# Appendix for:
# Employing the unemployed of Marienthal:
# Evaluation of a guaranteed job program

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## Contents

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# A  Additional tables and figures

## A.1  Synthetic control: Further details

Table A.1: Variables used for the construction of the synthetic control

| Variable | Definition |
|---|---|
| Working age pop | Working age population. |
| Long term unemp/pop | Number of long-term unemployed ($> 1$ year) as a share of working age pop. |
| Inactive/pop | Number of inactive persons in working age as a share of working age pop. |
| Mean age | Mean age in years of the total population. |
| Share small firms | Small firms (less than 10 employees) as a share of total firms. |
| Share mid firms | Medium sized firms (10-249 employees) as a share of total firms. |
| Share low edu | Persons with low education (ISCED 1-2) as a share of total pop. |
| Share mid edu | Persons with medium education (ISCED 3-4) as a share of total pop. |
| Share men | Male persons as a share of total pop. |
| Share migrant | Persons with a migrant background as a share of total pop. |
| Share care resp | Active persons with care responsibilities as a share of total pop. |
| Mean wage | Mean wage level. |
| Mean age unemp | Mean age in years of the unemployed. |
| Low edu/unemp | Unemployed with low education (ISCED 1-2) as a share of total unemployed. |
| Mid edu/unemp | Unemployed with medium education (ISCED 3-4) as a share of total unemployed. |
| Poor German/unemp | Unemployed with low German skills ($<$ A2 CEFR) as a share of total unemployed. |
| Men/unemp | Male unemployed as a share of total unemployed. |
| Migrant/unemp | Unemployed with a migrant background as a share of total unemployed. |
| Health cond/unemp | Unemployed with a medical condition limiting employment opportunities as a share of total unemployed. |
| Communal tax/pop | Communal tax per working age pop. |

*Notes:* This table describes the variables used for the construction of the synthetic control municipality; cf. Table A.2.

Figure A.1: Location of municipalities included in the synthetic control
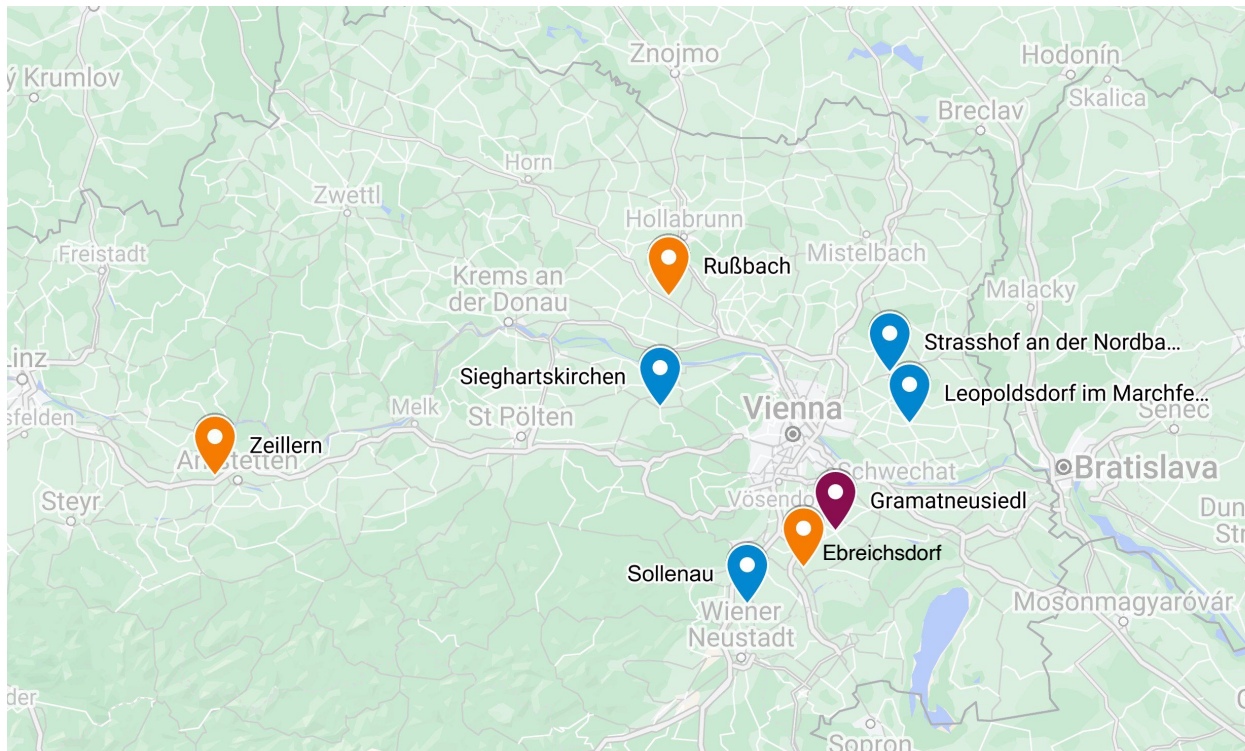


*Notes:* Gramatneusiedl, the treated municipality, is marked in red. The 3 municipalities with the largest weights in the synthetic control are marked in orange. Municipalities with smaller weights are marked in blue.

Figure A.2: Unemployment gap and permutation inference.
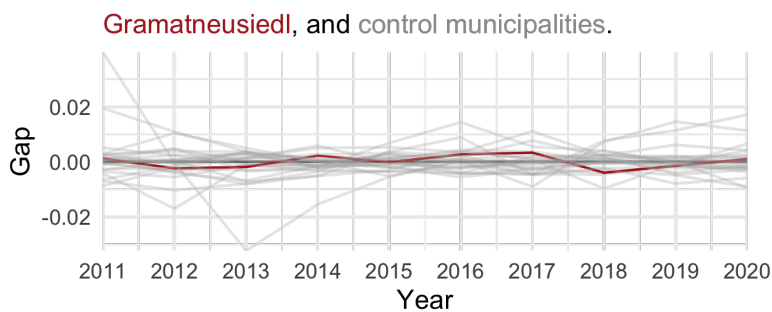


*Notes:* This figure shows the unemployment gap between Gramatneusiedl and its synthetic control (red), and between each of the 25 potential control municipalities and *their* synthetic control (grey). This figure parallels the second row of Figure 4, for the 10 years before the MAGMA program.

