



Exiting unemployment: How do program effects depend on individual coping strategies?

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ABSTRACT

This paper analyses if individual coping strategies explain heterogeneous effects of participation in active labour market programs (ALMPs) on reemployment probabilities for the unemployed. I use survey data linked with administrative data from Statistics Denmark and focus on respondents who are unemployed or participating in ALMPs ($n = 1310$). To account for selection bias I analyse the data with a mixed logit model. I find that the coping strategies displayed by the unemployed persons explain heterogeneous effects of participation in ALMPs.

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1. Introduction

Unemployment and especially long-term unemployment is one of the important gateways to poverty. Even with unemployment benefits and other types of income replacement benefits, unemployed persons have significantly lower incomes than their employed peers, and their risk of poverty is non-negligible. In addition, these unemployment benefits are rarely available for long periods of time and if the person fails to find work, the poverty truly sets in when benefit eligibility runs out. This risk of poverty for unemployed persons creates a strong need for public programs to help the unemployed persons find work. As a consequence, most governments offer different types of programs for the unemployed, to help them upgrade their skills and get in contact with potential future employers. These are the active labour market programs (ALMPs).

A large and growing empirical literature shows that ALMPs fail to meet the aim of helping the unemployed to find work, as only a few of them have positive reemployment effects. Some programs even reduce the reemployment probabilities of the participants (Dahl & Lorentzen, 2005; Friedlander, Greenberg, & Robins, 1997; Heckman, Lalonde, & Smith, 1999; Kluve, 2006; Kluve & Schmidt, 2002). These findings then provide an incentive to abandon the costly programs all together, and use public resources on other measures against poverty. But recently, the literature on the effects of ALMPs has begun to focus on heterogeneous effects of program participation (Frölich, 2006; Gerfin & Lechner, 2002; Heckman, Smith, & Clements, 1997; Lechner & Smith, 2007; Lechner & Wunsch, 2006; Rinne, Schneider, & Uhlenhorff, 2007; Wunsch & Lechner, 2007). This

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literature shows that program participation has a positive effect on reemployment probabilities for unemployed with low initial probabilities of returning to work (e.g. Lechner, 2006). It also shows that program effects vary with the duration of the unemployment spell (Gerfin & Lechner, 2002; Gerfin, Lechner, & Steiger, 2005) and by other observed and unobserved characteristics of the unemployed (Dahl & Lorentzen, 2005; Friedlander et al., 1997; Heckman et al., 1997, 1999; Kluve, 2006; Kluve & Schmidt, 2002; Koning, 2001; Manski, 2001). Consequently the programs may have a positive effect on reemployment and be a vital instrument in the fight against poverty as long as they are offered to the right group of unemployed.

This paper extends the literature on heterogeneous treatment effects by analysing if unemployed people's coping strategies with regard to managing the unemployment help to explain why effects of ALMPs are heterogeneous. Coping strategies are personal strategies which unemployed persons adopt to handle the unemployment, e.g. using their network to find a job. I use survey data linked with data from administrative registers to analyse this research question and I use a selection model to account for unobserved heterogeneity that influences both participation in ALMPs and reemployment probabilities. Similar to previous studies, I find heterogeneity in program effects, suggesting that ALMPs are a useful instrument to fight poverty, when they target the right group of unemployed.

1.1. Active labour market programs

Participation in ALMPs is mandatory for all unemployed persons in Denmark, who receive unemployment benefits, and who have been unemployed more than 12 months. Three different types of programs exist, such as subsidised jobs at regular work places, vocational training, or courses aimed at keeping the unemployed occupied (Sociale Ydelser, 1994–2003). These ALMPs have different contents and effects. Subsidised jobs are similar to regular private or public sector jobs. This type of program facilitates social contacts which can be important for reemployment. Other ALMPs consist in vocational training, whereby they raise the human capital of the participants and hence their ability to take on new jobs. Finally, some programs take place in 'artificial' environments created especially for the program, like some form of production facility, and their primary aim is to keep the unemployed person occupied and make them earn the rights to their benefits (Geerdsen & Geerdsen, 2006). Thus, these different types of ALMPs appeal to different types of unemployed (a selection effect) and will also have different effects on the participants' chances of finding reemployment (a program effect).

A large literature has analysed the effect of ALMPs on the unemployed person's reemployment probabilities and subsequent earnings, and hence of the probability that the programs prevents the unemployed from falling into poverty. There is consensus that subsidised jobs at privately owned work places have a positive effect along with vocational training, and furthermore, that programs which take place in artificial environments do not have any effect (Dahl & Lorentzen, 2005; Friedlander et al., 1997; Heckman et al., 1999; Kluve, 2006; Kluve & Schmidt, 2002).

