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# ABSTRACT

## How Do Caseworkers Affect Job Search Outcomes?

This paper examines how caseworkers influence job finding rates and job quality. To rule out selection effects, I exploit that caseworkers are assigned based on the jobseekers' month of birth in some offices of the Austrian public employment service. Combining administrative data on caseworkers and jobseekers, I compute value-added measures for multiple jobseeker outcomes. A one-standard-deviation increase in caseworker performance corresponds to six additional days of employment in the first year and two percent higher earnings. For older workers and workers of foreign nationality, I observe the largest differences in caseworker performance. Employment and earnings effects are positively correlated, suggesting that faster job finding does not come at the expense of job quality. Analyzing differences in caseworker strategies, I find that caseworkers who refer more vacancies to jobseekers achieve higher employment rates, and those who refer better-paying jobs also achieve higher earnings. In contrast, frequent use of training programs or benefit sanctions is associated with worse job search outcomes.

**JEL Classification:** J64, J68, J31

**Keywords:** unemployment, caseworkers, job search assistance, vacancy referrals

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# 1 Introduction

At many public employment services, caseworkers play a central role in matching unemployed workers with jobs. Complementing other labor market policies, they provide direct and customized job search assistance, which can easily be adapted to worker profiles and labor market conditions (Rosholm, 2014). Another advantage is that caseworker meetings do not require a large time investment. More extensive training or counseling programs often entail lock-in effects because jobseekers have less time to search for employment (Sianesi, 2004). However, the role and involvement of caseworkers can differ significantly between countries (OECD, 2015).

In this paper, I analyze job search outcomes of unemployed workers registered at the Austrian public employment office to quantify the importance of caseworker effects. Because the assignment of caseworkers depends on the jobseekers' month of birth, performance differences between caseworkers are not confounded by selection effects. Comparing unemployed workers by their month of birth, my analysis shows only minor differences in observable characteristics. This suggests that jobseekers have comparable profiles across assigned caseworkers. To quantify caseworker performance differences, I compute value-added (VA) measures for several jobseeker outcomes, which correct for the impact of sampling error in the estimation of caseworker fixed-effects.[1]

My estimates show that caseworkers play an important role in shaping both job-finding rates and job quality. A one-standard-deviation increase in caseworker performance corresponds to six additional days of employment in the first year after becoming unemployed, which is equivalent to a five-percent increase relative to the standard deviation of this outcome. Moreover, jobseekers have about two percent higher earnings and are two percentage points more likely to return to their previous sector when being assigned a caseworker with one-standard-deviation greater value-added. Correlations between these estimates show that caseworkers who achieve shorter unemployment spells

[1]This research design bears conceptual similarity to other strands of the literature. The methodology to estimate value-added measures has been developed and widely applied in the evaluation of teacher performance (Kane and Staiger, 2008). Similarly, random assignments of clients have been used for causal analysis in other settings, most prominently in the analysis of court cases, which exploit the random assignment of judges to study how convictions affect future outcomes (Dobbie et al., 2018; Bhuller et al., 2020).

also enable their clients to find better-paid work, suggesting that they generally do not trade off fast job finding with worse job outcomes. For older jobseekers and for jobseekers of foreign nationality, I find the highest value-added differences in both employment days and earnings. These groups could benefit most from caseworker support because they may face greater challenges in finding work due to employer discrimination.

A key tool of caseworker support is the mediation of vacancies to jobseekers. The Austrian public employment service tracks the number and type of jobs referred by caseworkers, which allows me to analyze the importance of vacancy referrals in the job search process. I find that caseworkers who refer more vacancies achieve faster job-finding rates, and that referrals to higher-paying vacancies are associated with higher earnings in the new job. This shows that both the number and quality of referred jobs matter for the successful mediation of jobseekers. Despite their own job search efforts, some unemployed workers may not be aware of all suitable vacancies. In this situation, caseworker assistance can help reduce search frictions by directly matching workers with jobs. In contrast, assigning training and education programs is associated with lower caseworker value-added. When caseworkers often assign training courses, their clients stay unemployed longer and earn less in the next job. This suggests that negative lock-in effects outweigh the potentially positive training impact on employability. If unemployed workers do not comply with job search requirements, caseworkers can also suspend their benefit payments. The comparison of caseworkers shows that increased use of these sanctions is negatively associated with employment days and does not influence job quality.

Since the assignment of caseworkers to jobseekers is typically not random, several previous papers provide experimental evidence on the effectiveness of interventions that entail additional or more in-depth caseworker assistance to jobseekers (Graversen and van Ours, 2008; Landeghem et al., 2017; Maibom et al., 2017). While the specific programs differ in their extent and type of counseling, all study findings show that intensified contact with caseworkers improves job search outcomes. To learn about the effectiveness of caseworker strategies, other papers analyze performance differences between individual caseworkers. Studies on the impact of caseworker leniency yield inconclusive results. Applying matching methods to account for potential selection,

Behncke et al. (2010) show that jobseekers find employment faster if their caseworkers are less cooperative and more demanding. In contrast, Arni et al. (2022) conclude that more supportive caseworkers yield more favorable outcomes for jobseekers. Schiprowski (2020) leverages variation caused by unplanned absences and shows substantial heterogeneity in the impact of caseworkers on exit from unemployment. For half of the caseworkers, meetings do not have any impact on job finding.