Table A.2: Gramatneusiedl and control municipality covariates

**Variables observed in December 2019**

| Municipality | Working age pop | Long term unemp/pop | Inactive/pop | Mean age | Share small firms | Share mid firms | Share low edu |
|---|---|---|---|---|---|---|---|
| Gramatneusiedl | 5013 | 0.007 | 0.220 | 50.775 | 0.115 | 0.339 | 0.208 |
| Synthetic control | 4830 | 0.016 | 0.228 | 51.074 | 0.126 | 0.363 | 0.225 |
| Zeillern | 1263 | 0.004 | 0.227 | 50.229 | 0.093 | 0.335 | 0.199 |
| Ebreichsdorf | 7655 | 0.020 | 0.228 | 50.810 | 0.139 | 0.381 | 0.235 |
| Leopoldsdorf im Marchfelde | 2035 | 0.022 | 0.247 | 51.304 | 0.135 | 0.348 | 0.242 |
| Strasshof an der Nordbahn | 6920 | 0.024 | 0.213 | 51.403 | 0.115 | 0.324 | 0.250 |
| Rußbach | 942 | 0.013 | 0.219 | 52.230 | 0.126 | 0.369 | 0.206 |
| Sieghartskirchen | 4560 | 0.010 | 0.224 | 52.464 | 0.135 | 0.337 | 0.197 |
| Sollenau | 5122 | 0.017 | 0.248 | 54.286 | 0.129 | 0.360 | 0.284 |

| Municipality | Share mid edu | Share men | Share migrant | Share care resp | Mean wage | Mean age unemp | Low edu/unemp |
|---|---|---|---|---|---|---|---|
| Gramatneusiedl | 0.642 | 0.511 | 0.242 | 0.257 | 3416 | 42.694 | 0.530 |
| Synthetic control | 0.644 | 0.503 | 0.181 | 0.235 | 3293 | 43.422 | 0.452 |
| Zeillern | 0.702 | 0.509 | 0.053 | 0.256 | 3168 | 40.462 | 0.346 |
| Ebreichsdorf | 0.620 | 0.498 | 0.234 | 0.235 | 3379 | 44.344 | 0.465 |
| Leopoldsdorf im Marchfelde | 0.619 | 0.498 | 0.260 | 0.216 | 3294 | 43.627 | 0.513 |
| Strasshof an der Nordbahn | 0.600 | 0.496 | 0.276 | 0.257 | 3393 | 42.364 | 0.465 |
| Rußbach | 0.676 | 0.513 | 0.088 | 0.224 | 3137 | 45.500 | 0.525 |
| Sieghartskirchen | 0.641 | 0.510 | 0.195 | 0.206 | 3366 | 41.257 | 0.387 |
| Sollenau | 0.608 | 0.496 | 0.229 | 0.193 | 3235 | 41.819 | 0.521 |

| Municipality | Mid edu/unemp | Poor German/unemp | Men/unemp | Migrant/unemp | Health cond/unemp | Communal tax/pop | Lt ue/pop 2020 |
|---|---|---|---|---|---|---|---|
| Gramatneusiedl | 0.455 | 0.082 | 0.627 | 0.418 | 0.245 | 57.281 | 0.009 |
| Synthetic control | 0.516 | 0.061 | 0.583 | 0.312 | 0.264 | 217.301 | 0.018 |
| Zeillern | 0.654 | 0.000 | 0.692 | 0.115 | 0.303 | 97.822 | 0.004 |
| Ebreichsdorf | 0.480 | 0.086 | 0.546 | 0.374 | 0.213 | 282.242 | 0.022 |
| Leopoldsdorf im Marchfelde | 0.473 | 0.093 | 0.573 | 0.467 | 0.256 | 284.806 | 0.023 |
| Strasshof an der Nordbahn | 0.496 | 0.089 | 0.528 | 0.472 | 0.303 | 160.549 | 0.027 |
| Rußbach | 0.475 | 0.025 | 0.575 | 0.200 | 0.375 | 97.079 | 0.016 |
| Sieghartskirchen | 0.552 | 0.054 | 0.609 | 0.360 | 0.281 | 329.855 | 0.012 |
| Sollenau | 0.460 | 0.140 | 0.558 | 0.457 | 0.282 | 308.998 | 0.019 |

**Variables observed in July 2020**

| Municipality | Inactive/pop | Mean wage | Mean age ue | Low edu/ue | Mid edu/ue | Poor German/ue | Health cond/ue |
|---|---|---|---|---|---|---|---|
| Gramatneusiedl | 0.209 | 3308 | 42.069 | 0.456 | 0.481 | 0.031 | 0.209 |
| Synthetic control | 0.219 | 3181 | 42.625 | 0.389 | 0.577 | 0.059 | 0.212 |
| Zeillern | 0.222 | 3025 | 41.474 | 0.289 | 0.711 | 0.000 | 0.193 |
| Ebreichsdorf | 0.217 | 3278 | 43.101 | 0.424 | 0.527 | 0.082 | 0.169 |
| Leopoldsdorf im Marchfelde | 0.244 | 3222 | 44.021 | 0.472 | 0.507 | 0.056 | 0.225 |
| Strasshof an der Nordbahn | 0.202 | 3264 | 41.188 | 0.458 | 0.493 | 0.061 | 0.260 |
| Rußbach | 0.208 | 3022 | 42.314 | 0.343 | 0.629 | 0.057 | 0.349 |
| Sieghartskirchen | 0.220 | 3241 | 43.406 | 0.319 | 0.626 | 0.043 | 0.278 |
| Sollenau | 0.238 | 3071 | 41.847 | 0.460 | 0.517 | 0.119 | 0.274 |

Table A.3: Covariate balance for the individuals in our control town sample

| Covariate | Gramatneusiedl | Control towns | Difference | T-statistic | P-value |
|---|---|---|---|---|---|
| Male | 0.581 | 0.535 | -0.045 | 0.523 | 0.602 |
| Age | 44.694 | 49.634 | 4.940 | -2.496 | 0.014 |
| Migration Background | 0.339 | 0.310 | -0.029 | 0.352 | 0.726 |
| Education | 0.452 | 0.535 | 0.084 | -0.958 | 0.340 |
| Medical condition | 0.306 | 0.338 | 0.032 | -0.386 | 0.700 |
| Benefit level | 29.839 | 34.535 | 4.697 | -2.600 | 0.011 |
| Days unemployed | 1661.355 | 1638.521 | -22.834 | 0.136 | 0.892 |

