ABSTRACT
        The basic objective of the study was to determine
whether discrimination is operative in the training component of the
WIN program, and to develop and utilize models for measuring its
dimensions. The study concludes that no evidence of racial
discrimination in WIN training allocations is observable but
substantial evidence exists that women are not being referred to WIN
training slots on the same basis as men, even after taking account of
previous background and that the origin of the discrimination is not
clear. These conclusions were reached after a statistical model was
formulated for analyzing the WIN employability process as applied to
client data collected through personal interviews at 29 urban WIN
sites during the summer and fall of 1971. (AG)

UNIVERSITY OF MARYLAND
COLLEGE PARK, MARYLAND 20742

College of Business and
Public Administration

Department of Economics

The Allocation of Training Resources
in the WIN Program

Final Report

on work completed under

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by

Bradley R. Schiller
Assistant Professor
of Economics

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I. Introduction and Summary

The basic objective of the research study has been to determine
whether discrimination is operative in the training component of the
WIN program, and to develop and utilize models for measuring its dimen-
sions. The motivation for the research emanated from a desire to enhance
understanding of where and how discriminatory obstacles are imposed
upon disadvantaged workers and what role, if any, the Federal govern-
ment plays in this process as a result of training program administra-
tion. In this respect, we have endeavored to define the concept
of discrimination, translate that concept into workable measures, and
analyze data available from a national sample of urban WIN programs.
As a result of these efforts, we have concluded that:

> •no evidence of racial discrimination in WIN training
> allocations is observable, i.e., blacks and whites are
> referred to WIN training opportunities on an equal basis.

> •substantial evidence exists that women are not being
> referred to WIN training slots on the same basis as men,
> even after taking account of previous background.

While the observed difference between male and female WIN
clients appears to provide prima facie support for the charge of sex
discrimination, some caution is necessary in interpreting this observa-
tion. First we must recognize that training choices are the result of
a joint appraisal by the client and the WIN staff. Hence, differentials
in training allocations may stem from both socialized occupational
preferences on the part of WIN trainees and WIN staff decisions, and
we have no way of disentangling the two causes with the data at hand.
While occupational preferences expressed by female clients may have been
molded by a discriminatory society, it is not clear that WIN can
or should try to overcome such perspectives. Moreover, "independent"
WIN staff decisions may be based on assessment of job-opportunities
available to women in the local area, and thus also be expressive of
community attitudes and labor-market realities. Under such circumstances

it is difficult to isolate the degree of overt discrimination occurring
in the program or identify its independent impact on labor market
outcomes. Nevertheless, we must also recognize that the observed
training differentials, whatever their cause, serve to maintain, extend,
and justify discrimination which already exists on the job.

Unfortunately, our observations provide little guidance to a
WIN program administrator who must choose between a discriminatory
training curriculum which leads to sex-typed jobs and a nondiscriminatory
training curriculum which leads to employer discrimination and no job.
We cannot resolve this dilemma nor do we believe that a single decision
rule will be adequate. It is important to address the issue directly,
however, particularly since improved labor markets and program design
(e.g., WIN II) may create opportunities which might be denied to female
WIN clients on the basis of their training experiences. Improved
training opportunities for women could contribute significantly to a
reduction in welfare rolls and costs if and when better job slots
become available.

II. Analysis of Discrimination

While nearly everyone recognizes that discrimination exists in
the educational, training, and labor markets, few attempts have been
made to operationalize the concept of discrimination or to measure the
relative impact of discrimination in each market. Yet, such measurements
are essential to the effective formulation of public policies. For
example, the observations that discrimination diminishes average black
earnings by $3,000 per year or average female earnings by $4,000 are
important, but in themselves provide few specific policy guidelines.*
What we really need to know is how much of this earnings loss takes
place in the schools, in training institutions, or in job markets and
how the discriminatory treatment occurs. Provided with such information,

*These figures are based on mean earnings for 1970, as reported
by the Census. (See Current Population Reports, Series P-60, No. 80,
1971).

we can focus Manpower and Equal Opportunity policies on areas of
greatest potential impact. Without such information, we risk the
waste of program resources and a perpetuation of race and sex differ-
entials in socio-economic status.