A few recent studies exploit quasi-random variation due to caseworker assignment rules. As in Austria, Swedish caseworkers are typically assigned to jobseekers based on their date of birth. Cederlöf et al. (2025) document large differences in value-added measures of caseworkers, which vary by the degree of similarity between caseworkers and jobseekers. Rasmussen (2021) uses the same rule in Denmark to find effects of similar magnitude and a positive impact on re-employment earnings and hours. Hervelin and Villedieu (2023) leverage the random assignment of young jobseekers at the French public employment service and show that high-performing caseworkers increase employment and training enrollment by a large share. Consistent with these studies, my analysis of Austrian caseworkers finds value-added in employment rates of comparable magnitude.

Arni and Schiprowski (2019) show that the stringency of randomly assigned caseworkers in Switzerland has mixed effects: job-finding rates improve while re-employment job duration declines. In contrast, I find that caseworker support can reduce unemployment duration and improve job outcomes without creating a trade-off between quick job finding and worker-firm match quality. Closely related to my analysis of caseworker strategies is a recent study by Cheung et al. (2025). Evaluating the effectiveness of extra caseworker meetings in Sweden, they find positive employment effects and attribute the impact to the caseworkers' vacancy referrals, which help jobseekers to find suitable job offers faster. Similarly, my findings show that the direct mediation of vacancies is the most effective tool. Both the number and quality of vacancies can lead to faster job finding and better employment outcomes.

# 2 Setting and data

## 2.1 Caseworkers at the public employment service

The public employment service AMS administers benefit payments and provides search assistance to both jobseekers and firms in Austria. Jobseekers must register at their local AMS office to receive unemployment benefits and other support from AMS.[2] Upon registration, they are assigned a caseworker, who serves as the main contact person. In most offices, caseworker assignments are fully determined by the birth month of clients; that is, jobseekers born in the same month are assigned the same caseworker. This assignment can change over time, for instance, if caseworkers join or leave an office. Some larger offices deviate from this rule and assign caseworkers instead to focus groups based on specific criteria such as the worker profile. In this study, I will focus solely on caseworkers who are assigned based on the birth-month rule.

A first in-person meeting between caseworker and jobseeker should take place within the first 10 days after registration. In this meeting, jobseekers outline their profile and discuss search strategies with the caseworkers. Additionally, they can use their AMS online account to provide additional information and create a publicly accessible search profile. Afterwards, jobseekers and caseworkers stay in contact via phone or through the online account and are supposed to meet in person about once a month. In addition to providing general advice, AMS caseworkers also refer jobseekers to specific job ads in the AMS vacancy database (*job referrals*).[3] Unemployment benefit recipients must apply for these jobs if the advertised positions match their profiles. Whether a job is deemed suitable depends on a set of formal rules. These criteria include the job's education requirements, physical requirements, pay, workplace location and working hours.[4] Caseworkers follow up with both jobseekers and recruiters to learn about the outcome of applications to referred vacancies.

[2]Although employed workers can also register at AMS, the vast majority of jobseekers are unemployed workers.

[3]Worker-vacancy mediation is organized into two sections at the public employment service: one section helps jobseekers find employment, and the other section assists firms in finding workers. Both sections work together to match jobseekers to vacancies. Besides the assigned caseworker, other AMS employees can also access the worker profiles and recommend appropriate job vacancies.

[4]The public employment service describes the criteria on its website: www.ams.at/arbeitsuchende (in German).

Another key tool of caseworkers is assigning *training and education programs* to improve the employment prospects of jobseekers. The public employment service offers a wide range of courses with varying content and duration. While most courses span only a few weeks and focus on enhancing specific skills, others can last multiple years, providing comprehensive vocational training for various occupations. Caseworkers can assign a training program or authorize participation in a course suggested by jobseekers. The public employment service fully covers related costs and continues to provide unemployment benefits during program participation. If jobseekers do not comply with the job search requirements, caseworkers can also impose *sanctions*, which reduce or suspend the payment of unemployment benefits. Most sanctions are caused by the refusal to apply for or accept suitable work, or to participate in a training measure. The suspension of benefit payments lasts for at least six weeks, and in repeated cases, for at least eight weeks.

## 2.2 Data

The empirical analysis draws from three linked administrative datasets: the databases on vacancies and jobseekers from the Austrian public employment service and matched employer-employee records from the Austrian social security administration. The jobseeker database encompasses all spells of jobseekers registered at AMS, including start date, end date and type of spell. In addition to regular unemployment spells, this also includes training spells and sanction periods. These spells can be linked at the jobseeker level to the social security database, which covers individual characteristics such as gender, age and nationality. In the subsequent analysis, I will use these demographics to check for balanced caseworker assignments and examine effect heterogeneity. Moreover, the database tracks all regular work spells along with the respective daily earnings, which are observed until the end of 2021.[5] These data allow me to estimate caseworker effects on employment days, earnings and job duration. To examine the sectoral match between workers and firms, I compare the four-digit NACE industry codes of the jobseekers' previous and new employers, which distinguish about 600 sectors. Sector transitions are assigned higher match values if they occur frequently in the labor

[5]Unfortunately working hours are not reported in the social security database.

market. Specifically, I compute the probabilities of sector-to-sector transitions from job switches in the year prior to the first year of the estimation sample, normalizing the most frequent transition from each sector to one.

The AMS vacancy database covers the universe of job postings reported to the public employment service, which constitutes the largest job board in Austria. According to survey data from Statistics Austria, the job board covers about 50 to 60 percent of all Austrian vacancies in recent years. Employees at the public employment service access the vacancy database to refer jobseekers to suitable vacancies. These job referrals are also recorded in the database and allow me to infer the assignment of caseworkers to jobseekers. Moreover, I can analyze the number and type of vacancies referred to jobseekers to assess how well the suggestions match the workers' profiles and whether this alignment leads to actual job matches.

