What is the impact of participation in “Club of looking for jobs” program on duration of unemployment of males?

Sergey Petrakov Dmitry Sayfulin Semeneev Danat

“The Club of looking for jobs”

- “The club of looking for jobs” is the initiative of the employment centers designated for social adaptation, particularly for people having difficulties with job placement, inter alia disabled, prisoners, other marginalized. The programs are widespread in Russia.
- The club is maintained via organizing the multi-day seminars, where the participants are supposed to “better determine their current qualification, choose concrete and achievable objectives, improve their skills of writing CVs and business communication, remove stress, analyze the reasons of difficulties and finally believe in themselves”

Theoretical framework

- Theoretical model of one-side search (Burdett, Mortensen) with

The

$$\Phi = \lambda\big(1 - F(w^*)\big)$$

function as a probability of leaving the unemployment, where λ is the frequency of applying to jobs and $F(w^*)$ is the wages' distribution function

Source Data and Empirical Strategy

- Source data is (in total) 473200 observations (with duplicates)

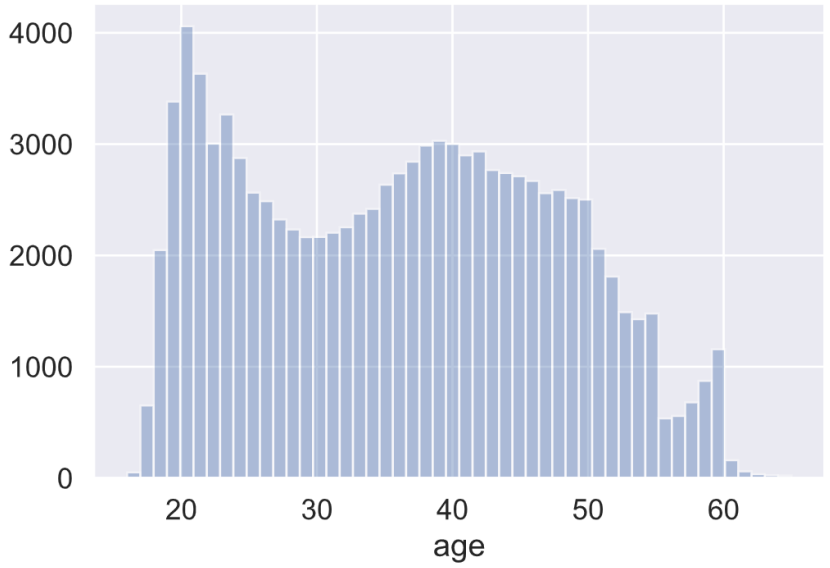
from merged datasets from Federal Employment Statistics on Voronezh Oblast

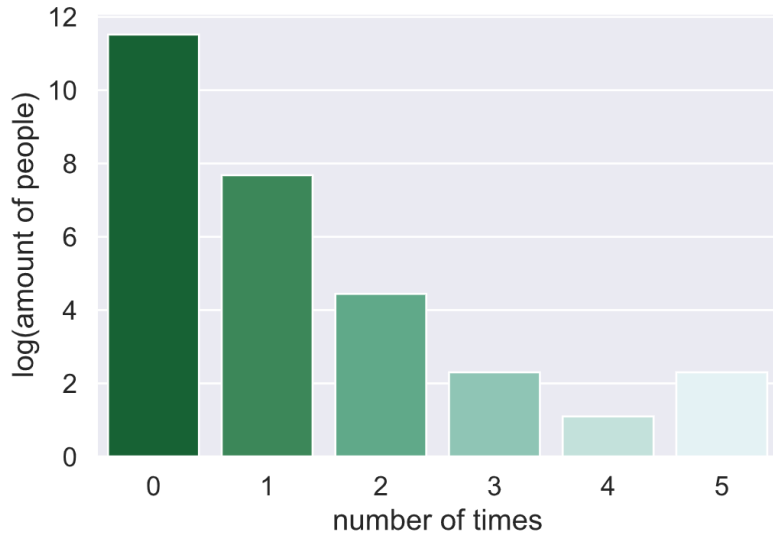
- The empirical strategy is to estimate the hazard functions $\lambda(X)$ via maximum likelihood estimation procedure, assuming parametric Cox and Weibull linear regressions (two methods for robustness)
- The model is present in two specifications: “short”, considering the age, marital status, sex, education level and the previous industry of employment, and “long”, regarding the reasons for being in unemployment

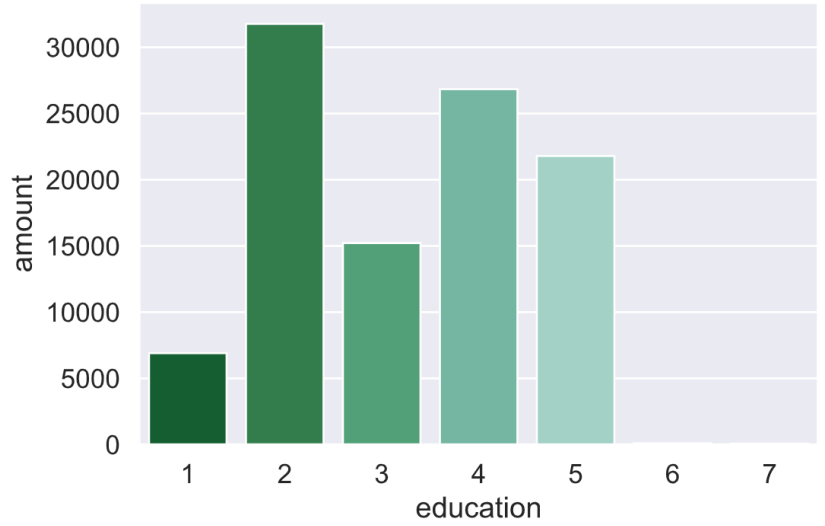
Cox linear regression:

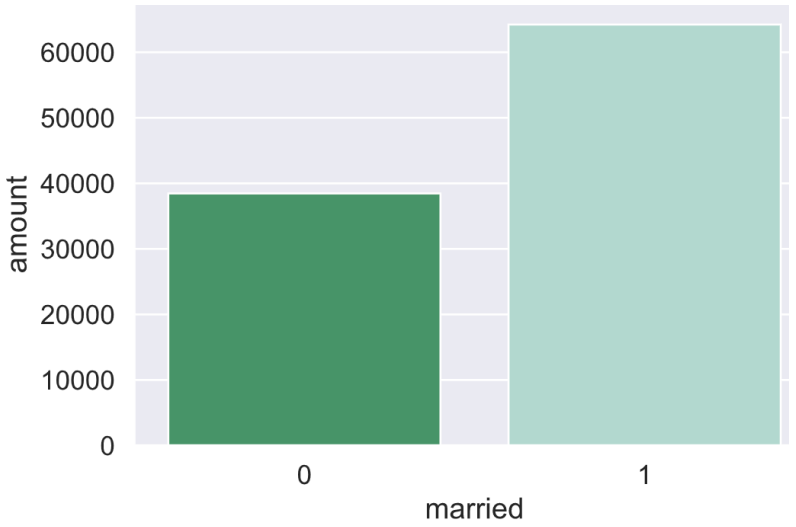
$$\ln \lambda(X) = \ln \lambda_0 + \sum_{i=1}^{n} \beta_i X_i$$

