

# **Has training helped employ xiagang in China? A tale from two cities.**

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# Outline

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## An Outline of the Presentation

- Introduction
- Institutional and Labor Market Context
- Sampling Design
- Selection of Sample
- Training Impacts on Employment and Earnings
- Impacts for Sub-groups
- Impacts of Program Features
- Conclusion

# Introduction

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## Background:

State-owned enterprises  
and labor redundancy in China

How did this study come about?

The Re-employment Program

# Data and Sampling Design

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## Shenyang

training samples: Dadong, Tiexi, and Heping districts

comparison groups: a census of laid-off workers  
(120,000) from the Shenyang Labor Bureau

## Wuhan

training samples: a master list of registered trainees  
from Wuhan Labor Bureau

comparison groups: a census of laid-off workers

# Differences between participant and comparison groups

Age

Education

Prior industry

Job tenure

Time since xiagang

Medical expenses paid by SOE

Received xiagang stipend between  
January 1998 and June 2000

Enterprise provides a reemployment center

## Differences between participant and comparison groups

	Shenyang		
	Participant	Comparison	t-Statistics
	Mean	Mean	
Age	36.44	39.86	10.9
Gender, Female	0.79	0.47	15.92
Ed - Junior High	0.43	0.66	10.82
Ed - Senior High	0.29	0.16	6.85
Ed - Tertiary	0.15	0.07	6.03
Ind - Low Skilled	0.104	0.039	5.83
Ind - Manufacturing	0.746	0.94	12.6
Ind - Services	0.095	0.015	8.15
Ind - Public Sector	0.053	0.007	6.31
Tenure (Months)	135	166.5	8.88
Time Xiagang (Years)	4.17	4.53	3.22
Enterprise Pays Med	0.36	0.44	3.8
Xiagang Stipend 98-00	0.21	0.23	1.16
Enterprise job center	0.182	0.268	4.79

## Differences between participant and comparison groups

	Wuhan		
	Participant Mean	Comparison Mean	T-Statistics
Age	37	38	2.48
Gender, Female	0.64	0.43	8.38
Ed - Junior High	0.35	0.36	0.15
Ed - Senior High	0.45	0.40	2.01
Ed - Tertiary	0.07	0.09	1.44
Ind - Low Skilled	0.16	0.13	1.76
Ind - Manufacturing	0.74	0.83	4.35
Ind - Services	0.08	0.03	4.47
Ind - Public Sector	0.03	0.02	1.42
Tenure (Months)	146	163	4.03
Time Xiagang (Years)	5.34	4.21	5.80
Enterprise Pays Med	0.63	0.79	3.05
Xiagang Stipend 98-00	0.80	0.94	8.51
Enterprise job center	0.71	0.84	6.04

# Training Impacts on Employment and Earnings

## Small sample results

### Estimators

Unadjusted difference in means

OLS regression

Probit (on employment)

Unrestricted propensity score matching

Max-min, min-max propensity score matching

Caliper propensity score matching

Unrestricted log-odds ratio matching

Caliper log-odds ratio matching

**Table 5.1** Training Impact Estimates on Employment and Earnings for the Smallest Samples  
Results from a Series of Estimators for Shenyang  
(standard errors in parentheses)

Estimator	Impact on Employment	Impact on Log Earnings	Sample Sizes from Employment Regressions/Matching	
			Participants	Comparison
Shenyang				
Unadjusted differences in means	-0.113** (0.022)	-0.125** (0.037)	1002	1061
OLS regression adjusted	-0.059** (0.026)	0.023 (0.045)	964	1047
Probit regression adjusted	-0.157** (0.069)			
Marginal effect	-0.063	NA	964	1047
Propensity score matching Unrestricted	-0.074** (0.023)	-0.029 (0.033)	964	375
Propensity score matching Max-min, Min-max trimming	-0.066** (0.023)	-0.026 (0.033)	951	375
Propensity score matching Caliper absolute tolerance 0.004	-0.081** (0.024)	-0.037 (0.039)	863	375
Propensity score matching Caliper absolute tolerance 0.003	-0.078** (0.025)	-0.026 (0.042)	823	375
Propensity score matching Caliper absolute tolerance 0.002	-0.072** (0.025)	-0.057 (0.045)	766	375
Propensity score matching Caliper absolute tolerance 0.001	-0.034 (0.029)	-0.062 (0.054)	613	353
Log-odds ratio matching Unrestricted	-0.046** (0.023)	-0.031 (0.031)	964	375
Log-odds ratio matching Caliper absolute tolerance 0.064	-0.068** (0.024)	-0.021 (0.038)	850	375
Log-odds ratio matching Caliper absolute tolerance 0.041	-0.069** (0.025)	-0.029 (0.040)	825	375
Log-odds ratio matching Caliper absolute tolerance 0.016	-0.060** (0.026)	-0.052 (0.044)	747	372
Log-odds ratio matching Caliper absolute tolerance 0.006	-0.035 (0.028)	-0.086* (0.053)	637	359