1.2. Heterogeneous treatment effects

A recurring finding in the literature is that effects of program participation vary over participants. Studies often find that participation has the largest effect for unemployed with low initial employment probabilities, and the lowest effect for unemployed with high initial reemployment probabilities, even after the end of the program. The most widely used explanation is that the programs prevent the relatively able unemployed from actively seeking jobs while participating, the so-called "lock-in effect". In addition, the post-program effect may be an indication that the quality of job offers decline over the course of the unemployment spell. Thus program participation prevents the relatively able unemployed person from exploiting good job offers they would get at the beginning of the unemployment spell and leaves them with poorer post-program opportunities. Since the less able unemployed do not receive good job offers to begin with, they are not equally punished by the program participation (Gerfin & Lechner, 2002; Gerfin et al., 2005; Wunsch & Lechner, 2007). However, the literature on heterogeneous treatment effects is theoretically underdeveloped and lack proper conceptualization of why heterogeneous treatment effects occur. This situation calls for new theoretic explanations of why different people benefit differently from ALMPs. In the next section this paper introduces the theory on coping strategies as an explanation of heterogeneous treatment effects.

1.3. Coping strategies

Coping strategies reflect behaviors and activities a person undertakes to reach certain desired goals. If a person is unemployed, this goal might be to find a job. The literature points to two coping strategies often displayed by the unemployed: the problem-focused coping strategy and the emotions-focused coping strategy. An unemployed person does not only display one strategy, but is likely to act out each strategy to different extents (Albion, Fernie, & Burton, 2005; Caska, 1998; Kinicki, Prussia, & McKee-Ryan, 2000; Lai & Wong, 1998; Latack, Kinicki, & Prussia, 1995; McFadyen, 1995; Starrin & Larsson, 1987; Walsh & Jackson, 1995).

A person displaying the problem-focused coping strategy attempts to directly manage or alter the problem which causes distress, for example by actively trying to find a new job. For this unemployed person mastery of one's own fate is central. By contrast, a person displaying the emotions-focused coping strategy attempts to avoid dealing with the problem, for instance by avoiding association or confrontation with the social role as unemployed. Compared to the problem-focused strategy the emotions-focused strategy is then less concerned with self-mastery and more oriented towards ignoring the problem.

Studies have found a correlation between individual coping strategies and personal resources, such as self-esteem and social support, as well as with individual characteristics like gender and educational level (e.g. Christensen, Schmidt, Kriegbaum, Hougaard, & Holstein, 2006; Grossi, 1999; Hanisch, 1999; McKee-Ryan, Song, Wanberg, & Kinicki, 2005; Walsh & Jackson, 1995).

Studies furthermore find a positive correlation between the problem-focused coping strategy and reemployment probabilities, and a negative correlation between the emotions-focused coping and reemployment probabilities (Hanisch, 1999; Lai & Chan, 2002; Leana & Feldman, 1995; McKee-Ryan et al., 2005; Waters & Moore, 2002). Coping strategies thus seem to contribute to unemployed persons' reemployment probabilities.

1.4. Coping strategy and heterogeneous treatment effects

One literature then links unemployed's coping strategies with their reemployment probabilities, and a second literature ascribes heterogeneous treatment effects of program participation to initial reemployment probabilities. The individual reemployment probabilities hereby connect coping strategies to heterogeneous treatment effects, which suggests that the coping strategies displayed by the unemployed persons might help to explain heterogeneous outcomes from participation in ALMPs. Consequently, this paper hypothesises that the coping strategy displayed by the unemployed person explains part of the heterogeneity in the effects of ALMPs on reemployment. This gives rise to the following hypotheses:

1. The effect of participation in ALMPs on reemployment probabilities varies by the degree to which an unemployed person displays respectively the problem-focused and the emotions-focused coping strategy:
 - a. Unemployed people who display the problem-focused coping strategy to a high degree will benefit less from participation in ALMPs than the unemployed person who displays the problem-focused coping strategy to a lower degree.
 - b. Unemployed people who display the emotions-focused coping strategy to a high degree will benefit more from participation in ALMPs than the unemployed person who displays the emotions-focused coping strategy to a lower degree.

2. Data and method

The data used in the analysis of this paper are part of the Danish Longitudinal Study on Work, Unemployment and Health. This data consists of administrative data linked with survey data. For this study, a postal survey was sent out in the spring of 2000 to a stratified random sample of the people living in Denmark. The sample consists of two populations. In the first group all individuals are exactly 40 or 50 years old by 1/10–1999 (response rate 69%, $n = 7588$). In the second group all individuals have been unemployed at least 70% of the time during the period 10/1–1996 to 10/1–1999, and they are between 37 and 56 years old at the time of the interview (response rate 57%, $n = 2350$). The questionnaire has a range of variables on well-being, health, coping strategies, etc.¹

My data then consist of, on the one hand, subjective data, like attitudes and values, which can only be collected by asking people, and, on the other hand, the more 'objective' data, like income and labour market history that are available from the administrative registers. This facilitates more and more precise information on the objective data than what people usually provide when asked. The administrative data furthermore gives me information on the respondents both before and after the survey was conducted.

For this paper I use a sub-sample of the respondents who, according to the administrative data, were unemployed at the time of the interview. This restriction leaves 1918 respondents. Missing variables cause further reductions in the sample (the main sources of attrition are the variables for coping strategies). The final sample size is 1310, and the two sources of attrition, unit and item non-response, cause bias in my sample.² I control for non-response by conducting a Heckman correction in the statistical model, which means that the model includes two Inverse Mills Ratios (one for each type of non-response) for the probability that the respondents appear in the final sample (Heckman, 1979). Appendix A explains the specific procedure.