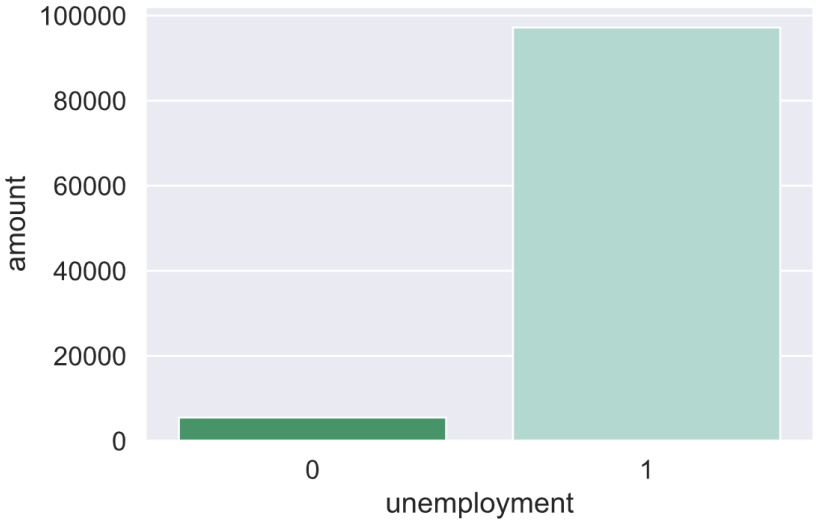
Source Data visualization

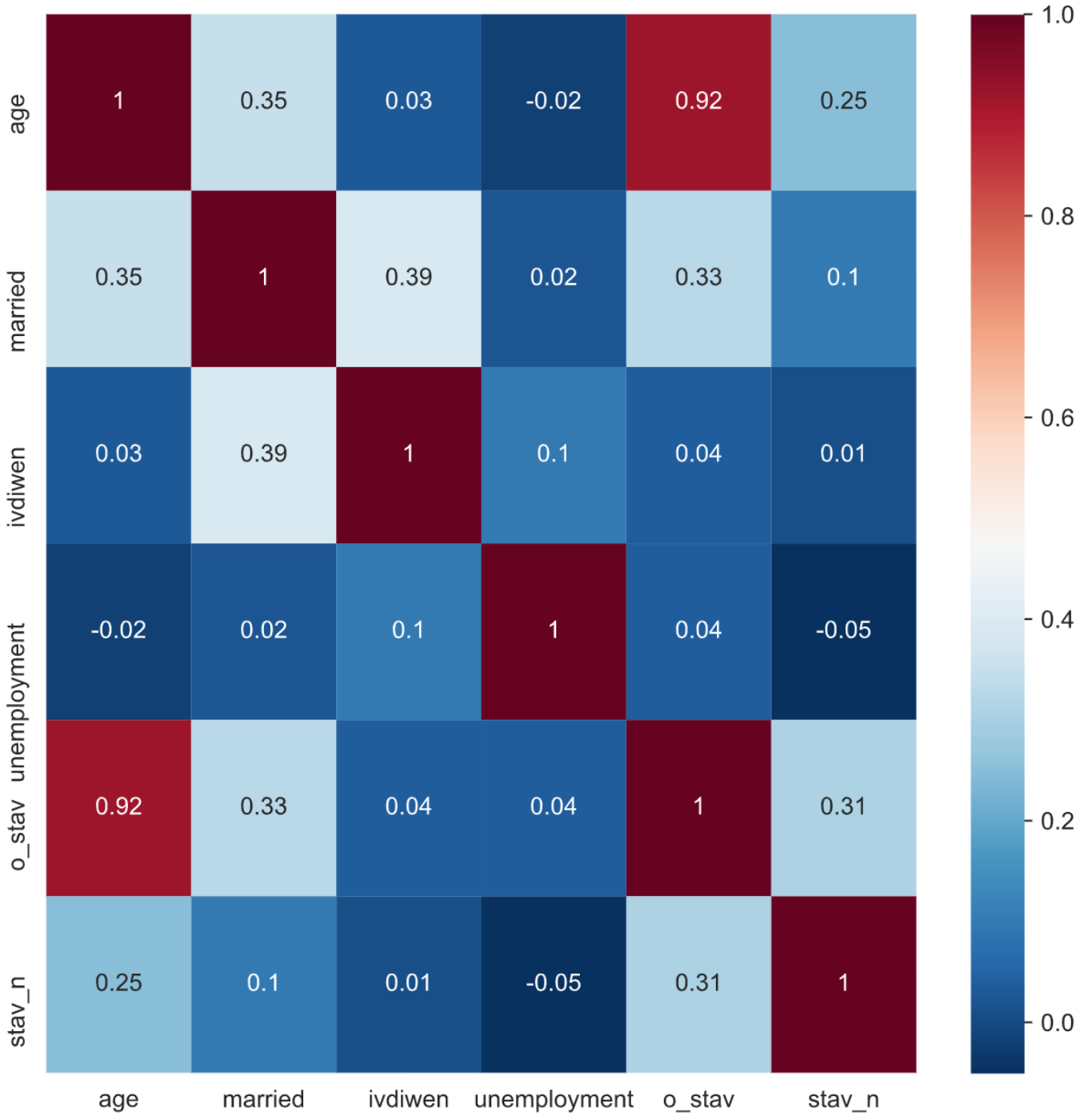








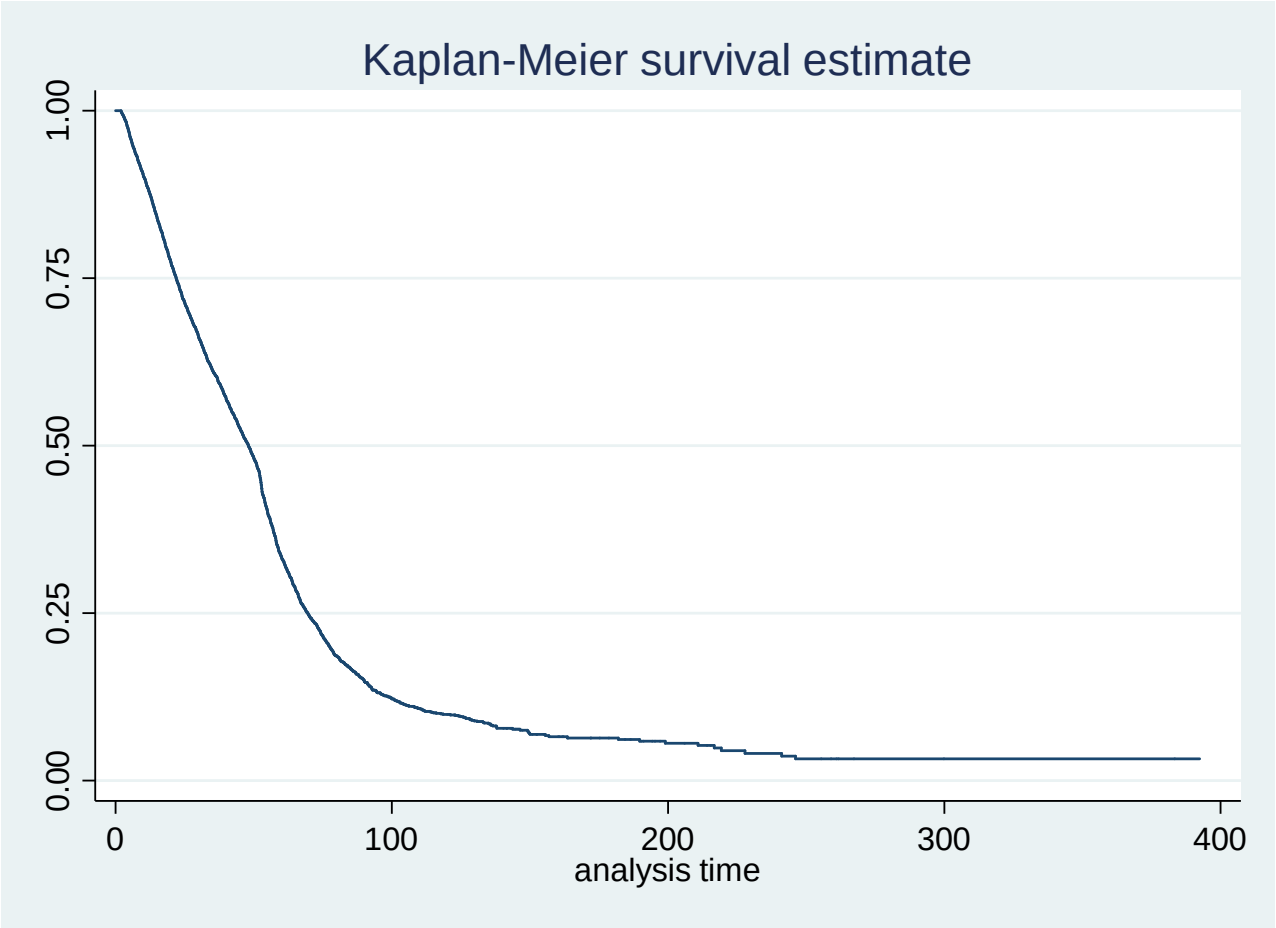




Correlation Heatmap

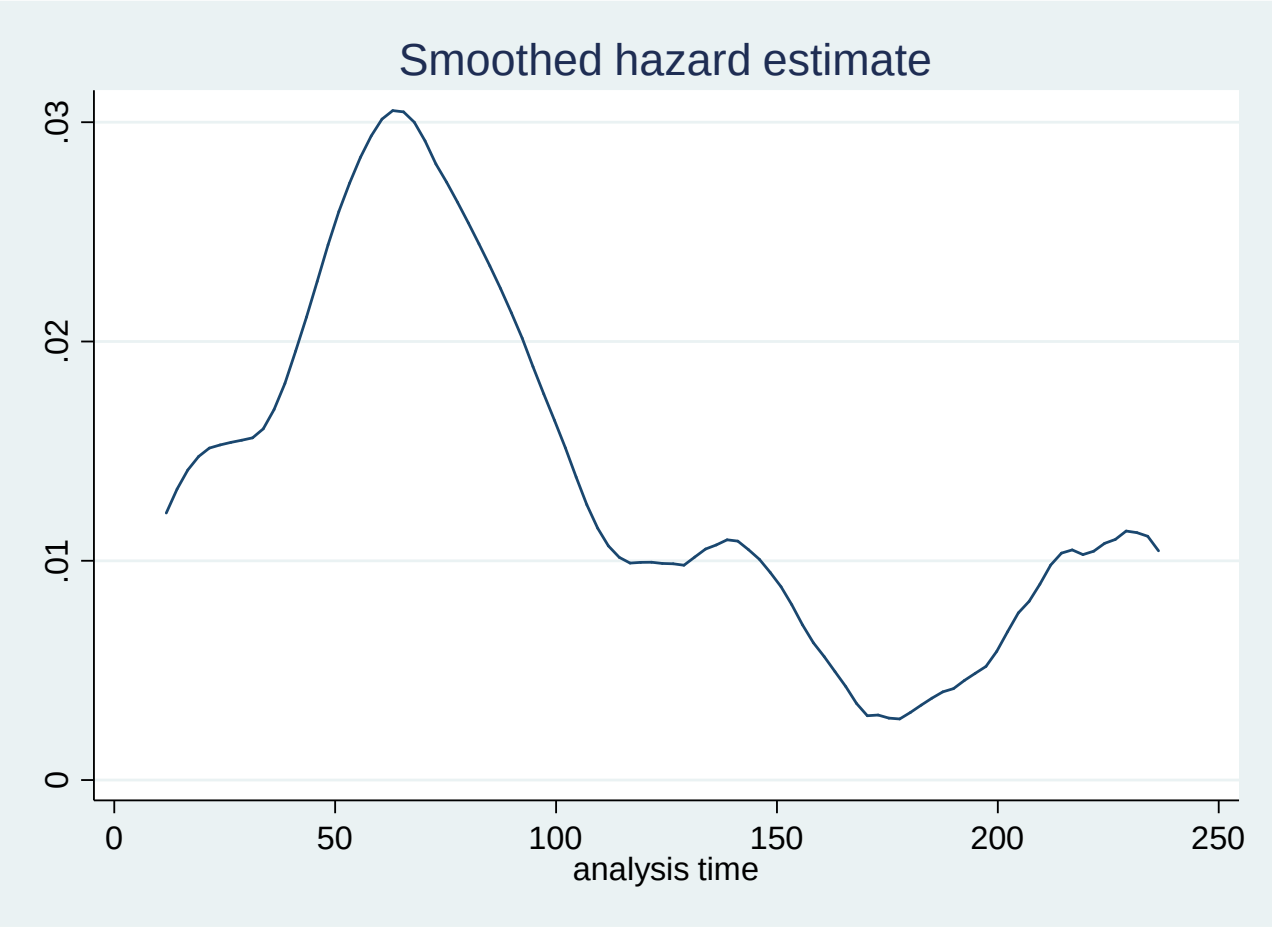
- Here we observe correlations between age, marital status, number of dependents, the total working experience and tenure