## 2.3 Estimation sample and balancing

The estimation sample is based on all jobseeker spells starting between 2002 and 2019. I focus on workers aged 25 to 60, disregarding younger individuals who may still be in education and older individuals close to retirement. Second, the sample excludes unemployed workers who return to their previous employer after the unemployment spell and those without any previous job spell.[6] Finally, I restrict the sample to jobseekers registered at AMS offices and in years when caseworkers are uniquely assigned to clients based on their birth month. This excludes offices that do not use the birth-month assignment rule in a given year, as well as larger offices where more than one caseworker handles jobseekers with the same birth month.

The resulting estimation sample covers about 560 caseworkers from 68 regional offices, handling more than 500,000 jobseeker spells. Table 1 presents summary statistics for jobseeker characteristics in this sample and in the jobseeker population across all offices and years. A comparison of both groups shows that jobseekers in the estimation sample appear to be very similar to the average Austrian jobseeker. The only notable differences are a somewhat lower number of foreign nationals and small discrepancies

[6]Employers in highly seasonal sectors frequently lay off workers but commit to rehire them in the future. If confirmed to AMS, these workers do not have to follow the same job search requirements as other unemployed workers.

in the sector distribution.

**Table 1:** Descriptive statistics

| | **Estimation sample** | | **All jobseekers** | |
|---|---|---|---|---|
| | Mean | SD | Mean | SD |
| Female | 0.47 | 0.50 | 0.45 | 0.50 |
| Age | 37.48 | 8.96 | 37.14 | 8.76 |
| Austrian | 0.81 | 0.39 | 0.75 | 0.43 |
| Workdays (year pre-UE) | 233.36 | 131.76 | 227.08 | 133.34 |
| Daily earnings (last job) | 78.09 | 36.57 | 76.76 | 36.66 |
| Sector (last job): | | | | |
| Retail/Wholesale | 0.17 | 0.37 | 0.16 | 0.37 |
| Admin./support service | 0.13 | 0.34 | 0.15 | 0.36 |
| Accom./Food | 0.17 | 0.38 | 0.16 | 0.37 |
| Manufacturing | 0.13 | 0.34 | 0.10 | 0.31 |
| Other | 0.40 | 0.49 | 0.42 | 0.49 |
| Jobseeker spells | 569,314 | | 4,562,761 | |

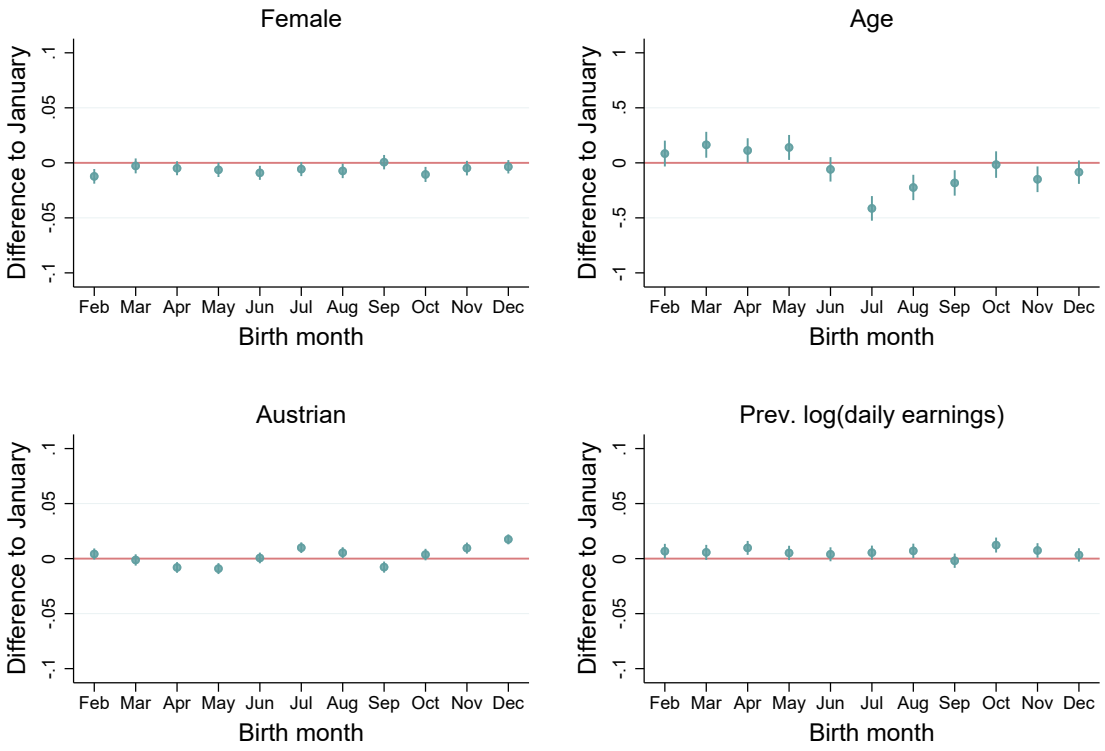
Note: The core sample consists of jobseekers aged 25 to 60 at the start of unemployment who do not return to their previous employer and became unemployed in the years 2002 to 2019. Jobseekers in the estimation sample are assigned to 562 caseworkers in 68 regional offices. Earnings are measured in 2020 Euros.