2.1. Statistical framework

The literature on ALMPs has given much attention to the potential problem of selection bias. This bias entails that observed effects of program participation results from participants selecting themselves into programs rather than the effect of the program itself. This implies a possible selection of unemployed with high unobserved probabilities of reemployment into one type of program and a selection of unemployed, with low unobserved probabilities of reemployment into other programs. Without taking this selection bias into account, it is impossible to estimate the causal effect of participation on reemployment.

¹ Because the data contains sensitive and confidential information from the registers, access to the data requires a special permit, and it is therefore not downloadable. More information on the data is available from the author on request.

² A comparison of the characteristics of the original sample and my selected sample reveals that especially the first attrition severely biases the sample. These comparisons are available from the author on request.

Table 1

Coping strategies: items and factor loadings (simple orthogonal varimax rotation).

Items	Problem-focused coping	Emotions-focused coping
1. Try to find work or start own business	0.80	0.01
2. Demand courses or further education	0.71	0.03
3. Talk with other unemployed persons	0.47	–0.09
4. Try to arrange my daily life so it feels like a workday	0.39	0.08
5. Avoid thinking about my working options	–0.38	0.10
6. Approach people who can help me to find a new job	0.80	–0.01
7. Avoid being seen by neighbours or others whom I do not know too well	–0.02	0.82
8. I keep my worries about my attachments to the labour market by myself	–0.07	0.80
9. I blame myself that I am unemployed	0.11	0.81
Eigenvalues	2.38	2.03
Kaiser's Measure of Sampling Adequacy	0.687	

Factor analysis based on the full sample (n = 1310).

I address the selection problem by means of a two equation model with correlated random effects, which I estimate using the statistical software Gauss. Here, the random effects accounts for the unobserved characteristics which influences both the selection into programs and reemployment probabilities. Controlling for the random effect then allows me to interpret the program effects as causal. The model's first equation, the outcome equation, is a binary logit model, which accounts for the probability of reemployment ($Y_i = 1$), given a vector of covariates, x . u_i is an unobserved individual specific component.

$$P(Y_i = 1) = \frac{e^{\beta'x_i + u_i}}{1 + e^{\beta'x_i + u_i}} \quad (1)$$

The model's second equation, the selection equation, accounts for selection into ALMPs and estimates a multinomial logit model, for the probability that the individual participates in program j ($Y_j = j$), again given a vector of covariates, x :

$$P(Y_j = j) = \frac{e^{\beta'x_{ij} + z_i + v_i}}{\sum_{j=1}^J e^{\beta'x_{ij} + z_i + v_i}} \quad (2)$$

Here, v_i is an unobserved individual specific component, and z_i is a variable, which only enters this second equation (as explained below). To identify the unobserved heterogeneity, the random effects of the two models, u and v , are correlated with a joint density function $h(u, v)$ (see Holm, 2002). The model requires an exclusion restriction in the selection equation (i.e. the equation regarding selection into programs) to ensure that the correction for the unobserved component is not just a product of assumptions regarding its functional form. This is the variable z .

2.2. Variables

The dependent variable used in the main equation is a dummy variable indicating exit to employment no later than 2 years after the beginning of the unemployment spell. I use this 2-year period is to make sure, first, that lock-in effects do not conflate the program effect and, second, that the program has had sufficient time to have an effect. Approximately 19% of the sample exit to employment.

2.2.1. Coping strategy

I conceptualize individual coping strategies by means of nine variables developed specifically for measuring individual coping strategies during unemployment (Christensen et al., 2006). Table 1 shows the wording of these nine variables, which pertain to different ways of handling unemployment, for example if the unemployed seeks help to exit unemployment, or if the unemployed tries to conceal the labour market status from acquaintances. The categories for answering are (1) never, (2) rarely, (3) sometimes, and (4) always.³

I employ a confirmatory factor analysis to extract two factors from the nine items. I use polychoric correlations because the items are ordinal.⁴ The factors measure each of the coping strategies; the problem-focused coping and the emotions-focused coping, and together they explain almost 50% of the variation among the nine questions. Furthermore Kaiser's Measure of Sampling Adequacy, which indicates the size of the variable's partial correlations relative to their ordinary correlations, is above the required 0.6, and the factors both have eigenvalues above one. This all in all implies that the two factors are useful and important.

Table 1 shows that items one to six have high loadings on the first factor. These items capture the extent to which the unemployed respondents try to pursue more education or use networks to find a job. Consequently this first factor captures the problem-focused coping strategy. The higher the score, the higher is the degree to which the respondents display the

³ The nine items appear as questions A32a, A32b, A32c, A32d, A32e, A32f, A32g, A32h and A32i in the survey.

⁴ I extract the two factors using SAS's 'proc factor' module, and the SAS macro 'polychor', which allows for factor analysis based on polychoric correlations.

Table 2

Descriptive statistics. Mean shown for dummy variables and mean and standard deviation is shown for continuous variables.