Survival function (Kaplan-Meier non-parametric estimation)



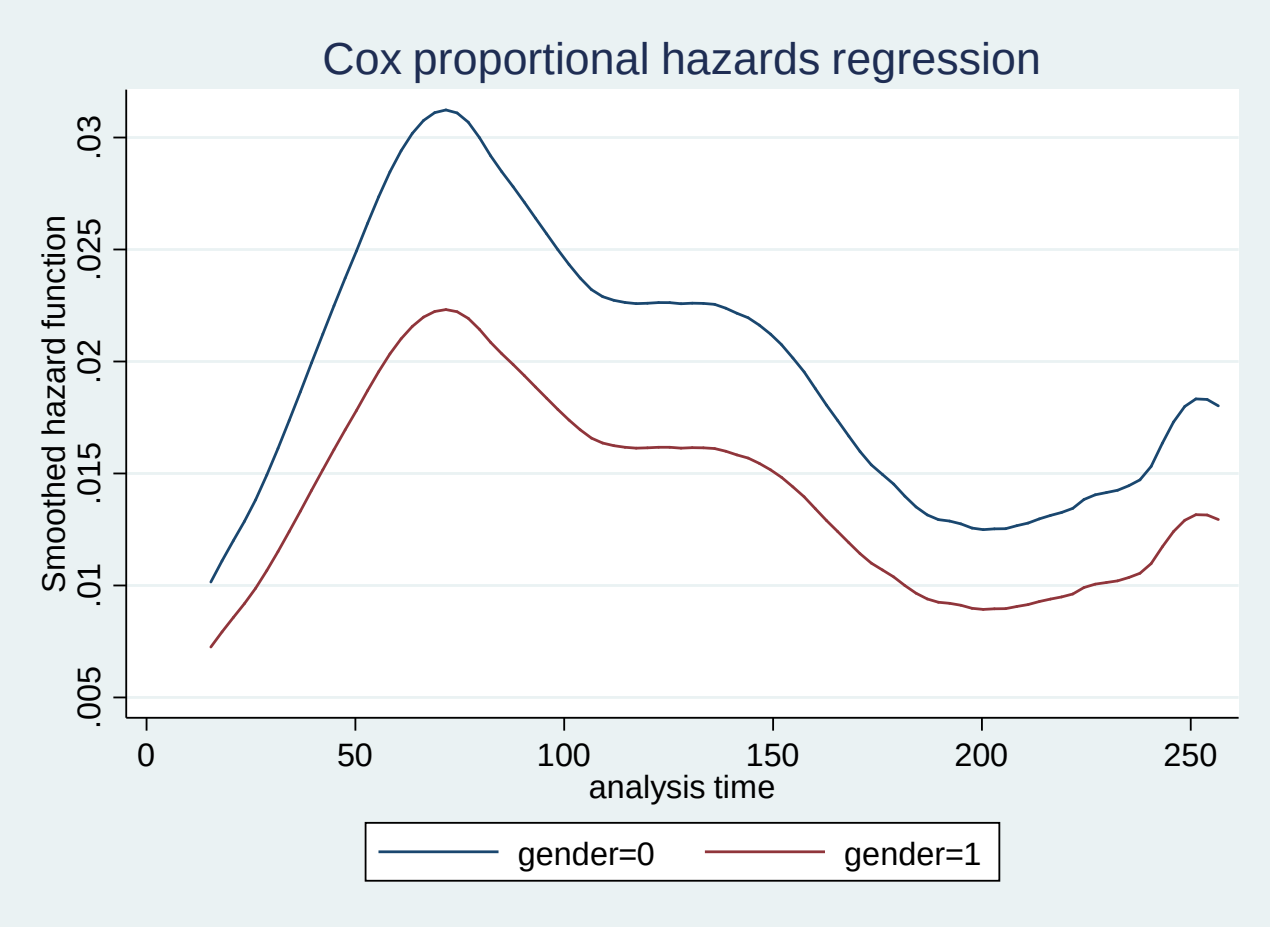
- The probability that the respondent remains registered if still unemployed by the time.

Hazard function (Kaplan-Meyer non-parametric estimation)



- The probability to leave unemployment under assumption that you are still in unemployment

Hazard function (Kaplan-Meyer non-parametric estimation)