## A.2   Confidence intervals

Figure A.3: Confidence intervals for contrast of Group 2 and Group 1 in February 2021
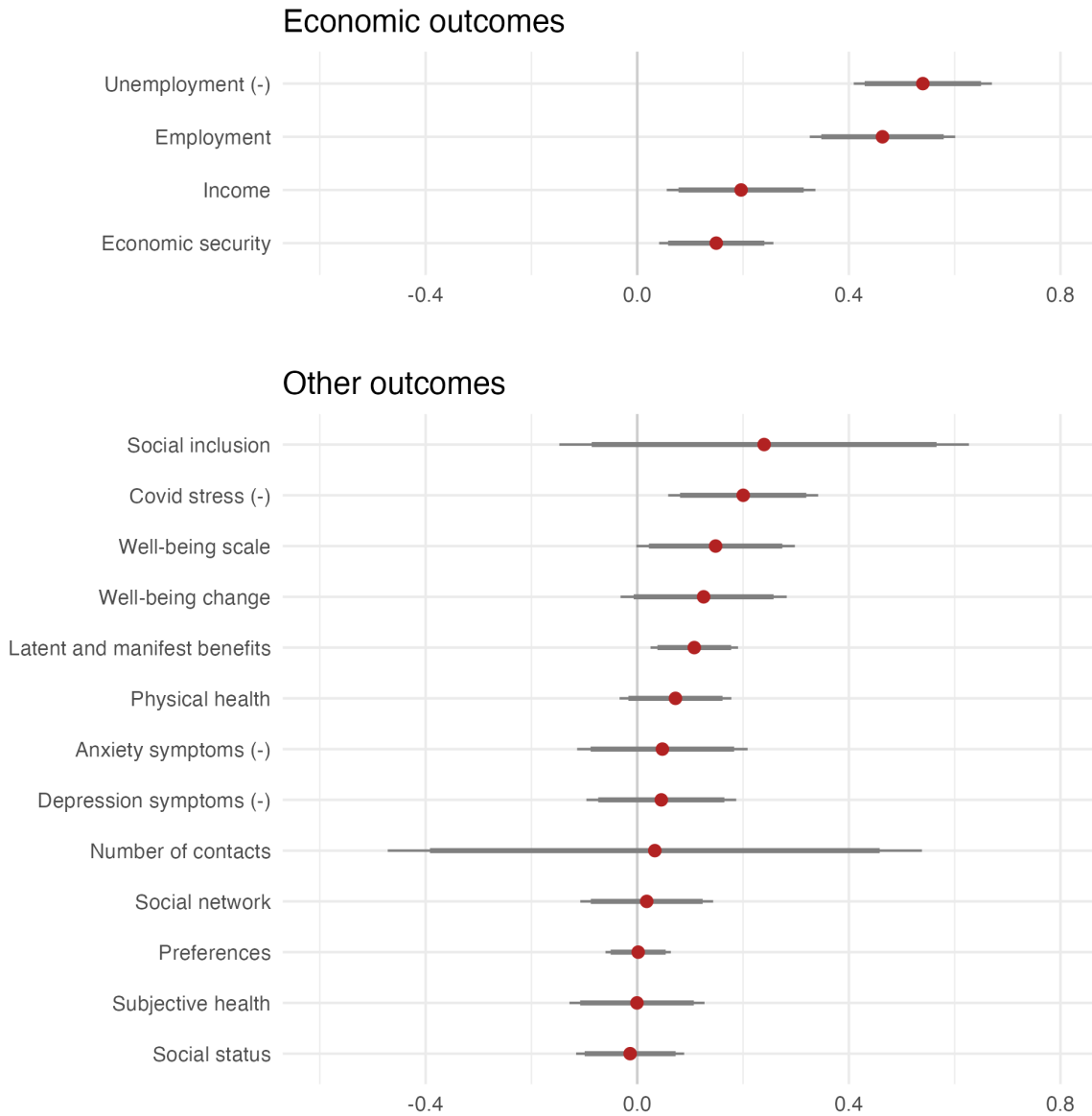


*Notes:* Confidence intervals for treatment effects, estimated with linear controls for baseline covariates, and with robust standard errors. The thin line shows the 95% confidence interval and the wider line shows the 90% confidence interval. These confidence intervals correspond to the estimates reported in Figure 2. These estimates are also tabulated in Table 5.

Figure A.4: Confidence intervals for contrast of Group 2 and control town individuals, February 2021
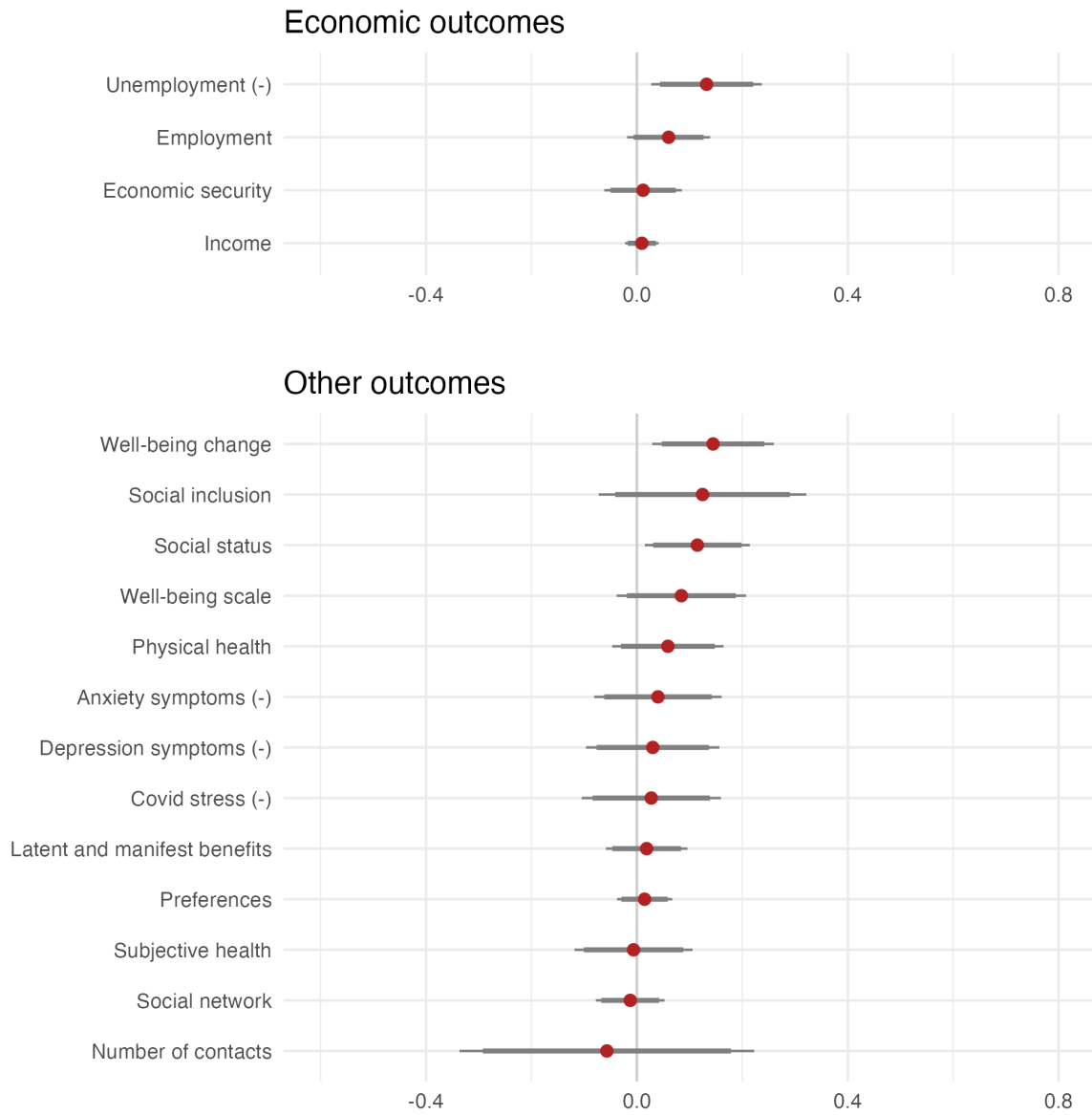
## Economic outcomes



## Other outcomes



*Notes:* These confidence intervals correspond to the estimates reported in Figure 6 and Figure 7. These estimates are also tabulated in Table 6 and Table 7.

