

Are Careers Still Stable and Life-long?
Stability and Heterogeneity of Employment Histories
in the United States, 1967-2005

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Abstract

This study investigates the trends of employment histories in the United States during 1967-1979, 1980-1989, and 1990-2005. Analyzing the changes in employment status of 32,195 respondents in the Panel Study of Income Dynamics, it shows that: (1) employment histories were more stable during 1990 to 2005 than earlier periods and were most diversified in the 1980s; (2) Women's employment histories were less stable and more heterogeneous than men's, so were white-collar careers compared with blue-collar careers; (3) The gaps in gender and occupation have both shrank, primarily driven by more women and white-collar workers experiencing stable careers; (4) Employment was more stable between age 30 and 50 than in younger or older ages; (5) Men and blue-collar workers spent more years in stable careers than women and white-collar workers. Instead of confirming that jobs become less secure in the post-industrial era, this study suggests an explanation of life course stages combined with employment history stages.

Key words: employment histories; post-industrial workplace; gender; occupation; optimal matching

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BACKGROUND AND RESEARCH QUESTIONS

This project investigates the degree of departure from the nominal, stable, full-time careers in the labor force of the United States over the past four decades. In recent years the diffusion of information technology, expansion of the service sector, and economic globalization have profoundly transformed production processes and employment relations in the labor market. Some scholars suggest that stable, full-time careers may have become less common than in the past (Aronowitz and DiFazio 1994; Moen and Roehling 2005). However, little empirical research has systematically examined whether and to what extent career patterns in the United States have changed. Sociological studies of employment histories have been sporadic and findings are largely based on small samples of professionals and other selective social groups. To accurately study this issue, a socio-demographic approach is needed to not only investigate employment histories across different social strata but also over an extended time span. In this study I ask two research questions: 1) Are employment histories in the US becoming increasingly unstable and heterogeneous overall? 2) What are the differences between women and men as well as among workers in different occupations with regard to the changes in their employment histories?

LITERATURE REVIEW AND HYPOTHESES

Employment Histories in Segmented Labor Market

Sociologists have studied careers and employment histories mainly through a structuralist approach which theorizes the mobility of the labor force as a response to labor demands,

reflecting unequal opportunities across labor market segments. For example, dual labor market researchers assume that the labor market consists of two distinct sectors, with the primary sector providing higher job rewards, better working conditions, and more opportunities for career advancement than the secondary sector (Doeringer and Piore 1971; Beck, Horan, and Tolbert 1978; Edwards 1979). Mobility is thus usually examined as *occupational careers* restricted within sector- or industrial- boundaries. Alternatively, internal labor market scholars have focused on *organizational careers* and traced promotions on predetermined job ladders by analyzing personnel records from specific firms or professions (e.g. Doeringer and Piore 1971; Sorensen 1977; Rosenbaum 1979; Konda and Stewman 1980; Althausser and Kalleberg 1981). In the internal labor market, entry is controlled, and different entry portals lead to distinct career paths. Moreover, a few scholars have studied *career lines*, paths linking occupations related to job transitions that are frequent among a group of workers (Spilerman 1977; Spenner et al 1980). Career lines neither need to exhibit an orderly pattern nor have to be restricted to the boundaries of any single firm, occupation, or sector, unlike occupational careers or organizational careers.

Overall, the structuralist approach focuses on careers in specific segments of the labor market such as the primary sector or the internal labor market, where careers are portrayed as continuous, upward, and orderly paths (Wilensky 1961; White 1970; Doeringer and Piore 1971). Nevertheless, it is unclear what work histories look like *outside* those segments, except that jobs in the secondary sector are presumed to be randomly distributed without necessary connections in function (Piore 1975).