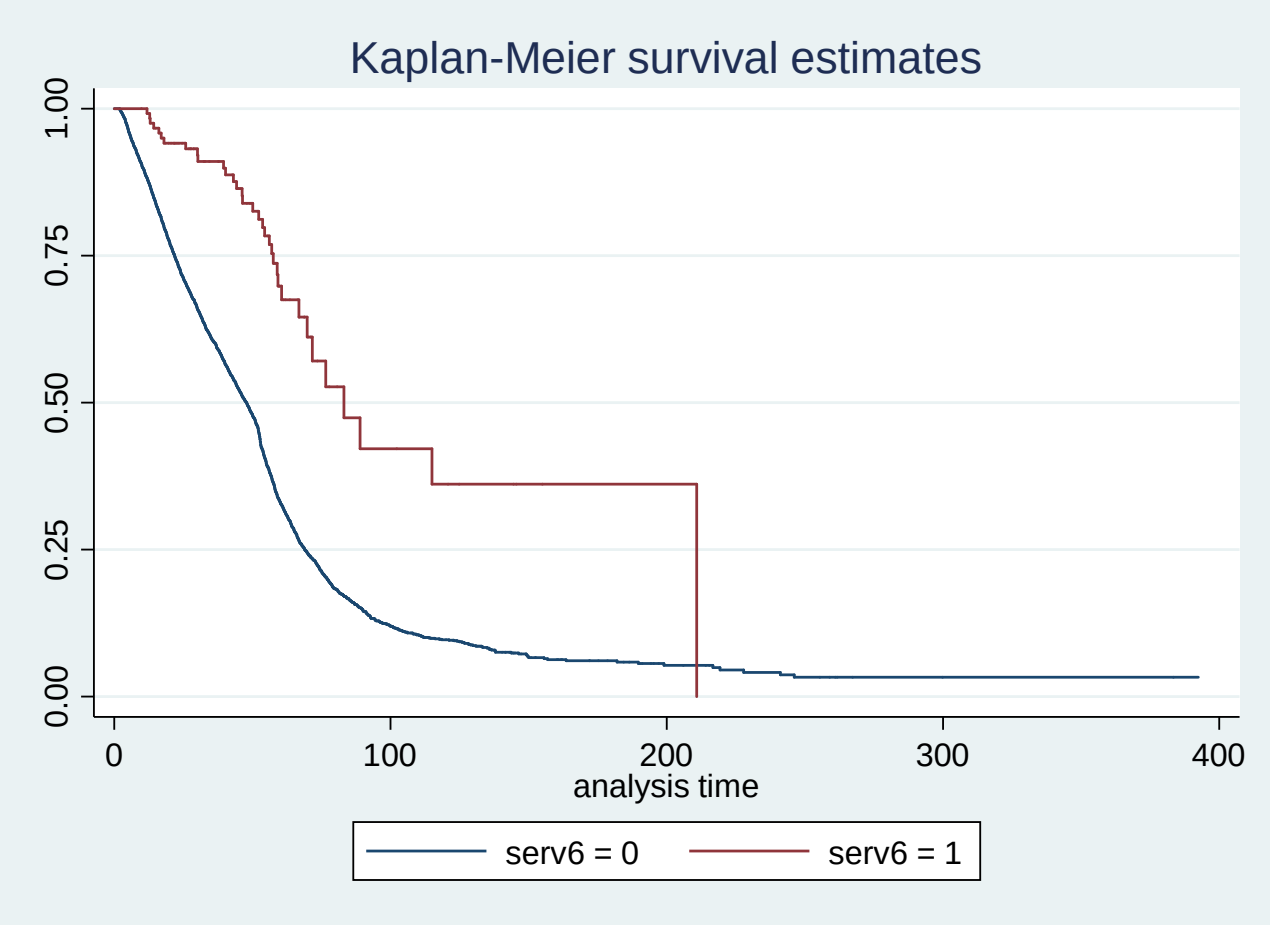


Restrictions imposed on Source Dataset:

1. Those not indicated the participation in program dropped (no imputations made)
2. Those aged more than 65 dropped
3. Those not indicated their tenure, marital status, number of dependents, level of education, total working experience, cause of unemployment dropped

⇒ 18450 observations left for regression.

Survival function (Kaplan-Meyer non-parametric estimation)



Possible graph interpretation:

-self-selection bias

-the program promotes to continue seeking new options

Key Variable description and reference to dataset

- Age – age of respondent in integer years (by 2001), ***age_n*** in dataset
- Serv6 – whether the respondent has taken part in the “Club of Looking for Work” program
- O_stav – the full job experience of the respondent in years
- Stav_n – the job experience of the respondent on the last job in months
- Industry1 – whether the respondent previously worked in industry or construction (1) or not (0)
- Industry2 - whether the respondent previously worked in agriculture (1) or not (0)
- Industry3 - whether the respondent previously worked in sales and catering or transportation (1) or not (0)
- Industry4 - whether the respondent previously worked in communal services or utilities (1) or not (0)
- Industry5 - whether the respondent previously worked in management (1) or not (0)
- Industry6 - whether the respondent previously worked in science or education (1) or not (0)
- Industry7 - whether the respondent previously worked in healthcare, social protection or culture (1) or not (0)
- Industry8 – whether the respondent previously worked in insurance, credit or finance sphere (1) or not (0), all Industry-variables are derived from ***otrasl_s*** factor variable.

Key Variable description: education and “working status” dummies.

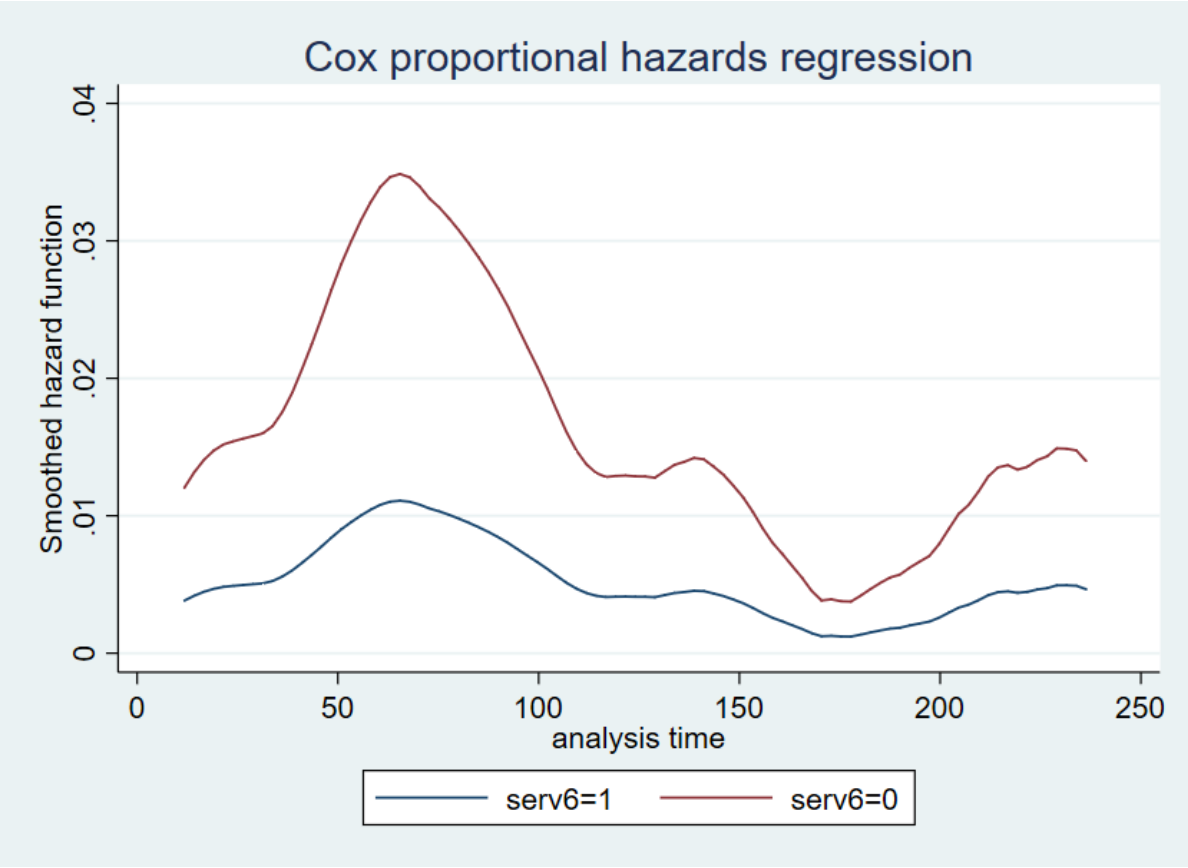
- EDUC1 – whether the respondent has finished only 9th grade of school as hir highest education grade (1) or not (0)
- EDUC3 – whether the respondent has finished primary professional education as his highest educational grade (1) or not (0)
- EDUC4 –whether the respondent has secondary professional education as hir highest educational grade (1) or not (0)
- EDUC5 - whether the respondent has graduated from university with specialist’s or bachelor’s diploma or has PhD or doctoral degree as his or has additional professional education diploma as hir highest educational grade highest educational grade (1) or not (0)
- Red – whether the reason for being unemployed is that the worker was made redundant
- LTerm – whether the reason for being unemployed is that the worker has been long-term not employed
- NW – whether the reason for being unemployed is that the worker has never worked before
- Married - whether the respondent is married (1) or not (0), derived from ***semejnoe*** in dataset.
- Gender – whether the respondent is female (1) or not (0)
- Ivdiwen – number of dependents associated with the respondent