Because the assignment of caseworkers to jobseekers follows the birth-month rule, caseworkers cannot choose their clients, which removes selection biases in the estimation of caseworker effects. This rules out, for instance, that jobseekers who require more counseling are allocated to specific caseworkers. Despite the absence of selection effects, jobseeker characteristics may still differ across birth months. A large body of research has documented that a person's birth month can be associated with several outcomes, including educational attainment and wages (Bound et al., 1995; Plug, 2001; Cascio and Lewis, 2006).

To test whether jobseeker characteristics are balanced across birth months, I estimate differences in gender, age, nationality and earnings in the previous job. Figure 1 shows how these characteristics differ in later birth months from averages among job-

seekers born in January. Due to the large sample size, even small mean differences are estimated with narrow confidence intervals. As expected, most month-to-month differences are small and do not show a clear seasonal pattern. The largest variation can be observed for age, with jobseekers tending to be younger when born in the summer months.

**Figure 1:** Differences in jobseeker characteristics by birth month

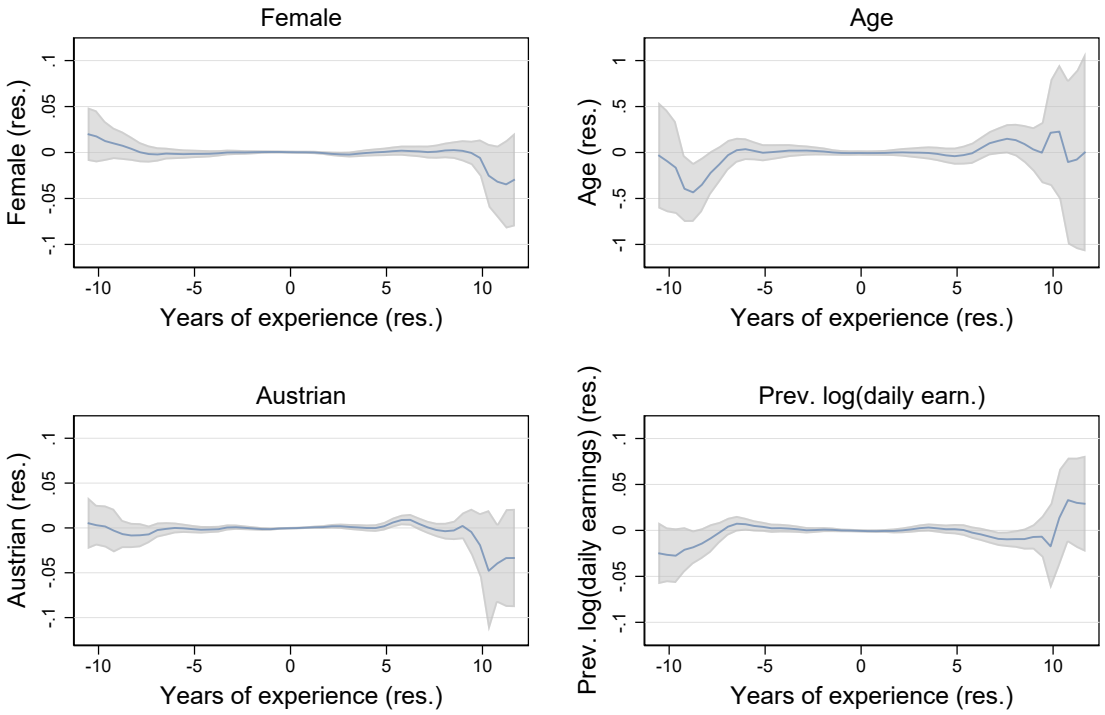



**Note**: The bars indicate 95%-confidence intervals.

The low magnitude of differences in observable characteristics suggests that jobseekers are generally comparable across birth months. If such differences affect job search outcomes, I expect the impact to be negligible compared to the potential effect of caseworker counseling. In the subsequent analysis, I estimate caseworker effects using specifications with and without individual characteristics and pre-unemployment work outcomes as control variables. The estimated effects are similar regardless of the inclusion of jobseeker covariates, further suggesting that birth-month differences do not substantially impact the estimation results.

As another balancing check, I examine whether jobseeker characteristics are orthogonal to caseworker characteristics, as would be expected under random assignment. While direct information on caseworkers is unavailable, it is possible to gauge their experience from the years they have been observed in the data. Analogous to the balancing test in Figure 1, I assess whether each jobseeker characteristic is systematically related to caseworker experience. If the assignment was not random, one might expect, for instance, that more experienced caseworkers are assigned to jobseekers who require more support.

**Figure 2:** Differences in jobseeker characteristics by caseworker experience




**Note**: The graph shows estimates from Epanechnikov-kernel-weighted local mean smoothing of residuals. Shaded areas indicate 95%-confidence intervals. Residuals are obtained from regressions of caseworker experience and jobseeker characteristics on office-year indicators.

To remove differences across offices and years, I first estimate residuals by regressing all variables on office-year fixed-effects. I then plot the residualized jobseeker characteristics against residualized caseworker experience using weighted local mean smoothing. Figure 2 shows that the estimated differences by years of experiences are very small and do not follow a systematic pattern for any of the characteristics.

## 2.4 Estimation strategy

The analysis of caseworker effects proceeds in two steps. First, I compute measures of the *caseworker value-added* (VA) for different jobseeker outcomes. This will reveal how much differences in job-finding success can be attributed to differences in caseworker performance. Second, I relate the value-added estimates to the observable actions that caseworkers take in support of the jobseeker (*caseworker strategies*). This includes the number and type of job referrals and the use of training programs and sanctions. Although the interventions are not randomized and the associations should therefore not be interpreted causally, they reflect the primary tools used by caseworkers. The findings thus provide suggestive evidence on which interventions are most effective in successfully mediating jobseekers.