Figure A.5: Confidence intervals for contrast of participants in both groups and control town individuals, February 2022
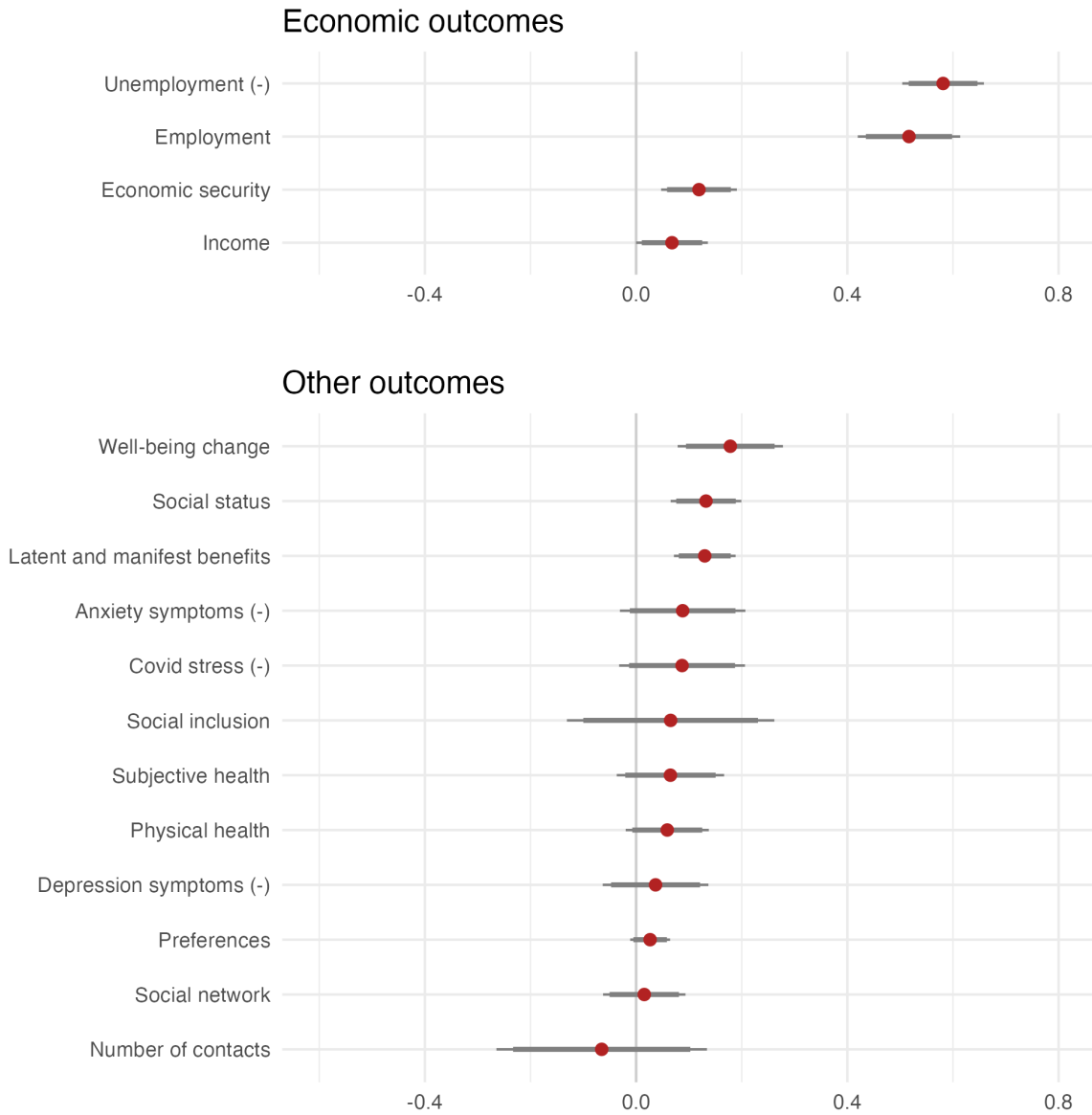
## Economic outcomes



## Other outcomes



*Notes:* These confidence intervals correspond to the estimates reported in Figure 6 and Figure 7. These estimates are also tabulated in Table 6 and Table 7.