(A) The Concept

The concept of discrimination has been used in a variety of
different contexts and often in inconsistent ways. To some observers,
all inequalities in status are regarded as dimensions of discrimination.
To others, discrimination refers to inequities involved in the process
of attaining a given status. The debate, in other words, revolves
around distinctions between results and processes.

In this report, we use the term "discrimination" to refer to
processes leading to a job acquisition. In particular, we seek to
determine whether the way individuals are treated in the WIN training
process is uniquely related to their sex or race, and therefore if
discriminatory treatment is operative. Observation of labor market
results for WIN graduates may suggest the presence of such treatment,
but cannot confirm the existence of discrimination in the absence of
process analysis. Thus, knowing that black and female WIN graduates
attain lower job status than white and male clients is suggestive of
discrimination, but not a sufficient basis for confirming its existence
or identifying its location.

In more specific terms, we would argue that discrimination
exists in WIN procedures when training supervisors allocate available
slots on the basis of sex or race or when placement officers refer
clients to jobs on the same criteria and no objective basis for such
treatment can be established. We would argue, then, that a black WIN
client has been discriminated against when comparable white clients
are given training in better occupations or referred to higher status
jobs after receiving identical training. The same kind of analysis
could, of course, be applied to other manpower training programs
(e.g., M.D.T.A.).
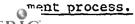
(B) Measurement Techniques

The complexities inherent in the concept of discrimination surface readily when an effort is made to apply the concept to a specific policy issue. How, for example, can we measure what is "better" or what is "worse?" How can we identify "objective" criteria in decision-making processes, and relate their use to process results? How can we identify "comparable" job-seekers or training candidates?

There is no set of measurements which can be applied generally to all studies of discrimination. We can, however, formulate some standard criteria for process analysis. First of all, some quantifiable indices of end-results must be established which are capable of distinguishing between performance results. Second, an effort must be made to identify factors which are causally related to those results, i.e., the variables that may alter performance outcomes. Third, a process model must be formulated which can measure the influence of these input variables. And finally, the analyst must determine which variables are "objectively" influencing process outcomes and which are reflecting subjective perceptions, i.e., distinguish the objective from the discriminatory bases.

The general guidelines for identifying and measuring discrimination can best be illustrated in a specific context. We are, of course, interested in the WIN training process and have applied the guidelines to that problem. The following section demonstrates how our process analysis proceeded.

(C) Application to WIN Training

The WIN program can be viewed as comprising two distinct processes. The first process may be described as the preparation of individuals for employment. The employability process involves the orientation, counseling, education and vocational training of individuals so as to prepare them for job search activity. The second process involves the identification of job openings and the placement of employable individuals therein. These activities, which include job development and placement assistance, may be referred to as the placement process.

It is important to distinguish between the employability and placement processes because each process involves a distinct set of outcomes, performance criteria, and most often, personnel. In addition, success in one process is not always correlated with success in the other. Thus, WIN might be very successful in preparing individuals for employment, but fail to place many clients because of a generally high rate of local unemployment. On the other hand, an ample supply of job vacancies may yield very good results for the placement process even in the absence of much effort in the logically-antecedent employability process.

Most of our attention in this report is focused on the employability process as it best reflects the thrust of activity in WIN-I. The outcomes of the employability process are also less sensitive to labor market vicissitudes, and therefore provide more of an insight into the attitudes and actions of WIN personnel. Finally, the employability process remains a key dimension of what happens later, i.e., whether clients actually move into jobs.

(1) Identification of Outcomes

Analysis of discrimination in the employability process is impeded by the lack of readily identifiable outcome measures. The placement process has some fairly clear performance criteria, namely the number and quality of jobs obtained. The employability process, however, produces only "employable" trainees, an elusive outcome. To sharpen our analysis, we have concentrated on the training component of the employability process, and used training status as the basic measure of output. In particular, we have endeavored to determine whether or not a client received training and how worthwhile that training was.

The difficulty in this approach lies in the determination of the "worth" of any particular training course. The value of training can be measured in many ways, including prestige, satisfaction and expected monetary pay-off. We have chosen to gauge the value of training on the last criterion, namely its expected labor market pay-off.

Our choice is dictated by the observation that WIN is intended to move individuals from welfare to employment, and that participants voluntarily enter the program largely in hopes of such a pay-off.