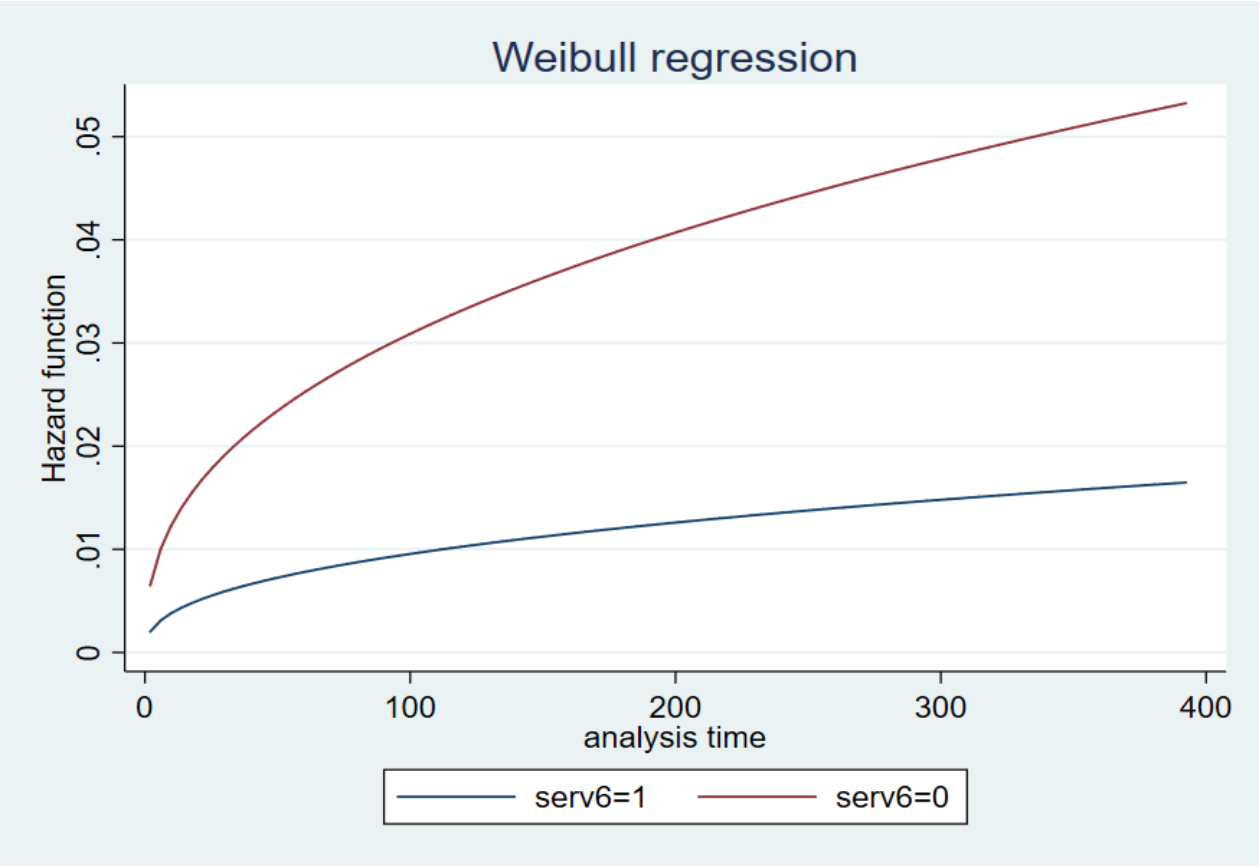
Results: Model comparison table:

VARIABLES	[1] Weibull1 Ln (λ)	[2] Cox1 Ln (λ)	[3] Weibull2 Ln (λ)	[4] Cox2 Ln (λ)
serv6	-1.173***	-1.146***	-1.151***	-1.125***
	(0.172)	(0.172)	(0.172)	(0.172)
age	-0.0393***	-0.0364***	-0.0419***	-0.0391***
	(0.00239)	(0.00240)	(0.00246)	(0.00247)
o_stav	0.0200***	0.0166***	0.0237***	0.0203***
	(0.00247)	(0.00248)	(0.00256)	(0.00256)
stav_n	-0.000599***	-0.000554***	-0.000393**	-0.000343*
	(0.000197)	(0.000197)	(0.000197)	(0.000198)
married	0.0821***	0.0763***	0.0951***	0.0895***
	(0.0271)	(0.0271)	(0.0272)	(0.0272)
ivdiwen	-0.0502***	-0.0485***	-0.0474***	-0.0456***
	(0.0163)	(0.0163)	(0.0163)	(0.0163)
EDUC1	0.0611	0.0483	0.0487	0.0361
	(0.0386)	(0.0386)	(0.0386)	(0.0386)
EDUC3	0.217***	0.223***	0.212***	0.219***
	(0.0327)	(0.0327)	(0.0327)	(0.0327)
EDUC4	-0.177***	-0.171***	-0.176***	-0.170***
	(0.0310)	(0.0310)	(0.0310)	(0.0311)
EDUC5	-0.165***	-0.158***	-0.168***	-0.160***
	(0.0290)	(0.0290)	(0.0291)	(0.0291)
red			-0.195***	-0.195***
			(0.0262)	(0.0263)

