	83

LIST OF TABLES

Table		Page
1.	Historical Rates of Labor Force Participation	21
2.	Adjusted Labor Force Participation Rates for Single Women Aged 25 to 54, by Marital Status	27
3.	Labor Force Participation of Women by Rate of Pay	29
4.	Number of Hours Worked per Week and Percentage of Full-Time Workers, Single Women, Aged 20 to 24, by Rate of Pay	29
5.	Labor Force Participation by Marital Status, Sex, and Age, 1972	30
6.	Labor Force Participation of Single Women, Aged 20 to 24, by Educational Level	31
7.	Adjusted Labor Force Participation Rates for Single Women, Aged 25 to 54	33
8.	Labor Force Participation Rates for Women, Married and Nonmarried, White, Aged 20 to 24	34
9.	Labor Force Participation Rates for Women, Aged 14 to 17, by School Status	35
10.	Labor Force Participation Rates and Intensities, Single Women, Aged 20 to 24	36
11.	Estimated Regression Coefficients Relating Changes in Female Earnings and Husband's Income to Changes in Wife's (Female's) Labor Force Participation Rate	39
12.	Estimated Regression Coefficients Relating Changes in Female Earnings and Husband's Earnings to Female Labor Force Participation Rates	39
13.	Estimated Regression Coefficients Relating Changes in Female Earnings and Husband's Income to Female Labor Force Participation Rates	40
14.	Labor Force Participation Rates for Married Women with Children, by Age Group	42
15.	Civilian Labor Force Participation Rates by Race and Sex, by Age, 1972	45

Table		Page
16.	Comparative Unemployment Rates: Male-Female, Negro-White, 1972	47
17.	Married Males as a Percentage of Age Group, by Race	49
18.	Percentage of Total Age Group in Different Marital Groups, Females by Age, Race, 1960	50
19.	Labor Force Participation Rates by Race and Sex, 1972	53
20.	Percentage of Population Aged 25 and Over, by Years of School Completed and Ethnic Origin, 1972	54
21.	The Effects of Each Additional Year of Age upon Labor Force Participation Rates for Two Groups of Older Workers	58
22.	The Effects of Changes in Rate of Unemployment upon Labor Force Participation of Various Age, Sex Groups	60
23.	Labor Force Participation Rates by Level of Educational Attainment, by Sex, Race, 1971	62
24.	Percent Distribution of Women in Labor Force by Marital Status and Educational Level	63
25.	Educational Level of Family Head by Number of Children, 1972	65
26.	Labor Force Participation Rates by Educational Level and Age, 1971	66

LIST OF FIGURES

Figure — Page

1. Factors Which Influence the Decision to Participate in the Labor Force 3

INTRODUCTION TO THE PROBLEM, SUMMARY OF THE FACTORS AFFECTING THE DECISION TO PARTICIPATE IN THE LABOR FORCE, AND IMPLICATIONS FOR MANPOWER AND OCCUPATIONAL EDUCATION PLANNERS

This report has two basic objectives: first, to examine the multiplicity of factors which influence the labor market activity of the population; second, and perhaps more important, to explore the implications of changes in those influential factors with regard to manpower and educational planning policy.

The most valuable resource available to a nation is its population. Anything which hinders the population from being productive necessarily involves a waste of at least part of the human resource. Likewise, a failure to improve upon the quality of human resources represents a failure to utilize human resources to their fullest capability and, thus, results in a loss to society.

Attempting to remove hindrances to active participation in productive activity and improving the quality of this participation are tasks which fit neatly into the domains of manpower and occupational educational planners. Some of the more prevalent hindrances to labor market activity are those inspired by custom, tradition, fear, etc., which have led to three types of discrimination: discrimination against females, discrimination against older workers, and discrimination against social groups. Discrimination not only frustrates people's desires to enter the active labor force, but also runs counter to all economic notions of efficiency in resource allocation and all moral and ethical considerations of equity, freedom, and justice. Breaking down the barriers of discrimination can be permanent only if the entire population is educated with regard to the socioeconomic consequences of discrimination. Educators and planners also can play important roles in reversing some of the present effects of past discrimination by pointing out the paths to job opportunity through gathering and dissemination of job information, job locations, and job-training opportunities.

Although discrimination has an important influence on a person's opportunity to be engaged actively in the labor force, it is not the only determinant or influencing factor. The person's marital status and the size of the spouse's income; the wage rate; and the person's educational background, previous work experience, number of children present, and psychological characteristics all affect not only his opportunity to work but also his desire to work.

The potential role of the manpower and educational planner is, therefore, quite sizable. His knowledge of the hindrances to labor force activity forms the bulwark of proposals and policies that could lead to the fullest and most productive population. Proper and efficient solutions of labor market inequities can be derived only from correct identification of problems.

As Figure 1 indicates, potential members of the labor force have a series of obstacles to overcome before they become members of the active (productive) labor force. Some groups have to overcome greater obstacles than others (married females with several young children, for example). Planners have a role in lessening or eliminating those barriers that stop a potential participant from being an active, productive, satisfied employee. Education, job training, worker retraining, job design, information, and elimination of all forms of discrimination can be tools used by planners to eliminate those barriers. The remainder of this paper explores the barriers to entry and the roles of manpower and educational planners in their removal.

The satisfaction of people's desire to work in jobs that are most beneficial to themselves and to society rests with planners. Although people are certainly free to choose among various occupations, industries, and geographic areas, the labor market has become so complex that it has become imperative that manpower and educational planners influence those choices by pointing out the skills that are needed in the world of work both in the present and in the future. Of course, providing facilities through which the population can obtain those skills also fits into the planner's function to assist people in making those work decisions that are mutually beneficial to themselves and to society. Assistance in making correct work choices results in a better, more satisfied work force, which in turn results in a desire among those who are in the work force to stay there.

The planner's task, however, is complicated by the fact that there are always likely to be people who want to work but cannot. Due to some educational deficiency caused by changing job requirements, some people are stuck in "dead-end" jobs and would like to move up if they could. Of course, there are also those who are not fully employed and those not in the labor force at all because of discrimination. In these cases, a positive decision to participate will not be effective since wanting to work and working in jobs commensurate with one's abilities (or working at all) tend to be quite disparate when the decision to participate is affected by discriminating employers and overinflated job requirements.

In summary, manpower and educational planners can contribute to workers' decisions with respect to labor force participation by:

1. estimating and forecasting the labor force characteristics (educational levels, specific occupational training, etc.) that are and will be needed in the world of work;

2. influencing people to enter needed occupations and leave antiquated ones;

3. arranging educational resources so as to insure that education and training are available to train both new and old workers for new jobs or old jobs which are changing;

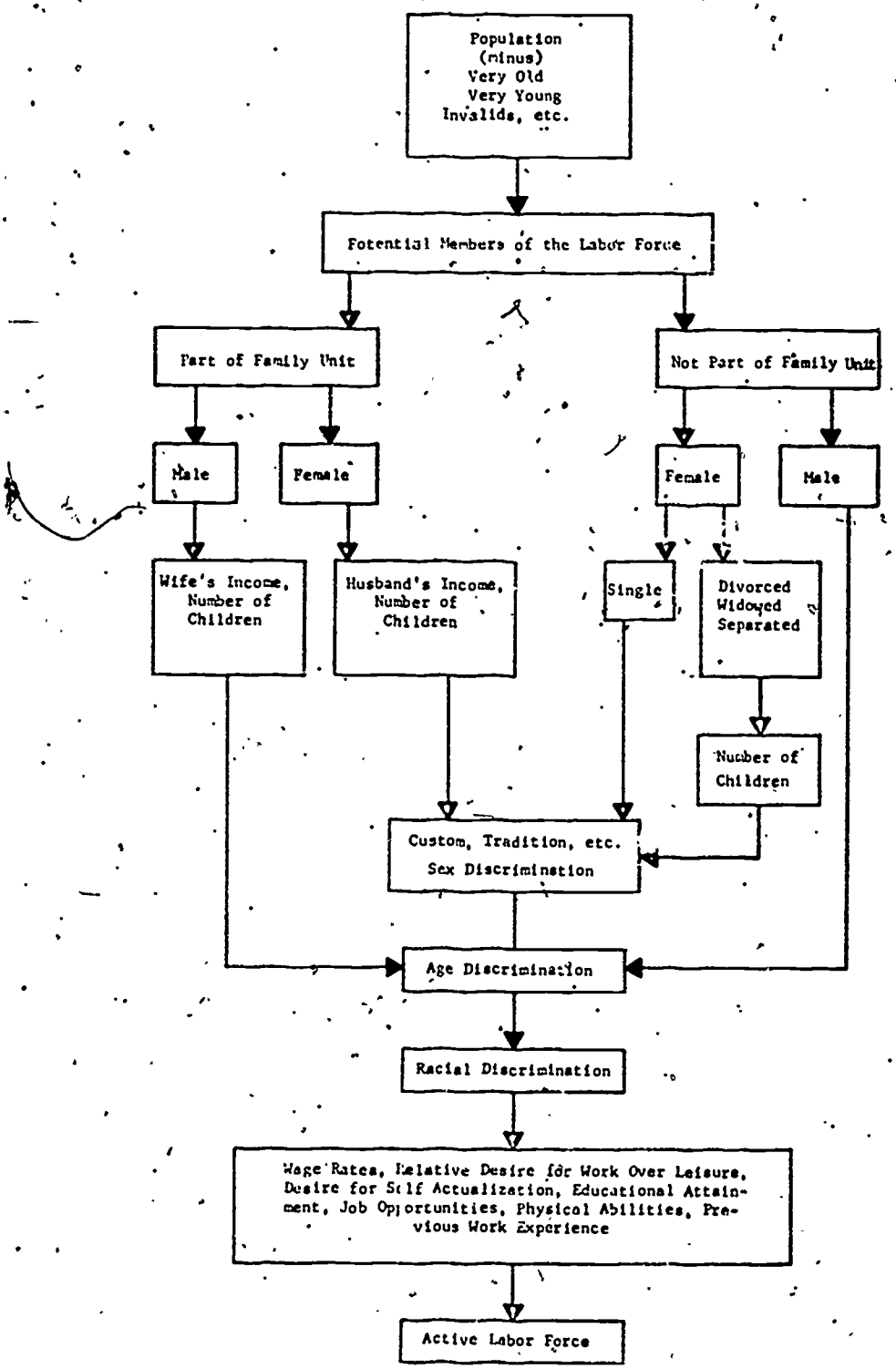

Figure 1. Factors Which Influence the Decision to Participate in the Labor Force.

4. establishing the proper informational framework and perhaps incentive system to insure that properly trained people enter the labor force in the proper "port," industry, and geographic area; and

5. maintaining an educational system that will once and for all rid the labor market of the artificial barriers to labor force participation--discrimination by sex, race, and age.

The effectiveness of planners rests on a thorough understanding of the magnitude and direction of forces that influence the decision to participate as well as the effectiveness of that decision.

To meet these objectives, it will be necessary to discuss not only the size and composition of the labor supply but also the characteristics of the market that will employ the services. The size and composition of the labor force are determined essentially by two factors: (1) the size and composition of the population and (2) the rate at which these population groups offer their services in the labor market.

It is obvious that all of the population cannot participate in the work force. Some are either too young or too old, while others are physically or mentally incapacitated. This discussion focuses primarily on that part of the populatfon which is able to work.

Changes in the composition of the population are likely to occur as a result of changes in fertility rates, life expectancy, and international migration. Cain (1966), writing in the early 1960's, concluded that demographic variables were not very important since "the demographic changes that have occurred over time have not been large and have certainly not operated in a single direction." However, as we move into the mid-1970's and approach the end of the century, certain substantial demographic changes are occurring that are bound to affect significantly many aspects of our lives in general and the labor force in particular.

The major and most recent demographic change is the decline in the birth rate. The United States has moved, in a few short decades, from the norm of a three-child family to a two-child family. It has also been observed that young married women are moving toward even less than the two-child norm. The U. S. Bureau of the Census has, for the first time, issued population projections based on a fertility rate of 1.8.

The reduced birth rate can be expected to affect the composition of the population in the following ways:

1. a decreased rate of population growth--possibly a zero by the year 2000;

2. gradual declines in the proportion of young people in the population;

3. increases in the proportion of the population in age group 35 to 55; and

4. overall, a visibly older population by the year 2000.

It is not likely that these demographic changes will occur without inducing some change in the rate at which the population offers its services to the labor market, a rate which is subject to other factors besides the demographic factors. Labor force composition is, therefore, likely to change because of changes in the population and in the participation rates.

A translation of demographic changes into labor force changes shows proportionately fewer younger and older people in the labor force. Furthermore, smaller family size is likely to induce increases in the propensity of women to work. Changing tastes and preferences for work--in favor of work, elimination of discrimination, reduction in the magnitude of business cycles, and rising rates of pay--are all likely to contribute to increasing rates of participation among women and other groups. However, several forces that will tend to retard the increase in labor force participation will also be at work; increased quality and quantity of pension plans, rising incomes, and increasing tastes for education are three of the more important ones.

In the face of these demographic eventualities and changing tastes and preferences for work, the task of the manpower and educational planner is a difficult one indeed. In an attempt to illustrate the impact of the impending changes in labor force composition upon manpower and educational planners and upon the policy decisions they must make, a list of questions is presented. (The list is not intended to be exhaustive.)

1. What skills will the influx of women and older workers possess?

2. How will these skills be related to the needs of the production process?

3. How will the needs of the production process itself be altered by these demographic changes?

4. Can education, training, and proper planning contribute to matching the labor supply of a new composition to labor demands which may also be changing?

5. Will the variables affecting the rate at which specific population groups enter the labor force continue to change in future decades?

6. With regard to those groups for whom the participation rates have been typically low, have the rates been suppressed by discrimination or by the structure of jobs and/or the market itself?

7. Can the influx of women into the labor force be handled by the existing economic and institutional arrangements?

-or-

8. Will jobs themselves have to be redesigned to be handled by women? By older workers?

9. Will women or older workers have to undergo any special training or education to ease the transition between home duties or previous jobs and newly sought jobs?

Related questions have to do with the need for day care facilities, better transportation, price stability, and the potential for economic growth.

The need for a systems approach to manpower and education planning and labor force participation is obvious. In such an approach, the interrelatedness of programs and policies is continually emphasized, as is the fact that attempts to adjust quality and quantity of labor supply will be fruitless unless the demands for manpower are taken into account.

The task of the manpower and educational planner, however, must involve more than the answers to these important questions. In a larger sense, manpower and educational planners can enhance job satisfaction, raise the quality and utilization of labor resources, and reduce the cost of job search and industry staffing by means of providing for more intelligent training and career decisions which increase the adaptability of the nation's labor force (Lester, 1966). There is no doubt that, properly executed, manpower and educational planning policy will lead to increased output per unit of human resources input--the economist's traditional concept of efficiency. The efficiency criterion is completely compatible with achievement of both economic and social well-being since exchange of something of economic value can occur only when that exchange is reciprocally advantageous to both parties. Properly educated and trained supplies of labor--designed to meet the labor input needs of employers--fall into this realm. (See E. Wight Bakke's [1969] defense of the notion that where human resources and their employability are concerned, there is no dichotomy between economic and social welfare.)

Nevertheless, it is possible that, to meet long-range national goals with respect to racial and sexual equality, the efficiency criterion would fall short since efficiency is difficult, if not impossible, to calculate when policy and expenditures are in and of themselves intended to create change and, furthermore, are intertwined with moral, ethical, and political considerations.

In summary, then, what economic theory and the efficiency criterion may enable us to do is to answer questions about what program will best move an individual into a mutually beneficial position in the world of work, formal education, technical training, on-the-job training, etc.

What the efficiency criterion will not enable us to do is to plan for the future, or to aim our programs at goals such as quality of life, worker satisfaction, and equality of opportunity. These cases, says Chamberlain (1967, p. 12), take "the courage and intellectual honesty to make assessments rest, in the final analysis, on our own best judgments."

This paper will be organized in the following manner. The next section will discuss the market as it was supposed to function. Market realities of cost of training, time, discrimination, and labor market strata are presented as interruptions in the efficient functioning of the market. The third section of the report presents some historical background on manpower and educational planning and discusses some attempts to estimate the labor force behavior of the population. The fourth section consists of a review of the literature on the variables which affect the labor force behavior of women (single and married), minority groups, and older persons. A literature review is also presented on the effects of educational attainment, sex discrimination, attrition, and market stratification on labor force participation. The final section presents some conclusions and policy implications about future labor force behavior, and manpower and educational planning.

THE MARKET MODEL, IMPERFECTIONS, AND SOME ALTERNATIVES

While the perfectly competitive model yields, in the long run, the most efficient solution to problems of resource allocation, there is nothing inherent in the model to solve important problems of equality, job satisfaction, and quality of life; these are decisions to be made by men, not by the market. However, the market can be discussed in terms of its ability to be manipulated to achieve socially desirable, as well as economically efficient, goals. We recognize that the free market, as envisioned by the neoclassical economists, does not exist and, therefore, is not likely to yield optimal results with respect to resource allocation. An idea of how markets are supposed to work, however, is necessary because manpower and educational planners still work within the institutional limits of the market which include freedom of choice of occupation, industry, and location. A recognition of the flaws in the market allocative mechanism will help place the planner's activity in market perspective.