To measure the value-added of caseworkers, I isolate the caseworker-specific effect from other components that influence job-finding outcomes. Specifically, outcome $y_i$ of jobseeker spell $i$, assigned to caseworker $j$ in year $t$, is defined as

$$y_{ijt} = \alpha_j + \beta_{jt} + X_{ijt}\boldsymbol{\gamma} + \varepsilon_{ijt}, \tag{1}$$

where $\alpha_j$ is the fixed-effect of caseworker $j$ and $\beta_{jt}$ is the fixed-effect of office-year group $jt$. Covering both personal characteristics and pre-unemployment job features, $X_{ijt}$ includes indicators for gender, nationality and age, as well as the last job's NACE four-digit sector and logarithm of daily earnings. Note that each jobseeker spell can only be observed for one caseworker and in one office-year group.

Assuming that unobserved birth-month differences in worker profiles do not affect the outcome under consideration, the resulting coefficients of the caseworkers' fixed-effects ($\hat{\alpha}_j$) represent unbiased estimates of caseworker $j$'s performance (relative to the excluded baseline caseworker). Yet, the variation in $\hat{\alpha}_j$ overstates the dispersion in caseworker performance because it reflects both differences between the actual fixed-effects and the sampling error in their estimates. To correct for this bias, I follow the shrinkage approach proposed by Kane and Staiger (2008) for estimating teacher value-added, which can also be applied in the context of caseworkers (Cederlöf et al., 2025). The method exploits year-to-year correlations to disentangle performance differences from

sampling error. Value-added estimates for caseworkers are then obtained by shrinking the raw estimates according to the relative size of the error.

Estimation of Equation (1) yields residuals $\mu_{ijt} = y_{ijt} - \hat{\beta}_{jt} + X_{ijt}\hat{\boldsymbol{\gamma}}$, which correspond to the sum of unexplained variation and caseworker fixed-effects. To derive the value-added, I first decompose the overall variance of the residuals ($\sigma^2_\mu$) into the variance of the jobseeker component ($\sigma^2_\epsilon$), the caseworker component ($\sigma^2_\alpha$) and the office-year component ($\sigma^2_\beta$). The variance of the jobseeker component is estimated by the variance within office-year groups: $\hat{\sigma}^2_\epsilon = Var(\mu_{ijt} - \bar{\mu}_{jt})$. To estimate the caseworker component, I compute the year-to-year covariance in caseworker averages: $\hat{\sigma}^2_\alpha = Var(\bar{\mu}_{jt}, \bar{\mu}_{jt-1})$. The office-year component is obtained by subtracting the jobseeker and the caseworker component from the overall variance: $\hat{\sigma}^2_\beta = \hat{\sigma}^2_\mu - \hat{\sigma}^2_\epsilon - \hat{\sigma}^2_\alpha$.

As a measure of caseworker performance, I compute weighted averages of the year-specific caseworker means, using their inverse variance as weights:

$$\bar{\mu}_j = \sum_t \frac{h_{jt}}{\sum_t h_{jt}} \bar{\mu}_{jt}, \quad \text{where} \quad h_{jt} = \frac{1}{\hat{\sigma}^2_\beta + \frac{\hat{\sigma}^2_\epsilon}{n_{jt}}}. \tag{2}$$

Years with more jobseekers ($n_{jt}$) are given stronger weight because the larger number of observations allows for more precise estimation. Finally, I obtain the caseworkers' value-added by rescaling the weighted averages with a shrinkage factor:

$$VA_j = \frac{\sigma^2_\alpha}{\sigma^2_\alpha + Var(\bar{\mu}_j)} \bar{\mu}_j, \tag{3}$$

where the variance of $\bar{\mu}_j$ equals the inverse of $\sum_t h_{jt}$. The greater the proportion of variance attributable to noise rather than to true differences across caseworkers, the more the value-added estimates are shrunk.

To evaluate the caseworkers' impact on job finding, I examine the days of employment in the first years after the start of unemployment as well as the working rate at different points in time. Daily earnings, the sector match quality and the duration of the new job serve as indicators of how caseworkers can influence re-employment job quality. To learn whether faster mediation comes at the cost of lower employment qual-

ity, I also estimate associations between the caseworkers' value-added in employment days, re-employment earnings and job duration.

The second part of the analysis follows the same value-added estimation approach as above to quantify variation in the use of caseworker strategies. As for the jobseeker outcomes, I compute caseworker fixed-effects and adjust them for sampling error. There exist official guidelines for jobseeker assistance that AMS staff are supposed to follow, but individual caseworkers have some discretion in handling their cases. Estimates of the between-caseworker variation reveal the extent to which caseworkers can implement their own rules. Finally, I regress the jobseeker outcomes on these estimates to learn how the use of different caseworker strategies affects job finding.