To ascertain the expected monetary pay-off associated with alternative WIN training slots, we determined the median income received by people in the occupation for which training is provided. On the basis of 1970 census compilations, we concluded, for example, that clerk-typist training is more valuable than cosmetologist training because clerk-typists have a median income ($6,500-$7,500) which is substantially higher than the median income of cosmotologists ($2,500-$3,500). Thus, an individual trained to be a clerk-typist confronts a higher expected income than an individual trained to be a cosmotologist.

Following this procedure, we matched all of the training courses pursued by WIN clients with the median incomes for those occupations, as detailed in the 1970 census. As a result, we were able to rank the training slots in terms of monetary worth and use those rankings as an index of outcomes. Our inquiries led to the identification of seventy distinct training courses and the summary ranking presented in Table 1.

(2) Identification of Causal Factors

The allocation of training slots among WIN clients is based on a wide range of factors, including the availability of slots, clients' expressed occupational goals, clients' previous work experience, client characteristics, and the subjective perceptions of WIN training specialists with respect to all of the above and labor market opportunities. Unfortunately, we cannot completely isolate and measure each of these factors. Instead, we must rely on a much smaller set of factors which are available in client and program records and from limited personal interviews. The factors available for study include (1) client demographic characteristics, (2) prior labor market experience, and (3) prior educational and training experiences. More specifically, the variables we have identified as available and potentially influential in the training allocation decision include:

    1. Sex
    2. Race
    3. Age
    4. Number of pre-school children
    5. Education
    6. Length of time on welfare
    7. Previous job experience
    8. Previous training experience

(3) Specification of Causal Model

In seeking to conceptualize the relationship between the
inputs and outputs specified in our description of the employability
process, we have been led to adopt a multivariate focus, i.e., one
which allows for the simultaneous impact of many variables. In particu-
lar, we have chosen to describe the employability process within the
abbreviated context of a linear regression structure. Although the
linear regression structure is not particularly unique, we see no justi-
fication for using other techniques in the absence of more suggestive
data. In our basic employability process analysis, the expected value
of training serves as the dependent variable, while the causal factors
listed above are the independent variables. Thus, our basic analytical
model takes the form:

Expected Value of Training $= a + b_1 x_1 \div b_2 x_2 + \ldots b_8 x_8$

(4) Identification of Discriminatory Factors

Among those variables which might particularly influence
training allocations, we have a responsibility to identify those that
are "discriminatory." In a strict sense, of course, all of the
variables could be said to have discriminatory impact, as the presence
or lack of any causal characteristic will alter an individual's
training allocation. Thus, one could argue that individuals with
little education are discriminated against because people with more
education get better training slots and jobs. However, we find this
usage of the term 'discrimination' to be too general and inharmonious

with social discourse. Accordingly, we focus on the impact of a
client's race or sex on the training decision as the most useful
measure of discrimination, and regard the impact of the other vari-
ables to be 'objective,' in the sense of nondiscriminatory. We must
take care to note, however, that because our model includes only a
subset of the potential influences on the training allocation, specific
parameter values must be interpreted with caution; we will return to
this point in paragraph F.

(D)   The Scope of Observation

The statistical model we formulated for analyzing the WIN
employability process was applied to client data collected through
personal interviews at 29 urban WIN sites during the summer and ?
of 1971. The original survey was carried out by Pacific Training d
TA,[*] and the data later made available to us. All of our find......
thus relate to the WIN-I program.

In reviewing the data available from the earlier s` y, we
discovered that one data item was missing; namely, the k? of training
received by each enrolee, an essential ingredient in our employability
process model. Accordingly, the decision was made to contact those
WIN sites which were the source of the original data base. Given the
time that had elapsed since that earlier study, it was also hoped that
the data base could be supplemented by information on which earlier
participants had by now completed their training curricula. Letters
requesting additional data were sent to 30 WIN projects during the
first two weeks in September 1972 with a follow-up letter sent in
November to those projects slow to respond. This supplemental data
collection effort ultimately resulted in responses from 29 of the sample
cities, with data supplied on 506 of the trainees (97 percent of the
original sample).