Table 5.2  
 Training Impact Estimates on Employment and Earnings for the Smallest Samples  
 Results from a Series of Estimators for Wuhan  
 (Standard errors in parentheses)

Estimator	Impact on Employment	Impact on Level of Earnings	Sample Sizes from Employment Regressions/Matching	
			Participants	Comparison
Wuhan				
Unadjusted differences in means	0.039 (0.025)	-0.133** (0.060)	641	939
OLS regression adjusted	0.078** (0.031)	-0.125* (0.074)	578	825
Probit regression adjusted	0.220** (0.085)			
Marginal effect	0.085	NA	578	825
Propensity score matching Unrestricted	0.064** (0.029)	-0.165** (0.064)	578	286
Propensity score matching Max-min, Min-max trimming	0.054* (0.029)	-0.160** (0.065)	571	285
Propensity score matching Caliper absolute tolerance 0.004	0.079** (0.030)	-0.118* (0.071)	530	286
Propensity score matching Caliper absolute tolerance 0.003	0.071** (0.031)	-0.082 (0.072)	496	286
Propensity score matching Caliper absolute tolerance 0.002	0.076** (0.032)	-0.099 (0.083)	471	284
Propensity score matching Caliper absolute tolerance 0.001	0.086** (0.035)	-0.114 (0.102)	385	265
Log-odds ratio matching Unrestricted	0.061** (0.029)	-0.165** (0.064)	578	286
Log-odds ratio matching Caliper absolute tolerance 0.064	0.077** (0.030)	-0.131* (0.073)	544	286
Log-odds ratio matching Caliper absolute tolerance 0.041	0.078** (0.030)	-0.124* (0.074)	538	286
Log-odds ratio matching Caliper absolute tolerance 0.016	0.083** (0.031)	-0.115 (0.074)	494	273
Log-odds ratio matching Caliper absolute tolerance 0.006	0.087** (0.034)	-0.154* (0.092)	424	266

# Impacts for Sub-groups

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- Age
- Gender
- Education
- Marital status
- Housing ownership status

**Table 5.7. Training Effect Estimates by Age, Gender, Education, Marital and Housing Status in Shenyang**  
(Standard errors in parentheses)

Training Category	Currently Working			Log of Current Earnings		
	Small Sample	Medium Sample	Large Sample	Small Sample	Medium Sample	Large Sample
Age: Less than 25 (r)	0.094 (0.205)	0.080 (0.206)	0.130 (0.196)	-0.163 (0.333)	-0.181 (0.325)	-0.181 (0.325)
Age 25 to 40	-0.119 (0.086)	-0.106 (0.085)	-0.125 (0.082)	0.005 (0.139)	0.063 (0.136)	0.063 (0.137)
Age 41 and older	-0.177 (0.129)	-0.157 (0.129)	-0.187 (0.123)	-0.021 (0.207)	0.048 (0.215)	0.048 (0.214)
Gender: Male (r)	-0.086** (0.041)	-0.085** (0.038)	-0.084** (0.038)	-0.151** (0.065)	-0.088 (0.060)	-0.088 (0.060)
Female	-0.045 (0.029)	-0.037 (0.029)	-0.036 (0.029)	0.028## (0.053)	0.039 (0.052)	0.039# (0.052)
Education: Primary	-0.093 (0.199)	-0.048 (0.196)	-0.047 (0.192)	-0.151 (0.338)	-0.086 (0.325)	-0.086 (0.326)
Junior High	-0.107** (0.043)	-0.100** (0.041)	-0.099** (0.041)	-0.026 (0.072)	0.017 (0.070)	0.017 (0.069)
Senior High	-0.110 (0.071)	-0.086 (0.070)	-0.085 (0.070)	0.015 (0.107)	0.053 (0.115)	0.053 (0.115)
Vocational	-0.224**# (0.090)	-0.186** (0.089)	-0.184** (0.088)	-0.044 (0.145)	0.039 (0.146)	0.039 (0.146)
Tertiary (r)	0.030 (0.071)	0.025 (0.071)	0.026 (0.070)	-0.112 (0.112)	-0.093 (0.111)	-0.093 (0.111)
Marital Status: Married	-0.070** (0.026)	-0.067** (0.026)	-0.066** (0.025)	-0.108***## (0.046)	-0.071## (0.044)	-0.071## (0.044)
Not Married (r)	-0.010 (0.057)	0.010 (0.055)	0.011 (0.056)	0.247** (0.107)	0.266** (0.101)	0.266** (0.101)
Housing: Own House (r)	-0.060 (0.043)	-0.066 (0.042)	-0.064 (0.042)	0.003 (0.071)	0.023 (0.116)	0.023 (0.069)
Enterprise House	-0.157** (0.070)	-0.138** (0.068)	-0.137** (0.068)	-0.066 (0.125)	-0.052 (0.116)	-0.052 (0.116)
Parents House	-0.052 (0.037)	-0.038 (0.036)	-0.037 (0.036)	-0.105* (0.063)	-0.050 (0.060)	-0.051 (0.060)
Other House	-0.012 (0.069)	0.006 (0.055)	0.001 (0.071)	-0.220 (0.136)	-0.155 (0.132)	-0.153 (0.130)