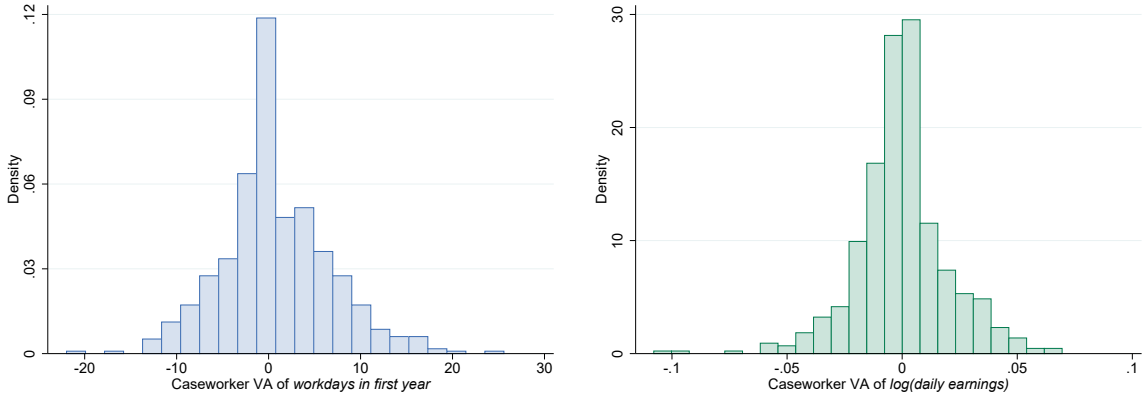
# 3 Analysis

## 3.1 Value-added estimates

This section presents estimates for the impact of caseworker differences on job finding and job quality. Following the empirical approach outlined above, I compute the value-added measure for each outcome and compare it to the respective sample mean and standard deviation to assess its relative magnitude. Figure 3 shows histograms of the value-added estimates for two of the main outcomes: days worked in the first year since becoming unemployed and the logarithm of daily earnings at the next job. Both distributions exhibit considerable dispersion in caseworker performance, with a few outliers representing caseworkers who perform exceptionally well or ineffectively compared to their colleagues.

The upper panel of Table 2 shows that caseworker differences have an economically significant and longer-lasting effect on job finding. A one-standard-deviation increase in value-added corresponds to six additional days of employment in the first year and 12 additional days within two years. Relative to the standard deviation of the jobseekers' future employment days, the estimates reflect increases of five percent. Next to days worked, Table 2 also shows effects on the employment rates of jobseekers. Being assigned a caseworker with a one-standard-deviation higher value-added measure results in approximately a two percentage-point increase in employment rates six and

**Figure 3:** Caseworker value-added distributions




**(a)** Days worked (first year) **(b)** Log daily earnings (next job)

12 months after becoming unemployed. To understand how the impact of caseworkers differs along the job search spell, I additionally estimate caseworker effects on the likelihood of having exited from unemployment by a given month. Figure 4 reveals that caseworker differences already matter from the first month of unemployment, and the effect sizes remain similar in the following months. This shows that caseworker support is important for both unemployed workers with good job-finding prospects and those who require longer searches to find new employment.

Next to job-finding rates, differences between caseworkers also explain re-employment outcomes of jobseekers. The lower panel of Table 2 reports value-added estimates for earnings, sectoral match quality and duration of the next employment spell. Having a caseworker who performs one-standard-deviation better yields two percent higher earnings. As a more direct measure of match quality, I compare the sector of the new employer to that of the jobseeker's previous employer. When workers switch sectors, they may not possess the required skills and first need to adapt to a different work environment. As shown in the lower panel of Table 2, such switches are very common among jobseekers, with only about 17 percent of workers finding employment in the same NACE 4-digit sector. To further differentiate sectoral matches, I also examine effects on the sector match propensity. As outlined in Section 2.2, this measure weights sector-to-sector transitions according to their frequency in the Austrian labor market,

**Table 2:** Standard deviation of caseworker value-added - Main outcomes

**Panel A**: Job finding

| | Days worked (12m) | Days worked (24m) | Working (+6m) | Working (+12m) |
|---|---|---|---|---|
| VA SD | 5.915 | 12.181 | 0.017 | 0.023 |
| Mean | 179.058 | 413.322 | 0.537 | 0.590 |
| SD | 125.965 | 239.762 | 0.499 | 0.492 |

**Panel B**: Job quality

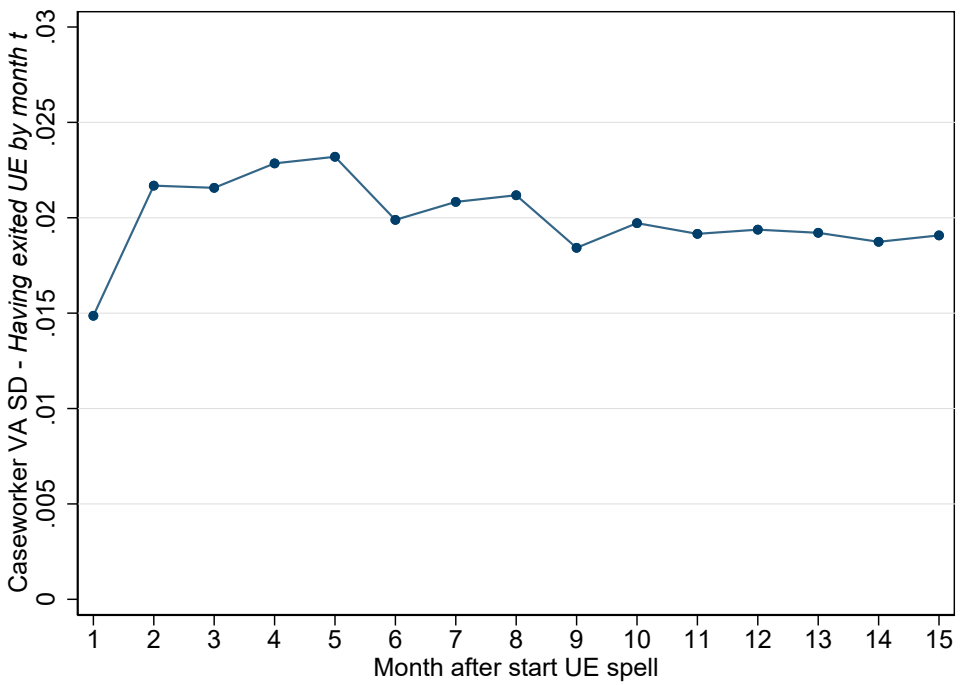
| | log(daily earn.) | Sector match (exact) | Sector match (prop.) | log(job dur.) |
|---|---|---|---|---|
| VA SD | 0.020 | 0.018 | 0.016 | 0.085 |
| Mean | 4.202 | 0.174 | 0.288 | 5.033 |
| SD | 0.484 | 0.379 | 0.379 | 1.795 |