The Market System

Ideally, under conditions of pure competition, individuals seeking to maximize their own welfare would act in such a way as to achieve the most efficient allocation of resources. Firms will demand workers on the basis of their productivity and the value of the product they produce (value reflecting the marginal benefit derived by society from that good). If, through either a change in the worker's productivity or increased demand for a particular commodity, upward pressure is put on the price of labor, more labor will be forthcoming since the opportunity cost of leisure time is increased (assuming that worker's tastes and preference for leisure are constant). This higher price (wage) would attract labor from less efficient and, therefore, less remunerative industries, occupations, or geographic regions and would assure that the most productive workers would flow to areas in which society wanted them. If society in the market place revises downward its desire for a particular commodity, the system sees to it that so long as firms are profit maximizers, the least productive worker would drop out first--but that he would find employment in his next best alternative. Full employment is always assumed, even though some frictional unemployment is accepted to permit the displaced worker time to seek out his next best alternative.

While the theoretical workings of the market mechanism and its conclusions are rather appealing, forces in the real world--some of them based perhaps on other than the economic variables of productivity and income--tend to reduce the ability of the market to allocate resources efficiently. For example, less productive workers displaced by a shift in technology may be unaware of alternatives, become discouraged, and drop out of the labor force or settle for a less desirable

job before finding their next best alternatives. In either case, inefficiency results and can be expressed as the magnitude of the output (income) society has to forego because the worker is either out of the labor force or is underemployed. Furthermore, if labor becomes discouraged at not being able to find employment because of outdated or mi irected prior education and training, the longer they stay out of th labor force, the greater the outmodedness of their training. Ulman (1972) points out that in the case of such labor market imperfections, the extent to which individuals must incur the costs of their own education and training determines not only the speed but also the likelihood of such individuals returning as productive workers in the labor force.

Ulman cites another type of market imperfection--employers who pay wages above market clearing levels either because of monopsonistic screeming to obtain higher quality labor or because of union power. In these cases, less educated workers are forced into poorer paying labor markets. As Ulman states (p. 23), "Under the circumstances and given that formal educational inequalities still exist, some compensatory training . . . might be in order."

The market, because of imperfections, has also experienced conditions in which there are shortages of skilled personnel--even in periods of rising economic activity and perhaps following periods of surplus labor. There are two conditions under which such a situation might occur:

1. During any sustained slack period, shortages build up because of the exit of those dying or retiring and the failure of the market to provide incentives at such times to encourage investment in human capital to replace those leaving the labor force due to normal attrition.

2. When training provisions are made for an anticipated shift in demand for a skilled person, a skilled person might not be in supply because the market alone did not provide the appropriate incentive to invest in the correct level of human resources.

Eventually, the price of that skilled occupation will probably be bid up and the investment incentives will likely appear, but training and education take time. The result is a tendency toward lumpiness of investment; that is, heavy investment in certain kinds of human capital during upswings and light investment during slack periods. The resource wastes are obvious.

The market system, therefore, in dealing with the problems of human resource allocation, may not necessarily perform its function well. Discrimination, changing technology, and the time and cost of retraining are but three of the factors that may keep the price of labor from reflecting true market preferences. If the market incentive is affected in this manner, the work-leisure decision may also be distorted, and

people may drop out of the labor force as a result of these "incorrect" incentives.

One possible solution is to control, through a central authority, the labor market behavior of productive workers. This alternative will be discussed briefly in the following section.

Command Model--Central Control

Controlling the participation of productive human resources is a viable alternative if it can be shown that it is more efficient than the market system. In present and past functionings of command-type economies, we can find no real evidence that central control of human resource allocation results in more efficient allocation than that attained by the market--even with its imperfections.

A second point with respect to the guiding of human resources by a central authority is that, where maintenance of political and economic freedom is in itself a goal, central control of human resource decision-making processes in unacceptable.

Third, once an economy becomes very large and integrated, the control of individual economic decisions involving entrance in the labor force becomes extremely complex and is a virtual impossibility.

The command model will, therefore, have to be discarded on the basis that there is no evidence to support the proposition that the command system could allocate human resources more efficiently than the market system. Aside from the fact that it subverts personal economic and political freedoms, the control of human resource decisions is a practical impossibility in the complex economies of the real world.

Somewhere between these two alternatives lie actual approaches to manpower and educational planning in the United States. The following sections examine some of these approaches.

MANPOWER AND EDUCATIONAL PLANNING IN THE UNITED STATES

Historical Background

Although manpower and occupational planning undoubtedly began with man himself (Morton, 1968; Morton, 1969), only recently has planning been treated as anything more than a personal activity, at least in the field of human resources. The Employment Act of 1946, for example, set forth the government's commitment to maintain maximum employment, while the Manpower Development and Training Act of 1962 indicated the government's concern with potential bottlenecks in manpower arising from the limited amount of training and education in needed labor skill areas. Subsequent legislation, such as the Vocational Education Act, further strengthened that commitment.

Full employment was and is thought to be attained when the rate of unemployment is at or near four percent. In 1962, the Senate Subcommittee on Employment and Manpower (1964) realized that this level could be maintained only if two conditions were met: first, the maintenance of high levels of aggregate demand and, second, the identification and elimination of frictional and structural unemployment.

The subcommittee proposed that an aggresssive and integrated manpower policy be employed to reduce structural unemployment. Structura unemployment results when changes in the nature of production processes or in the composition of demand for output are such that people are not able to be employed because of age, race, sex, and training or education.

In effect, changes in the structure of production, if not met by changes in the structure of the labor market, will result in unemployment. Elimination of this type of unemployment can come about only by retraining workers for new jobs. In many cases, discrimination also contributes to the structural problem.

Of course, retraining, education, and removal of discrimination take time to implement. The time factor was recognized in the Manpower Development and Training Act which called for planning for <u>future</u> structural changes in the economy. Section 102 of the Act specifically called for the establishment of new "techniques and methods for detecting in advance the potential impact of automation, technological progress [and] . . . changes in the structures of production and demand on the use of the nation's human resources."

Manpower and educational planning arose primarily out of the mandate of the MDTA in an attempt to ward off any future misallocations resulting from structural difficulties.

With respect to the actual planning process itself, Lester (1966, p. 6) points out that

> since manpower planning is based on the application of foresight, the first step in any planning program is the development of research so as to improve the forecasting, by skill categories, of demand and supply for the nation and for particular industries and areas.

Planners in the United States have certainly had forecasts available to them. The decade of the 1960's produced many variants of techniques and estimates of manpower demands and supplies for everything from particular occupations at the local level to aggregate projections of the labor force for the nation. The projection techniques presently in use are employer surveys, extrapolations of trends, econometric techniques, and the job vacancy-occupational outlook approach. Regardless of the particular projection technique used, the most common manpower criterion used by manpower and educational planners today is the so-called requirements approach.

Simply stated, under this approach certain assumptions are made by the planner regarding levels of output of particular industries. These assumed levels of output could be considered as socially optimal goals but are more likely to be probable goals. The size and composition of the labor force that would be required to meet these levels are then calculated. Under usual circumstances, these requirements are translated into occupational categories and educational demands, with the educational system expected to gear either up or down to reflect changes in the anticipated requirements. The educational system takes demand as given and attempts to aid the market by providing a labor force in the correct quantity and quality to meet future demands.

Of course, economists have argued against the efficacy of such an approach, proposing at different times and places alternative criteria rooted more deeply in economic theory. One alternative, the social demand criterion, states that the supply of education should be provided to that point at which it is equal to the market demand for it. This criterion, however, does not adequately account for the possibility that resources have alternative uses, nor does it provide any guidelines for the issue of society's valuation of the costs and benefits of education. Likewise, where we have market impediments and externalities, can we expect the market alone to allocate educational resources correctly?

Another alternative, the cost-benefit or rate-of-return approach, is, theoretically at least, the most appealing. In considering education as an investment in human resources, this technique suggests that resources should be devoted to education up to that point at which the rate of return to education is equal to the rate of return on alternative investments. The data limitations and methodological complexities of this approach have thus far hindered its use by manpower planners.

The Manpower Requirements Approach--Tomorrow's Manpower Needs

An examination of the particular methods of generating forecasts of labor demand and supply for use in determining "requirements" for manpower and educational planning purposes reveals that the determination of labor force participation rates plays a crucial role in the mechanics of planning and projections.

The total supply of labor, either to a region or to the nation as a whole, can be determined only if the population and the work propensities of groups within that population are known. In the long run, the composition of the population shifts quite drastically, and since, as is discussed later, the work propensities of different groups in the economy differ greatly, the labor force availabilities can also shift substantially.

The absolute size of the labor force, to repeat, depends on two factors: the size of the population and the propensity of the population to participate in the labor force. As will be seen later, a great deal of evidence has been presented concerning the long-run stability of aggregate labor force participation rates. Long-run estimates of the aggregate labor force, therefore, are primarily subject to the long-run changes in the absolute size of the population. In light of this comment, why aren't manpower and educational planners more concerned with factors affecting population changes rather than with factors affecting labor force participation rates?

There are two replies to this question. First, stability in the labor force participation rate occurs because of offsetting movements in the rates of groups within that population, and there is no reason to assume that these rates will continue to be offsetting or that they are, for certain geographic areas, smaller than for the nation as a whole. Second, while aggregate labor force participation rates have been stable over time, movements in the rates within the population--especially among women--have been far from stable. The changing composition of the labor force is what is of interest to planners.

Tomorrow's Manpower Needs (1971) focuses attention on the regional needs of planners--where most planning takes place, especially with respect to occupational education. The Appendix to Volume I of Tomorrow's Manpower Needs includes a detailed discussion of how state labor force projections are developed (pp. 99-100). There is a heavy reliance on either aggregate labor force projections or projections of the labor force participation rates of the age-sex-race components of the regional population. The participation rates themselves are projected as dependent variables whose future movements are related in some time trend relationship of the past ratio of state participation rates to national participation rates. This state ratio is calculated for some future year, assuming that the national rate (the denominator) is known. The calculated state

participation rate for each age-sex-race group is multiplied by the expected future population to yield an aggregate labor force total for the state.

Requirements by occupations are calculated separately by estimating future demand for labor by industry and by disaggregating by occupation. From this operation, a matrix of occupations is derived which reflects the occupational groups required to produce some expected level of output. The sum of all occupational groups derived from this operation reflects aggregate demand conditions for labor, while the labor force estimates derived from population and participation rates reflect expected supply. If the two estimates of labor force are not equal, certain policy proposals can be made; due to the nature of the methodology and the results obtained, however, these proposals can only be of a general nature. Possible policy alternatives, depending upon whether demand for labor is greater or less than supply, are to increase or decrease the population or the participation rates or to plan for a slower or faster rate of industrial growth to account for either the surplus or shortage of labor.

This approach has been shown to be deficient in several respects. First, no policy recommendations with respect to structural labor problems are possible. For example, an equating of demand for and supply of labor, using this methodology, implies no policy change, when, in fact, there is evidence that at full employment levels, at the national level at least, substantial unemployment exists among certain labor market groups--especially those considered to be marginal.

Second, the link between occupational requirements and educational requirements is, as Gannicott and Blaug (1973, p. 58) state, "one of the weakest links in the manpower forecasting chain" because of the failure of the methodology to account for both the demand for and supply of personnel who are trained or educated at given levels.

The present methodology also concentrates too heavily on the employer's demand for skilled personnel when, in fact, as Denison (1964) argues, the population's demand for education has increased as well as the employer's demand for more highly skilled manpower. Both, therefore, must be taken into account to arrive at any sort of rational manpower and educational planning policy. In fact, given the evidence (Folger and Nam, 1964; Jaffe and Froomkin, 1968; Denison, 1964), more emphasis needs to be placed on the supply side and on the effects of educational level on the supply of labor since there is some indication that employers demand personnel with higher levels of training because the population itself has become better trained. This view implies that the demand for more highly trained personnel may have been supply-induced.

The importance of examining more carefully the supply decisions of the labor force cannot be underplayed, especially with regard to the marginal labor force groups. Walter Heller (1964) noted, for example, that when the overall unemployment rate stood at a low level of four percent, much higher rates were generally recorded for the marginal elements in the labor force--e.g., 10.8 percent for teenagers, 8.0 percent

for blacks, and 9.4 percent for the unskilled. In Heller's words, "These high specific unemployment rates, which persist even when the general rate falls to an acceptable level, are the essence of the problem of structural unemployment."

Heller does not mention that high unemployment rates for the marginal labor groups may reflect a much deeper structural problem--that of the discouraged worker who is not included as an unemployed worker. As has been mentioned earlier, and as will be seen later, workers' discouragement and the number of discouraged workers vary inversely with the overall level of economic activity. What this means, in terms of participation rates and unemployment, is that the level of discouragement for any individual worker decreases as the level of economic activity increases, causing him to enter the labor market in search of a job. What is more than likely to be the case, however, is that because he was a marginal worker in the first place, he will probably not be employed because he is less productive, less educated, and perhaps discriminated against because of his sex or age.

In these cases, then, the observed unemployment rate at any point reflects only part of the deeper structural problem. That is why, in the research discussed in later sections, strong correlations are observed between the participation rates for these marginal labor groups and the level of unemployment. People who find themselves educated, but with the wrong skills, may be in a similar situation with respect to the effect of discouragement.

To remedy this situation, Heller calls for improvement in the education and training of these marginal groups and the alleviation of the market-distorting effects of discrimination.

One additional point must be made with respect to the marginal labor force attachment of certain groups in the population. It has been argued, and quite convincingly, that the pace of technology has been such that the demand for more highly educated labor has increased relative to that of the less educated, in effect weakening the relative position of the marginal labor force participant. If this is true, the need for examining the effect of education (and other factors) on the labor force becomes even more important.

Comparative Analysis and Evaluation of Predictive Methodologies

The market model was seen to be theoretically capable of providing an efficient allocation of human resources, but, realistically, impediments such as discrimination, cost of retraining, and inadequate information concerning job alternatives lead to unsatisfactory solutions. The command model likewise was seen to be unsatisfactory in light of the desire to maintain political and economic freedom as well as efficiency in the United States. In actual practice, the United States, in its

approach to planning, depends primarily on the market to achieve desired results. The approach most generally used--the manpower requirements approach--has been attacked on both conceptual and methodological grounds, leaving room for more research on the supply side of the labor market.

The predictive attempts on the supply side have dealt mainly with the aggregate labor force for the nation. These forecasts will be discussed with respect to estimation of labor force participation rates.

The Bureau of Labor Statistics (BLS) estimates labor force participation rates through analysis of trends in the ratios of state to national participation and aggregate participation rates of the various age-sex-race groups over time. In 1970, the Bureau's estimate underpredicted the size of the female labor force by six percent--an underprediction due primarily to changes in the labor force participation rate of women. Rosenblum (1972, p. 23) states that the probability that the "growth of the female labor force attributable to positive changes in participation rates since 1966 has been well beyond a level explainable by economic factors alone," implying that the Bureau failed to account for these "other" factors. Rosenblum also points out the possibility that the Bureau's projection of the size of the labor force for 1975 is also likely to underpredict the female labor force by another six percent.

An earlier analysis of BLS projections (Swerdloff, 1969) showed that the projected and actual size of the labor force in 1970 was nearly on target--in the aggregate. It was pointed out, however, that this was true mainly because the number of women in the labor market was underestimated while the number of men was overestimated. If planners had to be concerned only with aggregates, the offsetting errors would certainly contribute to the efficiency of forecasts; but, as Swerdloff states, "Planners who must be concerned with training workers to meet future occupational requirements need to know the age and sex of workers in the labor force in estimating potential labor supply."

On examination, the Bureau's estimates of the size of the future labor force, by group, came closest for those groups that normally exhibit stability with respect to participation rates (total labor force, 29-44 years old) and deviated most from the actual for those groups with greatest sensitivity in participation rates (women, older workers).

Two authors, in addition to the Bureau of Labor Statistics, have attempted to predict size of the labor force in 1970, which provides an opportunity to compare the accuracy of the three forecasts.

Alfred Tella (1965), in using a lagged employment-population ratio by age-sex to predict future labor force, exceeded BLS estimates for 1970 by one million persons. His projection also understated total labor force increases but by less than the BLS. Both Tella and the BLS overpredicted male participation rates and grossly understated the younger women's labor force participation rates. Tella's model grossly overstated older worker labor force participation, while the BLS came closer to the actual level.

Dernburg et al. (1966), in projecting the total labor force, achieved better results than the BLS but poorer than Tella. In Dernburg's case, the total labor force was underestimated because of underestimations of both male and female labor force participation rates. Dernburg's model, therefore, came closer to predicting the magnitude of the increase in female labor force participation as well as anticipating the downturn in male labor force participation.

Dernburg's better estimation of the magnitude of the change in labor force participation resulted from the fact that a great deal of unemployment was unaccounted for by the BLS; BLS base estimates were lower than they should have been because of slackened overall economic conditions which tend to shrink the size of the labor force due to the number of discouraged workers who leave the labor force.

In sum, the models which incorporate cyclical sensitivities of the labor force as well as disaggregated groups and their corresponding participation determinants seem better able to predict actual labor force behavior of the type needed by, or of the most potential use to, manpower and educational planners. The review of literature section concerning determinants of labor force participation should show why the performance of these models was to be expected.