## A.3   Robustness checks
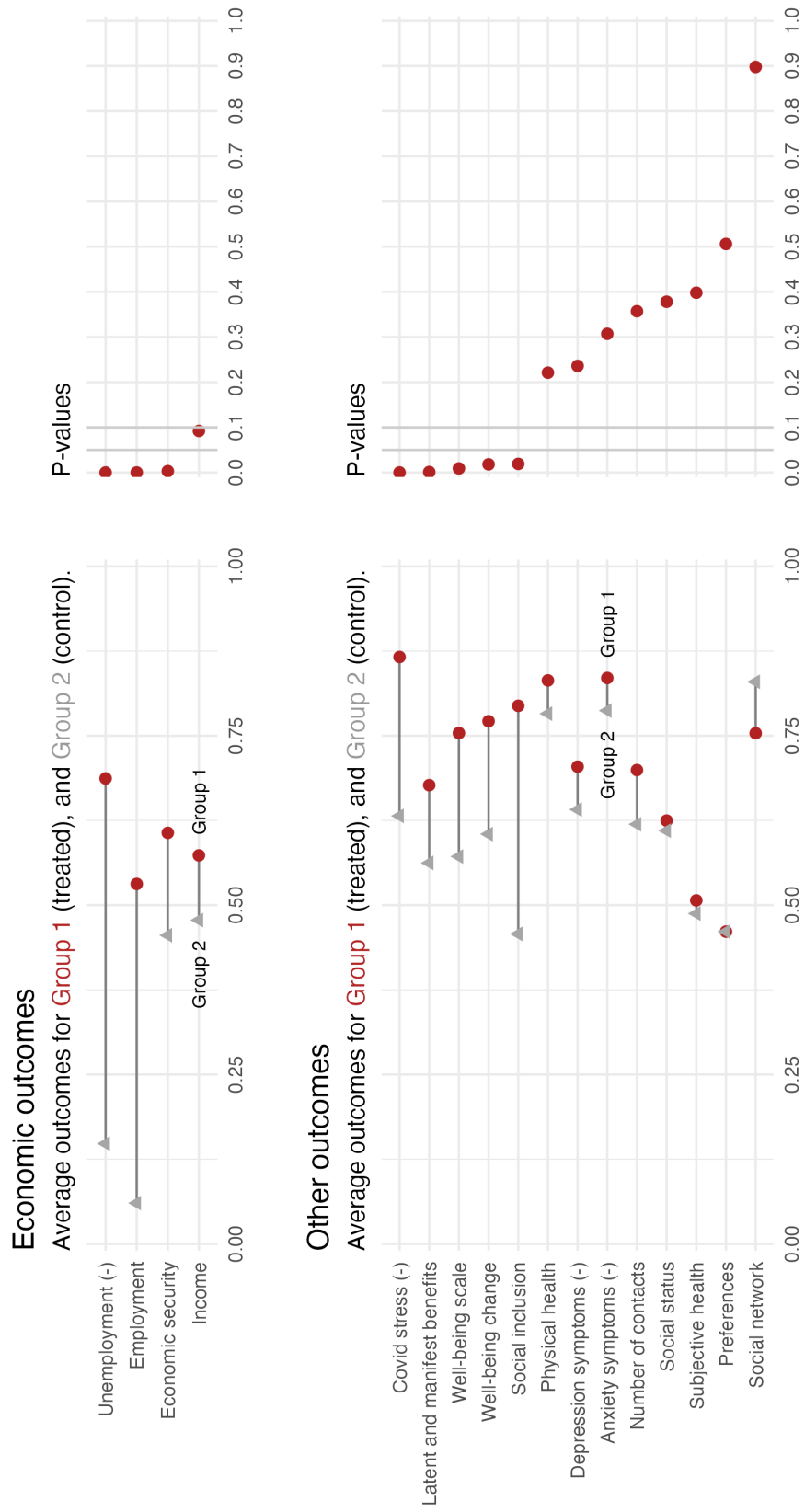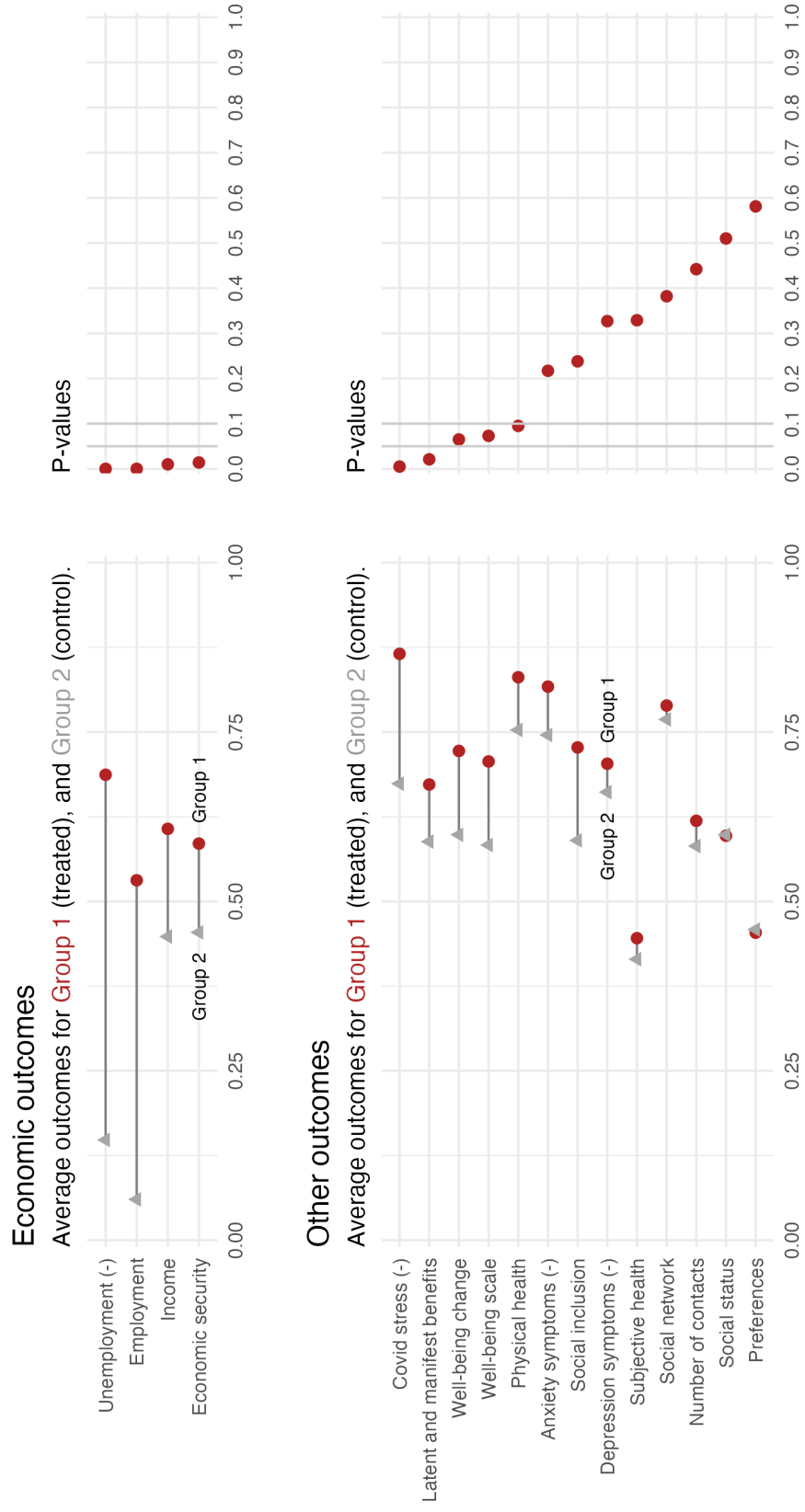
Figure A.6: Experimental estimates with pair controls



Economic outcomes

Average outcomes for Group 1 (treated), and Group 2 (control).

P-values

Other outcomes

Average outcomes for Group 1 (treated), and Group 2 (control).