Inspired by the structuralist approach, a modest amount of theoretical or empirical research has been done in the past two decades to study career patterns (Abbott and Hrycak 1990; Blair-Loy 1999; Blair-Loy and DeHart 2003; Han and Moen 1999; Halpin and Chan 1998; Stoval et al. 1996). However, almost all present studies have been based on small samples of specific social groups, such as 18th century German musicians (Abbott and Hrycak 1990), employees at Lloyds Bank (Stoval et al. 1996), and African American female attorneys (Blair-Loy and DeHart 2003). Yet it remains under-investigated what patterns of employment histories exist across all types of labor markets in the United States and how those patterns have transformed over time.

Employment in Change

This study focuses on the changing patterns of employment histories among the general population in the United States. Scholars who study post-industrial societies point out two trends that may impact working careers. On one hand, job security has become a problem for workers in all industries and occupations (Aronowitz and DiFazio 1994). On the other hand, more workers are able to adopt self-employment, corporate part-time employment, contract jobs, or freelance work as strategies to accommodate personal and family demands (Meiksins and Whalley 2002). Moreover, life course scholars have noticed that temporal sequencing in the life course has become more defined by variable timing rather than age-markers (Heinz 2003). Both the processes of entry into and exit from the labor market have been more prolonged and diversified. In response to the first research question, the above discussions lead to the following hypothesis:

H1: Employment histories have become less stable and increasingly heterogeneous across individuals.

However, workers from different social positions may experience this change unevenly. For example, life course researchers emphasize that women are more subject to career discontinuity in order to fulfill family obligations than men (Han and Moen 1999; Moen and Roehling 2005). In large firms or monopoly industries, continuous, upward, and orderly careers are more common than in other labor market segments (Doeringer and Piore 1971; Althausen 1989). Given the segmentation within the labor market, women, minorities, and immigrants tend to concentrate in the secondary sectors characterized by part-time jobs with low job security, low benefits, and slim chances for career advancement. If climbing the ladder of occupational success is primarily a privilege of a select group of mostly white, middle-class men (Moen and Roehling 2005), we should expect that

H2: Women have less stable and less homogeneous employment histories than men;

H3: Blue-collar workers' have less stable and less homogeneous employment histories than white-collar workers.

Research on post-industrial societies further implies that recent transformations in the labor market may impact white-collar, professional workers the most. For instance, permanent full-time jobs are being replaced with “contingent jobs” with reduced job security, lower compensation, and impaired working conditions (Benach et al. 2002).

Today, a growing number of white-collar workers whose employment was once more secure are faced with lay-off and downsizing (Aronowitz and DiFazio 1994). If a “floor effect” persists such that women and blue-collar workers fear less for downward changes in their employment than middle-class, professional men do, we should anticipate a convergence of the trajectories of employment histories between men and women as well as between white-collar workers and others:

H4: The gender divide in employment histories decreases over time, as fewer men hold secure, full-time jobs;

H5: The gap between workers in different occupations decreases over time, as fewer white-collar workers hold secure, full-time jobs.

DATA AND METHOD

Data

To test these hypotheses, I analyzed data from The Panel Study of Income Dynamics (PSID), a longitudinal study of a representative sample of U.S. individuals and families. Since 1968 the head of a sampled family was interviewed annually or bi-annually to report important household characteristics such as housing, household expense, and family composition, as well as important individual characteristics of each family member. Detailed information about employment has been collected for the heads and in most years for their spouses, but not for other family members. Therefore this study is restricted to household heads and their spouses or cohabiters who are treated equivalent to spouses as long as the cohabitation lasts longer than a year. In PSID the head of a

family was defined as the person aged 16 years or older and with the most financial responsibility for the family. There are 16,391 men and 18,061 women who have ever been heads or their spouses between 1968 and 2005. Selecting people who were working age (age 16 to 70) for ten or more years within the PSID observation window, 1967¹ to 2005, I restricted my sample to 32,195 heads or their spouses who were born between 1907 and 1979. Together, these men and women represent the most economically active adults in the American labor force from the late 1960s to the present.