Note: 569,314 (Panel A) and 512,975 (Panel B) observations. Earnings are measured in 2020 Euros. Outcome sector match indicates whether jobseekers find employment in the same or a similar sector as their previous job (defined at the NACE 4-digit level). Job duration measures the number of days employed in the first job found, censored after four years.

ranging from zero to one. The average match propensity among jobseekers amounts to 0.38. Results for both measures are very similar and show that caseworker performance can influence the sector in which jobseekers find employment. A one-standard-deviation increase in value-added yields a 1.5-2 percentage-point higher match share, which corresponds to a five percent rise relative to the standard deviation of these outcomes. Finally, caseworker performance also affects the longevity of new employment: a one-standard-deviation higher value-added corresponds to an 8.5 percent increase in days employed in the new job, again equivalent to five percent of the total standard deviation of this outcome.

While job-finding outcomes are available for the full estimation sample, job quality is observed only for those jobseekers who found a new job during the period of observation. For about 10 percent of jobseekers, I do not observe the start of a new job. Some caseworkers may be highly selective, mediating only high-quality jobs. This selectivity can lead to higher re-employment job quality among those who secure a position, but it

**Figure 4:** Standard deviation of caseworker value-added - Exit from unemployment




may also reduce the likelihood of jobseekers finding any employment within the observation period. As a result, more selective caseworkers appear to have higher value-added in job quality, but these estimates exclude jobseekers who never found employment. To assess the impact of this sample selection, I compute the caseworker value-added in finding *any* job and compare it to the value-added in job-quality outcomes. The estimates show no statistically significant correlation between caseworker value-added in finding any work and earnings (corr. coef. = 0.03, s.e. = 0.04). In contrast, I find modest negative correlations with sectoral match quality (corr. coef. = -0.14, s.e. = 0.04) and job duration (corr. coef. = -0.13, s.e. = 0.04). These patterns show that caseworkers who achieve better sectoral matches and longer job durations are somewhat less likely to mediate any job within the period of observation.

All caseworker estimates are obtained from the value-added estimation procedure described in Section 2.4. To see how the correction of caseworker fixed-effects and the inclusion of covariates impact the value-added estimates, I present further estimation results for different outcomes in Table A.1 in the appendix. The first and second

columns report the standard deviation of caseworker value-added estimates from specifications with and without controls for jobseekers' personal characteristics and pre-unemployment job features ($X_{ijt}$). As expected, omitting the control variables ($X_i$) in the estimation leads to larger estimates but differences are small for most outcomes. The largest change appears in re-employment earnings, where the standard deviation of value-added rises from 0.020 to 0.027 when controls are omitted. The similarity in estimates lends further support to the identifying assumption that outcome differences among jobseekers stem from the quasi-random assignment of caseworkers, rather than from unobserved confounders like season-of-birth effects.

The last two columns show that coefficient estimates are about two times larger when I use the uncorrected caseworker fixed-effects instead of the value-added measure. Because these coefficients also capture differences due to sampling error, the uncorrected measure yields clearly exacerbated effect sizes. To assess how much outliers in the value-added distribution drive the results, I also compute standard deviations of the value added measures without the top and bottom one or five percent. By construction, the estimated dispersion decreases for all outcomes. However, it remains substantial even after trimming the highest and lowest five percent. In the censored distribution, a one-standard-deviation increase in caseworker performance still corresponds to 4.3 additional days worked and a 1.4 percent increase in re-employment earnings.

The estimated value-added dispersion among Austrian caseworkers is similar in magnitude to findings from caseworker studies in other countries. Schiprowski (2020) finds that missing a caseworker meeting at the Swiss public employment service increases unemployment duration by five percent over the mean. In the evaluation of Swedish caseworkers by Cederlöf et al. (2025), a one-standard-deviation higher value-added corresponds to increases of 0.05-0.08 standard deviations in the job-finding rate. Focusing on caseworkers of young unemployed workers in France, Hervelin and Villedieu (2023) estimate for employment days in the first two years a value-added of about six percent relative to the mean. Despite variations in the extent and design of job search assistance between these countries, they all emphasize personalized support, active labor market policies and employer cooperation, which may explain why effect sizes are similar across countries.