Variable	Used in model		
	Mean (std.)	Outcome: employment	Outcome: government training program
Exit to employment within 2 years	0.19	Outcome	
Coping strategy: problem-focused	0.01 (1.00)	Control	Control
Coping strategy: emotions-focused	0.01 (1.00)	Control	Control
ALMP: vocational training or subsidised job at a private work place	0.44	Control	Outcome
ALMP: subsidised job at a public work place	0.19	Control	Outcome
Government training: programs provided by the municipality	0.13	Control	Outcome
<i>Controls</i>			
Wages (divided by 10,000)	6.42 (7.61)	Control	Control
Educational level	12.21 (2.00)	Control	Control
Age	45.77	Control	Control
No. months employed in the 4 years prior to the interview	10.49 (14.11)	Control	Control
No. months unemployed in the 4 years prior to the interview	33.64 (15.37)	Control	Control
No. months in ALMPs in the 4 years prior to the interview	10.10 (10.16)	Control	Control
More than 70% unemployment in the 4 years prior to the interview	0.68	Control	Control
Single	0.39	Control	Control
Children	0.21	Control	Control
Female	0.64	Control	Control
Immigrant	0.10	Control	Control
Fair treatment in	1.50 (0.54)	Control	Control
Inverse Mills ratio for attrition bias	0.58 (0.10)	Control	Control
Inverse Mills ratio for bias due to missing variables	0.47 (0.14)	Control	Control
Fair treatment at the tax office	1.90 (0.69)		Excl. restriction

Descriptive statistics of the full sample ($n = 1310$).

problem-focused coping strategy. Items seven to nine have high or moderately high loadings on the second factor. These items seem to capture the extent to which the unemployed respondents avoid thinking about and being associated with the unemployment. Consequently, this second factor captures degree of emotions-focused coping strategy (Christensen et al. (2006) use nine items in a similar way). Again, the higher the score, the higher is the degree to which the respondent displays the emotions-focused coping strategy.

For each respondent, I calculate their score on the two latent factors. Mean score on the two factors is zero and the standard deviation is one (see Table 2).

2.2.2. Types of programs

My measure of program participation has four categories. The first group is the group of non-participants ($n = 310$, 24%). The second group comprise of respondents who participate in vocational training or who find a subsidised job with a private sector employer ($n = 579$, 44%). As a large majority of the respondents in this category get vocational training, I subsequently refer to the category as vocational training.⁵ The third group comprises of respondents who find subsidised jobs with public sector employers ($n = 253$, 19%) and the fourth group comprises of respondents who participate in training programs provided by the local municipality ($n = 168$, 13%). This four-category variable enters as independent variable in the outcome equation, and as the dependent variable in the selection equation. Table 2 shows descriptive statistics. In total 1000 of the 1310 respondents (76%) participate in a program during their unemployment.

2.2.3. Exclusion restriction

I include an exclusion restriction in the selection equation to ensure that the correction for the unobserved component does not only rely on assumptions regarding the component's functional form. An exclusion restriction is valid when it affects on the outcome variable in the selection equation, but is uncorrelated with the error term of the outcome equation (the equation for the probability of reemployment).

Selection into programs is distinct from reemployment since only the first outcome involves an interaction with the job centre which allocates programs. That is, participation in one type of program rather than another depends on negotiations between the unemployed person and the case worker. Studies in political science show that people's trust in institutions influences their interactions with the institutions (Sandstrom, 2007; Shlapentokh, 2006; Taylor-Gooby, 2005). Relying on this argument, a variable for the unemployed person's trust in the job centre can be used as an indicator of their approach to the negotiations leading to participation in a specific program, and is a usable exclusion restriction.

⁵ The two categories, vocational training and subsidised jobs with a private sector employer are merged due to the low number of observations in the latter category. Findings from previous studies indicate that these two programs are the more efficient programs in terms of raising the reemployment probabilities of the participants, and this legitimises the aggregation of the two categories.

Table 3

Results from the two equation model.