As employment rates might often fluctuate with national economy, two primary economic recessions that peaked in 1980 to 1982 and in 1990 to 1991 (Bureau of Economic Analysis, 2001) were used to divide the span from 1967 to 2005 into three *periods*---1967-1979, 1980-1989, and 1990-2005. In order to reveal their changes at different times, employment histories were compared by period. The impact of economy on employment may vary among different generations of workers who were in different stages of life cycle and employment histories. Therefore, I classified the 32,048 people into five *generations* marked by Schuman and Scott (1989): Pre-war cohort (born 1907-1927), Post-war cohort (born 1928-1945), Older baby boomers (born 1946-1954), Younger baby boomers (born 1955-1964), and Generation X cohort (born 1965-1979).

An employment trajectory was mapped for each individual in the sample based on his or her primary employment status every year. This study considers five employment statuses: 1) employed full-time, 2) part-time, 3) unemployed, 4) temporarily laid off or on leave, and 5) outside the labor force. Given that people are in varying ages and

generations, their employment histories in this study differ in length. The longest trajectories cover all 39 years. People from the Pre-war generation, who were born between 1907 and 1927, aged 48.9 years in 1967 with employment histories of 18.88-years long on average. Those born between 1928 and 1945 (the Post-war generation) had the longest employment trajectories within the 1967-2005 time span----19.69 years. Not surprisingly, Generation X, the youngest generation, had the shortest employment trajectories with average length of 9.91 years (see Table 1).

[Table 1 about here]

Similarly, every year a person's occupation at each interview is also known. A person was coded as a white-collar worker if there are more years holding white-collar jobs than blue-collar jobs in his or her occupation trajectory. White-collar workers are professionals, technicians, managers, officials, proprietors, self-employed businessmen, as well as clerical and sales employees. Blue-collar workers include craftsmen, foremen, operatives, laborers, service workers, farm workers, farmers, people on military service, and others. In this study, 56% of the people were white-collar workers, slightly more than blue-collar workers (44%). In terms of generation, the largest group was the older cohort of baby boomers who are about a quarter of the sample. It was followed by Generation X, Baby boomers cohort 1, and Post-war generation. The Pre-war generation (12%) was the smallest group. Men and women were nearly evenly distributed although family heads are disproportionately male (65%).

If jobs become less secure and fewer people are employed full-time for a substantial length of time (Hypothesis 1), we should expect the segments of employment trajectories in the period 1967-1979 less stable and more diversified than those during 1980-1989, even more so than those in 1990-2005. This trend should be observed even after taking generation, gender, and occupation into account. If Hypotheses 2 and 3 hold, then regardless of period and generation, women's employment trajectories would fluctuate more often and to a larger degree than men's. So do white-collar careers when compared to blue-collar careers. Finally, these differences in gender and occupation are anticipated to decrease with period, accounting for generation (Hypotheses 4 and 5).

Method

In this study the changes in employment histories in the United States are investigated by comparing a person's employment trajectory with the stable, full-time trajectory in each period. This comparison is meaningful as this type of trajectory represents how people tend to perceive careers. Earlier sociological research about labor market segmentation usually portrays employment histories as orderly and upward career ladders (Wilensky 1961; Doeringer and Piore 1971; Kalleberg and Sorensen 1979; Althausen and Kalleberg 1981). The assumption underlying this stereotypical career path is that a worker is continuously full-time employed throughout his working age without any family obligation. Despite its limitations in capturing women's employment histories and those of workers in disadvantaged labor market segments, this stereotype remains central to not only researchers but also policy makers and the public (Moen and Roehling 2005). In this analysis, a full-length trajectory of a stable, full-time career can be operationalized as

$t_1=f, t_2=f, t_3=f, t_4=f, \dots, t_{39}=f$, where f = full-time employment.