Market theory practice and performance have been seen to diverge somewhat for a number of reasons. In terms of labor force participation of marginal groups, an estimate must be made of whether the choice of these groups not to be in the labor force (at different points in the business cycle) is rational. That is, given standard work-leisure-type choices and given the wage rate, is labor rational when it decides in favor of leisure over work? Of course, the work ethic in the United States is such that "normal" thinking is that it is better to work than not to work. In order to judge, from an efficiency standpoint, whether a decision not to participate is indeed "rational," we need to incorporate into the work-leisure model factors other than just income generated from the work decision because the effects of working are likely to be both positive and negative. Discrimination, in particular, may affect the work-leisure decision of labor in such a way as to distort the policy implications which could result from the analysis. For example, if a black worker is not working in a particular occupation which pays relatively high wages, while a white worker of the same productivity level is working, it might be inferred that the black worker places more value on leisure than on work, relatively speaking. The policy called for, if this were the true situation, is to adjust the motivations of the black worker in such a way as to affect the work-leisure decision more in favor of work.

If, however, discrimination were present, then the wage offered to the black man would have to be discounted by some amount to account for the condition. The adjusted wage, therefore, would reflect the true alternatives offered to the black man; the black man's decision would imply rationality; and proper policy now would be aimed at the elimination of discrimination--not at changing the black worker's motivations.

Before we can incorporate into the work-leisure model factors other than income, it is necessary to explore the nature of the determinants of the work decision and the magnitude and direction of its effect upon the work decisions of different labor groups. Because planners must work through the market to achieve their goals, they need to know these magnitudes in order to educate and train labor in those skills that employers demand. A necessary condition for an "ideal" is that the demand and supply functions, for all labor groups, intersect. Necessary and sufficient conditions call not only for this intersection but also for no excess or shortages in quantities supplied or demanded.

REVIEW OF THE LITERATURE

The question of determinants of rates of labor force participation is basically one of determinants of the supply of labor. Discussion of the aggregate labor force revolves around several issues: (1) the appropriateness of the labor force participation rate as a measure of labor supply, and (2) the stability of the participation rate over time. A third point of contention has been the unit of the labor force with which to measure the participation rate: should it be the individual or the family?

A considerable amount of research concerning short-term cyclical changes in the labor supply has spawned two opposing hypotheses: (1) the "additional worker" hypothesis, which states that the size of the labor force is inversely related to the level of economic activity, and (2) the "discouraged worker" hypothesis, which holds that the size of the labor force varies directly with the level of economic activity.

Each of these hypotheses is discussed in turn. Throughout the discussion, it must be remembered that different groups in the labor force are affected differently by each of these factors as well as a host of other factors. Thus, several groups within the labor force will be discussed in more detail.

The Supply of Labor

The appropriateness of the labor force participation rate as a measure of the supply of labor has been questioned because it appears to be an all-or-nothing approach and, therefore, does not adequately account for adjustments that can be made by labor at several margins (Fleisher, 1971). Economic theory, however, suggests that, as a measure of aggregate labor supply, the labor force participation rate is satisfactory. As Friedman (1971, p. 6) states, we are interested essentially in the "factors that determine the fraction of the total labor force that is offered for sale in the market" with a given population (short-run) and with a changing population (long-run). The labor force participation rate, as defined, is that fraction of the population that is working or seeking work* and is consistent with theory. Friedman offers two additional points. First, the number of people offering their services in the labor market can vary regardless of institutional arrangements since the actions of individuals have no effect on the market. If it were true that the labor force participation rate reflects an all-or-nothing labor supply concept and that, as some have argued, the rate is fixed

*See U. S. Department of Labor, BLS Handbook of Methods, Bulletin 1711, Bureau of Labor Statistics, 1971, specifically Chapter 1, for a more complete discussion of the concept and measurement of the labor force.

by institutional factors, then under perfect competition, a rate fixed either above or below the market rate would result in either all or none of the population offering their labor services. Neither case has ever been recorded since the labor force has considerable leeway in adjusting to market conditions.

The second point of contention is that, while a single individual may view the work week as being fixed, all workers together can determine the number of hours that they work, and any institutional impediments can be overcome through unified action.

Therefore, while the labor force participation rate may be an imperfect way to measure labor supply, it is an acceptable one, at least on theoretical grounds. Other acceptable measures are hours worked per day, week, or year and weeks worked per year.

Clarence Long's (1958) statement that the "labor force participation in relation to population as a whole did not change materially during peacetime periods of rising income and high employment" signifies the hypothesis that there is unusual stability in the aggregate labor force participation rate over time. Other researchers have expressed support of and provided additional evidence for Long's thesis (Klein and Kosabrud, 1961; Denison, 1962).

The widespread belief in constancy of aggregate participation rates is reflected in most projections of the labor force. The Manpower Report of the President of 1964, for example, prepared projections of the labor force participation rates for the population aged 14 years and over. These participation rates were projected to be 57.0 percent for both 1970 and 1975.

The contention that aggregate labor force participation rates remain stable over time stemmed from the belief that labor supply decisions by various labor market groups shift in such a way as to offset one another. Table 1 demonstrates the stability in the aggregate rate over a 25-year period and shows that it was the decline in male labor force participation rates and the increase in female rates which caused long-term aggregate stability over this time period.

> Women may have both pushed and pulled young and elderly males from the labor force, to some extent seeking jobs that had been sought by males, and to some extent being drawn into the labor force by the vacuum left by the exodus of males for other reasons (Long, 1958, p. 23).

Reasons for the increases and decreases in female and male labor force participation rates will be discussed in detail later. For now, this argument is presented to point out the need for analyzing in detail the various groups within the labor force. Examination of aggregate data alone would lead analysts and especially planners to make incorrect decisions regarding the future size of the labor force, especially when the age, sex, and racial compositions of the local population differ substantially from the national average.

Table 1. Historical Rates of Labor Force Participation

Year	Total Rate of Labor Force Participation	Male Rate of Labor Force Participation	Female Rate of Labor Force Participation
1948	59.4	87.0	32.7
1953	60.2	86.9	34.5
1958	60.4	85.0	37.1
1963	59.6	82.2	38.3
1968	60.7	81.2	41.6
1973	61.4	79.5	44.7

Source: Manpower Report of the President, April, 1974, p. 253.

As stated previously, classical economic theory suggested that the supply of labor results from an individual decision in the choice between work and leisure. Changes in wage rates involve income and substitution effects, the relative sizes of which determine the slope of the supply curve of labor; that is, the sensitivity of the response of labor to changes in the wage rate. In the case of an individual, in the classical theory sense, work and leisure were the only two alternatives and excluded other productive uses of one's time. Thus, simply stated, classical economic theory assumed that the supply of labor of any individual was a function of the wage rate he was offered. Mincer's (1962) contribution, a major one that complemented classical theory, was that the correct unit of observation of labor supply is not the individual because an individual's labor offering is not a simple function of wage rate. Rather, it is a complex function affected by alternatives other than the work-leisure ones assumed in classical theory. The individual's supply of labor, therefore, may be a function of his participation within a family unit, where the supply of labor of the family is offered in response to many different wage rates and labor offerings within the family which can be substituted for one another (within limits, of course). As Mincer states (p. 66) "Recognition of the family context of leisure and work choices, and of the home-market dichotomy within the world of work, is essential for any analysis of labor force behavior." In this case Mincer was referring to married women and men. For unmarried people, he points out that the individual is the correct unit of observation but that the analysis must take place in the context of other than work-leisure choices. (Education, for example, represents a rational alternative to either work or leisure and exerts a substantial influence on supply of labor)

Thus, even in the aggregate we are forced to consider different decision-making units in order to understand labor force participation. The determinants of a married female's decision to seek employment may be quite different from the determinants of a single woman's decision.

Though the aggregate labor force participation rate tends to be somewhat stable over time, it is an accepted fact that there is variation in participation among labor groups for any given period of time, especially between and among sexes, ages, and races.

At this point, it would be beneficial to define briefly some labor force concepts as well as to discuss some problems inherent in their use and interpretation. Employed persons are those who, during a survey week, did any work at all as paid employees or who worked at least 15 hours as unpaid workers in a family-operated enterprise. Also included are those who were not working but who had jobs or businesses from which they were temporarily absent because of illness, bad weather, vacation, labor dispute, or personal reasons. Unemployed persons include those who did not work at all during a given survey week provided they were looking for and were available for work during the reference period. The total labor force is comprised of both employed and unemployed workers. All other persons are not considered to be in the labor force (Bancroft, 1957, p. 72).

There are two important reasons why the unemployment rate, as calculated, may not indicate the true labor market situation. First, all data regarding the labor force are based on samples of the population. The rates as calculated are, therefore, subject to sampling error. Given a sample size and a level of unemployment--say, three million workers if the sample estimates show unemployment at five percent of the labor force--the chances are one in three that the sampling error could be as high as 0.19 percent. In other words, the probability that the actual unemployment rate lies somewhere between 4.81 and 5.19 percent is .67.*

Second, the unemployment rate reflects only that group in the labor force who are looking for work. Not counted as unemployed are those who are entirely out of the labor force for a number of reasons, one of which is likely to be discouragement. These concepts and definitions were discussed because they are central to the discussion of the short-run movements in labor supply.**

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*For a complete and technical discussion of labor force concepts, the reader is referred to: U. S. Department of Labor, Bureau of Labor Statistics. Handbook of Methods, 1970.

**The reader should note that a great deal of research has been conducted on the problem of hidden unemployment. As part of the literature it has been suggested that the number of poorly educated potential workers is considered to be underestimated. See Flaim (1973), Gastwirth (1973), Mincer (1973a), Killingsworth (1968), and Killingsworth (1970).

Researchers have noted the fact that many short-run fluctuations in labor force participation rates occur for the aggregate labor force and for specific labor groups. As mentioned previously, two hypotheses have been formulated to explain short-run or cyclical movements in labor supply: one is the additional worker thesis; the other, the discouraged worker thesis.

The additional worker thesis suggests that the size of the labor force is inversely related to the level of economic activity. Woytinsky (1953) is considered to be the originator of the formal expression of this thesis which, in his words, states that:

> During the depression the number of persons seeking jobs tends to outrun the number of persons who have lost jobs. On the other hand, with progressive recovery, the re-employment of gainful workers is likely to bring about the gradual withdrawal of additional job seekers.

Woytinsky's analysis applies mainly to periods of economic depression. Simply stated, the additional worker hypothesis suggests that when cuts in family income are large and long-lasting, the need for any member of the family to find employment becomes that much greater--so much greater, in fact, that normal impediments to labor force participation will be overcome. The result is increased unemployment and a larger labor force than would otherwise have been the case. Therefore, if operable, the additional worker hypothesis tends to act as a disequilibriating factor, swelling the labor force and unemployment in times of economic downturn. In the 1930's, Woytinsky estimated "additional workers" represented 10 to 25 percent of the work force, implying that for every increase of 1,000 in the labor force, unemployment would increase from 1,100 to 1,250.

The opposite thesis, that of the "discouraged worker," assumes a direct relationship between the level of economic activity and the labor force. The primary contention of the discouraged worker thesis is that limited employment opportunities during depressed periods discourage entrance into the labor market of those individuals who might otherwise seek jobs, and those who lose jobs leave the labor market out of discouragement.

Several authors have tested the relative strengths of the two opposing views, and these efforts are reviewed briefly here. It should be pointed out that this discussion deals with marginal labor force participants. Nearly all researchers agree that the labor force participation of prime age males is essentially unaffected by the level of business activity.

Long (1958) found no significant change in overall labor force participation rates for 1930, 1940, and 1950--years of relatively different levels of economic activity. These results suggest a combined effect of both forces--additional and discouraged worker--at work in such a way as to offset one another. This offsetting influence of

the discouraged and additional worker is further substantiated by Hansen (1961) and in two papers by Dernburg and Strand (1964, 1966).

Hansen's model, using gross additions to unemployment from sources outside the labor force and from those keeping house, showed that these gross flows fluctuated with the level of unemployment. While the gross additions to the unemployment level are to be expected because people are being disemployed, Hansen noticed that approximately 40 percent of the total addition to unemployment came from outside the labor force. Thus, even though the economy was contracting and people were losing jobs, others who were not previously in the labor force were entering, only to be unemployed.

On the one hand, this evidence suggested "additional worker" behavior--especially among housewives, who constituted nearly one-half of the added workers. On the other hand, Hansen's data revealed that reductions in unemployment over time occur in response to cyclical changes in business activity, suggesting that the discouraged worker hypothesis is also operable. The important point with regard to the simultaneous additions and subtractions to the unemployed ranks, Hansen pointed out, is that they, in fact, cancel out one another, lending support to Long's stable participation rate hypothesis and somewhat weakening Woytinsky's argument. Hansen's evidence, and that of others, indicates that a recession would have to be quite severe in order to have the additional worker effect outweigh the discouraged worker phenomenon to such an extent that it would lead to an increase in the labor force in periods of falling business activity.

Dernburg and Strand, in an econometric analysis of labor force-population ratios for various groups in the economy, concluded that the discouraged worker effect is present to the extent that for every two workers who lost their jobs, one person withdrew from the labor force. The discouraged worker hypothesis was substantiated in all but three of the 14 groups tested by Dernburg and Strand. The additional worker hypothesis was also substantiated in Dernburg and Strand's analysis, again for all but three age-sex groups.

The calculation of relative elasticities of labor force participation rates for the 14 age-sex groups showed that labor force participation tended to be highly responsive to changes in total employment when group employment was also highly responsive. Dernburg and Strand's earlier study, however, convincingly argued that the discouraged worker effect is generally the dominant one, even though both are operating.

Hansen (1961) provided some possible explanations for this conclusion: (1) recessions have not been severe enough to evoke the kind of additional worker effect envisioned by Woytinsky; (2) income supplements in the form of unemployment compensation tend to lessen the effect on the family unit of the primary worker's being unemployed; (3) many families have cash assets or other forms of wealth upon which they can rely in times of financial stress; and (4) there is a relative unavailability of large supplies of "additional workers."

The Strand and Dernburg and Hansen models offer a great deal of insight into aggregate labor force participation decisions and into the contribution to that aggregate behavior by various population groups. The predictive power of the models, particularly Dernburg and Strand's model, for the aggregate seems to be quite high, with a coefficient of determination of over .93 and a standard error of estimate of .000115.

None of the aggregate models, however, offers reasons or evidence why certain groups within that aggregate act the way they do with respect to labor force participation. All that is known from the evidence presented thus far is that aggregate labor force participation rates tend to be stable over time and that the stability is caused by cancelling out the discouraged worker and additional worker effects. What is necessary at this point is some knowledge of the motivations of various populations with regard to job-seeking or job-ignoring behavior.

The next section is organized in the following manner. Empirical and analytical evidence is presented (when available) on the actual labor force participation behavior of the specific labor force groups: single and married women, minority groups, elderly persons, secondary and postsecondary graduates, and educational dropouts. Motivations for the observed behavior are given, with empirical testing of those causal effects whenever available.

Factors Influencing the Labor Force Participation of Women

Women in the labor force present special problems to the analyst. In fact, the category "women" itself is probably too broad to allow one to understand or to explore fully all of the factors that determine whether a woman will be in the labor force. For the most part, women are considered marginal participants in the labor force, that is, able to move easily into and out of the labor force. Their decisions concerning participation are subject to childbirth, home duties, and the labor supply decisions of their husbands. Of course, single women are free of some of these influences, and, as expected, their labor force participation differs significantly from their married counterparts, single women having significantly higher partipation rates than married women. For women in general, participation rates have risen dramatically over the last several decades, although married women's rates increased at a much more rapid pace than those of nonmarried women, narrowing the gap somewhat between the participation rates of married and single women. The gap between participation rates for single and married women also exists for blacks, but black women as a whole differ significantly from white women regardless of marital status. This black-white discrepancy in participation rates will be discussed in more detail later.

Single Women

In 1947 the proportion of single women to married women in the labor force was one to one; by 1972 married women were over two times more prevalent in the labor force than single women (U. S. Department of Labor, 1973). The reason for this change is that married women have been entering the labor force in ever-increasing numbers while the labor force participation rates for females of all age groups has increased only slightly over the last several decades.

Single women's participation in the labor force, to a large extent, resembles that of men in terms of the life cycle of work behavior. The proportion of single women of working age who are employed nearly equals the employment rate among single men, and their work continuity is much more like that of men than of married women. The average single woman enters the labor force at the age of 20, works for approximately 40 years, and then lives in retirement for approximately 13 years (Lewis, 1968, p. 96).

For single women, the work decision is complicated by many factors, not all of which can be easily quantified. Some deal directly with economic motives, some with family responsibility, and others with custom, societal attitudes, and the need for self-actualization and self-realization.

The factors which affect the labor force participation of single females generally are not unique to single women. The fact that women's labor force participation differs significantly according to marital status is not due to the factor of marital status per se, but rather to the factors that affect the two groups--married and single--in different ways.

Bowen and Finegan (1969) stress the important fact that the catefory "single women" is probably the most heterogeneous group in the labor force. It contains women who have never married, women who were once married, women who are heads of families, women who are members of families headed by someone else, and women who live alone. This diversity, of course, makes it very difficult to generalize with respect to the factors that affect labor force participation, and this fact should be kept in mind throughout the discussion of the following determinants of labor force participation among single females.

The determinants to be discussed in the following sections are: marital status, earnings, age, education, presence of children, school attendance, training, and demand for labor.

Marital status. In their discussion of marital status as a determinant of single women's labor force participation, Bowen and Finegan are referring to past marital experience. Table 2 classifies women into four groups: (1) never married, (2) separated or divorced, (3) widowed. and (4) husband absent.