Parameters	Model 1	Model 2 (reference: no. participation)		
	Outcome = employment	Outcome = vocational training	Outcome = subsidised job at a public work place	Outcome = government training provided by municipality
	Coef. (std.)	Coef. (std.)	Coef. (std.)	Coef. (std.)
<i>Independent variables</i>				
Coping strategy: problem-focused (PF)	1.41 (0.46)***	0.21 (0.10)**	0.25 (0.11)**	−0.45 (0.15)***
Coping strategy: emotions-focused (EF)	−0.87 (0.49)*	0.09 (0.10)	0.17 (0.11)	0.05 (0.15)
ALMP: vocational training (VOC)	−5.78 (1.10)***			
ALMP: subsidised job (J_PU)	−3.17 (1.19)***			
ALMP: programs by municipality (M)	−7.21 (1.22)***			
<i>Interactions</i>				
Coping: PF*ALMP (VOC)	−1.39 (0.48)***			
Coping: PF*ALMP (J_PU)	−0.12 (0.67)			
Coping: PF*ALMP (M)	−1.05 (0.52)**			
Coping: EF*ALMP (VOC)	0.63 (0.50)			
Coping: EF*ALMP (J_PU)	2.07 (0.82)**			
Coping: EF*ALMP (M)	0.85 (0.55)			
<i>Controls</i>				
Wage, year prior to the survey	−0.01 (0.02)	−0.11(0.01)***	0.02 (0.01)	−0.24 (0.03)***
Educational level	−0.09 (0.06)	0.08 (0.04)*	0.01 (0.03)	−0.22 (0.07)***
Age	−0.10 (0.02)***	0.06 (0.02)***	0.09 (0.02)***	−0.04 (0.03)
No. months employed in the 4 years prior to the interview	0.03 (0.02)	−0.00 (0.01)	−0.01 (0.01)	−0.03 (0.02)
No. months unemployed in the 4 years prior to the interview	0.01 (0.02)	0.00 (0.01)	0.01 (0.02)	0.02 (0.03)
No. months in ALMPs in the 4 years prior to the interview	0.04 (0.01)***	0.04 (0.01)***	0.03 (0.01)*	0.11 (0.02)***
Unemployed for more than 70% of the time during the 4 years prior to the interview	1.29 (0.51)***	0.72 (0.34)**	0.54 (0.40)	−0.17 (0.61)
Single	−0.32 (0.23)	−0.17 (0.19)	−0.41 (0.23)*	0.63 (0.30)**
Children	−0.06 (0.31)	−0.03 (0.23)	−0.93 (0.32)***	−0.39 (0.40)
Female	−0.15 (0.31)	−0.10 (0.27)	0.31 (0.31)	−1.40 (0.42)***
Immigrant	−0.14 (0.40)	−0.24 (0.31)	−0.44 (0.38)	0.13 (0.47)
Fair treatment in personal relations	−0.08 (0.21)	0.05 (0.16)	−0.18 (0.19)	0.33 (0.25)
Inverse Mills ratio for attrition bias	−0.16 (1.51)	−2.55 (1.27)**	1.72 (1.49)	−0.59 (1.99)
Inverse Mills ratio for bias due to missing variables	0.76 (0.89)	−0.63 (0.74)	−1.14 (0.84)	2.94 (1.06)***
<i>Exclusion restriction</i>				
Fair treatment at the job centre		0.09 (0.14)	−0.46 (0.16)***	0.54 (0.20)***
Intercept	1.85 (2.16)	−2.29 (1.64)	−4.12 (1.74)**	−0.49(2.58)
−2 log likelihood value of the two equations model with correlated random effects: −1992.36				
−2 log likelihood value of the two models estimated separately: −2004.47				
LR-test for difference between the two models (df = 5): 12.11**				

Model based on the full sample ($n = 1310$).* $p < 0.1$.** $p < 0.05$.*** $p < 0.01$.

Consequently, I choose an exclusion restriction from the survey part of the data that measures the degree to which the respondents expect to receive a fair treatment at the job centre.⁶ The variable expresses the respondents' trust in the fairness of the institution which handles their unemployment, and hence their point of departure when entering into the negotiation about the program participation with the caseworker. On a scale from 1 to 4 with 1 representing the lowest degree of trust, the mean level of trust in my sample is approximately 1.9. As it will be evident from the empirical results of the regression analysis (see Table 3), the exclusion restriction has a significant effect on selection into the different programs.⁷

To ensure that the exclusion restriction measures trust in job centres specifically, rather than trust in general (the two types of trust are likely to be correlated), I include a variable for general trust in both equations (i.e. this variable does not serve as an exclusion restriction). Its scale resembles the one concerning institutional trust, and the mean is 1.5. Hence the respondents display less general trust, than trust in the job centre.

⁶ Question A39a in the survey, which asks "Do you expect to get a fair treatment at the job centre".

⁷ Note that because I only have one instrument, I cannot test its validity statistically, but only give theoretical motivation for its use.

2.2.4. Employability

To ensure that the coping strategies do not just express the respondents' underlying employability I control for the respondents' earnings, educational level and age in both equations. These are indicators of human capital (age is a proxy for job experience) and of returns to employment, and they capture the respondents possibilities of and incentives to find reemployment. Employability is also a result of past labour market experience, and consequently, I also control for this by including the number of months the respondent has been (1) employed, (2) unemployed and (3) participating in ALMPs during the 4 years prior to the interview, and a dummy indicating if the respondent has been unemployed for more than 70% of the this period. This is a standard indicator for marginalisation, which is similar to the variable used for selecting the marginalised respondents (see Section 2).

Table 2 shows that the mean earnings in the year prior to the survey is DKK 64,193 (\$10,698), which is low by Danish standards, but reflects respondents' unstable labour market history. I measure education by years of completed schooling, with values above 10 equalling the number of years above what is required as minimum. The mean value is 12.2 which resemble high school diploma. The respondents are on average 46 years old. The average number of months employed, unemployed and participating in ALMPs the 4 years prior to the interview is respectively 10, 34 and 10. In addition, 68% have been unemployed for more than 70% of this time.

2.2.5. Other control variables

I also control for include marital status, having children, gender, and immigrant background. 39% of the respondents are single. 21% have children, and 64% are female. Only 9% of the respondents have immigrant backgrounds. This is not a lot considering the high proportion of immigrants on welfare benefits in Denmark. However, it reflects that immigrants were over-represented in the group of non-respondents in the survey.

3. Results

Table 3 shows the results of the model. The likelihood ratio test at the bottom of the table compares the explanatory power of my two equations model with correlated random effects, with the explanatory power of the two models when estimated separately. The significant test result indicates that my model, which controls for unobserved factors that influence both the selection into ALMPs and reemployment probabilities, has significantly better explanatory powers than the simpler model. This emphasises the importance for correcting for unobserved components, as done in my model.