VARIABLES	[1] Weibull1 Ln (λ)	[2] Cox1 Ln (λ)	[3] Weibull2 Ln (λ)	[4] Cox2 Ln (λ)
LTerm			0.0803**	0.0803**
			(0.0345)	(0.0345)
NW			0.655*	0.667**
			(0.334)	(0.334)
industry1	-0.101	-0.0927	-0.0793	-0.0719
	(0.0818)	(0.0818)	(0.0819)	(0.0819)
industry2	-0.0906	-0.0775	-0.0943	-0.0824
	(0.0936)	(0.0936)	(0.0936)	(0.0936)
industry3	-0.147*	-0.134	-0.134	-0.121
	(0.0845)	(0.0845)	(0.0845)	(0.0846)
industry4	0.0393	0.0521	0.0359	0.0486
	(0.0944)	(0.0945)	(0.0945)	(0.0945)
industry5	-0.296**	-0.232*	-0.297**	-0.230*
	(0.124)	(0.124)	(0.124)	(0.124)
industry6	0.0212	0.0500	0.0364	0.0645
	(0.101)	(0.101)	(0.101)	(0.101)
industry7	-0.0351	-0.0204	-0.0355	-0.0193
	(0.120)	(0.120)	(0.120)	(0.120)
industry8	-0.548***	-0.558***	-0.443***	-0.454***
	(0.161)	(0.161)	(0.161)	(0.161)
Constant	-4.302***		-4.278***	
	(0.108)		(0.108)	
Ln p	0.3352***		0.3402***	
	(0.008)		(0.008)	

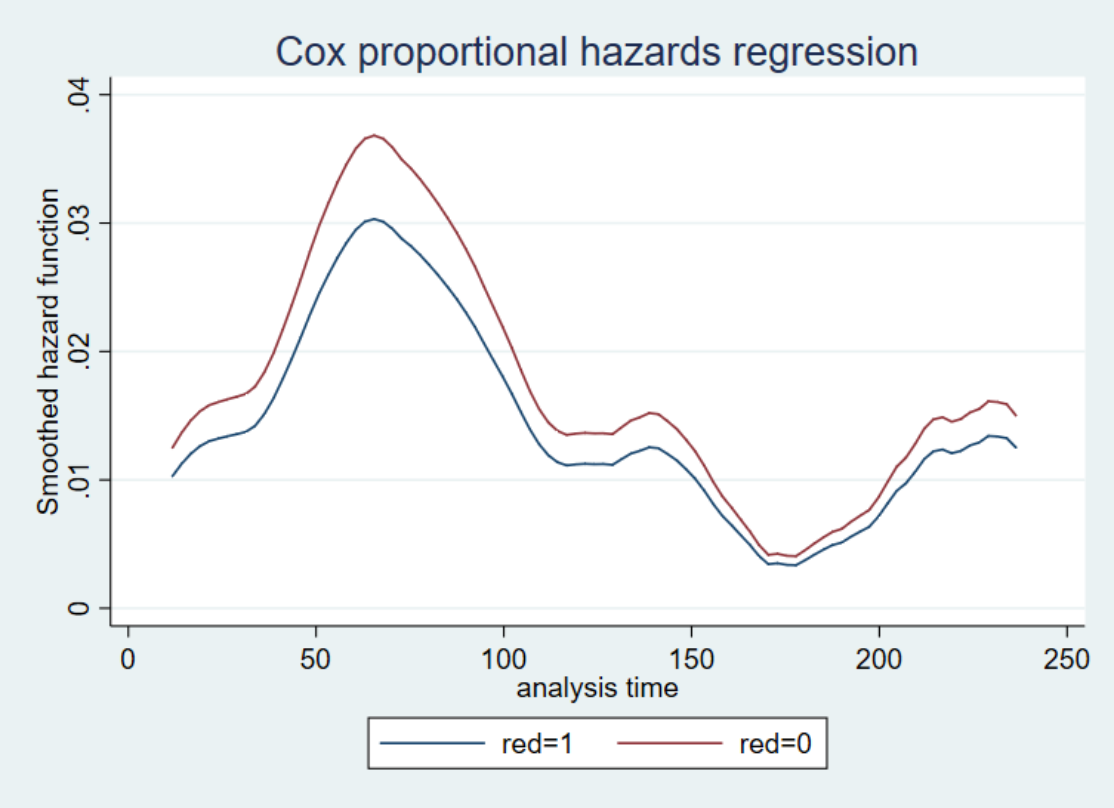
Visualization of attendance effect on hazard