Table 2. Adjusted Labor Force Participation Rates for Single Women Aged 25 to 54, by Marital Status

All Single Women	Adjusted Labor Force Participation Rate
Never married	91.2%
Separated or divorced	88.5%
Widowed	80.5%
Husband absent	66.2%

Source: Bowen and Finegan (1969, p. 243).

The adjusted labor force participation rate can be interpreted in the following manner. If all single women in this group were identical in schooling, "other" income, age, and color, their participation rates would be as indicated in the table. Interpreted in this way, the differences in participation rates reflect only the effects of marital status. The differences between women who were never married and separated or divorced women are not statistically significant, while for other groups the participation rates differ significantly from one another.

Bowen and Finegan reported that the particular ranking of single women was due to the following differences among these groups: (1) taste for work, (2) presence of young children, (3) family status, (4) financial resources, and (5) expected market wage rates.

Women who have never been married supposedly have stronger career drives than do most other women and certainly are bound to have fewer children than the other groups discussed. These facts alone account for their position at the top of the list of adjusted participation rates.

While the overall list seems to indicate that child care responsibilities account for much of the decline in participation, a second series of calculations for women 30-34 years old revealed that, for the last three groups of single women, the differences in adjusted participation rates did not seem to be attributable to differences in child care responsibilities.

Family status, i.e., being a member of a household or head of a household, was found to affect significantly single women's participation only insofar as they were or were not part of a family. Not being in a family, i.e., living alone or with nonrelatives, tends to increase participation significantly. The fact that a single woman is in a family

or head of a family apparently makes little difference in her labor force behavior. Because the woman living alone must rely on her earnings to support herself, this finding is not surprising.

Another factor that comes into play in considering the effects of marital status is the expectation of single women that employment is a permanent situation; the weaker that expectation, the smaller the labor force participation rate. This fact could help to explain why single women with husband absent have the lowest adjusted participation rate.

The widowed women may have lower participation rates because they tend to have larger asset holdings. Furthermore, widowed women tend to have lower participation rates than divorced women because the shock of death as opposed to divorce tends to be greater and, thus, a greater inhibitor to re-entry into the labor force.

Earnings. There is some evidence that women generally react to increased earnings in a manner consistent with the theory of the "backward bending" supply of labor. A simple theoretical explanation of this kind of behavior rests in the direction and magnitude of income and in the substitution effects of a rising wage rate on work-leisure choices. With rising wage rates, the price of leisure rises, and a substitution effect works in such a way as to decrease the demand for leisure, which has become relatively more expensive than other goods. At the same time, however, the increase in wages raises income, which tends to increase the demand for leisure and to decrease the supply of labor services (income effect). It is widely held that the substitution effect tends to outweigh the income effect in lower wage ranges, with the income effect at the upper wage levels beginning to outweigh the substitution effect, which in turn leads to decreased labor supply at higher income ranges (see Table 3).

For this age group, in Shea's sample at least, there appears to be an indication that the income effects of higher wages tend to overcome the substitution effects, thereby causing a reduction in the number of women who offer their services in the labor market at the higher wage rates.

For single women in this age group, the backward bending supply function does not manifest itself in declines in participation rates but rather in participation intensities.

Table 4 indicates that as wages rise, the average number of hours worked per week by single women tends to fall, as does the proportion of single women who work full-time.

Table 3. Labor Force Participation of Women by Rate of Pay

Rate of Pay ($)	All Women (18-24)	Single Women (20-24)
Less than 1.00	59.6	a
1.00-1.49	61.7	80.7
1.50-1.99	83.6	94.3
2.00-2.49	87.9	95.8
2.50-2.99	90.9	100.0
3.00-3.49	95.4	n.a
3.50 or more	94.6	n.a.

[a]Omitted due to small sample size.

Source: Shea et al. (1971, p. 81).

Table 4. Number of Hours Worked per Week and Percentage of Full-Time Workers, Single Women, Aged 20 to 24, by Rate of Pay

Rate per Hour ($)	Average Number of Hours Worked per Week	Percentage of Full-Time Workers
1.00-1.49	41.1	81.7
1.50-1.99	39.4	83.4
2.00-2.99	39.8	91.6
3.00 or more	36.3	78.2

Source: Shea et al. (1971, p. 81).

Age. As can be seen in Table 5, the effect of age on single females' labor force participation is more similar to that of single males than of women who are married. Generally, the older single women

Table 5. Labor Force Participation by Marital Status, Sex, and Age, 1972

Age	Percentage Single Females	Percentage Single Males	Percentage Married Females
Under 20	41.9	51.1	39.0
20-24	69.9	73.3	48.5
25-34	84.7	87.5	41.3
35-44	71.5	86.2	48.6
45-64	71.0	71.6	44.2
65 and over	19.0	24.6	7.3

Source: U. S. Department of Labor, Manpower Report of the President, March 1973, Table B-2.

become, the more likely they are to be in the labor force. However, the relationship is bell-shaped with respect to age, with the lower participation rates found among the lower age groups, the highest rates found among the middle-aged groups, and the rates declining somewhat through the later years. The increase in participation rates in the early years for women undoubtedly reflects completion of formal schooling and subsequent entrance into the work force.

Bowen and Finegan (1969), in their analysis, find age to be a significant causal factor in single women's work force behavior in the aggregate. However, no reasons for single women's behavior toward work as they get older is found in the literature other than that they are kept out of the labor force in early years as they prepare for work, join the labor force after school, and eventually leave the work force to retire.

Education. The relationship between educational level and the participation rate of single women is not very easily explained. Perhaps an examination of some observed behavior of women with respect to marital status and education would aid in the analysis.

--Approximately 25 percent more women would have a high school education if they did not marry.

--About 5/6 of undergraduate women are single.

--About 2/3 of female graduate students are single (Lewis, 1968).

The fact that single women predominate in upper education levels implies that single women are less likely to be in the labor force because of the desire to get an education, at least in the early years. The effect of education on single women's work behavior is seemingly stronger from the viewpoint that, to a single woman, getting an education which is career-oriented may have represented a choice among three alternatives with which she was faced: (1) getting a job, (2) getting married, or (3) going to school. The relative strengths of the three alternatives will undoubtedly affect the way in which education affects her work behavior after she leaves school. In fact, there is the probability that the effect of education on single female labor force participation is so intertwined, say, with the desire to get a better marriage offer, that it may be impossible to get a "true" reading of the effect of education on female labor force behavior.

For example, if getting an education increases the likelihood that a single woman will get married, then education contributes to nonparticipation, because being married increases the likelihood of nonparticipation. However, if education increases the likelihood that a woman will not get married because it increases the value of a career relative to that of marriage, then education will enhance a single girl's propensity to enter the labor force.

Shea et al. (1971) report some evidence that there is a positive effect of education on the labor force participation of young single women (20-24 years old). Table 6 shows the results of their survey.

Table 6. Labor Force Participation of Single Women Aged 20 to 24, by Educational Level

Education Level	Labor Force Participation Rate	Average Number of Hours Worked per Week	Percentage of Full-Time Workers
Less than 12 yrs.	54.8	a	a
12 years	93.0	39.0	85.3
13-15 years	92.4	40.1	84.9
16 or more	95.3	42.8	95.6

[a]Omitted because of small sample size.

While this table indicates that the short-term effects of education exert a positive influence on participation, nothing can be inferred about the long-term effects. It is likely that getting married negates some of the positive effects of education on the labor force behavior of single women. Equally likely is the possibility that these positive effects will reappear after a woman has been married long enough to have finished raising her family.

Bowen and Finegan found evidence consistent with Shea's findings that participation tends to be positively associated with years of schooling. Table 7 illustrates their results.

The interesting point revealed in this analysis is that quantum jumps in participation rates occur only at the three completion stages of schooling--8, 12, and 16 years. No significant gains in participation rates are associated with having started--but failing to complete--a new level of schooling.

It should be noted that the "all single women" category includes once-married women. This explains, for the most part, the higher participation rate among never-married women since the latter are likely to have more work experience, fewer children, and less overall home duties at all levels of education.

Presence of children. The presence of children seems to exert a much stronger influence on the labor force behavior of married and nonmarried women than does marital status. Single women with no children have labor force participation rates only nine percent higher than married women with no children. Single women with children, on the other hand, have participation rates 34 percent lower than those without children.

Among all groups of married and nonmarried women with and without children, the ranking in terms of participation rates (from high to low) is as follows:

1. Single women without children
2. Married women without children
3. Single women with children
4. Married women with children

Table 7. Adjusted Labor Force Participation Rates for Single Women Aged 25 to 54 (holding the effects of marital stat., other income, age, and color constant)

Population Group by Years of School Completed	Adjusted Labor Force Participation Rate
All Single Women	
0-4	77.8
5-7	74.8
8	84.4
9-11	85.3
12	90.1
13-15	88.9
16	92.7
17 or more	93.6
Average Total	86.8
Never-Married Women	
0-4	74.4
5-7	83.9
8	90.2
9-11	93.6
12	95.8
13-15	93.5
16	96.7
17 or more	97.4
Average Total	93.9

Source: Bowen and Finegan (1969).

Table 8 indicates the effect of presence of children upon women's labor force behavior. Widowed, divorced, and separated women are more likely to have responsibility for a child than those who have never been married. Shea et al. show that the difference in participation among single women aged 20-24 with and without children is substantial.

Table 8. Labor Force Participation Rates for Women, Married and Nonmarried, White, Aged 20 to 24

Work Measure	Without Children		With Children	
	Married	Nonmarried	Married	Nonmarried
Percentage in labor force	78.0	89.7	31.8	54.3
Average number of weeks worked	39.5	40.8	14.5	26.1
Percentage full-time	83.0	87.0	57.0	70.0

Source: Shea et al. (1971).

Table 8 shows that similar spreads in participation rates exist for married women with and without children. Thus, the effect of presence of children appears to be much the same, regardless of marital status. Within the groups of "children" and "no children," the labor force participation rates of single and married women do not differ greatly.

Thus, there are strong similarities in labor force behavior between single and married women within presence-of-child groups. The presence of children seemingly affects women, regardless of marital status, in the same manner. The effect of children on the labor force behavior of women is, therefore, more logically discussed in detail in the section dealing with married women.

The remainder of the factors to be discussed will deal only with those differences that arise because of a woman's marital status, i.e., within presence-of-child groups.

School attendance. Single women's participation in the labor force is strongly affected by enrollment or nonenrollment in school even though the size of the difference has diminished slightly over time. (Table 9).

Table 9. Labor Force Participation Rates for Women, Aged 14 to 17, by School Status (Years)

Year	Enrolled	Not Enrolled
1952	13.9	53.7
1957	18.0	39.2
1962	16.5	38.5
1967	20.5	40.2
1971	22.4	41.0

Source: Manpower Report of the President, March, 1973.

Although the above data refer to all women, both married and single, the vast majority of women in this age group are single, and the differences in the rates reflect, for the most part, the differential effects on participation brought on by enrollment or nonenrollment in school. It should be pointed out, though, that enrollment effects upon labor force behavior are not restricted to single women since large differentials are noticed for other age groups in which single women are less predominant. The relative size of the effect of enrollment in school may, however, be greater for single women than for married women for several reasons, including: (1) single women, in anticipation of marriage, are sometimes drawn into the labor force to save money for the marriage; and (2) married women, in that they have more duties to which they must attend such as husband, home, children, etc., are less likely to be able to find time to tend to their household and family duties, enroll in school, and work at the same time.

This hypothesis is borne out somewhat by the data presented in Shea et al. which shows that single women 18-24 enrolled in school have higher labor force participation rates than married women with children.

Bowen and Finegan (1965), in their cross-sectional analysis of the participation rates of single women (aged 14-19), found school attendance to be a significant causal factor in single women's work force participation. In testing this hypothesis in three different census years, the results in each year showed that as the percentage of women enrolled in school increased, the participation rate of women decreased. Over time, however, Bowen and Finegan noticed that the influence of this variable was diminishing. Whereas a one percent increase in school enrollment in 1940 evoked a 0.8 percent decline in single women's participation rates, in 1960 it resulted in only a 0.2 percent decline.

The probable reason for the declining influence of school attendance on labor force participation is the increase in part-time job opportunities for women which enable them both to work and to go to school.

Training. Much of what has been said about the relationship between education and labor force behavior can be said about training and participation. Unfortunately, however, the only evidence found thus far refers to single women under 24 years of age. No research on the life-work cycle effect of training (as in education) is available.

Shea et al. report a fairly strong relationship between job skills obtained through training and both participation rates and intensities (Table 10).

Table 10. Labor Force Participation Rates and Intensities, Single Women Aged 20 to 24

Skills	Labor Force Participation Rate	Average Number of Hours Worked per Week	Percentage of Full-Time Workers
No typing or shorthand	89.8	38.5	85.3
Typing only	90.4	39.9	87.3
Typing and shorthand	95.3	40.5	86.8

Source: Shea et al. (1971, p. 79).

The demand for labor. Demand, as measured by level of employment or unemployment, is related to single women's labor force participation in such a way as explained by the discouraged worker effect. Tella (1965), Dernburg and Strand (1966), and Bowen and Finegan (1965) all give empirical support to the discouraged worker effect for those age groups in which single women are predominant. All three report a high elasticity of response by single women to changes in the level of employment.

Several other factors mentioned in the literature as potential influences on single women's labor force behavior are: income level of the father, demand for women employees due to industry occupational mix, total supply of single women, and attitudes of single women's mothers toward work (Shea et al., 1971). Although, a priori, there is reason to believe that these factors would affect single women's labor force behavior, they prove to be inconclusive parameters affecting the work decision.

While the differences in the environment and the overall needs of single and married women are so great as to make the answer to any question concerning differences in labor force participation very obvious, the question of why single women differ in labor force behavior is subject to complex factors. Age, education, presence of children, and earnings have all been shown to be highly significant determinants of single women's labor force participation. It has been mentioned in the literature (Lewis, 1968) that a large proportion of highly successful women are unmarried. Precisely why that is so has not really been fully explored, but it is possible that the motivations underlying a woman's opting for a career over marriage are such that they pose problems which are not easily overcome.

Married Women

The entry, exit, and overall marginal participation of married women in the labor force are complex phenomena. In deciding to marry, a woman, in fact, increases the complexity of her decision to enter the work force. Because the married woman functions as part of a family unit as well as an individual, rational entry into the labor force dictates that she maximize either her own welfare (subject to the constraint of her husband and family) or her family's welfare (subject to the constraint of her own well-being).

When examined in this context, the woman's decision to work or not to work changes over her lifetime. She may work early in the marriage perhaps to save for a home, withdraw from the labor force to raise children, and re-enter once the children have left home. Evidence seems to indicate that the majority of married women experience the life-work cycle as described above.

While the presence of children in the family unit has the greatest impact on a woman's decision to enter the labor force, several other important factors influence not only that decision but also their interaction with each other. For example, the desire to own a home may postpone the birth of children, or the desire to have additional amenities or to send older children to college may mean quicker re-entry into the labor force than would otherwise have been the case. Generally, the other factors are those relating to: (1) unemployment, (2) overall demand for women workers, (3) overall supply of women workers, (4) earnings, (5) husband's income, (6) educational level, (7) children, (8) age, (9) previous labor force experience, (10) attitudes toward work, (11) other psychological characteristics, and (12) custom and tradition.

Two questions must be answered in any discussion of married women and the determinants of their work force behavior: (1) What is the relative importance of these factors in a married woman's decision to work or not? (2) What factors have led to the remarkable rise (approximately doubled over the last two decades) in married female labor force participation? Attempts will be made to answer both questions. The answer to the second question is undoubtedly tied to explaining changes in the

magnitude of each of the factors listed as well as the direction each of the factors has had on the labor force participation of married women.

Jacob Mincer (1962) indicated that a married woman's decision to work is a three-way choice among leisure, paid work and unpaid housework, which includes the care and training of children. Married women's participation, therefore, will be affected by anything which changes their relative evaluations of leisure, paid work, and unpaid housework.

The discussion of income (paid work) and leisure have already been presented, and it has been shown that income has a positive effect on the demand for leisure; i.e., the demand for leisure is relatively more responsive to changes in income than is the demand for work. Mincer showed that it is family income that matters and that an increase in income generated by one family member does not necessarily result in a reduction in labor supply for that particular individual. In the family context, therefore, Mincer noticed that, for women with similar earning power, a woman's labor force participation tends to be inversely related to her husband's income. For those women with different income potentials, those earning more tend to work more. In fact, Mincer showed that the positive response of a woman's labor force participation to her market wage rate is substantially stronger than her negative response to her husband's income. The net result for married women would, therefore, be an increase in labor force participation rates even though overall income was rising.

Mincer states that, for a one-unit increase in husbands' income, wives' labor force participation decreases .62 units; a one-unit increase in female income would increase labor force participation 1.33 units. In percentage terms, a one percent increase in female income will increase the wife's participation by 1.5 percent while a one percent increase in the husband's income will decrease the wife's participation by 0.83 percent.

Bowen and Finegan (1965) report similar findings. A husband's income is negatively related to the wife's participation, while the wife's participation is positively related to her own earnings. For the year 1950, the relative size of the coefficients (ignoring signs) in both analyses was approximately two times higher for the female's earnings than for the husband's income (Table 11).

Although the absolute sizes of the regression coefficients are not strictly comparable--especially among different regressions--the female/male ratios illustrate the strength and consistency of the relationship of income of both the wife and husband to the labor force participation of the wife. Cain (1966) reports similar findings.