The degree to which an employment history departs from this normal career path was assessed as a distance score by *Optimal Matching Analysis (OMA)*. Widely applied in computer science, biology, and other disciplines, OMA is a method to estimate the dissimilarity between two sequences, such as two DNA chains, by counting the steps of transforming one sequence into the other. The more steps one needs to reach two identical sequences, the more the difference between the sequences under comparison. Optimal matching analysis enables researchers to condense the multiple dimensions of a sequence, such as the states in numerous time points in an employment trajectory, into one single score without losing substantial information, which allows for easy comparisons among sequences. Optimal matching is computationally intensive for a large sample of cases. Therefore, compared with a design that requires computing distance score for any pair of employment trajectories in the sample, this study that compares each employment trajectory to a single reference career path has the advantage of significantly reducing the amount of computation in OMA.

I focus on two measures of employment histories based on the distance scores derived from OMA. First, the *mean* of distance scores in a period indicates the average degree of dissimilarity between employment history segments in that period and the stable, full-time careers. Second, the *interquartile range (IQR)* of distance scores measures the level of heterogeneity among those employment trajectories from one another. Large mean and IQR are evidence for instability and heterogeneity of employment trajectories.

To track the changes in employment histories over time, I compared the distance scores by time period. The hypothesis of a trend toward unstable and heterogeneous employment histories predicts monotonic increase in mean and IQR of distance scores along the three periods from 1967-1979, 1980-1989, to 1990-2005. It also predicts that this trend is consistent across five generations, even after accounting for gender and occupation. The same approach was adopted to compare men and women as well as white-collar and blue-collar workers.

As employment trajectories in this study varied in length and started in different years, each trajectory was compared with a stable, full-time trajectory with the same length, starting and ending points. For example, as illustrated below, Person 1A began with a part-time job in 1968 but was unemployed after two years. Her trajectory ended in 2003 when she was full-time employed. Her reference trajectory was 1B, a person who started in the same year but stayed on full-time employment until 2003. Similarly, Person 2A was compared with Person 2B. In cases with missing employment spells, such as the missing employment status in 1969 in Person 3A's trajectory, the reference was a stable, full-time trajectory with missing value in the same year (Person 3B).

	1967	1968	1969	1970	...	2002	2003	2004	2005
1A		p	p	u	...	f	f		
1B		f	f	f	...	f	f		
2A	o	o	o	o	...	o	o	o	o
2B	f	f	f	f	...	f	f	f	f
3A		p	.	p	...	f	f	t	
3B		f	.	f	...	f	f	f	

f=employed full-time, p=employed part-time, u=unemployed, t=temporarily laid-off, o=out of labor force.

The distance score in OMA is estimated by counting the steps of inserting, deleting or substituting elements in a sequence when transforming it into another one. Based on the “cost” attached to each insertion, deletion, or substitution, the degree of dissimilarity of sequences is approximated as the minimum total cost of transforming, given that there are usually more than one way of doing that (for introductions about OMA refer to Abbott and Tsay 2000 as well as Stovel and Bolan 2004).

Because each employment trajectory in this study was compared with a stable, full-time career of equal length, only substitutions were conducted (see Lesnard 2006 for methodological discussions about the advantages of using substitution over insertion or deletion in comparing sequences of equal length). Moreover, the substitution cost of replacing an employment status A with status B was set as the inverse of the frequency of transitions between A to B in the data. Therefore, transitions that occur more often were considered less 'costly', which might contribute to a small distance score at last (Rohwer and Pötter 1999: §6.7.2.5). Because the spans of three time periods differed and longer trajectories had larger possibility of departing from their reference trajectories, I standardized the distance scores calculated in OMA and divided them by the number of years in corresponding time periods (i.e., 13 years for Period 1, 10 for Period 2, and 16 for Period 3).² Optimal matching analysis was conducted in computer program TDA (Rohwer and Pötter 1999; Schmidheiny 2001).

RESULTS

Large distance scores imply high degree of dissimilarity from the stable, full-time trajectory. In this study, a person who spent all 39 years outside the labor force, such as

Person 2A on P.11, was estimated to have a distance score 1.920. Instead, it was 0 for someone like Person 2B whose trajectory was exactly the same as the stable, full-time career. Period-wise, Person 2A's distance scores are 1.969, 1.921, and 1.896 for the three time periods, respectively.