P-values

Figure A.7: Experimental estimates with no controls

## Economic outcomes
Average outcomes for Group 1 (treated), and Group 2 (control).



## Other outcomes
Average outcomes for Group 1 (treated), and Group 2 (control).

# B  Survey questions

This section includes the questions used to survey participants in the treatment and control groups. The questions are structured by outcomes. First-level numbered bullet points correspond to the questions that constitute the aggregate index for each outcome reported. Each question was used with equal weights for the aggregation. Second-level alphabetically listed bullet points correspond to the answer categories provided in the survey. Some questions (on income and on social networks) are repeated, to clarify that they enter the construction of different outcome measures, as listed in Table 1 in the manuscript. The questionnaire for the survey was registered at https://www.socialscienceregistry.org/trials/6706.

**Income security**

*Source of questions:* US-SHED (Board of Governors of the Federal Reserve System, 2019), EU-SILC (Eurostat, 2019), and own.

1. Overall, which one of the following best describes how well you are managing financially these days:

   (a) Living comfortably

   (b) Doing okay

   (c) Just getting by

   (d) Finding it difficult to get by

2. Compared to 6 months ago before the start of MAGMA, would you say that you are better off, the same, or worse off financially?

3. How much is your monthly income?
   Subsequent question if no response: Can you try to guess in which category your monthly income falls approximately?

   (a) less than 600 €

   (b) 600 - 1,000 €

   (c) 1,000 - 1,400 €

   (d) 1,400 - 1,800 €

   (e) 1,800 - 2,200 €

   (f) 2,200 - 2,600 €

   (g) 2,600 € or more

4. Are you in arrears with a regular payment such as rent, phone bill, loan installment or the like?

5. Are you able to make an unexpected expense such as X for a repair?

**Income**

*Source of questions:* US-SHED (Board of Governors of the Federal Reserve System, 2019), EU-SILC (Eurostat, 2019), and own.

1. How much is your monthly income?
   Subsequent question if no response: Can you try to guess in which category your monthly income falls approximately?

   (a) less than 600 €
   (b) 600 - 1,000 €
   (c) 1,000 - 1,400 €
   (d) 1,400 - 1,800 €
   (e) 1,800 - 2,200 €
   (f) 2,200 - 2,600 €
   (g) 2,600 € or more

**Depression symptoms**

*Source of questions:* Fragile Families Survey (Bendheim-Thoman Center for Research on Child Wellbeing and Center, 2020).

Over the last 2 weeks, how much does the statement describe your feelings?

1. I feel I cannot shake off the blues, even with help from my family and my friends.

2. I feel sad.

3. I feel happy.

4. I feel life is not worth living.

5. I feel depressed.

**Covid stress**

*Source of questions:* Conway et al. (2020)

Please tell us whether the following statements apply to you:

1. Thinking about the coronavirus (COVID-19) makes me feel threatened.

2. I am afraid of the coronavirus (COVID-19).

3. I am stressed around other people because I worry I'll catch the coronavirus (COVID-19).

4. The Coronavirus (COVID-19) has impacted me negatively from a financial point of view.

5. I have lost job-related income due to the Coronavirus (COVID-19).

6. I have become depressed because of the Coronavirus (COVID-19).

7. The Coronavirus (COVID-19) outbreak has impacted my psychological health negatively.

**Social inclusion**

*Source of questions:* Fragile Families Survey (Bendheim-Thoman Center for Research on Child Wellbeing and Center, 2020).

1. How many new people have you met in the past month? Please type the approximate number.

2. Which of the following statements best describes your current relationship status?

    (a) I am romantically involved on a steady basis. We live together.
    (b) I am romantically involved on a steady basis. We live separately.
    (c) I am involved in an on-again and off-again relationship.
    (d) I am not involved in a romantic relationship.

**Preferences**

*Source of questions:* Falk et al. (2018). Weber and Blais (2006). Mobasseri et al. (2022). Own.

**Time preferences**

1. Would you prefer to receive 100 € today, or 300 € in 1 month?

2. Would you prefer to receive 100 € today, or 300 € in 6 months?

3. Would you prefer to receive 100 € today, or 300 € in 12 months?

4. Suppose you have some money to do business, and you have a choice between 2 options. Which option would you choose?

    (a) A business that can give you a lot of profit every month, but there is a chance you could lose money.
    (b) A business with less profit every month, but you can't lose your money.

5. Imagine you have saved 10,000 € from working at a job. You receive the following offer from a good bank: If you invest with them there is a chance that you will double the money you invested immediately, or lose half of the money you invested. How much do you want to invest? You only have 10,000 €.

**Personality traits**

6. In general terms, most people can be trusted.

7. You are willing to give up something that is beneficial for you today in order to benefit more from it in the future.

8. When someone does me a favor I am willing to return it.

9. If I am treated very unjustly, I will take revenge at the first occasion, even if there is a cost to do so.

10. I am willing to punish someone who treats me unfairly, even if there may be costs for me.

11. Imagine the following situation: Today you unexpectedly received 1,000 €. How much of this amount would you donate to a good cause?

12. Generally, I am willing to give to a good cause without expecting anything in return.

**Risk preferences**
We are interested in your risk-taking behavior. Please select how risky you find the respective behavior.

13. Admitting that your tastes are different from those of a friend.

14. Drinking heavily at a social function.

15. Disagreeing with an authority figure on a major issue.

16. Having an affair with a married man/woman.

17. Passing off somebody else's work as your own.

18. Betting a day's income on the outcome of a sporting event.

19. Engaging in unprotected sex.

20. Revealing a friend's secret to someone else.

21. Speaking your mind about an unpopular issue in a meeting at work.

22. Not returning a wallet you found that contains 200 €.

## Latent and manifest benefits

*Source of questions:* Kovacs et al. (2017)

Please select whether you agree or disagree with the following statements:

**Activity**

1. There is usually not enough spare time in my day.

2. I often have nothing to do.

**Social interaction**

3. I usually have a lot of opportunities to mix with people.

4. I seldom meet new people.

   **Collective purpose**

5. I rarely feel that I make a meaningful contribution to society.

6. I often feel a valuable part of society.

   **Time structure**

7. My days are usually well organized.

8. I rarely catch up with the things I need to do.

   **Social recognition**

9. I am usually important to my friends.

10. My friends rarely value my company.

    **Financial strain**

11. My income usually allows me to do the things I want.

12. My income usually does not allow me to socialise as often as I like.

## Physical health

*Source of questions:* PHQ-15 somatic symptom scale (Kroenke et al., 1998).

During the past month, how much have you been bothered by any of the following problems?

1. belly

2. back

3. limbs

4. menstruation (asked for women only)

5. sexual intercourse

6. head

7. chest

8. dizziness

9. passed out

10. heart

11. breath

12. intestine

13. digestion

14. sleep

15. energy

## Anxiety symptoms

*Source of questions:* GAD-7 general anxiety disorder (Spitzer et al., 2006).

Over the last 2 weeks, how often have you been bothered by the following problems?