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[*]Pacific Training and Technical Assistance Corporation, The
Impact of Urban WIN Programs, May 1972 (DOL Contract No. 51-09-70-10).

As a result of our supplemental data collection effort, we discovered that only 307 of the 506 former WIN clients had actually received any vocational training. While not even all of these individuals completed their training curriculum,[*] they became the primary focus of our study, as they at least reflected the outcome of a training allocation decision.

(E) Basic Findings

We began our analysis of the assembled data by cross-classifying the sample population by vocational training status, sex, and race. The basis for our training status rankings was described in section II-C above. The resultant index includes nine classifications, generally demarcated by $1,000 median income ranges. The index, together with the distribution of trainees across the occupational rankings, is depicted in Table 1.

What is of immediate interest to our present study is the distribution of training slots by sex and race. As we proceed to look at the relative occupational training status of the sample subjects by sex and race, several interesting observations stand out. Consider the differential experiences of men and women for example. The average occupational rank of the training received by men is 5.29, the equivalent of occupations with expected incomes around $6,000. Women trained by WIN, on the other hand, manifest an index rank of only 3.92, representing jobs in the $4,500 median income range. Accordingly, were the

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[*] The Win-I reporting system does not distinguish clients who enter and complete a training curriculum from others who receive placement assistance only. Accordingly, it is not possible to evaluate the training components of WIN-I based on official program data. This weakness in the data system raises serious questions about evaluations that rely on such data.

Table 1. Occupational Distribution of Training Slots for WIN Participants by Race and Sex.

Rank/ Median Income	Occupational Description (selected examples)	Sex		Race		
		M	F	W	B	All
	None	39	160	50	149	199
1. $1 - 2500	seamstress, alteration & tailoring, domestic	0	5	1	4	5
2. 2501-3500	cashier, nurses aide, cosmetologist, para psych aide	2	50	11	41	52
3. 3501-4500	dietician, typist, LPN, clerical	1	92	26	67	93
4. 4501-5500	medical & dental tech., secretary, cook, barber	8	27	16	19	35
5. 5501-6500	bookkeeper, auto mech., TV repair, RN, operatives	18	21	21	18	39
6. 6501-7500	multi clerical, clerk-typist, clerk-steno., baker	3	57	12	48	60
7. 7501-8500	elem & sec teachers, woodworkers, postal workers, mechanics	4	8	7	5	12
8. 8501-9500	electrician, craftsmen, draftsmen, journalism	3	2	4	1	5
9. 9501+	accountant	2	4	3	3	6
Total Number		80	426	151	355	506
Average Rank, all persons		2.71	2.45	2.98	2.28	2.48
Average Rank, persons with training		5.29	3.92	4.46	3.97	4.13

NOTE: Median incomes are based on 1970 Census compilations.

level of WIN training a significant determinant of later earnings, female
trainees would be at a substantial disadvantage, as their expected income
is approximately $1,500 less than their male counterparts.

The same kind of training status differentials are not nearly so
evident in comparisons of black and white trainees. White trainees do
receive higher status training than blacks, but the difference (4.46
vs. 3.97, or approximately $500 in expected income) is not nearly so
great.

While Table 1 provides some prima facie evidence of discrimination
in WIN training assignments, the evidence is far from complete. The
numbers in Table 1 tell us only the results of the employability process,
and tell us nothing about how or why those results were obtained. Ac-
dordingly, to substantiate the discrimination hypothesis, we must impose
some sort of statistical control on the characteristics and pre-WIN
experiences of each subject group. If women enter the program with
much less education or job experience than men, then Table 1 may over-
state the force of sex discrimination in training assignments. By the
same token, if black trainees enter WIN with backgrounds superior to
whites, then Table 1 understates the extent of racial discrimination
exercised within the program. In an effort to standardize the relevant
background factors, we have subjected these results to the multivariate
analysis outlined above.

The regression model we used employs the occupational training
rank as the dependent variable. Our basic results are incorporated in
Table 2. Briefly, they provide some support to the hypothesis that sex
discrimination is a significant factor in training allocations. They
also suggest that race is insignificant in the employability process.
The only other factor which appears to have a significant influence on
training decisions is the previous job experience of the trainee: those
trainees with a record of full-time job experience end up in vocational
training courses of higher expected value.