My primary interest is the first model (model 1), which explains exit to employment as a function of coping strategies and program participation (and the controls). After presenting the results of this model, I discuss these in relation to the results of the selection model (model 2), which explains exits to programs.

3.1. Outcome: employment

The first model (second column of Table 3) shows that the problem-focused coping strategy has a significant and positive effect on reemployment and that the emotions-focused coping strategy has a significant and negative effect on reemployment. This implies that both coping strategies have the expected effects; the higher the degree to which the unemployed person displays the problem-focused coping strategy, the higher is his or her reemployment probabilities. In contrast, the higher the degree to which the unemployed persons who display the emotions-focused coping strategy, the less likely is he or she to become reemployed. I find negative effects of all programs, compared to the reference category, which is no participation.⁸

Of particular interest are the effects of the interactions between coping strategy and participation in ALMPs. Here, I find three significant effects. The first effect is the interaction between the problem-focused coping strategy and vocational training, and the second is the interaction between this coping strategy and programs provided by the municipality. The effects are negative and a bit smaller, numerically, than the main effect of the problem-focused coping strategy. This finding suggests that the effect of participation in these two programs on reemployment probabilities varies considerably by the degree to which the unemployed person displays the problem-focused coping strategy. Unemployed who display the problem-focused coping strategy to a very low degree (i.e. who have a negative value on the coping variable) will experience a positive effect of the program participation on employment outcomes. By contrast, unemployed people who display the problem-focused coping strategy to a high degree will experience a negative effect of program participation. The third significant effect is the interaction between the emotions-focused coping strategy and the subsidised jobs. The positive coefficient shows that an unemployed person who displays the emotions-focused coping strategy to a high degree benefits more from this program than an unemployed person who displays the emotions-focused coping strategy to a low degree. This positive synergy suggests that this program is especially efficient for unemployed persons who put more effort into avoiding confrontation with their unemployment than into finding a job.

⁸ These findings do not correspond with the expectations regarding the program effects, as I expected vocational training to be relatively more efficient than the other programs.

Together, the effects of the interactions between coping strategy and the programs suggest that programs are most efficient when offered to unemployed persons who have chosen not to deal actively with their situation as well as to avoid being confronted with it. The findings then confirm the hypotheses that the coping strategies displayed by the unemployed explain heterogeneous program effects, and are in accordance with previous literature on heterogeneous treatment effects.

We furthermore see that age has a negative coefficient – the older the unemployed person, the less likely is reemployment. We also see that, more months of previous program participation along with extensive previous unemployment (more than 70% of the time) increase reemployment probabilities. Last it should be noted that the two inverse Mills ratios have insignificant effects, which indicates that a person's probability of being a respondent, and a respondent's probability of having valid values on the central variables is uncorrelated with reemployment probabilities. Hereby bias caused by attrition and missing variables is unlikely to influence the results of this model.

3.2. Outcome: programs

The second model is not the prime interest of the paper, but some of the results are of interest to the overall conclusion. Table 3 shows that unemployed persons who display the problem-focused coping strategy to a high degree are more likely to get vocational training or subsidised jobs, but less likely to participate in programs provided by the municipality. The first coefficient is of interest, as the employment model showed that the combination of a high degree of problem-focused coping and participation in vocational training is non-beneficial in terms of reemployment probabilities. This result suggests that unemployed persons who benefit the least from vocational training are most likely to enter them. In contrast, the negative effect of the problem-focused coping strategy on the probability of participating in a program provided by the municipality shows that some of the unemployed who benefit the least from these types of programs are also those who are least likely to enter them.

The controls in the second model show the following. First, the probability of getting vocational training decreases by earning levels prior to unemployment, and increases by age and the length of previous program participation. Second, the probability of getting a subsidised job is lower for single respondents and respondents with children, but increases by age and length of previous program participation. Third, the probability of entering a program provided by the municipality is lower for women than for men, it decreases by wage and educational status, but increases by length of previous program participation. Fourth, the inverse Mills ratio for attrition has a negative effect on the probability of participating in vocational training. Fifth, the inverse Mills ratio for missing variables has a positive effect on the probability of participating in programs provided by the municipality. These results underline the importance of controlling for these types of sample biases to achieve consistent results. Sixth, the exclusion restriction has a negative effect on getting a subsidised job and a positive effect on participation in programs provided by the municipality. That is, unemployed with high degrees of institutional trust are less likely to get a subsidised job and more likely to participate in programs provided by the municipality.

3.3. Stability and causality

The results presented above rely crucially on two assumptions: (1) individual coping strategies are stable over time – and are not affected by participation in ALMPs and (2) a person's reemployment probabilities do not affect his or her coping strategies. The first assumption is violated if program participation alters the coping strategies, which implies that heterogeneity in the unemployed persons' coping strategies reflects a treatment effect in itself. This then blurs the interpretation of the results presented above. The second assumption is violated if reemployment probabilities are endogenous to coping strategies. This implies that we may not interpret the effect of the coping strategies on reemployment as causal. Hence the two assumptions are important for the explanatory potential of the results of the analysis.