Table 11. Estimated Regression Coefficients Relating Changes in Female Earnings and Husband's Income to Changes in Wife's (Female's) Labor Force Participation Rate

	Mincer	Bowen-Finegan (1950)	Cain (1950)
Female earnings	+1.33	+1.05	+1.48
Husband's income	-0.62	-0.52	-0.52
Ratio (female/male)	2.1	2.0	1.8

Sources: Bowen and Finegan (1965); Cain (1966).

There is reason to believe, however, on the basis of Bowen and Finegan's analysis, that the relative strengths of the opposing forces have been waning over time, the female more rapidly than the male. Whereas a $100 increase in female earnings would increase the labor force participation rate by 1.05 percent in 1950, the same increase in income in 1960 would evoke only a 0.37 percent increase in the labor force participation of wives (Table 12).

Table 12. Estimated Regression Coefficients Relating Changes in Female Earnings and Husband's Earnings to Female Labor Force Participation Rates

	Bowen-Finegan (1960)	Bowen-Finegan (1950)
Female earnings	+0.37	+1.05
Husband's income	-0.25	-0.52
Ratio (wife/husband)	1.5	2.1

Source: Bowen and Finegan (1965).

Examination of Cain's analysis for 1950 and 1960 for married women lends some supportive evidence to the suggestion that married women are becoming relatively more responsive to husband's income than to their own earnings (Table 13).

Table 13. Estimated Regression Coefficients Relating Changes in Female Earnings and Husband's Income to Female Labor Force Participation Rates

	Cain (1960)	Cain (1950)
Female earnings	+0.34	+1.18
Husband's income	-0.29	-0.44
Ratio (wife/husband)	1.2	2.7

Source: Cain (1966).

Although the positive effect on married female labor force participation has decreased relative to the negative effect of rising income, the size of the coefficients are still in favor of an overall rise in the participation rates of married women. As Cain notes, these results agree with Mincer's but weaken the relationship between the two variables.

One possible explanation for the decline in the relative size of these coefficients is that, as incomes have risen over time, factors other than income per se have begun to assume more important roles in the work decision. It must be remembered, however, that the variables of wife's earnings and husband's income continue to be highly significant factors affecting a wife's decision to work.

Alfred Tella's (1965) study of the sensitivity of female participation in employment concluded that women are only marginally attached to the labor force. Tella estimates that more females than males are disguisedly unemployed; that is, they would have entered the job market had more opportunities been available.

Dernburg and Strand's (1966) analysis substantiates Tella's conclusions in finding a positive relationship between the level of employment and level of participation in the labor force for females of all ages.

Bowen and Finegan (1965) in their analysis of the relationship of married women's labor force participation and unemployment found a significant and negative relationship between the two. Cain (1966) also reports a significant negative relationship between unemployment and wives' labor

force participation. For 1940 and 1950, the regression coefficient estimated by Cain was -0.50, indicating that a two percent increase in the unemployment rate would lead to a decrease in wives' labor force participation of one percent. These results provide evidence of the importance of the discouraged worker effect upon married women.

The importance of the level of employment (and unemployment) upon women's labor force participation at single points in time, coupled with Bowen and Finegan's and Cain's analyses which seem to indicate that the degree of response to these variables has been increasing over time for married women, leads us to additional points concerning married females and their decision to work.

1. The negative effect of unemployment on the labor force participation of wives supports the idea that the wage variable is more powerful than the income variable, as applied to the short run. This idea is also supported by the long-run rise in work rates of wives.

2. If the husband's income (and, therefore, family income) has increased over time, then it becomes less important that a wife enter the labor force to supplement that income. Married females, therefore, should become increasingly responsive to employment and unemployment over time, as Bowen and Finegan's results seem to indicate.

3. Mincer pointed out that a wife's participation responds differently to transitory changes in the income of the family as opposed to permanent changes. When short-term or transitory family income is below the permanent or long-run expected level of income, the wife will tend to work in order to maintain family consumption levels geared to "permanent" income expectations. In fact, Mincer's evidence suggests that the labor force response of a wife to transitory components of income are more than double those of permanent income.

In his analysis, Mincer also examined the response of wives to transitory and permanent components of income to determine if it varied with educational levels. He found that the response of the labor force to both income components declined with higher educational levels of the family head--presumably, as Long (1962) says, better educated family heads have other assets which make it unnecessary for wives to work if income is low. The positive significant relationship between wives' labor force participation and educational level is consistent with other evidence. Married women, it has been shown, are highly responsive to the employment situation, so that any increase in employment opportunities more than increases the response of women to that change. In the sense that education (especially at the high school level and beyond) increases the number and attractiveness of job opportunities and alternatives, higher levels of education increases the labor force participation of women. Bowen and Finegan found that, along with the trend toward higher levels

of education for all population groups, the variable of educational level moved from nonsignificance in 1940 to a significant positive relationship in both 1950 and 1960.

While family income, employment, and education are important variables to be considered in wives' labor force behavior, one major shock that tends to disrupt the life-work cycle of married women is the presence of children. Table 14 indicates that there have not been many changes in recent years in wives' labor force behavior as children grow up. Women with children younger than six years of age have participation rates less than the average, while women with children over six years of age have above-average participation rates. These patterns are quite obviously explained by the fact that wives take care of children in the formative years and then work, once the children have gone to school, perhaps to provide for their college education. Participation rates continue to be above average for married females once children have reached the age at which they can care for themselves.

What is not so obvious is the reason or source of changes in the presence of women with children in the labor force. The gap in participation rates between married women with children and without children has narrowed from 7.1 percentage points in 1960 to 2.2 percentage points in 1972.

Table 14. Labor Force Participation Rates for Married Women With Children, by Age Group

Year	All Wives	< 3 Years	3-5 Only	6-17 Only	18 and Over
1960	30.5	15.3	25.1	39.0	34.7
1966	35.4	21.2	29.1	43.7	38.4
1972	41.5	26.9	36.1	50.2	42.7

Source: Hayghe (1973).

Of the additional married women who were in the labor force in 1972, 82 percent of the increase was due to the increased participation rate of this group. (The remainder was due to population increase.) For women aged 25 to 34 years with children under six years of age, 98 percent of the increase in their number in the labor force from 1966 to 1972 resulted from increased labor force participation rates (Shea et al., 1971). Therefore, the increased participation rates of women with children under six years of age have been the leading factor in reducing the gap between married women with and without children and married women

overall--at least over the last decade. Several possible explanations for wives with young children and for married women in general entering the labor force can be offered (Long, 1962). The size of the average family has declined over the years, reducing the length of time a mother is forced to stay out of the labor force. More and better appliances tend to increase the woman's productivity in the home to such an extent that she can accomplish more work in the same unit of time. Likewise, the increased availability of day care centers has made it easier for women who would not normally have taken jobs to do so. The overall decline in hours of work in the office and factory and the predominant growth of the service sector over the manufacturing sector have also increased the opportunity (demand) for women workers. Bowen and Finnegan, including the demand variable in their analyses, found it to be a highly significant explanatory variable with regard to married female labor force behavior.

In Bowen and Finnegan's equation, the variable "children" (average number per family) moves from statistical nonsignificance in 1940 to significance at the one percent level or better in 1960. This variable was also significant in 1950 (at the five percent level). In both 1950 and 1960 the sign of the coefficient was negative, indicating that the larger the family, the less likely the wife is to be in the labor force. It is not likely that the sign of this coefficient has changed since 1960; however, it is likely that the magnitude of this effect has diminished somewhat, given the increasing propensity of wives with younger children to work.

Another reason for the expected decrease in the effect of presence and number of children is the propensity of more educated mothers to curtail their work in the labor market to a greater extent than the less educated. That is, expanding levels of education may contribute to women's staying out of the labor force longer, even though they tend, on the average, to increase the propensity to participate in the labor force (Mincer, 1973b).*

Bowen and Finegan break down the effect of presence of children on wives' labor force participation by the age of the children. As might be expected, the most significant result occurred for wives with children less than one year old and with children one to five years old. However, they also observed that statistically significant increases in participation rates occurred in the one-year-old and less category; the one- and two-year-old category; and the three- and four-year-old category. Bowen and Finegan explain the significant increases in participation rates of wives with young children by the apparent increased willingness of mothers to leave their children in the care of others as they get older.

Cain's results obtained from cross-sectional analysis of data on wives with children find negative and highly significant relationships

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*See, also, future National Bureau report on Family Investments in Human Capital by Arleen Leibowitz.

between the presence of children and the participation rates of wives for 1940, 1950, and 1960. Because different definitions of "presence of children" were used in the three time periods, comparisons over time of the size of the coefficients would lead to spurious conclusions.

Bowen and Finegan present one additional variable, supply, which they maintain will have a negative effect on wives' labor force participation. Supply is measured as the proportion of the total population that is female. Their reasoning is that, given a particular level of demand for female employees, the larger the proportion of women in the population, the greater the competition for those places--and supposedly (with the relatively high elasticity of response of wives to employment conditions), the lower the wives' participation rate. Their empirical results substantiate the hypothesis. Again, the continued importance and significance of the supply of women as an explanatory variable is somewhat doubtful. Growth in demand for women workers plus lessened classification of "female" occupations should make sex per se less important as a determinant of wives' labor force participation.

Related to the reduction in purely "female" or "male" jobs is the entire question of changing attitudes, customs, and traditions regarding wives' and mothers' entry into the work force. The attitudes toward working wives and mothers on the part of the husband and of society (Bailyn, 1965) as a whole are definitely related to a wife's decision to work. Attitudes of mothers of wives toward work--or whether the wife's mother worked--have also been shown to influence a wife's decision to work.

In summary, given the leisure, paid work, and nonpaid work (housework) context of the decision to work by the wife and mother, strong factors are at work simultaneously and in the same direction to increase female participation in the labor force. Rising women's wages, increased productivity in the home coupled with better products (prepared foods) and services (day care) have tended to force the women's propensity for work upward. Changing customs, traditions, and attitudes, the changing structure of employment toward the service sector, rising educational levels, and the gradual move toward elimination of sex-oriented jobs signify greater opportunities for women. The increased desire to work and expanded opportunity to work, therefore, are reasons why married women work.

Factors Influencing the Labor Force Participation of Minority Groups

Minority groups have gained the attention of manpower and educational planners in the 1960's because of continued disparities between these groups and whites in terms of income, employment, and overall standards of living. Discrimination, of course, continues to be examined as a causal factor which contributes to these disparities. Discrimination

tends to distort the market because it forces differentiation between minority groups and whites on bases other than productivity. Lester (1972) states:

> Negroes and ghetto residents . . . have good grounds for lack of faith that the market mechanism alone is sufficient for solving their employment problems. Their leadership has recognized the need for political and social action to break down employment barriers that the market failed for a century to eliminate. By themselves, market answers to ghetto manpower problems have proved too doctrinaire and ineffectual under prevailing circumstances.

Negroes

Table 15 reveals several aspects of Negro labor force behavior as distinguished from white labor force behavior. In the early years, white labor force participation tends to be far higher than that of blacks, but the situation is reversed (to a lesser degree) in the older age categories. This fact is borne out in Bowen and Finegan's analysis,

Table 15. Civilian Labor Force Participation Rates by Race and Sex, by Age, 1972

Age	Male		Female	
	Negro	White	Negro	White
16 and over	73.7	79.6	48.7	43.2
16 and 17	34.1	50.2	21.4	39.3
18 and 19	60.1	71.7	43.9	57.4
20 to 24	81.5	84.3	56.7	59.4
25 to 34	92.7	96.0	60.1	45.8
35 to 44	91.4	97.0	60.7	50.7
45 to 54	86.1	94.0	57.3	53.4
55 to 64	73.6	81.2	43.9	42.0
65 and over	23.6	24.4	12.8	9.0

Source: Manpower Report of the President (1973).

in which overall labor force participation rates were tested for the effect of the race variable upon them. Bowen and Finegan found that only in the cases of labor force participation rates for 14-19 year olds, male and female, does the race variable prove significant and negative. The analysis in the aggregate, however, does not indicate the factor or factors which lead to the differential rates in labor force participation between whites and blacks, especially in the younger years.

Of course, race per se does not influence participation; rather it is the characteristics that the races possess (or that they are perceived to possess) that influence their labor force behavior. Differences in the characteristics of whites and blacks, therefore, should give some indication of why differential participation rates are observed. One possible explanation is that part of the difference in the characteristics may be the result of discrimination and that what we are measuring (say, in differentials in educational level) are really the effects of discrimination (Becker, 1972).

The policy implications of limited labor force participation of Negroes due to discrimination are quite different from those due to educational deficiences, for example. The evidence thus far indicates that discrimination has, in fact, led to distortions in labor markets and in income and employment situations for Negroes even in light of recent educational and income gains (Ulman, 1965). The evidence, however, is far from conclusive and, in some cases, is contradictory.*

The question of whether to institute policies to eliminate discrimination or to increase the Negro's market power through training and education rests on a resolution of the issue of the extent to which discrimination has caused Negro nonparticipation in the labor force. Keeping that fact in mind, some of the determinants of labor force participation, the direction of those effects, and Negro labor force behavior are listed.

Dernburg and Strand's results suggest that the likelihood of discouragement and withdrawal from the labor force is closely related to the degree of job security that workers normally enjoy. They showed that there is a relatively small response to changes in the level of employment for males in the prime working ages, while exactly the opposite is the case for men over 65 and for men 14-19 and 20-24. The same holds true for women. That is, the younger and older age groups tend to be more marginally attached to the labor force than others with respect to changes in the level of employment and unemployment.

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*For example, Gary Becker, in "Changes in Discrimination Over Time," found evidence that no appreciable change in the Negro's situation had occurred over time. Elton Rayack, in "Discrimination and the Occupational Progress of Negroes" and Claire C. Hodge in "The Negro Job Situation: Has It Improved?" found evidence conflicting that of Becker.

Even if we assume equal degrees of response to levels of employment between whites and blacks in younger age groups, the unemployment rate differential between the two races would be a clue to why Negro youth, male and female, tend to participate to a lesser extent in the labor force.

On the basis of the data presented in Table 16 and Dernburg and Strand's earlier suggestion that the likelihood of discouragement and withdrawal is directly related to the degree of job security, we might say that (1) as measured by unemployment rates, Negro workers' jobs are only half as secure as white workers' jobs; (2) the discouragement effect for Negroes (of all ages) is proportionately stronger than for whites; and (3) therefore, we would expect the proportionately lower rates of labor force participation noticed in Table 15 for Negro males and Negro females. Among females 65 years of age and over, whites have a higher rate of unemployment than Negroes, and, as suspected, Negroes have a higher rate of labor force participation than do whites.

Table 16. Comparative Unemployment Rates: Male-Female, Negro-White, 1972

Age Group	Male		Female	
	Negro	White	Negro	White
16 and over	8.9	4.5	11.3	5.9
16-17	35.1	16.4	38.3	17.0
18-19	26.2	12.4	38.7	12.3
20-24	14.7	8.5	17.4	8.2
25-34	6.8	3.4	10.2	5.5
35-44	4.8	2.5	7.2	4.5
45-54	3.8	2.5	4.7	3.5
55-64	4.6	3.0	4.0	3.3
65 and over	6.9	3.3	2.0	3.7

Source: Manpower Report of the President (1973).

Of course, the Negro's relatively high degree of responsiveness to differentials in employment and unemployment rates reflects only the fact that the Negro worker is more susceptible to cyclical influences than is the white worker. This tends to be the case when some of the other characteristics of Negro workers are examined: educational level and level of school enrollment for younger Negro women. Perhaps in examining these additional characteristics, the unexplained fact that Negro females between the ages of 25 and 54 have noticeably higher participation rates, even though their unemployment rates are higher, becomes explainable. It is possible that Negro women in these age groups are not as perceptibly discouraged by limited job opportunities and accept part-time work rather than drop out of the labor force,* or perhaps are influenced more by the additional worker effect than by the discouraged worker effect.**

One important factor--certainly more important for Negro and white women than for men--is the marital status of the woman. It was mentioned earlier that married men tend to be more permanently attached to the labor force and that married women tend to have less permanent attachments. In comparing the marital status of married and single whites and nonwhites, additional clues are obtained to why (1) Negro men tend to have lower rates of labor force participation than white men, and (2) negro females tend to have lower rates of participation at earlier ages and higher rates at older ages than white women.

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*See Bowen and Finegan's calculations on this topic. It is noteworthy that even after adjusting for intensity of participation, Negro wives, at best, tend to have higher labor force participation rates than all other wives

**For some additional conjectures on the reason for Negro women's greater labor force participation in the later years, see Paul Glick, American Families (New York: John Wiley and Sons, Inc., 1957), pp. 91-93; and Irene Taeuber and Conrad Taeuber, People of the United States in the 20th Century, December 1971, pp. 207-212. The latter authors suggest Negro movements toward modal educational levels, standards of living, and pressures of insufficient opportunities and incomes as well as the evasive responsibilities of men as causes of Negro-white differentials in female labor force participation.

The data below indicate that if marital status of men is a contributing factor to more labor force participation, then differential propensities of white men over nonwhite men contribute to higher rates of labor force participation among white men than among Negro men (Table 17).