**Table 5.8.**  
**Training Effect Estimates by Age, Gender, Education, Marital and Housing Status in Wuhan**  
(Standard errors in parentheses)

Training Category	Currently Working			Log of Current Earnings		
	Small Sample	Medium Sample	Large Sample	Small Sample	Medium Sample	Large Sample
Age: Less than 25 (r)	-0.079 (0.220)	-0.095 (0.207)	-0.056 (0.198)	-0.131 (0.437)	-0.225 (0.417)	-0.156 (0.390)
Age 25 to 40	0.130 (0.082)	0.141* (0.075)	0.123* (0.072)	-0.090 (0.173)	-0.033 (0.148)	-0.068 (0.147)
Age 41 and older	0.210 (0.154)	0.215 (0.148)	0.182 (0.139)	-0.147 (0.320)	-0.051 (0.292)	-0.096 (0.277)
Gender: Male (r)	0.069* (0.040)	0.086** (0.036)	0.081** (0.035)	-0.171** (0.086)	-0.143* (0.076)	-0.140* (0.072)
Female	0.090** (0.035)	0.079** (0.034)	0.076** (0.032)	-0.020 (0.102)	-0.017 (0.098)	-0.036 (0.086)
Education: Primary	0.095 (0.265)	0.096 (0.258)	0.075 (0.249)	-0.585 (0.690)	-0.494 (0.666)	-0.632 (0.620)
Junior High	0.101 (0.069)	0.102 (0.066)	0.108* (0.064)	-0.054 (0.163)	0.001 (0.154)	0.003 (0.015)
Senior High	0.067 (0.062)	0.072 (0.059)	0.081 (0.057)	-0.057 (0.146)	-0.001 (0.132)	0.025 (0.124)
Vocational	0.097 (0.106)	0.107 (0.096)	0.092 (0.094)	-0.193 (0.249)	-0.079 (0.218)	-0.034 (0.198)
Tertiary (r)	0.075 (0.090)	0.076 (0.085)	0.059 (0.084)	-0.162 (0.200)	-0.202 (0.184)	-0.254 (0.173)
Marital Status: Married	0.065** (0.028)	0.074** (0.026)	0.067** (0.025)	-0.101 (0.073)	-0.095 (0.065)	-0.102* (0.060)
Not Married (r)	0.175** (0.073)	0.137** (0.067)	0.153** (0.064)	-0.165 (0.173)	-0.077 (0.156)	-0.075 (0.148)
Housing: Own House (r)	0.152** (0.059)	0.155** (0.055)	0.116** (0.052)	-0.198 (0.165)	-0.097 (0.152)	-0.194 (0.134)
Enterprise House	0.059 (0.074)	0.075 (0.065)	0.095 (0.063)	-0.029 (0.206)	-0.079 (0.158)	-0.007 (0.147)
Parents House	-0.001 (0.051)	-0.012# (0.049)	0.022 (0.046)	-0.060 (0.128)	-0.087 (0.120)	-0.030 (0.107)
Other House	0.019 (0.068)	0.039 (0.064)	0.058 (0.061)	-0.006 (0.187)	-0.101 (0.170)	-0.006 (0.155)

# Impacts of Program Features

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- Location
- Duration
- Type
- Personal contribution to costs

**Table 5.9**  
**Effects Estimates for Training Location, Duration, Type**  
**and Individual Payment for Training in Shenyang**  
(Standard errors in parentheses)