To investigate the validity of the assumptions I first test if the coping strategies are affected by program participation and the duration of the unemployment at the time the coping strategies are revealed (i.e. at the time of the interview). I find that neither program participation nor the duration of the unemployment affect the unemployed person's coping strategy.⁹ Second, I compare my results from the model presented in Table 3 with the results of a model in which I instrument the coping strategies to test if the possible endogenous relationship between coping strategies and reemployment affects my results. I instrument the coping strategies using a variable which measures the extent to which the unemployed person expects to receive practical support from other people in case of need (question A46F in the survey): since coping strategies very much involve other people (either as means or something to avoid), the strategies are likely to depend on expectations regarding interpersonal relationships (cf. also Section 1.3). However, such expectations should not explain reemployment probabilities, as people who expect to get practical support might use this support to find reemployment, just as people who do not expect

⁹ I use propensity-score matching (see Appendix B) to compare the coping strategies of the respondents in my sample who (1) have already participated in ALMPs and finished this participation at the time of the interview, (2) participate in ALMPs at the time of the interview, and (3) participate in ALMPs some time after the interview. The results of the propensity-score matching show no significant differences between the coping strategies of these groups, which suggests that the actual participation does not alter the unemployed's coping strategy. In addition I calculate the correlation between the respondents' coping strategies and the duration of their unemployment at the time of the interview (which is when the coping strategies are expressed), by subgroups of unemployed as defined by the total duration of their unemployment (0–1 year, 1–2 years, 2–3 years, etc.). This is to test if coping strategies vary over the course of the unemployment spell, for subgroups who are otherwise assumed to have the same reemployment probabilities. None of these correlations are significant. In combination these tests suggest that the coping strategies are robust to both program participation and unemployment duration.

this support might be more likely to develop independent strategies to find work.¹⁰ Here, the Hausman test shows no significant differences between the models ($\chi^2 = 1.01$, $p > 0.1$), which suggests that my results do not suffer from endogeneity problems. Together these tests indicate that the two assumptions are reasonable.

4. Conclusion

The aim of this paper was to analyse if individual coping strategies help to explain the heterogeneous effects of participation in ALMPs on reemployment probabilities for the unemployed found in previous studies. The results of the analysis indicate that variation in the unemployed's coping strategies help to explain why outcomes from ALMPs are heterogeneous. This is in accordance with previous studies on heterogeneous treatment effects of ALMPs which find that the unemployed with the lowest reemployment probabilities benefit the most from the programs. My results moreover indicate that those who benefit the most from a specific program are not necessarily those who are most likely to participate in the program.

My findings have at least two policy implications: First, they imply that the social system exposes the unemployed to expensive programs from which they do not necessarily benefit. Since the programs lock-up both public funds and personal resources of the unemployed, the findings of this paper should inspire careful considerations on whether or not public funds are spent in vain, and if the programs prevent the targeted unemployed from finding jobs on their own. Second, my results may help caseworkers to reconsider their allocation of unemployed into programs. The knowledge that unemployed, who display a high degree of problem-focused coping might experience a negative effect of vocational training, and that unemployed, who display a high degree of emotions-focused coping might experience a positive effect of subsidised jobs, may be useful in the process of allocating unemployed persons into programs. Hopefully this knowledge could prevent more unemployed from falling into poverty, as it might help us achieve more efficient program allocation.

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Appendix A. The Heckman correction

My sample suffers from two selections processes. First is attrition from the original randomly selected sample (unit non-response), and second is attrition due to missing values on the central variables (item non-response). I control for these two types of selection with the Heckman correction. This means that I estimate the probability that a person, who was selected to participate in the original survey ($n = 15,277$), actually appears in the survey ($n = 9938$), and the probability that a person who was unemployed at the time of the interview ($n = 1918$) has valid values on all the included variables ($n = 1310$). With these two probabilities I calculate two inverse Mills ratios (iMr), which I include in my empirical model (presented in Section 2.1). The iMrs account for each respondent's probability of appearing in the final sample, and they ensure that this probability does not affect the other coefficients of the model. This allows me to generalise my findings to a broader population than just respondents of my sample (of other examples of a double Heckman correction, see Caudill and Oswald (1993)).

I calculate the first correction with information from the administrative data (year prior to the survey): gender, age, educational level, labour market status, immigrant status. The Heckman correction requires an exclusion restriction which affects attrition, but not the outcomes of interest, reemployment probabilities and program participation. For this I include a dummy indicating if the respondent lives in one of Denmark's seven biggest cities.¹¹ People in big cities live busier lives than people in the rural areas, which affects their probability of answering a questionnaire (previous studies show that being busy is a good predictor of unit non-response in surveys, see e.g. Cranford et al. (2008)). However there is no reason to think that urbanisation should affect the type of program the unemployed participates in or his or her chances of reemployment. First, the law requires the case worker to have all types of programs on offer for the unemployed, which implies that caseworkers in both rural and urban areas offer the same types of programs. And whereas unemployed in rural and urban areas may have different characteristics, selecting them into different program, the control for observed and unobserved characteristics should account for this aspect. Second, even though larger cities might provide more job offers, Denmark is so small that almost any resident lives in commuting distance to a larger city, which means that also unemployed who live in rural areas may benefit from job offers in larger cities.