1. Feeling nervous, anxious or on edge.

2. Not being able to stop or control worrying.

3. Worrying too much about different things.

4. Trouble relaxing.

5. Being so restless that it is hard to sit still.

6. Becoming easily annoyed or irritable.

7. Feeling afraid as if something awful might happen.

## Social network

*Source of questions:* Social Network Accuracy Test ("SNAT") from Mobasseri et al. (2022), and own.

1. From time to time, most people discuss work-related and job-search issues with other people. Looking back over the last 6 months, who are the people with whom you discussed work-related and job-search issues with? In the boxes below, please list the FIRST NAME and LAST NAME INITIAL of the people with whom you discuss important matters. E.g., Maria Maier would be recorded as "Maria M." Please list only one name per box. If two people on your list share the same first name and last initial, use numbers to distinguish them (e.g., "Maria M" and "Maria M2"). If you don't discuss important matters with anyone, just leave the fields blank.

2. Below is a list of the names you provided on the prior page. Please answer the questions below about each person you named. How frequently are you in contact with each person?

3. Please select whether you agree or disagree with the following statement. This person is close to you.

4. Please select whether you agree or disagree with the following statement. Compared to other people you know, this person is very valuable to you.

5. Which of the following best describes your relationship to each person?

(a) Spouse/Significant Other

(b) Other Family Member

(c) Friend/Social Contact

(d) Work/Professional Contact

(e) Other

6. Please select whether you agree or disagree with the following statements. This contact is someone who looks up to me.

**Well-being scale**

*Source of questions:* WHO-5 Well-being Index (WHO, 1998; Topp et al., 2015).

The following statements relate to your well-being in the past two weeks. For each statement, please mark the number that you think best describes how you have felt over the past two weeks. In the last two weeks . . .

1. I was happy and in a good mood.

2. I felt calm and relaxed.

3. I felt energetic and active.

4. I felt fresh and rested when I woke up.

5. My everyday life was full of things that interest me.

**Well-being change**

*Source of questions:* Own questionnaire.

1. Compared to 6 months ago before the start of MAGMA, would you say that you are doing better, the same, or worse?

**Social status**

*Source of questions:* US-SHED (Board of Governors of the Federal Reserve System, 2019), and own.

1. Imagine a ladder showing where people stand in society. At the top are the people who are the best off — those who have the most money, the most education, and the most respected jobs. At the bottom are the people who are the worst off — those who have the least money, the least education, and the least respected jobs or no job. Where would you place yourself on this ladder? *(The questionnaire includes an annotated image of a ladder).*

2. Over the past half year did your status in society...

(a) improve a lot

      (b) improve

      (c) improve a little

      (d) remain as it was

      (e) worsen a little

      (f) worsen

      (g) worsen a lot

3. Thinking of the future, do you expect your status to...

      (a) improve a lot

      (b) improve

      (c) improve a little

      (d) remain as it was

      (e) worsen a little

      (f) worsen

      (g) worsen a lot

**Number of contacts**

*Source of questions:* Social Network Accuracy Test ("SNAT") from Mobasseri et al. (2022), and own.

1. From time to time, most people discuss work-related and job-search issues with other people. Looking back over the last 6 months, who are the people with whom you discussed work-related and job-search issues with? In the boxes below, please list the FIRST NAME and LAST NAME INITIAL of the people with whom you discuss important matters. E.g., Maria Maier would be recorded as "Maria M." Please list only one name per box. If two people on your list share the same first name and last initial, use numbers to distinguish them (e.g., "Maria M" and "Maria M2"). If you don't discuss important matters with anyone, just leave the fields blank.

**Subjective health**

*Source of questions:* Fragile Families Survey (Bendheim-Thoman Center for Research on Child Wellbeing and Center, 2020), and own.

1. Would you say your health generally is...

      (a) excellent

      (b) very good

      (c) good

      (d) fair

      (e) poor

2. Over the past 6 months, would you say your health generally has...

    (a) improved a lot

    (b) improved

    (c) improved a little

    (d) remained stable

    (e) worsened a little

    (f) worsened

    (g) worsened a lot

# C Description of jobs

## C.1 Jobs created

This section documents the type and number of jobs created by the Marienthal job guarantee scheme between its start in 2020 until November 2022 both in the market and non-market sectors. This includes jobs for individuals who joined the scheme after treatment was assigned. Jobs of eligible individuals who found a job outside of the program are not included in this section. Figure A.8 shows some of the program participants at work.

**Jobs created in the non-market sector**

- 13 Carpenters
- 7 Tailors
- 6 Gardeners
- 5 Renovation workers
- 3 Registrars
- 3 Cleaners
- 1 Driver
- 1 Assistant counselor

**Jobs created in the market sector**

- 6 Office clerks
- 2 Warehouse workers
- 2 Assistant electricians
- 1 Care home assistant
- 1 Technical sales assistant
- 1 Facility manager
- 1 Construction worker
- 1 Salesperson
- 1 Construction foreman
- 1 Taxi driver
- 1 Hospitality assistant
- 1 Carpenter

- 1 Marketing assistant

- 1 Municipal building yard worker

- 1 Farm worker

- 1 Nursery worker

- 1 Call centre agent

- 1 Lift technician

- 1 Assistant cook

- 1 Forklift driver

- 1 Accounting clerk

- 1 HR consultant

## C.2 Participant views

**Werner V., aged 60:** "After more than 600 job applications over three years, my wish for employment proved hopeless. Too old, too expensive, over-qualified, without long-term prospects due to my age, with multiple university degrees seemingly over-qualified for service jobs... many obstacles seemed to exist. The job guarantee proved extremely valuable and useful for me. In cooperation with the municipality and the local museum, I am archiving and documenting the cultural, scientific and economic value of the historical site of Marienthal."

**Mohamad A., aged 44:** "I am from Syria and live here in the village with my family–my wife and my 4 children, some of whom are already at school. I recently had a job offer, the company wanted to hire me full time but due to the current Covid situation they changed their minds and offered only a marginal employment contract. By contrast, the job guarantee scheme provides an opportunity to work [full-time], which suits me because we can work every day and learn something new. I'd also like to use the time to improve my German language skills so that I can later catch up on my general qualification for university entrance and perhaps study at a university of applied sciences. I'm grateful for the help the job guarantee offers; it is important for me."

**Johann G., aged 65:** "I live in Gramatneusiedl and worked for 38 years at a company in the chemical industry that was located in Gramatneusiedl and closed down some years ago. I am now taking part in the job guarantee since 2020, which makes me feel comfortable. Under the scheme, I have worked in renovation and have been able to apply my skills in many ways. With the help of the job guarantee, I can start as a warehouse worker in a recycling company in October 2022."