Figure 1 and the right panel of Table 1 describe the means and interquartile ranges of period-specific distance scores for the whole sample as well as by generation, gender, and occupation. One noticeable trend among the 32,195 family heads or their spouses during 1967 to 2005 was the decrease in distance from the stable, full-time career path in Period 3 (Plot 1, Figure 1). Their distance scores slightly climbed up from 0.61 to 0.68 in the first two periods but declined to 0.37 in Period 3. In other words, people were more likely to have full-time jobs and stable employment after 1990, compared with three or four decades ago. Similar patterns were found in almost all generations (Plots 2-6). For the Pre-war generation and the younger baby boomers, the distance scores in Period 3 dropped to a level comparable to those in Period 1.

[Figure 1 about here]

The IQR measures the degree of heterogeneity among employment trajectories. Contrary to Hypothesis 1 about larger diversity in employment histories over time, this study reveals that employment trajectories were most diversified during 1980-1989, the years between those two major economic recessions. Combined or for each generation, the bars of IQRs were the widest in that period.

However, the most interesting findings are about the differences between men and women or workers in different occupation categories (Plot 7, Figure 1). As predicted by Hypothesis 2, women's employment histories were less likely to resemble the stable, full-time careers than men's and more heterogeneous from each other, regardless of periods. The gender gaps were indeed shrinking as the differences between men and women in mean distance scores and IQR's declined along three periods (Hypothesis 4). Yet the pattern was primarily driven by more women holding stable, full-time work rather than fewer men having this type of jobs, the "feminization of men's careers" (Fondas 1996).

Surprisingly, white-collar workers were found to be less likely to resemble the stable, full-time trajectory than the blue-collar workers, even before the post-industrial era, contrary to Hypothesis 3 (Plot 8). The gaps between them decreased as the stable, full-time trajectories became more prevalent over time in both groups, but in a faster pace among white-collar workers, which was partly contrary to Hypothesis 5.

[Figure 2 about here]

Figure 2 shows the distance scores by age of 150 randomly selected person-age observations. For all those cases, combined or by generation (Plots 1-6), the lowest distance scores occurred during age 30 to 50. Before or after this middle age, distance from the stable, full-time trajectory was larger. People in Generation X tended to achieve stable employment upon passing age 25 whereas the older baby boomers, small distance did not occur until after age 40.

The employment histories of men and women were also most stable during the middle ages (Plot 7, Figure 2). However, women's distance scores took off at earlier ages than men. In other words, they spent fewer years on stable employment than men. The same pattern was found between white-collar workers and blue-collar workers (Plot 8). Blue-collar workers spent more years on stable careers than white-collar workers.

CONCLUSION

Previous studies have suggested that employment history patterns have significant consequences for individual's timing of retirement, health, well-being, and quality of life (O'Rand and Henretta 1982; Pavalko and Smith 1996; Han and Moen 1999; Huang and Sverke 2006). This project is one of the first longitudinal studies to systematically investigate trends in employment histories in a general American population.

As this study uncovers, the stable, full-time careers have become more widespread in the United States since the early 1990s in general rather than the opposite. Employment trajectories tend to be most diversified during the 1980s, regardless of generation. As more women and white-collar workers began to follow the stable, full-time careers, the differences between genders or between workers with white-collar or blue-collar careers have decreased.

Scholars who study post-industrial societies have raised concerns about job insecurity and related negative impacts on worker's well-being (Aronowitz and DiFazio 1994; Benach et al. 2002). Workers in some labor market positions may certainly undergo

tremendous job insecurity when facing the dramatic changes in the economy. This study implies that employment has not become less secure than before, at least if we examine the American labor force as a whole. Some life course researchers pointed out that life transitions have become prolonged with increased variation in timing and order in post-industrial societies and thus life course paths are more heterogeneous than before (Heinz 2003). Evidence from the present study partly supports this argument. On one hand, what remains underlying the fluctuation of employment histories still are age-graded life course transitions, such as transition to adulthood, initial and trial stages of employment histories, aging, and retirement. On the other hand, diversity among employment trajectories did not increase monotonically as predicted. Rather, it peaked during 1980-1989 and then declined after the major economic recession in early 1990s.