Training Category	Currently Working			Log of Current Earnings		
	Small Sample	Medium Sample	Large Sample	Small Sample	Medium Sample	Large Sample
Location: Labor Bureau	-0.059** (0.026)	-0.063** (0.025)	-0.060***## (0.025)	0.027 (0.045)	0.040 (0.044)	0.040 (0.044)
Other (r)	0.031 (0.109)	0.071 (0.068)	0.073 (0.068)	-0.239 (0.182)	0.110 (0.105)	0.110 (0.105)
Duration: 1 Month or Less	-0.061***## (0.026)	-0.066***## (0.025)	-0.064***## (0.025)	0.021 (0.045)	0.041 (0.043)	0.041 (0.043)
More than 1 Month (r)	0.307** (0.115)	0.262** (0.082)	0.264** (0.082)	-0.018 (0.159)	0.123 (0.113)	0.123 (0.113)
Type: Computers	-0.061* (0.036)	-0.073** (0.035)	-0.071** (0.035)	0.109***## (0.065)	0.116*# (0.062)	0.116*# (0.062)
Repair	-0.069 (0.073)	-0.046 (0.068)	-0.045 (0.068)	0.135## (0.120)	0.117 (0.108)	0.117 (0.108)
Cooking	-0.067* (0.039)	-0.063* (0.038)	-0.061 (0.037)	-0.074## (0.068)	-0.042 (0.065)	-0.042 (0.065)
Sewing and Toy Making	-0.059 (0.046)	-0.056 (0.045)	-0.054 (0.045)	0.046## (0.086)	0.045 (0.083)	0.045 (0.083)
Beauty, Massage, Hair Cutting	-0.029 (0.045)	-0.029 (0.044)	-0.027 (0.044)	0.096## (0.080)	0.105 (0.077)	0.105 (0.077)
Management	-0.021 (0.078)	-0.031 (0.058)	-0.029 (0.067)	0.063## (0.136)	0.110 (0.114)	0.110 (0.114)
Other (r)	-0.070 (0.077)	-0.015 (0.065)	-0.012 (0.065)	-0.421** (0.138)	-0.102 (0.109)	-0.102 (0.114)
Payment: Personal payment	0.074 (0.120)	0.128## (0.094)	0.131## (0.095)	-0.137 (0.190)	0.172 (0.138)	0.172 (0.138)
No personal payment (r)	-0.059** (0.026)	-0.059** (0.025)	-0.057** (0.025)	0.024 (0.045)	0.041 (0.043)	0.041 (0.043)

**Table 5.10**  
**Effects Estimates for Training Location, Duration, Type and Individual Payment for Training in Wuhan**  
(Standard errors in parentheses)

	Currently Working			Log of Current Earnings		
Training Category	Small Sample	Medium Sample	Large Sample	Small Sample	Medium Sample	Large Sample
Location: Labor Bureau	0.112** (0.031)	0.110** (0.029)	0.111** (0.027)	-0.142* (0.073)	-0.103 (0.066)	-0.088 (0.062)
Other (r)	0.074 (0.046)	0.095** (0.038)	0.094** (0.037)	-0.097 (0.109)	-0.058 (0.086)	-0.041 (0.081)
Duration: 1 Month or Less	0.080** (0.034)	0.101** (0.030)	0.100** (0.029)	-0.211** (0.082)	-0.150** (0.070)	-0.134** (0.065)
More than 1 Month (r)	0.127** (0.037)	0.108** (0.034)	0.107** (0.033)	-0.061 (0.086)	-0.023 (0.077)	-0.008 (0.073)
Type: Computers	0.098** (0.042)	0.104**# (0.037)	0.105**# (0.036)	-0.262**# (0.102)	-0.208**## (0.087)	-0.195**## (0.083)
Repair	0.027## (0.070)	0.031## (0.066)	0.033## (0.066)	-0.215 (0.154)	-0.269# (0.141)	-0.258*## (0.137)
Cooking	-0.059## (0.069)	-0.052## (0.064)	-0.053## (0.063)	-0.231 (0.196)	-0.209 (0.179)	-0.204 (0.173)
Sewing and Toy Making	0.196 (0.183)	0.245 (0.152)	0.244 (0.152)	-0.110 (0.435)	0.179 (0.324)	0.191 (0.315)
Beauty, Massage, Hair Cutting	0.262** (0.122)	0.253** (0.115)	0.249** (0.114)	0.017 (0.251)	0.131 (0.232)	0.143 (0.225)
Management	0.088*# (0.048)	0.078*## (0.042)	0.077*## (0.040)	-0.063 (0.116)	-0.026 (0.098)	-0.008 (0.093)
Other (r)	0.186** (0.045)	0.195** (0.040)	0.195** (0.040)	-0.032 (0.101)	0.021 (0.086)	0.039 (0.082)
Payment: Personal payment	0.194**## (0.051)	0.183**## (0.042)	0.187**## (0.041)	-0.117 (0.107)	-0.027 (0.087)	-0.007 (0.083)
No personal payment (r)	0.077** (0.031)	0.081** (0.028)	0.081** (0.027)	-0.144* (0.075)	-0.123* (0.067)	-0.107* (0.062)

# Conclusion

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Why does training appear to have been effective in Wuhan but not in Shenyang?

- Duration of training differed
- Provider of training differed
- Quality of training differed
- Targeting of resources differed
- Other lessons

# **Has training helped employ xiagang in China? A tale from two cities.**

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World Bank**

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