## C.3 Case studies

**Public vegetable garden:** The local mayor provided $250m^2$ of land which participants cultivate as a sustainable food garden. Herbs and vegetables can be picked free of charge and the garden is open year-round. The first harvest was in summer 2022.

**Animal therapy:** Two participants are employed with an association providing animal-assisted therapy for children with various conditions (e.g., autism, ADHD, disabilities, learning difficulties). By looking after the association's animals, house, and garden, they have enabled the centre to improve its services and care for more young people.

**Funeral urns:** During participant Michaela P.'s (paid) internship doing office work at a funeral parlour, her employer noticed her talent for painting. Her internship turned into permanent employment in spring 2022 and, in addition to office work, she now paints urns – a new business venture for the parlour. Before Michaela became unemployed, she worked in a canteen and never thought she would be able to include her hobby in her job.

Figure A.8: Program participants at work

# D From "Die Arbeitslosen von Marienthal" to our study

Ninety years ago, in 1930, a team of researchers (including Marie Jahoda, Paul Lazarsfeld, and Hans Zeisel) wrote the pathbreaking study "Die Arbeitslosen von Marienthal" (Jahoda et al., 2017). Three years ago, in 2020, a pilot of a guaranteed job program for the long-term unemployed was launched in the very same location, which we evaluate in the present paper ("Employing the unemployed of Marienthal," EUM).

In this note, we take the occasion to reflect on the methodological differences between these studies. These two studies can be seen as examples of broader developments in social science methodology over the course of the 20th century. We would like to emphasize that this comparison is intended to be descriptive rather than taking a stance regarding the superiority of different methodological approaches.

The study of Jahoda et al. (2017), while pioneering in many ways, also reflected established approaches to empirical social science at the time. Similarly, our study EUM is fairly typical for policy evaluations in current empirical economics (and social science more generally). The methodological state of the art that we follow is reflected in standard graduate curricula in applied econometrics, and has been canonized by the economics Nobel prizes of 2019 ("for their experimental approach to alleviating global poverty") and 2021 ("for his empirical contributions to labour economics" and "for their methodological contributions to the analysis of causal relationships").

There are some commonalities between Jahoda et al. (2017) and EUM. Both are quantitative, empirical studies drawing on a variety of data sources, including self-collected surveys and administrative data.[1] Both are based on similar sample sizes (a few hundred) and geographic scope (Marienthal and Gramatneusiedl, and nearby communities).

Turning to differences between the two studies, there is first the type of question asked. Beyond its rich description, a primary contribution of Jahoda et al. (2017) is a **classification** of the unemployed of Marienthal into 4 types (ungebrochen / resigniert / verzweifelt / apathisch, which translate as unbroken / resigned / desperate / apathetic). By contrast, our focus is on the estimation of **causal effects** of a job guarantee, on both its beneficiaries and the wider community.

The focus on classification was a primary concern of 19th century empirical social science, from Adolphe Quetelet's "social physics" and its focus on types of "average man" through the "scientific" racism of the 19th century in biology and the humanities and its obsession with classifying humanity into distinct "races," to Max Weber's "ideal types." In an afterword to Jahoda et al. (2017), Hans Zeisel justifies the focus on comprehensive description and classification (or "sociography," as the authors call it) out of the need to understand a complicated and unstable capitalist society, for the purpose of rational policy, a need which he argues did not arise in pre-capitalist feudal times, where the classification of individuals was stable and known to everyone. An important role that Zeisel assigns to classification is to make qualitative data amenable to quantitative analysis.[2]

The focus in statistics on causal effects of interventions, on the other hand, traces back to the work of Neyman and Fisher in the 1920s, and has more recently first entered clinical trials in medicine, and has since the 1990s become dominant in empirical economics as well as other social sciences.

Closely related to this focus on classification versus causality is a distinction in the type of event studied. Jahoda et al. (2017) consider the consequences of a **historical macro event** (the Great Depression) – there is not even an attempt at finding a comparison group for their study sample of unemployed workers and their families. In EUM, by contrast, we focus on the **causal effect of a (micro) policy** intervention; much

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[1]Jahoda et al. (2017) also has an important qualitative component.

[2]Classification of course still plays an important role in some social sciences as well as psychology today.

of the methodological effort goes into finding valid comparisons. The notion of causality is intimately related to the ideas of **interventions** and **comparison groups.**

Another related aspect is how these studies deal with **heterogeneity**. Jahoda et al. (2017) engage in an impressive and comprehensive effort to **fully capture** and describe the variability of circumstances and psychological responses of the unemployed of Marienthal. By contrast, no such comprehensive effort is made in EUM. Instead, the methodology of causal inference – pairwise matching, randomization, synthetic controls – is used to ensure that comparison groups for causal inference are the **same on average**.

This different approach to heterogeneity is reflected in another striking difference: In Jahoda et al. (2017), no attempt is made to **quantify statistical uncertainty** – there are no standard errors, confidence intervals, or p-values. The study contains a large number of statistical tables, but there is no sense in which these reported numbers (e.g., shares in the sample belonging to a particular category) are related to an underlying **population object** (e.g., shares in the population belonging to a particular category). There is no distinction between estimate and estimand; the reported numbers are what they are. By contrast, EUM follows modern standard practice in reporting standard errors, confidence intervals, and p-values, and additionally addresses the issue of multiple hypothesis testing. The implicit notion is that there are true causal effects (either in the sample or in a larger population), and that the reported estimates are noisy approximations of these effects.

Again related, a striking feature of Jahoda et al. (2017) is its **methodological open-endedness**, contrasting with the complete **pre-registration** of EUM. Jahoda et al. (2017) use a wide variety of data-sources and personal observations, and enter Marienthal without prespecified questions that they will ask. Instead, they distill abstractions and classifications from the rich empirical material they find. By contrast, recent empirical social science has been greatly impacted by its perceived replication crisis, attributed to selective reporting of findings by authors (p-hacking) and journals (publication bias); cf. Andrews and Kasy (2019). A key remedy that has been promoted in recent years, enshrined in journal policies, and followed by EUM, is the pre-registration of experimental designs and statistical analyses. Such pre-registration prevents selective reporting of findings by publicly tying researchers' hands. The aim is to make findings replicable and independent of researcher identity.

Let us conclude by emphasizing one more arc connecting the two studies over the course of a century. A key contribution of Jahoda et al. (2017) was that they documented the devastating impact of unemployment beyond its material consequences on income – in the form of psychological outlook, attitudes to the future, time structure, social cohesion, etc. This perspective was further developed by Marie Jahoda over the course of her career, and has been operationalized by sociologists of work in the form of survey instruments for the Latent And Manifest Benefits (LAMB) of work. In EUM, these survey instruments were included in our data collection. And, indeed, these are the dimensions where our experimental findings suggest the strongest impact of a job-guarantee on the well-being of beneficiaries, besides the direct economic impacts.

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