Table 17. Married Males as a Percentage of Age Group, by Race

Age Group	White	Nonwhite
15-19	2.9	2.4
20-24	42.6	33.4
25-29	74.8	58.4
30-34	83.5	66.3
35-39	86.1	69.7
40-44	86.8	71.8
45-49	86.1	71.7
50-54	84.5	70.0
55-59	82.4	66.6
60-64	80.2	66.0

Source: Price, (1969, p. 225).

The same basic, but inverse, relationship holds for women. On the average, more single women tend to be in the labor force than married women, over the age spectrum. In the 15-19 age group, a slightly larger percentage of white females tend to be married than nonwhites. If, as was said previously, marriage tends to reduce labor force participation of females, then this differential helps to explain why younger Negro females tend to have lower labor force participation rates than white females (Table 18).

Although the proportions of married women among nonwhites are greater than for whites in all other age groups, nonwhite females are significantly more likely to have marriages with spouse absent, to be widowed, or to be divorced--all of which contribute to the observed higher rates of labor force participation for Negro females than for whites, aged 20 and over.

Table 18. Percentage of Total Age Group in Different Marital Groups, Females by Age, Race, 1960

Age	Single		Married				Widowed		Divorced	
			Spouse Present		Spouse Absent					
	W	NW	W	NW	W	NW	W	NW	W	NW
15-19	83.9	83.8	13.5	11.8	2.2	4.1	0.1	0.1	0.3	0 2
20-24	27.4	35.4	66.0	48.1	4.5	14.1	0.3	0.7	1.8	1.7
25-29	9.8	15.7	83.8	62.3	3.5	16.7	0.5	1.8	2.5	3.6
30-34	6.6	9.6	86.5	65.1	3.2	17.2	0.9	3.3	2.9	4.8
35-39	5.9	7.6	85.9	65.3	3.1	16.4	1.8	5.2	3.4	5.5
40-44	6.0	6.4	83.6	64.0	3.1	15.0	3.4	8.7	3.8	5.8
45-49	6.6	5.9	80.2	61.3	3.1	13.7	6.0	13.2	4.1	5.8
50-54	7.8	6.1	74.7	56.7	3.2	12.3	10.2	19.8	4.1	5.2
55-59	5.4	6 9	67 8	50.2	3.0	10.5	16.8	28.2	3.9	4.3
60-64	7.9	4.7	59.4	44.0	2.9	8.0	26.5	39.9	3.3	3.3

Source: Price (1969, p. 225).

While some variation in labor force participation rates is noticed between the races (especially for women), overall labor force participation rates for Negro women tend to be higher than for white women, and white male participation rates tend to be higher than for nonwhite males

There are several other differentials, the effects of which are not entirely straightforward or additive, which exist between whites and nonwhites that must be considered as important causal factors in explaining differentials in labor force participation rates. These are: income, number of children in the family, and job availabilities.

Within the framework of Mincer's paid work-nonpaid work-leisure hypothesis concerning the work decisions of the family, family income and wife's participation tend to be inversely related. Therefore, if there are differences in family incomes between whites and nonwhites, it would be expected that, for the wife at least, higher rates of labor force participation would be observed--as they are. Of course, significant differences in incomes are also noticed between white and nonwhite families, aged 35-44. Taeuber and Taeuber (1971) report that median

family income of white families in 1960 in the United States was $6,871 compared to $4,295 for nonwhite families. The 1970 Census of Population figures indicate that income differentials persist, with white and nonwhite family incomes of $9,961 and $6,067, respectively.

It was pointed out earlier that the larger the family, the less likely women are to be in the labor force. However, given the relatively lower family income and the relatively higher proportion of Negro women married and without a spouse, widowed, and divorced, it is likely that the more children Negro families have, the greater the tendency to enter the labor force. It must be cautioned here that the evidence on this point is far from clear. What can be said, though, is that although Negro families tend to have more children than white families, they also tend to have higher rates of labor force participation (U. S. Department of Commerce, 1973).

Bowen and Finegan concluded that Negro women with children tend to have higher labor force participation rates than other married women--even after allowances are made for differences in age, schooling, other family income, and employment status of the husband. The higher participation rates are most noticeable for those Negro women with children less than six years old and still quite noticeable for those with children between six and 13 years old. For the group of married female Negroes aged 14-54, there were no significant differences in participation rates between them and all other married females--once allowances had been made for schooling, age, other income, and employment status of the head. Although Cain reports results quite different from those of Bowen and Finegan on this topic, the reader is referred to Bowen and Finegan where it is reported that Cain, after reworking his data, reached some agreement with Bowen and Finegan's conclusions.

One additional fact, or difference between white and nonwhite families, is that 59.1 percent of nonwhite families lived in central city areas of SMSA's in 1972, compared with 26.9 percent for white families. It is a fact that unemployment rates and overall job opportunities in central cities are substantially worse than elsewhere, and when Negro married men try to find employment in these areas, they are subject to discouragement on a number of different fronts. They may drop out of the labor force completely or accept a lower paying job. In either case, regardless of the number of children, the wife's propensity to enter the job market is increased. Paul Offner (1972) offers statistical support to the thesis that a family residing in a ghetto tends to have a suppressed supply of labor in the prime age groups and that these rates are partially the result of few job opportunities there. One obvious question is: Why do the discouraged workers not look for work outside the ghetto? Offner tests the hypothesis that the further ghetto residents live from alternative job opportunities, the more likely that the distance would be a suppressant on labor force participation. Offner concluded that the distance variable was significant in the correct direction for ghetto residents of all tested age groups for both sexes, except males aged 55-64. Offner also showed that Puerto Ricans, at least in the New York City area, have labor supply problems similar to (if not

worse than) those of Negroes in that the greater the proportion of Puerto Ricans in all age and sex groups, the more suppressed was the overall ghetto labor force participation rate for these age-sex groups.

One final comment concerning Negro labor force participation must be made with respect to the influence of educational levels on the participation rates. Although the gap between white and nonwhite levels of education has been narrowing steadily over the last decade, it is likely that the increase in overall educational levels of Negroes was generated by the significant increases in Negroes with less than a high school diploma rather than by increases in college education. Perhaps, as Becker suggests, Negroes have not really experienced any substantial improvement in their occupational distribution either because of continued educational disparities, market imperfections mentioned earlier, or racial discrimination. More than likely, the observed labor force behavior of the Negro is a complex combination of all of the factors mentioned previously.

In summary, female labor force participation rates continue to be significantly higher for Negroes than for whites--even after adjusting for all factors which, a priori, appear to be causal. Cain offers three possible explanations, which are repeated by Bowen and Finegan.

1. There is apparently a lesser degree of job discrimination against Negro women than against Negro men. This fact is reflected in the higher wife-to-husband earning ratio of Negroes.

2. Housing patterns (crowding and "doubling-up") tend to be such for Negro families that less time need be devoted to routine housework.

3. The apparent incidence of marital instability among Negro families tends to increase the probability that a wife will be left without support unless she maintains close ties with the labor market.

Spanish-Americans

Another important minority group in the United States consists of people of Spanish origin: Mexicans, Puerto Ricans, and Cubans (U. S. Department of Labor, 1974). Table 19 depicts the labor force behavior of Spanish-Americans relative to that of the white and black races.

Except for Puerto Ricans, Spanish-American males have slightly higher rates of labor force participation than white males and much higher rates than Negro men. The primary reason for the lower participation rates of Puerto Ricans is health. Approximately 25 percent of all Puerto Rican men under the age of 65 and out of the labor force were disabled.

Table 19. Labor Force Participation Rates by Race and Sex, 1972

Race and Ethnic Group	Men	Women
Total persons	79.0	43.7
White	79.6	43.1
Negro	74.0	48.2
Spanish Origin	80.4	38.0
Mexican	82.1	36.7
Puerto Rican	73.0	25.3
Cuban	83.8	54.0
Other Spanish	79.7	43.4

Source: Ryscavage and Mellor (1973, p. 5).

The most significant differences in labor force behavior between Spanish-Americans and other races occur among women. As a group, Spanish-American women's labor force participation rates are only 38 percent, compared to 43 percent for whites and 48 percent for blacks. Cuban women, however, have the highest rates of labor force participation of all racial groups (54 percent).

The fact that Mexican and Puerto Rican families tend to be larger partially explains the low rates for women in these ethnic groups. The average size of Mexican-American and Puerto Rican families in 1970 was 4.4 and 3.9 members, respectively, compared to 3.5 in white families. Equally important is the fact that Mexican and Puerto Rican families tend to be much younger, with over 40 percent of both groups containing children under the age of six years old. In contrast, only 25 percent of all white families had children in this age group.

It was pointed out with respect to black families that the extent of female participation affected black family income positively. The same appears to hold true for Spanish-Americans. The higher participation rates of men partially explain why Spanish-Americans have higher incomes than blacks, and the combination of higher participation rates of Cuban men and women explain why they have the highest median family income of all Spanish-Americans.

On the other hand, the reasons why Spanish-American people's incomes are lower than white incomes cannot be explained by participation rates alone. Although larger proportions of Spanish-American men are working, smaller proportions of Spanish-American women are working. To a large extent, members of the Spanish-American population, especially Puerto Ricans, work in the poorest paying jobs with the least chance for advancement (U. S. Department of Labor, 1973; Lyle, 1973). Unemployment among Spanish-Americans is higher than among whites but less than among Negroes, which adds to the explanation of why Spanish-Americans are in a relatively better economic position than are Negroes. Among Spanish-American women, however, unemployment rates exceed even those of Negro women. This fact correlates quite well with the effect of unemployment upon rates of labor force participation, i.e., the discouragement effect leads to inflated levels of workers dropping out of the labor force. Cubans, however, have unemployment rates closer to those of whites and, in the case of male Cubans, lower unemployment rates than their white counterparts.

A large portion of the poorer economic position of Spanish-Americans, relative to that of the white population, can be attributed to their educational attainment. Even within the Spanish-American group, large disparities in incomes can be explained by differences in educational attainment. In fact, one of the primary reasons for the Cuban population's overall better performance in the economic sense probably stems from the fact that they are better educated than their Mexican counterparts. The Puerto Ricans, who exhibit the poorest economic position, are the most poorly educated. Table 20 shows the relative educational situations of Spanish-Americans (Mexicans and Puerto Ricans) and the total population.

Table 20. Percentage of Population Aged 25 and Over, by Years of School Completed and Ethnic Origin, 1972

Years of School Completed	Total Population	Spanish Origin		
		Total	Mexican	Puerto Rican
Less than five years	4.6	19.3	26.7	20.2
Four years of high school or more	58.2	33.0	25.8	23.7

Source: Ryscavage and Mellor (1973, p. 8).

The strong correlation between education and economic position indicates quite clearly the need for strengthened educational programs for minority groups. The desire to work and even work itself can only

be beneficial to minority groups (and for everyone else) if they enter the labor market properly equipped. It is obvious from the data on Spanish-Americans that relatively high proportions of the men have found their way into the labor force. However, their families continue to earn less, and they continue to have high unemployment rates. The task of manpower and educational planners under such circumstances must be to ensure that lack of education (or lack of "proper" education) does not hinder the labor market group once it does get into the work force.

Sex Discrimination and Labor Force Participation

Sex discrimination has, in the past several years, been the subject of much discussion because, there are, in fact, some serious labor market consequences of discrimination on the basis of sex.

People who defend women's rights point to the fact that in 1968, for example, full-time female employees were receiving incomes 58 percent smaller than those of their male counterparts and that market segregation was such that there had developed, in fact, "masculine" and "feminine" occupations.

The first effects of discrimination in masculine occupations are revealed as a reduced demand for women in these occupations, which in turn forces women into other labor markets and represents an increase in the supply of women in these other labor markets. Both conditions are consistent with the observed suppressed income levels for women in the labor market.

Zellner (1972) argues that progress in achieving equal representation of women in all occupations rests on their getting into the discriminating occupations in the first place. Once in typically male occupations, women tend to increase their own demand in those occupations because women discriminate less against members of their own sex, because women have the opportunity to "prove" themselves, and because they can help to weaken stereotyped images of women workers.

Of course, as Zellner points out, the inelasticity of the demand for women in "masculine" occupations--even under reduced or falling relative wages--is such that it tends to increase the demand for discrimination and does not necessarily result in a substantially changed demand for women. The demand for discrimination is increased in two ways:

1. Wages paid to women represent real costs to the employer. The employer can, under conditions of inelasticity of demand, realize reduced costs by keeping female wages suppressed (increased real income) without suffering any substantial withdrawal of women from his work force.

2. Oftentimes, when the employer receives a recommendation from a fellow worker for someone to fill a position, the co-worker may be the discriminator, with the employer being once removed from the source of discrimination; this tends to increase the tendency for the demand curve for women in masculine occupations to be inelastic.

The thrust of Zellner's argument, therefore, is that the structure of the market and the relative inelasticity of the demand curve for women are such that the "market" alone will not be able to achieve sexual integration of the occupations. Women will continue to have difficulty entering masculine occupations--a prerequisite to complete sexual integration.

Certain other institutional and economic factors make the realization of equality of opportunity more difficult. Institutionally, girls have been taught to aspire to "female" jobs; naturally, employers brought up in the same institutional setting maintained "female" jobs. In some cases, employers could rationalize their not hiring women on the basis of the fact that the women were young and likely to have relatively higher rates of absenteeism and turnover than male job candidates. If women were hired, they were placed in jobs requiring little or no training time, which tended to be jobs inducing dissatisfaction and high turnover. The act of discrimination itself, therefore, generated evidence that women were, indeed, poor job risks.

While these have been characteristic of the approach to women in the past, there have been several recent developments with respect to women that must be mentioned. First, the existing attitudes toward women workers may have been formed when the females entering the labor force were young and unsettled and, indeed, may have been justified. However, the changing composition of the work force, especially the increased average age of women seeking work and the willingness of women with children to work, seems likely to cause deviations from the previously formed picture of women workers. Second, evidence is available to the effect that when employers were in need of employees due to a restricted male labor force, females responded quite significantly--implying that women enter the job market in response to increased job opportunities (Weiskoff, 1972). The policy implications of these two factors in concert will be presented later.

A discussion of labor market stratification and its effects upon labor force participation is a natural extension of that on discrimination since it has been argued that discrimination on the basis of sex, race, and age has, in fact, been one of the causes of such stratification (Piore, 1971). This has not been the only cause for the increase in skill specificity; on-the-job training and customs have also led to the development of an "internal" labor market alongside the external or competitive market. Movement from the latter to the former occurs only at "ports of entry or exit" (Kerr, 1954; Doeringer and Piore, 1971).

Labor market stratification or segmentation can be classified as follows (Reich et al., 1972):

1. Segmentation into primary and secondary markets. In primary markets, jobs are stable, training is available, and wages are high. Secondary markets are typified by opposite circumstances and are, as a rule, predominated by minority groups, women, and youth.

2. Segmentation within the primary sector. Within the stable jobs category there are those tasks which are routinized and leave little room for individual self-expression. Others allow much room for creativity.

3. Segmentation by race. Certain jobs tend to become race-typed and are found across primary and secondary type jobs.

4. Segmentation by sex. This has been covered for the most part in the preceding section on sex discrimination.

This list is certainly not exhaustive since noticeable segmentation can also be seen in the labor market by age and other characteristics.

While much discussion concerning the political repercussions of labor market segmentation has taken place, several consequences of labor market stratification on labor force participation and the educational system should be pointed out.

First, potential labor force entrants will exclude themselves from participation to the extent that they perceive the criteria for access to a particular labor market. This behavior tends to reinforce customary behavior on the part of the educational system and other institutions. No new demands are made on these institutions to include those workers who could compete on the basis of their own productivity. This leads to the next point--that labor market segmentation causes a divergence from the neoclassical belief that profit-maximizing employers hire workers on the basis of their individual characteristics. Employment in these kinds of labor markets subjects the employee to the additional constraint of belonging (or not belonging) to the "right" groups. The group could be women, youth, blacks, Ph.D.'s, or machinists with ten years of experience. If this is the case, noticeable improvement in the labor force activity and rewards of individuals may not improve until the group characteristics are uplifted. The policy implications of these remarks are far reaching and will be discussed in the next section.

Factors Influencing the Labor Force Participation of the Elderly

According to the 1973 Manpower Report of the President, an increase of 43 percent in the number of persons 65 years and over can be

expected by the end of the century. The task of manpower and educational planners is to provide the kind of services that will keep the potentially productive older workers in the labor force. Of the total number of people recorded as not being in the labor force in 1972, nearly 60 percent were out of the labor force due to retirement and old age. The effect of age is also reflected in the decline in labor force participation rates for all age, sex, and marital status groups. For elderly single males and single females, labor force participation rates have shown a tendency to increase during the last several years after having declined steadily since 1947.

To illustrate the effects of age upon labor force participation, Bowen and Finegan (1969) calculated the expected change in participation rates per each additional year of age. These calculations are presented in Table 21.

Table 21. The Effects of Each Additional Year of Age upon Labor Force Participation Rates for Two Groups of Older Workers.

Labor Group	Age Range	
	55-64	65-74
Men	-1.3	-1.6
Single women not living in families	-1.5	-2.2
Married women	-2.5	-0.5

Source: Bowen and Finegan (1969, p. 278).

However, elderly married males exhibit only slightly higher labor force participation rates than do nonmarrieds, while single elderly females have rates more than two times higher than their married counterparts. Married elderly female participation rates have remained fairly constant over the last several decades while the rates for married males aged 65 and over have declined steadily over the same period. Regardless of marital status, elderly males participate in the labor force more than females.