I base the second correction on the same information from the administrative data, and but use a different exclusion restriction: I need a variable which explains the probability that a respondent answers the personal questions regarding coping strategies but not explain the outcomes of interest. Here I argue that respondents who experience insecurity on a daily basis are less likely to give personal information to strangers (e.g. the interviewer), because this insecurity may cause them

¹⁰ I acknowledge that social support in itself may facilitate reemployment, however, the *expectation* of social support may just lead to different personal strategies to find reemployment, between those who expect social support and those that do not expect this support.

¹¹ Copenhagen, Frederiksberg, Esbjerg, Odense, Kolding, Århus or Ålborg.

Table A1

Results of one-to-one propensity-score matching with replacement (std. err. in parentheses).

Controls	Treatment	ALMPs after the interview	ALMPs at the time of the interview	ALMPs before the interview
All other participants (i.e. not the treated)	Diff. in problem-focused coping	−0.075 (0.088)	−0.125 (0.083)	0.073 (0.095)
	Diff. in emotions-focused coping	−0.045 (0.082)	−0.041 (0.078)	−0.033 (0.092)
ALMPs after the interview	Diff. in problem-focused coping	–	−0.164 (0.100)	−0.146 (0.156)
	Diff. in emotions-focused coping	–	−0.067 (0.090)	−0.137 (0.137)
ALMPs at the time of the interview	Diff. in problem-focused coping	0.114 (0.094)	–	0.050 (0.104)
	Diff. in emotions-focused coping	0.012 (0.087)	–	0.108 (0.106)
ALMPs before the interview	Diff. in problem-focused coping	−0.069 (0.134)	−0.041 (0.078)	–
	Diff. in emotions-focused coping	−0.147 (0.129)	−0.050 (0.075)	–

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. All matches are balanced according to standard requirements and estimated using the Stata ado “psmatch2”.**Table B1**

Results from the two selection models. Logistic regression.

Parameter	First selection: attrition	Second selection: missing variables
Female	0.25 (0.02)***	−0.17 (0.07)**
Age	−0.01 (0.00)***	−0.01 (0.01)
Educational level	0.10 (0.02)***	−0.27 (0.06)***
Working year prior to survey (ref. unemployed)	0.17 (0.02)	−0.08 (0.07)
Outside the labour force year prior to survey (ref. unemployed)	−0.13 (0.03)***	−0.22 (0.08)***
Western immigrant (ref. native dane)	−0.13 (0.17)	0.28 (0.42)
Other immigrant (ref. native dane)	−0.20 (0.10)**	−0.75 (0.24)***
Exclusion restrictions		
Live in big city	−0.08 (0.02)***	
Chicane in neighbourhood		−0.20 (0.09)**
Street gangs in neighbourhood		−0.26 (0.09)***
Ethnic min. in neighbourhood		−0.31 (0.09)***
Intercept	0.04 (0.06)	0.96 (0.21)***
LR χ^2 /pseudo R^2	314.55*** / 0.016	100.56*** / 0.043
No. of observations	15,277	1918

* $p < 0.1$.** $p < 0.05$.*** $p < 0.01$.

to suspect that they may use this information for covert purposes (previous studies mention how the respondents' reluctance towards the interviewer may affect item-non-response, see [Safir, Black, and Steinbach \(2001\)](#)). Again there is no reason to suspect that the experience of insecurity affects type of program or reemployment: First, the unemployed negotiates the type of program with the case worker, whom he or she, according to the law, has met several times prior to this negotiation meeting to discuss other aspects of the unemployment situation (job search strategy, etc.). Therefore, the case worker is not a stranger at this point in time, and the unemployed person's suspicion towards strangers should then not affect the negotiation regarding program participation. Second, whereas the unemployed person's reemployment probabilities implies negotiations with a stranger, the potential future employer, the employer is not a random stranger, as e.g. an interviewer, rather, it is a stranger with which the unemployed person wishes to develop a reasonable relationship. The meeting with this stranger, which is important for the unemployed person's reemployment, will therefore start off from different premises than the meeting with the interviewer, and a person's suspicion towards random strangers will probably not affect this meeting. My exclusion restriction is therefore three dummy variables for the presence of different types of insecurity in the respondent's neighbourhood: (1) high risk of experiencing chicane, (2) visible presence of street gangs, and (3) visible presence of indisposed ethnic minorities.¹²

Table B1 shows the results from the two selection models. The exclusion restrictions are significant and have the expected effects, as people living in large cities are less likely to respond to a survey, and respondents who experience insecurity in their neighbourhood are less likely to answer personal questions.

Appendix B. Coping and program participation

I test if participation in ALMPs affects coping strategies by comparing the coping strategies of three groups of participants: (1) those who have already participated in and finished a program at the time of the interview, (2) those who participate in a program at the time of the interview, and (3) those who participate in a program after the interview. If program participation

¹² Questions A38b, A38k and A38l in the survey.

affects coping strategies, I should find significant differences between the coping strategies of these three groups. I compare the groups' coping strategies using nearest neighbour propensity-score matching with replacement, and estimate the propensity-score using the same variables as used in Eq. (2) (as presented in Sections 2.1 and 2.2 and Table 2). I also include variables for the type of program attended, to secure proper matches. Table A1 presents the results, and as seen, there are no significant differences between the coping strategies of the three groups. This then supports the assumption that program participation does not affect coping strategies.

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