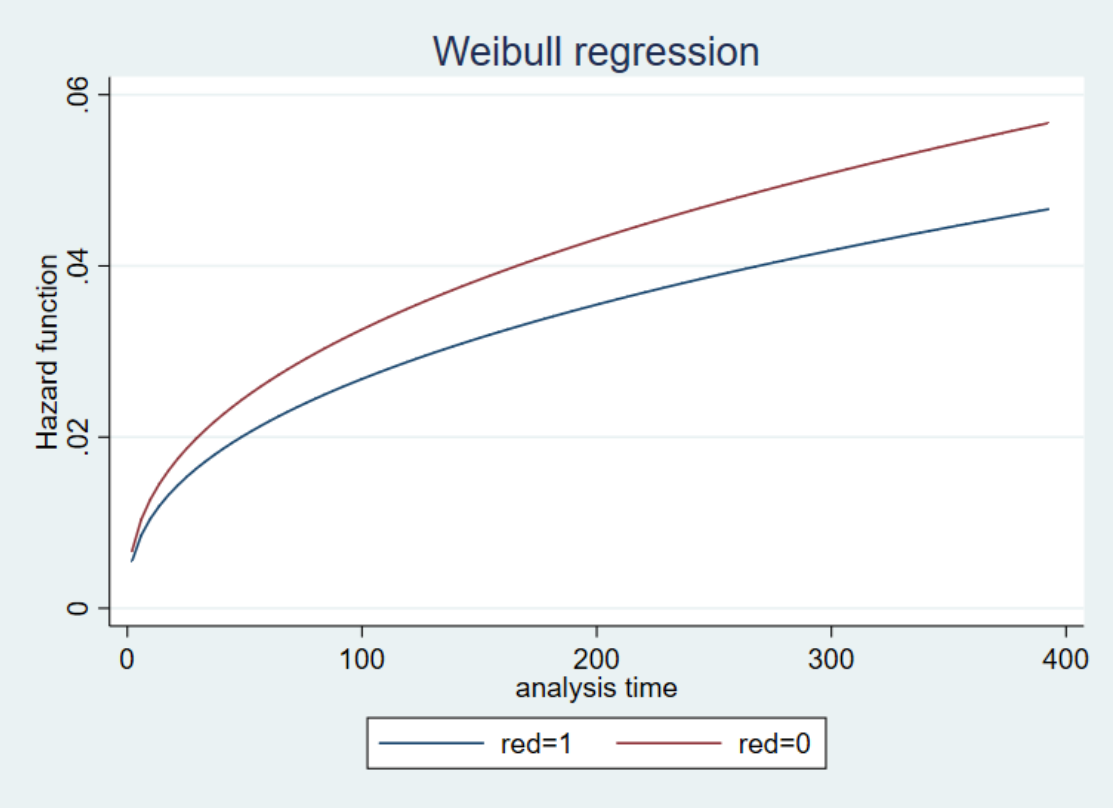




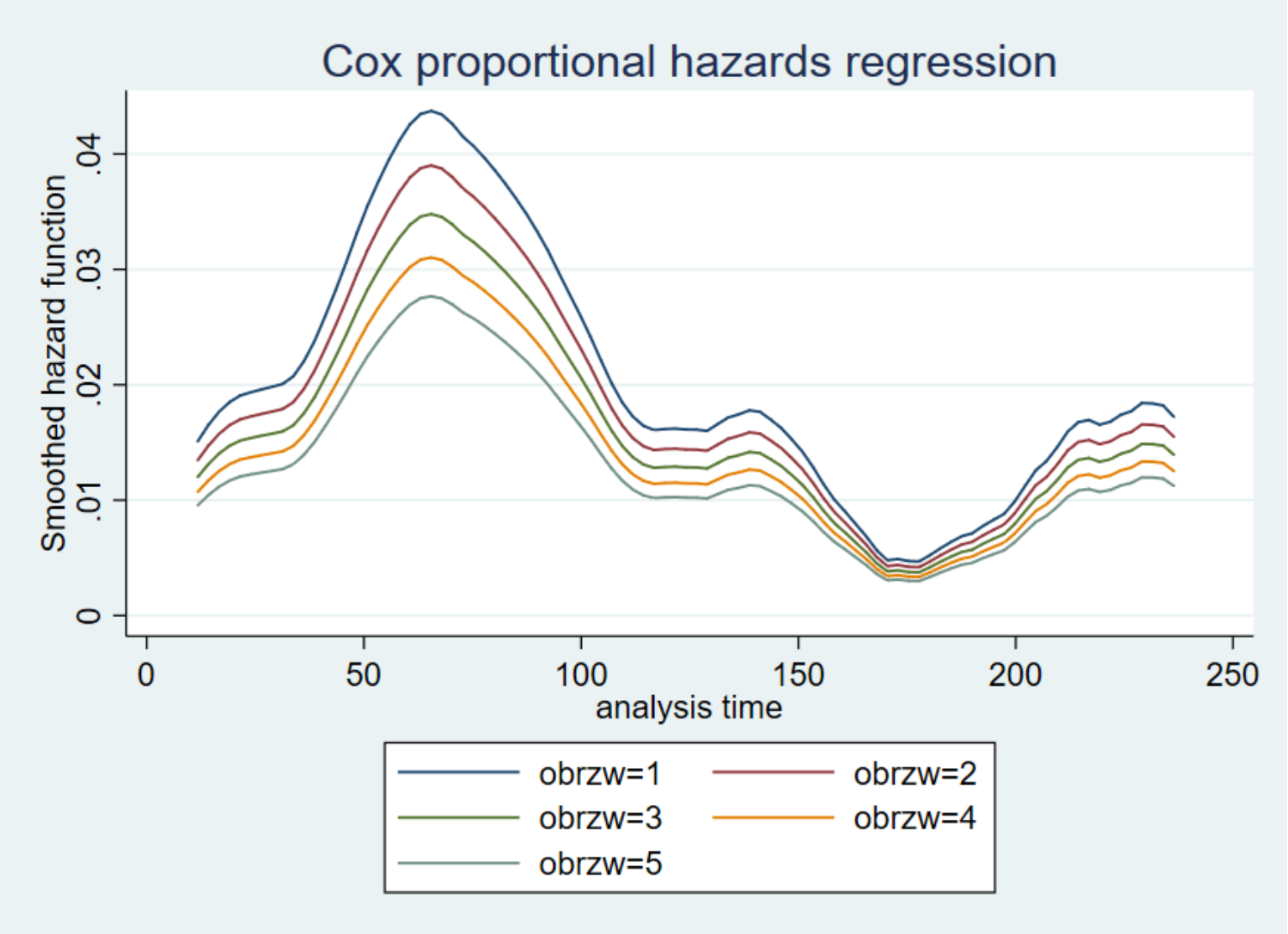
(The graphs are almost identical for both specifications)

Visualization of the effect of being redundant on hazard (in “long” specifications)





Parametric Cox Hazard Regression for various levels of education, “long” specification



Conclusions (1)

- We find that the «Club Looking for Work» program prolongates the presence in unemployment for men. We could explain that via self-selection of participants (who already had substantial difficulties in finding the job but are motivated to find one and thus not terminating the search). To establish whether the program has any positive effect on *placement*, a further research, considering the comparable (by discussed characteristics) subsamples of men that differ only in participation in program, is needed.
- We observe that, as predicted by the theory, the respondent's age has a prolongating impact on the time of job search. The existence of wives (for men) causes both rationales and possibilities to quickly find a new job, thus shortening the average time spent in unemployment.

Conclusions (2)

- We observe that people with prestigious education (university graduates) have bigger difficulties in finding new appropriate jobs (due to smaller demand) yet struggle to find them. On the contrary, the people with professional education have higher hazard rates.
- A similar effect, consistent with theory, is visible for people that have previously worked in high-income areas, such as management, insurance, credit and finance. People from other fields don’t seem to follow this pattern at high significance levels.

Conclusions (3)

- In the “extended” model, we get the results that people made redundant on their previous jobs tend to persist longer in unemployment, compared to those that leaved their jobs voluntary or via firing. This is simply explainable: voluntary resigning people typically either have a new prepared job option or are going to leave the job market. In addition to that, the are slight positive relative effects on hazard rates for people recently started seeking the job, but these results shouldn’t be overinterpreted due to small amount of such people in sample.