The decline in participation rates for all groups--especially those whose participation rates were high to begin with (married and single males, single females)--is understandable given the growth in quantity and quality of pension and retirement plans, social security allotments, and forced retirement control provisions. Over the life-work cycle of a laborer, it is to be expected that labor force participation will decline as a person becomes older simply because of the

aging process itself. What has been of concern to many economists, sociologists, psychologists, and others is that the drop comes so abruptly between ages 64 and 65--for artificial reasons rather than market ones. Certainly, some additional research needs to be conducted to estimate the cost to society of forced removal from the work force of potentially productive people.

Another serious problem faced by older workers is that of unemployment. These individuals are likely to be very closely tied to jobs and/or occupations, perhaps not as productive as they once were (or assumed to be less productive), and less likely to be able or to want to move to another job, industry, or region in search of a similar job. Sobel and Folk's (1965) study has also indicated a general unwillingness of older workers to retrain for existing job opportunities.

Thus, the conclusion that older workers would be willing to accept lower wages if they could find jobs seems reasonable. Nevertheless, only about one-third of the older workers in Sobel and Folk's study thought they had a good chance of finding work even at a lower wage, as compared to three-fifths of those less than 35 years old.

Sobel and Folk summarize older workers' behavior as their attempts to maximize the expected value of their remaining work lives. They point out, however, that older workers' perception of the market may be distorted by the hiring practices of firms with respect to older workers and by the fact that the only jobs open to them may be low-paying jobs--perhaps even at entry level. In examining the evidence, over eight of ten older workers who said they had trouble finding a job gave their age as the factor that was keeping them out of the productive labor force.

Bowen and Finegan (1965), in their attempt to isolate the determinants of older male labor force participation, report some interesting results. The determinants tested were unemployment, earnings, other income, schooling, color, region (South), and marital status. In their analysis, color and region proved to be statistically nonsignificant. The "rate of unemployment" variable had the expected negative sign and was significant at better than the one percent level, indicating that the older worker's response to changes in the level of employment is relatively high. A one percent increase in the overall rate of unemployment would theoretically lead to a 1.62 percent reduction in the labor force participation rate of older workers. This evidence is consistent with the conclusions of other authors regarding the more marginal attachment of the elderly to the labor force due to their greater susceptibility to the discouraged worker effect (Dernburg and Strand, 1966). These figures point out, though, that the relative impact of unemployment upon participation increases with age (Table 22).

"Other" income was tested and was found to be significant and to have the expected depressing effect on older workers' labor force participation. The larger the income from nonemployment sources, the lower is the rate of older workers' labor force participation.

Table 22. The Effects of Changes in Rate of Unemployment upon Labor Force Participation of Various Age, Sex Groups

Population Group	Absolute Change in Group Participation Rage Given a One-Point Change in Unemployment Rate
Males 25-54	-0.31
Males 55-64	-1.27
Males 65 and over	-1.34
Married Women 14-54	-0.94
Married Women 55-64	-0.93
Married Women 65 and over	-0.25

Source: Bowen and Finegan (1965, p. 343).

Schooling has apparently become a relatively more important determinant of labor force participation in this age group, moving from statistical nonsignificance in 1940 to significance in 1960. The size of the coefficient increases over time as well and has a positive sign in all cases. In 1960, a one-unit increase in the educational level of males in this group would theoretically lead to a 2.05 percent increase in their labor force participation. Franke (1962) reports similar strong relationships between the participation and level of education of the elderly.

Bowen and Finegan (1969) also notice a strong negative relationship between older males' marital status and their rates of labor force participation. For many obvious reasons, they expected marital status to exert a positive effect on labor force participation; therefore, the results were inconsistent with their hypothesized relationship. In some further tests on this point, they noticed that married men do, in fact, have higher rates of labor force participation than their non-married counterparts. In breaking down older workers into married and all other, Bowen and Finegan found not only that married men have a higher rate than single men but also that the higher the marriage percentage in a particular city, the lower the participation rates of both married and unmarried males. They explain the paradoxical phenomenon on the basis of job availabilities--that is, regions with poor job opportunities are more likely to witness an out-migration of single older workers than of married ones. However, in communities where employment opportunities are unimportant to older workers (retirement communities), the

participation rate will be lower because of a limited number of job opportunities in retirement areas implies that part of the older population with the higher participation propensities will leave the area, leaving the retired population (older persons with a much smaller propensity to work) to stay. Thus, for different places there would appear to be a suppressing effect of marital status on the labor force participation of both marital groups of older workers. Bowen and Finegan did not attempt to test that hypothesis.

A factor that appears to affect the labor force participation of older Negroes is whether they reside in urban or nonurban areas and the size of these areas. Size of urban areas makes little difference in participation rates for white native urbanites regardless of age; however, older black women who are native urbanites have higher participation rates in the smaller SMSA's and about the same as the young in the larger SMSA's. As for migrant Negro women, the larger the area, the lower is their participation rate (Sheppard, 1971).

It is Sheppard's belief (p. 70) that under-utilization of women workers, in terms of occupational status and labor force participation, will continue to be a problem--but that the problem will be especially acute among older black workers in the smaller urban areas.

In addition, Sheppard points out that skill levels, educational attainment, etc., are highly important in determining the work decisions of the elderly, but that each of these is affected by factors that seem to be associated with age--lowered levels of motivation, anxieties about the chances of reemployment, and self-image.

Gallaway (1971), however, after examining some of the evidence, suggests that we may have misinterpreted the generally lower participation rates for the elderly. Perhaps, he says, they reflect the rational income-leisure choice that theory tells us determines the amount of labor supplied. The tendency for the elderly to opt in favor of more leisure should not be surprising in light of having worked their entire lives.

Gallaway's conclusion rests on the assumption that older workers have voluntarily chosen leisure over paid work. If older workers have not made the decision voluntarily, then the revealed preference of which Gallaway speaks may not necessarily mean that older workers are happier with reduced income and more leisure. Another possibility is that the work-leisure trade-off has been distorted by the factors mentioned by Sheppard--lowered self-esteem and anxieties about being able to be reemployed after retirement. Given these considerations, a much more in-depth analysis needs to be conducted with regard to the paid work-leisure choice made by the older worker.

In summary, Bowen and Finegan's remarks (1969, p. 373) should be kept intact.

1. the principal impetus toward lower participation rates for older men has resulted from the increased ability to afford leisure, and

2. the growth of compulsory retirement systems.

Educational Attainment and Labor Force Participation

Table 23 reveals that for all race-sex groups, the lowest participation rates are associated with the lowest level of educational attainment. For women of both races, the rate of participation increases along with the level of education, but for men of both races, the rate of participation appears to be suppressed by the fact that they have attended college. The data include, however, all those with over one year of college, including those with only one to three years of college but no diploma. An examination of these data shows that a very distinct drop in the rate of participation occurs for men having one to three years of college. In fact, their participation rates are lower than those of men who have only one to three years of high school.

Table 23. Labor Force Participation Rates by Level of Educational Attainment, by Sex, Race, 1971

	Dropouts (1-3 Yrs. High School)	Secondary Grads (4 Yrs. High School)	Postsecondary (1 Yr. or More College)
White			
Men	81.0	89.2	85.4
Women	38.3	48.5	52.4
Negro			
Men	82.7	85.8	81.6
Women	48.4	63.0	66.4

Source: William Deutermann, Educational Attainment of Workers, Special Labor Force Report No. 140, U. S. Department of Labor, 1972.

These data reveal that people of different educational levels do, in fact, offer different amounts of their services in the labor

market. The explanation perhaps can be found by comparing the determinants of participation among the three levels of educational attainment. There is no reason to assume that the completely new set of factors determines rates of participation of the different educational groups. Rather, it is likely that each of these groups is affected by differences in the determinants of participation among them, which lead to observed differences in rates of labor force participation.

Marital status, sex, race, earnings, presence of children, and age are factors likely to affect the decisions of people at different educational levels to participate in the labor force. Before the effects of these factors on rates of labor force participation of particular educational groups are discussed, it must be pointed out that the participation rates of the various educational groups were not broken out separately to be used as variables dependent on the values of the earlier mentioned determinants.

Marital Status and Educational Attainment

Among women in the labor force, marital status appears to affect the work decisions of secondary school graduates less than those of either dropouts or college graduates since the percentage of women in the labor force, regardless of marital status, is higher for secondary school graduates than for dropouts or college graduates. Among dropouts, marriage tends to increase substantially the female's presence in the labor force; among high school graduates, there is a slight increase, and among college graduates, there is a substantial decline (Table 24).

Table 24. Percentage Distribution of Women in the Labor Force by Marital Status and Educational Level

	Dropouts	Secondary Grads	Postsecondary Grads
All white men	16.1	36.4	9.0
Single women	11.2	46.5	16.6
Married, husband present	17.0	47.4	11.0
Widowed, divorced, separated	20.2	37.8	7.6

Source: New Jersey Department of Labor (1974).

Although data for men by marital status, education, and labor force participation rates are not available, data for all men (married, single, and other) appear to follow the same pattern as that for women--at least across educational groups. It is probable, however, that a larger proportion of married men as compared to single men are in the labor force, regardless of educational level.

If these facts are representative of labor force behavior by marital status, it might be hypothesized that:

1. The larger the proportion of married people in the "dropout" and "high school graduate" categories, the greater is the participation of the two educational groups in the labor force. The tendency should be stronger in the dropout group since the married dropout men (with assumed higher rates of labor force participation than single men) will have their family labor supplies augmented by higher labor force participation of wives. The same holds true for high school graduates, but less so.

2. Nothing conclusive may be said about the fact that there is a larger proportion of married people in the college graduate group since marital status causes a smaller percentage of women to be in the labor force. Since, in this educational group, a married man's participation is likely to be greater than a single man's, the two effects of marital status would be offsetting to some degree, and the outcome, therefore, is indeterminate.

Sex, Race, and Educational Attainment

Table 24 shows that males at all three educational levels have higher participation rates than females, regardless of race, and whites generally tend to have higher participation rates than Negroes. These differences persist across educational levels, implying that sexual and racial differences in participation are not substantially affected by educational level. This implication is partially substantiated in Bowen and Finegan's (1969) analysis, in which the level of schooling was found to be relatively nonsignificant in explaining the labor force behavior of either men or women.

Earnings and Educational Attainment

Part of the noticed differential in rates of participation among female marital groups and among educational levels (the decline in married female participation rates relative to single rates as educational level increases) can perhaps be explained by the levels of income generated by individuals and families in the different educational groups. Certainly, the wife tends to act more as an additional worker if her

husband's income is low than if it is high, and if the husband's educational level is low, his income is more likely to be low. In the paid work-leisure-nonpaid work framework, families at lower educational levels (lower income levels) would tend to have higher labor force participation rates for women in attempts to improve their family's well-being. The fact that wives augment family income is borne out by the fact that family income and the percentage of wives who worked sometime during the year are very closely related. The effect is much stronger among Negro married women than among whites (Waldman and Young, 1971).

Several researchers have noticed a strong association between female earnings and female (married and unmarried) labor force participation--stronger, in fact, than the negative influence of husband's income. It is expected that the strength of this effect for men and women will increase as the level of education increases, since earning potential is increased by higher educational levels. Although the positively sloped supply curve of wives' labor with respect to family income is noticed through income ranges up to $20,000 the percentage of working wives in families with incomes over $20,000 declines from 64.2 percent to 54.6 percent of all wives, indicating a backward bending supply error.

Presence of Children and Educational Attainment

The data in Table 25 indicate that the number of children per family declines as the level of education increases. If the number of children affects the rate of labor force participation, it will do so most significantly for women in the child-bearing ages. As can be seen

Table 25. Educational Level of Family Head by Number of Children, 1972 (Percentage of Families Falling into "Number of Children" Groups)

Number of Children	Dropouts	Secondary Graduates	Postsecondary Graduates
None under 18	18.9	16.6	24.7
1 under 18	21.5	24.7	20.0
2 under 18	27.4	29.2	29.0
3 under 18	18.0	16.8	16.4
4 under 18	9.8	7.9	7.0
5 under 18	5.0	3.0	1.8
6 or more under 18	4.4	1.7	1.2

Source: U. S. Department of Commerce (1973).

from Table 25, there is evidence that female participation rates increase across educational groups while the number of children per family declines across educational groups.

Age and Educational Attainment

Table 26 shows that the effect of educational attainment on labor force participation persists through all age groups; however, the differential between dropouts and secondary graduates tends to diminish with age--probably signifying the effect of informal education such as on-the-job training and experience (Mincer, 1971).

Table 26. Labor Force Participation Rates by Educational Level and Age, 1971

Age	Dropouts	Secondary Graduates	Postsecondary Graduates
18 and over	58.5	66.1	74.5
18-19	48.3	60.1	
20-24	59.9	72.5	86.0
25-34	64.7	68.9	76.5
35-44	70.7	71.2	80.2
45-54	71.3	72.9	83.8
55-64	59.6	64.8	74.1
65 and over	17.4	17.9	23.1

Source: Deutermann (1971).

LABOR FORCE ATTRITION

Labor force attrition can be discussed under the general heading of labor force turnover, which includes, under most circumstances, accessions to the labor force as well as separations. Separations are further broken down into voluntary separations (resignations), involuntary separations, including layoffs.

Both accessions and separations involve questions of labor mobility, and the bulk of the discussion in the literature deals with attrition or turnover from the labor mobility side. More specifically, the discussion concerns the issue of whether resources have tended to become relatively immobile over time due to certain institutional factors. The general conclusion is that they have not.

The market system is still the prevailing mechanism for allocating resources, and the market assumes that, in order to have an efficient allocation, workers must be free (or relatively free) to move from one job to another. Thus, the quit rate, since it denotes the voluntary aspect of attrition and mobility decisions, is most often used in the literature to denote turnover of the labor force. As Parker and Burton (1971) put it,

> Theoretically, a worker should be able to move to a superior job for which he is qualified even if the work force for that job is not being expanded--the envious worker need only offer his services at a lower rate than the going wage for the job, and he will displace a previous employee. In practice, workers seldom behave in this manner and only attempt to move to superior employers when these employers are actually seeking workers.

The statement by Parker and Burton reflects the thinking that workers will move from one job to another only if there is an opening elsewhere. It should, therefore, be expected that in periods of high economic activity, when presumably there are more job openings, attrition or turnover will be higher and vice versa. Ross (1958) found that the business cycle exerted a strong influence on the quit rate over time. He reported that 70 percent of the variations in the quit rate during the period from 1930 to 1956 could be explained by variations in the rate of unemployment. Ross further tested the thesis that turnover (quit rate) was associated with the opportunity to move to alternative jobs. Using the ratio of manufacturing employment to total employment to denote alternative employment opportunities for those employed in manufacturing (since quit rates were for manufacturing only), Ross found that more than 84 percent of the variation in manufacturing quit rates could be explained by alternative opportunities for manufacturing employees.

Thus, it can be said that the quit rate, or turnover, is directly related to the level of economic activity. An additional reason why quit rates tend to be low at the lower levels of business activity is that young workers with low seniority, who account for most of the voluntary mobility, tend to drop out of the labor force to a larger extent than older workers. This younger group is also more likely to be involuntarily unemployed than others who are less likely to be involuntarily mobile.

Parker and Burton, in their analysis of quit rates in manufacturing, also test the job opportunity thesis and include the unemployment rate as a measure of alternative opportunities in the economy as a whole. They also include the accession rate in manufacturing as another measure of opportunity, justifying its inclusion in the model on the basis that workers are more likely to quit their present jobs if other employers are hiring. In all 12 equations run by Parker and Burton, the coefficient of the unemployment variable was negative and highly significant, and the coefficient of the accession rate was positive and also highly significant.

While it is generally agreed that the quit rates react strongly to the level of opportunity--as measured by unemployment rate, accession rate, and relative size of manufacturing sector (for manufacturing quit rates only)--considerable discussion has focused on the secular--rather than the cyclical--movements in the quit rate. This discussion introduces new variables into the analysis: unionization; external economic shocks, such as wars, wage dispersion, and differentials; and the relative size of employment not on production lines.

Ross' analysis has already been referenced as having shown, through time, that the reduction in the ratio of manufacturing employment to total employment has been strongly associated with the secular decline in manufacturing quit rates. The effect of unionization on the turnover of the labor force was thought to be negative since stronger unions mean more pension plans, seniority rights, group insurance, etc., which tend to hold an employee in a particular job. Ross refutes this hypothesis in noticing that (1) most workers who quit their jobs are young and have not built up any substantial union benefits; and (2) older workers who quit their jobs probably do so for a host of other reasons stronger than seniority clauses and fringe benefits. Parker and Burton substantiate Ross' refutation of the hypothesis that unions have caused much of the witnessed immobility.

Ross attributes the secular decline in quit rates to the spread of unionism, which has given the worker an alternative to quitting when he is dissatisfied with his job (strike, grievance committee, etc.) and has also led to overall job improvement by removing many of the hazards of work and by reducing working hours. He notes further that a general "aging" of the labor force has been responsible for some of the decline over the period 1910 to 1956. The fact that manufacturing employment remained stable over this time period is an additional factor noted by Ross, since young workers--those with higher turnover

rates--tend to move to areas of expanding opportunity, leaving the manufacturing quit rates lower than they might have been had more younger workers been attracted. In Parker and Burton's analysis, the test of workers' incentives to quit their present jobs because of higher wages elsewhere showed alternative wages to be statistically nonsignificant in all but one of their equations.