In summary, this study suggests that life course changes through life stages combined with employment history stages have driven the stability and heterogeneity of employment histories in the United States during the past four decades. More sophisticated analysis needs to be carried out in the future to study workers in different sectors, industries, or regions separately. Moreover, other patterns may be observed if job changes instead of transitions in employment status are examined.

Notes:

1. Although the PSID respondents were first interview in 1968, their employment status in 1967 can be obtained from the 1968 questions about last year's employment.
2. All distance scores reported in this session, including table and figures, were standardized in this manner.

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**Table 1. Distance from Stable, Full-time Careers: PSID Employment Trajectories
in Three Time Periods: 1967-1979, 1980-1989, and 1990-2005**

	sample size	% sample	average age (years)				length of employment trajectory (years)	Standardized Distance Scores *				
			in 1967	in 1980	in 1990	in 2005		Period	mean (stability)	interquartile range (heterogeneity)		
			p25	p75								
All	32,193	100%	37.4	50.4	60.4	46.9	15.71	1	0.61	0.12	1.03	0.91
								2	0.68	0.16	1.21	1.06
								3	0.37	0.00	0.54	0.54
Generation												
Pre-war (born 1907-1927)	4,020	12%	48.9	61.6	70.8	83.3	18.88	1	0.88	0.14	1.60	1.46
								2	1.17	0.46	1.92	1.46
								3	0.87	0.47	1.19	0.71
Post-war (born 1928-1945)	5,720	18%	30.8	43.2	53.1	67.4	19.69	1	0.74	0.12	1.48	1.36
								2	0.66	0.00	1.33	1.33
								3	0.54	0.09	0.81	0.73
Older baby boomers (born 1946-1954)	6,708	21%	19.2	29.6	39.7	54.7	17.79	1	0.55	0.12	0.87	0.75
								2	0.57	0.00	1.04	1.04
								3	0.28	0.00	0.41	0.41
Younger baby boomers (born 1955-1964)	8,374	26%	na	21.1	30.6	45.5	14.90	1	0.28	0.12	0.36	0.24
								2	0.62	0.16	1.04	0.89
								3	0.28	0.00	0.42	0.42
Generation X (born 1965-1979)	7,371	23%	na	na	21.4	32.7	9.91	1	na	na	na	na
								2	0.56	0.19	0.77	0.58
								3	0.26	0.00	0.36	0.36
Gender												
Men	15,423	48%	38.6	51.6	61.6	46.7	14.48	1	0.28	0.00	0.36	0.36
								2	0.42	0.00	0.62	0.62
								3	0.24	0.00	0.32	0.32
Women	16,770	52%	36.6	49.6	59.6	47.1	16.84	1	0.87	0.24	1.51	1.27
								2	0.90	0.19	1.55	1.35
								3	0.49	0.10	0.71	0.61
Occupation												
White-collar	17,935	56%	38.2	51.2	61.2	48.0	17.99	1	0.80	0.15	1.45	1.30
								2	0.84	0.16	1.54	1.38
								3	0.47	0.09	0.71	0.63
Blue-collar	14,258	44%	36.2	49.2	59.2	45.0	12.84	1	0.34	0.00	0.48	0.48
								2	0.43	0.00	0.66	0.66
								3	0.22	0.00	0.31	0.31
<i>Notes:</i>												
na: Not available.												
* Standardized distance scores are optimal matching distance divided by the number of years in corresponding period. The distance of never-employed trajectory from stable, full-time career is 1.969 in Period 1, 1.921 in Period 2, and 1.896 in Period 3.												