Table 2. Market Value of Training Allocation

Equation	Intercept	Sex	Race	Age	Pre-school Chidlren	Education	Prior Welfare	Previous Job	Previous Training	Previous Occupational Rank	Mean / $\overline{R}^2$
2(A) n = 307	6.69***	-1.60***	-.23	-.02	.12	.20	.22*	.24**	.10		Mean = 4.1
	(.90)	(.32)	(.18)	(.01)	(.12)	(.13)	(.12)	(.10)	(.24)		$\overline{R}^2$ = .10
2(B) n = 232	6.99***	-1.67***	-.21	-.03	-.01	.19	.27*	.28**	.08		Mean = 4.2
	(1.0)	(.33)	(.22)	(.02)	(.14)	(.15)	(.15)	(.13)	(.27)		$\overline{R}^2$ = .10
2(C) n = 232	6.68***	-1.60***	-.20	-.03	-.01	.18	.27*	.29**	.07	.04	Mean = 4.2
	(1.1)	(.35)	(.22)	(.02)	(.14)	(.15)	(.15)	(.14)	(.27)	(.07)	$\overline{R}^2$ = .10

*** Significant at .01 level   ** Significant at .05 level   * Significant at .10 level

NOTES: The variables are coded as follows:

Sex: male = 1, female = 2
Race: white = 1, black = 2
Age: chronological age
Pre-school Children: number thereof
Education: 0-8 years = 1, 9-11 years = 2, 12 years = 3
Prior Welfare: Number of months (10-99)
Previous Job: No previous full-time job = 0; less than one year = 1; 1-3 years = 2; over 3 years = 3
Previous training: None = 0; Some = 1
Previous Occupations: Expected value index, as per Table 1 and dependent variable

Consider, for example, equation 2(A). Included in equation 2(A)
are all those trainees who received some WIN training. As mentioned
earlier, these individuals received training in 70 different specific
occupations.[*] Our task is to determine how their individual character-
istics and experiences have influenced the observed training allocation.
The large and negative coefficient (-1.60) for the sex variable is con-
firmation that female clients receive decidedly less valuable training,
even after account is taken of the other variables noted. Moreover,
the coefficient has an exceedingly high level of statistical significance,
thereby dispelling concern for sample size.

Continuing across the row for equation 2(A), we may note that
only two other of our available variables appear to play a role in
training allocations. The length of time a client has been on welfare
("Prior Welfare") is positively related to the rank of training, although
the level of statistical significance is modest. Previous job experience
is more significantly related to training value, and in the expected
(positive) direction.

We may summarize the results of equation 2(A) then, by observing
that a trainee's sex is an important determinant of his/her training
allocation, even when statistical controls are imposed on selected other
demographic, welfare, and labor market variables. Indeed, sex is the
largest observable influence on training allocations, substantially out-
weighing the importance of the other significant variables, i.e., length
of dependency (prior welfare) and previous job experience. A trainee's
race has no significant effect on the training allocation. Hence,
multivariate analysis appears to confirm the hypothesis of sex discrimi-
nation, as suggested in the raw data on training allocations.

To tighten our controls on a trainee's background--and thus to
sharpen the test of the discrimination hypothesis--we also assigned

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[*]Although there were large concentrations of training in just
a few courses (e.g., cosmotology, nurse's aide, file clerk, clerk-
typist, nurse, teacher), see appendix for a detailed listing.

an occupational value (expected income) score to the trainee's reported
pre-WIN job (the ranking mechanism is identical to the one used to
rank training allocation). The purpose of introducing this additional
variable is to determine whether the kind of work (as opposed to the
amount of work) a client performed prior to entering WIN influenced the
training allocation. 252 of the sample cases included information on
previous occupation and were thus available for this additional inquiry.
Equations 2(B) and 2(C) summarize our results.

Equation 2(B) is identical in structure to equation 2(A) but
includes only the 232 observations with previous occupational data.
As is apparent, the subsample of 232 cases is not materially different
from the larger sample. While some coefficients increase slightly in
value, there is no change in the pattern of influences or the levels of
significance.