Major economic shocks, such as wars, were also discussed by Ross and by Parker and Burton. When war years were separated from nonwar years through dummy variables, Parker and Burton found postwar periods to exert a relatively strong, negative influence on the quit rate. This finding was consistent in all equations employing the postwar dummy. Overall, Parker and Burton's equations explain from 95 to 99.7 percent of the variation in manufacturing quit rates by employing the variables discussed. They are, in summary: (1) intra-manufacturing wage dispersion; (2) manufacturing--all economy wage differential; (3) unemployment rate; (4) accession rate; (5) postwar dummy; (6) unionization; and (7) percentage of total employees in nonproduction work. Noticeably absent from Parker and Burton's analysis is a variable for average age of the work force in manufacturing--undoubtedly due to the lack of data. The effects of this variable are likely to have been included in the time variables; however, when time was included in the last set of Parker and Burton's equations (1949 to 1966), it proved to be statistically nonsignificant--even though the work force had aged somewhat over this period. One possible explanation is that the influx of women--who normally have higher turnover rates than men--into the labor force over this period tended to offset the downward trend in turnover rates for the labor force as a whole due to aging (U. S. Department of Labor, 1969).

CONCLUSION

As stated in the opening paragraphs of this report, the discussion of manpower planning, occupational education, and labor force participation had two objectives. The first objective was to examine the many factors that influence the work decision of several important groups in the labor force: women, minorities, and older workers. The review of the literature concerning these factors led to the conclusion that the decision to participate in the labor force is an extremely complex one.

For married women, the complexity of the decision, as Mincer points out, stems from the fact that they act within a family unit. A woman's choice to work in this environment is affected not only by the work versus leisure trade-off, but also by a third alternative--work in the home. Recent thinking also suggests that unpaid work in the home has investment properties in that time spent in training and educating one's child represents an investment in the child's future well-being.

Several events have led to past increases in married women's labor force behavior. Among the more important ones are rising women's wages, increased productivity of the housewife, changed attitudes towards working women and mothers, and increased opportunity for women to work, brought about, in large part, by a shift from the predominance of the manufacturing industry to the service industry.

The married woman's participation in the labor market is likely to increase because all of the relative trade-offs that determine the extent of her participation are likely to change in the direction of continued increases in proportions of women seeking work. Several explanations can be offered for this conclusion. First, it was empirically shown that women tend to respond more to their own wage levels than to their husband's income. This factor was further shown by Mincer (and was elaborated upon by Cain and Bowen and Finegan) to be responsible for the secular increase in the number of married women in the labor force. It is likely that women's wages will approach men's wages for the same occupation in the face of attempts to remove sex discrimination. For this situation to occur, women's wages will have to rise at faster rates than men's, which should increase the incentive for women to enter the labor force. The trend toward smaller families will also work to increase female labor force participation. Finally, the changing tastes and preferences of women in favor of work as a means of self-actualization and expression will tend to increase their numbers in the labor force.

Women, especially married women, possess particular sets of characteristics that make them unique in the labor market and that subject them to certain amounts of discrimination. Needless to say, women have not been alone in this respect; minority groups as well as older workers have been subjected to evaluation of their potential job performance on the basis of their group attachment. The results of discrimination

are obvious: females have lower labor force participation rates than men, blacks have lower rates than whites, and older workers are forced out of the labor market simply because they have reached the age of 65. In the few cases in which Negro female labor force participation rates are higher than white female rates, the rates per se disguise the fact that Negro females are employed in lower paying, lesser skilled, dead-end type jobs, as are, more than likely, the Negro females' husbands.

Minority groups are likely to experience somewhat the same effects as women, given the probability that the effects of discrimination will be lessened over time. Wages for minority groups and unemployment levels will more than likely approach the norm as both the rate and intensity of these groups entering the work force increase.

The elderly are also likely to occupy more dominant roles in the economic side of life. Proportionately, the importance of older workers is very likely to increase--at least to the year 2000--because of continued advances in medicine, shortened work life per job, and the declining birth rate.

These changes in labor force composition, if they are to result in a labor force of better quality which also has the capacity to be employed, must be dealt with by manpower and educational planners in anticipation of their occurrence. Of course, the shifts in composition of the population and the labor force have serious implications for the type of policy that will evolve, and the educational system will have to occupy a key role in insuring the effectiveness of any policy.

This point brings us to the concluding comments with respect to the second objective of this study--to explore the implications of changes in the labor market activity of the population for manpower and educational planning policy.

Specific policy can evolve only in reaction to or anticipation of future events. There are, however, several general recommendations that flow from this discussion. In order for an individual to be made employable, his own employability characteristics as well as those of the group with which he is associated may have to be uplifted. If the educational system provides a black worker with the necessary employability characteristics, but he is not hired because he is a black man, then perhaps the task of the manpower and educational planners is to educate the employer. It will also be necessary, however, to upgrade the quality of the entire black work force, since part of the reason not to hire a black worker in the past was rational; as a group, that is, the black man was less educated and less capable of performing on the job than his white counterpart. The problem here--one which is truly inescapable in attempting to raise the average level of any characteristic must be made continually higher than the group average. Therefore, an increased but constant amount of effort to upgrade the group's characteristics will not be sufficient; rather it will take an ever-increasing effort.

A second point with respect to policy deals with job characteristics and labor market characteristics. Labor market internalization and segmentation is fact, and identification of ports of entry as well as paths of progression through the various segments must be identified before proper educational and training policy can be discussed.

An additional point of concern is the question of job requirements themselves within the labor market. Have jobs themselves changed in such a way as to require that workers be more highly trained, or have employers merely upgraded jobs because people's tastes for and availability of education have been rising? If the latter case is true, then attempts to upgrade the employability characteristics of groups below the mean will be much more difficult--since the gap between what the group has in the way of employability potential (education, training, etc.) and what they need will tend to remain the same.

In cases in which the job requirements have indeed changed because of some internal technological change, for example, the manpower and educational planner's task is to provide the "right" quality and quantity of manpower to meet the needs of the production process. In light of expected developments in the composition of the labor force--proportionately fewer young people and more women and older workers--it may be necessary to redesign jobs so that they may be handled by women or by older workers.

In the past, a large portion of the gains in the productive labor force came from the ever-growing numbers of new workers entering the labor force each year. This continuously growing population (as well as forced retirement at 65) gave the labor force a great deal of flexibility which was needed in a time of rapid technological advance. The future, however, is certain to see continued technological advance, so that the need for a flexible labor force will continue to exist. The future is also likely to see an increase in the actual number of jobs in the economy. Thus, the questions that arise are: How are we to keep a relatively high degree of flexibility in the labor force? How are we to insure that there will be a labor supply of the right size to work the additional jobs that will be created over the rest of the century and into the next?

The authors have calculated that if the number of jobs grows at the historical rate of approximately 1.8 percent per year, there will be 140 million jobs available by the year 2000. However, given changes in the composition of the population that year and holding labor force participation rates constant at 1971 levels, the total labor force would fall short of estimated requirements by nearly 20 million. The authors further calculated that all female and older male labor force participation rates would have to increase by 50 percent for these groups in order to have an adequate aggregate labor supply.

Changes of this magnitude can come about only through proper planning and education. Certain institutions are likely to fall in the

process--or will have to be made to fall. Forced retirement, elimination of age and sex discrimination, elimination of the occupation of housewife, job redesign, expansion of part-time work opportunities, and provision for mid-career occupational changes through training and education are some of the more important changes that may have to be made. These are to be the task of the manpower and educational planners with respect to labor force participation in the years to come.

The implications for manpower and educational planners arise from the need to prepare the work force for future labor market conditions. By providing for more intelligent training and career decisions, planners can enhance job satisfaction and raise the quality and level of utilization of human resources. Planners, in addition to recognizing the determinants of labor force participation, will have to do several things to ease the current potential labor force into the world of work.

1. Planners will have to study and evaluate both the direction and magnitude of changes in the determinants of labor force participation.

2. Planners will have to determine the extent to which the anticipated changes will affect the labor force groups with which they are concerned.

3. Planners will have to devise methods of influencing the labor force in the direction of "needed" change. This last question undoubtedly is the most problematic because of the question of who will determine what changes are "needed."

Assuming that needed changes in participation can be agreed upon, however, several alternatives are available. Certainly, planners could publicize, advertise, and perhaps even cajole affected labor force groups into action by pointing out the negative consequences of their not reacting positively to change. Much of the research concerning labor force participation points out that people, in general, behave rationally in the labor market, and this fact could be used to help achieve the desired goals of a fully employed, highly productive, satisfied labor force. Providing economic incentives (or disincentives) to seek additional training or to enter a particular educational-career oriented program (or not to enter a particular program because of over-supply) appears as a very important means of achieving desired ends.

Jobs that people currently possess should be thought of as more than ways of earning a living. Methods of making a job a learning experience for both the new trainee and the person who has been employed at it for years must be found. The trade-offs between on-the-job training and formal schooling have for too long been thought of as necessarily being trade-offs. Planners of education and manpower needs must explore the possibility that the two could, and indeed should, be complementary.

A new approach to education that includes those people who have left formal education and are working must evolve. If, as Myers (1971) says, the private business sectors are "the major source of trained manpower in the U. S. labor force" and education supposedly is to be a continuous process, then why has education not played a more continuous role in the complete development of human resources? Myers also points out that some employers insist more than others upon training and development of human resources, and he points out that "there is often a gap between what the better firms do and what the average firm does." It seems quite clear that educators and manpower planners have a duty to see to it that such training is available to all who desire it. More of the responsibility for providing such training must fall upon the educational system.

In summary, the roles of planners of education and manpower are, to a large extent, dictated by the institutional limits of the market system, which include freedom of choice of occupation, industry, and location. The choice between participation and nonparticipation is also free. Some of the reasons why people opt in favor of the latter have been pointed out in this paper: discouragement due to lack of education, training, job opportunities, children, etc. It is possible that our currently existing institutions reinforce the barriers to entry into the labor market. To the extent that potential labor force entrants perceive the criteria for access to a particular labor market, they will exclude themselves from participation. This behavior tends to reinforce customary behavior on the part of the educational system and other institutions. No new demands are made of the old institutions, which are thereby lulled into a false sense of achievement.

People who drop out of the labor force because of discouragement do not necessarily drop into the educational system. Their discouragement, in fact, may be a function of their initial educational experience and subsequent reward (unemployment). The implication for planners under this set of circumstances is to initiate changes in the educational system such that people who drop out of the labor force in fact drop into the educational system automatically. There the nonparticipant can perhaps be retrained, reeducated to meet changes in job content and structure, and eventually placed back in the labor force--better trained, more productive, and happier than he was previously.

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TECHNICAL APPENDIX

The equations given below are those generated from analysis of labor force data using econometric techniques. They are presented below by author and research title without further comment. These are intended as supplements to the nontechnical presentation in the body of this paper and are presented primarily as a convenience to the interested reader. For full econometric and theoretical presentations, the interested reader is, of course, referred to the primary source.

* * * * * * * * * *

Dernburg and Strand (1966)

$$\left(\frac{L}{P}\right)_t = Am + \underset{(.0367)}{.9490}\left(\frac{E}{P}\right)_t + \underset{(.735)}{12.699}\left(\frac{X}{P}\right)_{t+2} - \underset{(695.4)}{5326.1}\left(\frac{1}{P}\right) + e_{t1}$$

$R^2 = .88$ Standard error of estimate = .000115

* * * * * * * * * *

Strand and Dernburg (1964)

For the period 1947 to 1962

$$\left(\frac{L}{P}\right)_t = A_m + \underset{(.0308)}{.8715}\left(\frac{E}{P}\right)_t + \underset{(.641)}{12.347}\left(\frac{X}{P}\right)_{t+2} - \underset{(419.4)}{3492.2}\left(\frac{1}{P}\right)_t + e_{t1}$$

$R^2 = .8138$ Standard error of estimate = .00227

For the period 1953 to 1962

$$\left(\frac{L}{P}\right)_t = A_m + \underset{(.0367)}{.9490}\left(\frac{E}{P}\right)_t + \underset{(.735)}{12.699}\left(\frac{X}{P}\right)_{t+2} - \underset{(695.4)}{5326.1}\left(\frac{1}{P}\right)_t + e_{t1}$$

$R^2 = .8766$ Standard error of estimate = .0026

Definitions for both Strand and Dernburg articles:

$(\frac{L}{P})_t$ = adult civilian labor force participation ratio in month t;

$(\frac{E}{P})_t$ = percentage of the adult civilian noninstitutional population employed in month t;

$(\frac{X}{P})_{t+2}$ = ratio of new unemployment-compensation exhaustions to the adult population two months after t;

$(\frac{1}{P})$ = reciprocal of total population.

* * * * * * * * * * *

Tella (1965)

$$(\frac{L + A}{P})_{i,t} = a + b_1 \frac{(E + A)}{P}_{i,t-1} + b_2 (\log T)_t$$

Definitions:

L = civilian labor force;
E = civilian employment;
A = armed forces;
P = noninstitutional population;
T = time;
i = labor force age-sex groups;
t = 1947 - IV to 1964 - II;
a = intercept.

The coefficients are in the order of the structural model given above.

Sex	Age	a	b_1	b_2	R^2
Male	14-19	103.07	.358 (.061)	-32.9 (4.2)	.91
Male	20-24	37.11	.464 (.039)	6.38 (2.02)	.70
Male	25-34	63.45	.202 (.032)	6.98 (.72)	.65
Male	35-44	91.07	.071 (.035)	--	.06
Male	45-54	82.73	.144 (.041)	--	.16
Male	55-64	48.60	.463 (.047)	--	.60
Male	65+	63.99	.742 (.077)	-25.1 (.72)	.98

Sex	Age	a	b_1		b_2		R^2
Female	14-19	35.11	.401	(.101)	-7.35	(3.14)	.65
Female	20-24	1.02	.445	(.114)	12.2	(1.8)	.46
Female	25-34	-5.73	.517	(.088)	11.2	(1.4)	.80
Female	35-44	23.62	.512	(.072)	21.2	(2.3)	.96
Female	45-54	-48.93	.688	(.096)	30.2	(7.7)	.98
Female	55-64	-55.32	.627	(.094)	32.2	(7.0)	.98
Female	65+	-1.36	.700	(.087)	2.15	(1.04)	.64

* * * * * * * * * * *

Regression Estimates of Intercity Differences in Labor Force Participation Rates for Males 25 to 54 Years Old for 1940, 1950, and 1960. Dependent Variable = Labor Force Participation Rate for Males, 25 to 54 Years Old.

		Independent Variables							
Year	Intercept	Unemployment %	Earnings ($100/yr.)	Other Income	Schooling (Completed Years)	Color (% Non-White)	South	R^2	Standard Error of Estimate
1940	98.6	-0.02 (.03)	+0.15 (.08)	-0.07 (.02)*	-0.23 (.17)	+0.01 (.01)	-0.45 (.43)	.29	.89
1950	94.2	-0.24 (.08)*	+0.20 (.06)*	-0.69 (.16)*	-0.06 (.18)	+0.00 (.03)	-0.80 (.59)	.51	1.09
1960	92.3	-0.24 (.06)*	+0.11 (.02)*	-0.36 (.10)*	+0.12 (.11)	-0.03 (.01)	-0.06 (.33)	.54	.82

* = significant at the 1 percent level.

Regression Estimates of Intercity Differences in Labor Force Participation Rates of Males Aged 65 Years and Older, 1960. Dependent Variable = Percentage of Males over 65 in Labor Force.

Year	Intercept	Unemployment	Earnings	Other Income	Schooling	Color	South	Marital Status	R^2	Standard Error of Estimate
1960	58.4	-1.62 (.24)*	-0.04 (.07)	-1.81 (.42)*	+2.05 (.84)**	+0.08 (.05)	-.78 (1.21)	-0.39 (.09)*	.62	2.93

* = significant at the 1 percent level; ** = significant at the 5 percent level.

Regression Estimates of Intercity Differences in Labor Force Participation Rate of Married Women with Husband Present, 1960. Dependent Variable = Percentage of Married Women in the Labor Force.

Year	Intercept	Unemployment	Demand	Supply	Female Earnings ($100/yr.)	Husband's Income ($100/yr.)	Other Income	Schooling	Children	Color (% Non-White)	South	R^2	Standard Error of Estimate
1960	52.4	-0.76 (.18)*	+0.75 (.14)*	-0.30 (.26)*	+0.37 (.12)*	-0.25 (.09)*	-1.27 (.29)*	+1.33 (.34)*	-6.08 (2.23)*	+0.09 (.05)	+0.28 (.93)	.71	2.18

* = significant at the 1 percent level.

Regression Estimates of Intercity Differences in Labor Force Participation Rates of Single Women 14 to 19 Years Old, 1960. Dependent Variable = Percentage of Single Women 14 to 19 Years Old.

Year	Intercept	Unemployment	Father's Income ($100/yr.)	Demand	Supply (%)	School Enrollment (%)	Color (% Non-White)	South	Age	R^2	Standard Error of Estimate
1960	33.8	-0.73 (.24)*	+0.13 (.08)	+0.04 (.16)	-0.48 (.33)	-0.88 (.09)**	-0.18 (.05)*	-2.76 (1.35)**	+0.41 (.11)*	.68	3.10

* = significant at the 1 percent level; ** = significant at the 5 percent level.