Figure 1. Distance from the Stable, Full-time Career
Mean and Inter-quartile Range

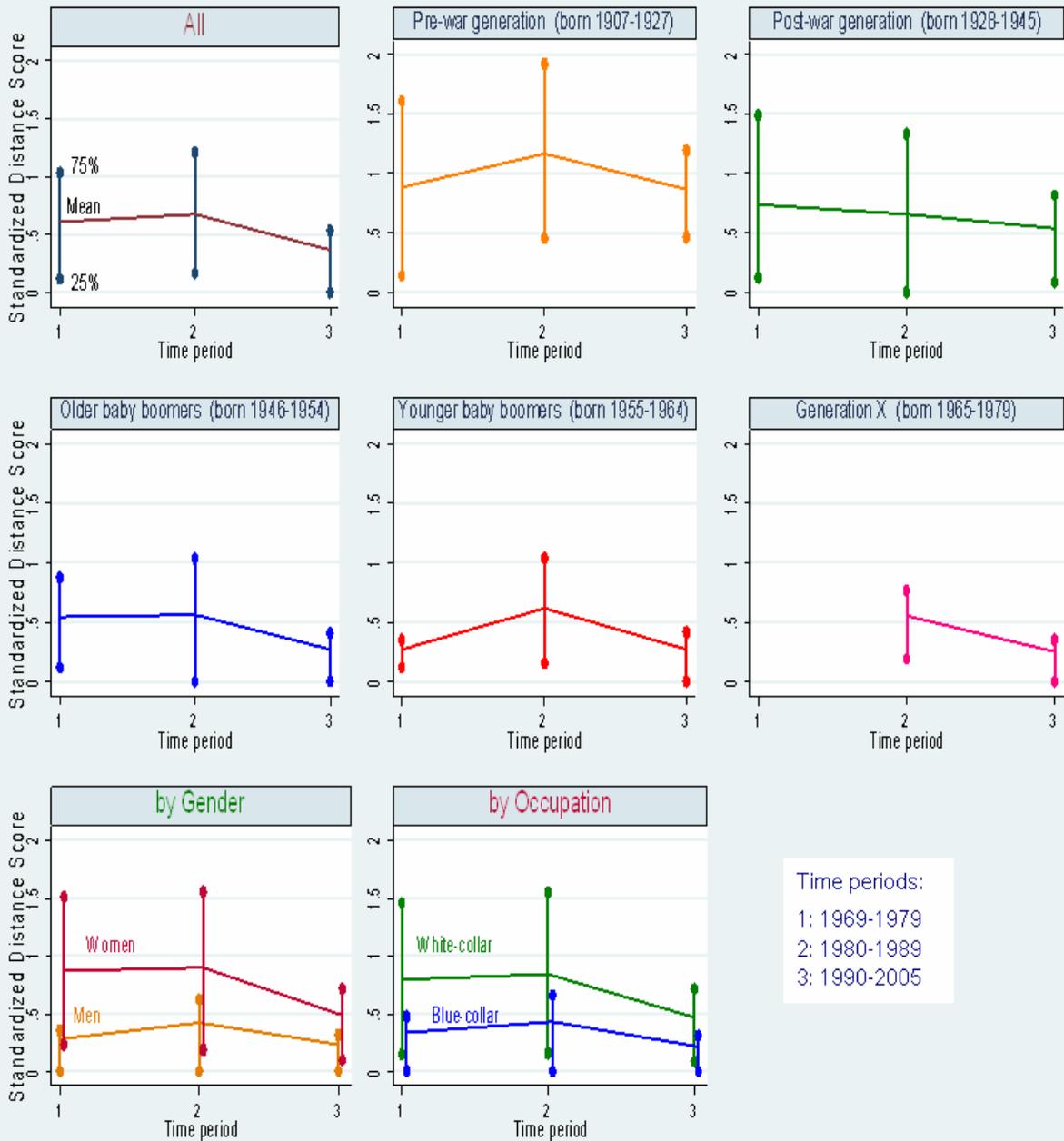


Figure 2. Scatter Plots of Distance Score by Age
Random Sample (N=150)