Equation 2(C) demonstrates the impact of introducing the previous
occupational rank as an independent variable. Clearly, the additional
control on client experiences does nothing to alter the basic findings
on sex and race patterns. The same pattern and significance level of
coefficients is maintained as we move from equation 2(B) to 2(C).

The same kind of analysis summarized in Table 2 was performed
for a variety of other subsamples, particularly for different groupings
of dropouts, graduates, and (then-) current WIN clients. These further
inquiries did not alter our findings, however, and are not therefore
included here.[*]

(F) Conclusions

In light of the results of our multivariate analysis, we are
led to conclude that the sex of a trainee significantly affects the WIN
training allocation. In seeking to interpret this finding, we are
attracted to two explanations. First, female WIN clients are subjected

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[*]Additional tables and equations are available for inspection
on request.

to the same socialization pressures as all women in society and may thus be conditioned to constrained occupational goals. This socialization could be reflected in the training preferences expressed by our sample subjects. The socialization pressure may be reinforced, however, by a second factor; namely, the views of WIN counselors and training specialists. We have no documentary basis for distinguishing between these two factors, and caution the reader in this respect. We do feel, however, that WIN staff play a significant role in guiding the training decisions made by WIN clients, and that the hypothesis of discrimination is relevant to this aspect of the employability process.

A summary assessment of the extent of sex discrimination in the WIN employability process is clouded by the nature of WIN staff training allocation decisions. In guiding a client to a particular vocational curriculum, a WIN specialist reflects not only his or her subjective appraisal of capability but also the perceived likelihood of employer receptivity. Thus, discrimination in job markets may influence training decisions. In this way, the WIN program may not be introducing discrimination, but instead responding to a discriminatory reality in the labor market. While such a response contributes to the maintenance of discriminatory barriers, it is not clear that WIN could effectively overcome such barriers and produce better jobs for its female clients. It is important, however, that more explicit attention be given to this issue, especially as improved job opportunities become increasingly available and the potential of WIN impact grows.

Our conclusions on the subject of race discrimination are much easier to formulate in light of the fact that no significant racial differentials were observed. On the basis of available data, we have concluded that racial discrimination is not a serious factor in the WIN program. This conclusion contradicts the impressions of the principal investigator in selected cities. However, the aggregate findings indicate those personal impressions are isolated and not representative.

Appendix Table 1. Detailed Occupational Listing of WIN Courses

Index Rank and Median Income	Specific Training Curriculum	Number of Trainees in Sample
1. $1-2,500	alteration & tailoring	1
	domestic housekeeper	1
	seamstress	3
2. $2,501-3,500	cashier	5
	cashier-checker	4
	cosmetologist	13
	dietary assistant	1
	grocery checker	1
	hairdresser	1
	nurses aide	27
	para-psychiatric aide	1
3. $3,501-4,500	clerk	40
	dietician	1
	key punch operators	10
	LPN	25
	messenger	1
	medical office assistant	1
	office procedures	3
	receptionist	1
	teacher aide	10
	typist	1
	ward clerk	1
4. $4,501-5,500	barber	6
	child care	3
	cook	2
	dental secretary	
	executive secretary	2
	legal secretary	2
	medical secretary	1
	secretary	15
5. $5,501-6,500	auto mechanic	8
	auto repair	1
	bookkeeping	7
	business administration	4
	electrical assembly	1
	electrical appliance repair	2
	IBM operator	1
	lab technician	2
	lathe operator	1
	NCR operator	5
	RN	8
	radio-TV repair	3
	sewing machine operator	1
	tractor trailer driver	2

Index Rank and Median Income	Specific Training Curriculum	Number of Trainees in Sample
6. $6,501-7,500	apprentice butcher	1
	baker	
	clerk-steno	1
	dental assistant	1
	employment clerk	1
	inhalation therapist	4
	medical assistant	5
	medical insurance clerk	1
	multi-clerical	5
	operating room technician	2
	radiology technician	1
	retail sales	1
	social worker	3
	urban prof assistant	1
7. $7,501-8,500	elementary & secondary education	10
	machinist	1
	postal worker	1
	welder	1
	woodworking	2
8. $8,501-9,500	craftsmen	
	draftsmen	1
	electrician	1
	journalism	2
	vamper	1
9. > $9,500	accountant	4
	commercial pilot	