## 3.2 Effect heterogeneity

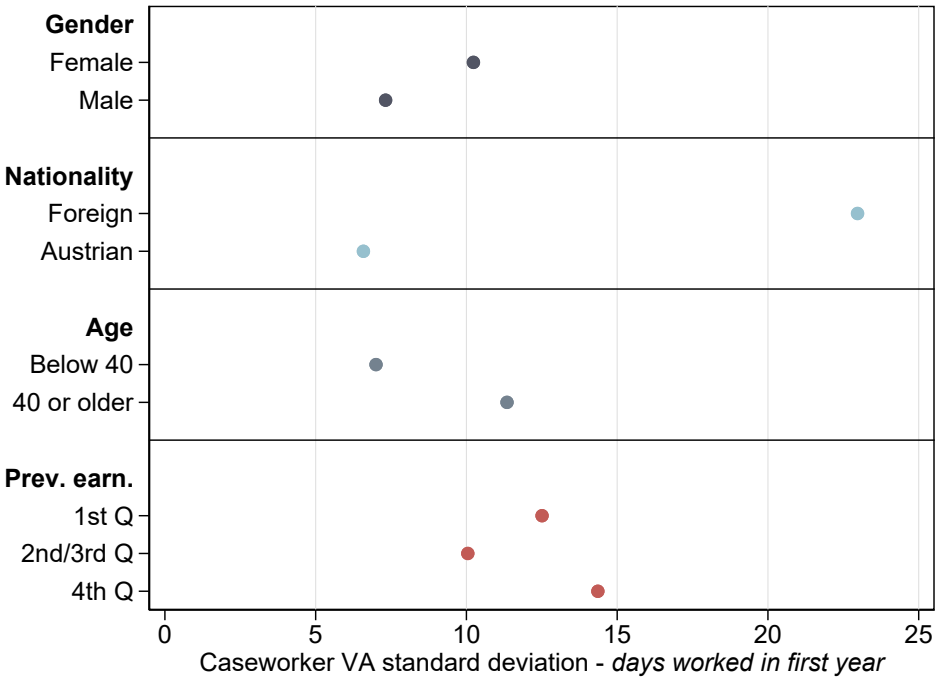
Because not all jobseekers require the same level of support, there may be substantial differences in caseworker value-added by worker type. To explore effect heterogeneity, I divide the estimation sample by several jobseeker characteristics and estimate value-added measures for the separate subsamples. Figure 5 shows differences in effect sizes by gender, nationality, age and previous earnings of jobseekers. The upper graph depicts estimates for days of employment in the first year, while the lower graph displays results for daily earnings at the next job.

A comparison of value-added standard deviations for male and female jobseekers shows that gender differences are small. In terms of re-employment earnings, the estimated standard deviations are very similar. For days worked, I find that caseworker performance differences matter somewhat more for female jobseekers. In contrast, there are much larger differences between foreign and Austrian jobseekers. While the overall standard deviations of employment days and earnings are comparable across both groups, the corresponding standard deviations of caseworker value-added are approximately three times larger for foreign jobseekers. Being assigned to a caseworker with a one-standard-deviation greater value-added yields about 23 additional days of employment, which corresponds to 20 percent of the outcome standard deviation. Foreign nationals might benefit more from caseworker assistance due to weaker integration in the Austrian labor market.

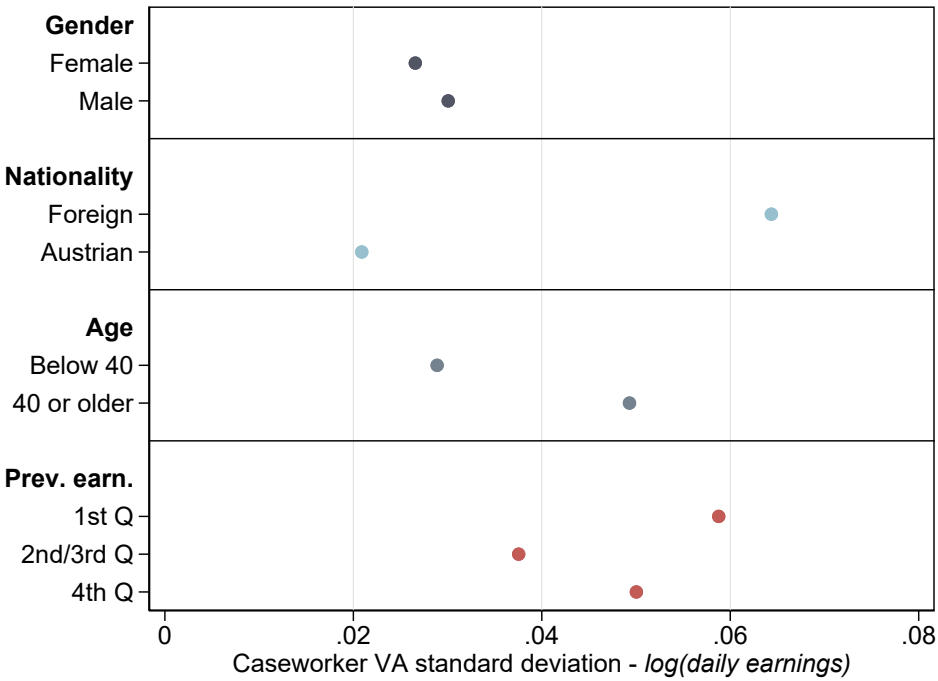
Although less pronounced, clear differences also exist between younger and older jobseekers: in the sample of jobseekers aged 40 or older, caseworker effects on job finding and re-employment earnings are considerably larger. When older workers face age discrimination by employers, they may disproportionately benefit from caseworker support. The last comparison of Figure 5 shows differences between quartiles of earnings at the jobseekers' previous employment. To account for age and year trends in earnings, I use the residuals from a regression of earnings on age and year of observation. Differences in caseworker value-added with regard to job finding are greatest among jobseekers with earnings in the highest quartile, whereas the dispersion in terms of re-employment earnings is largest in the lowest quartile.

**Figure 5:** Standard deviation of caseworker value-added - By jobseeker characteristics

**(a) Outcome**: Days worked in first year




**(b) Outcome**: log(daily earnings)

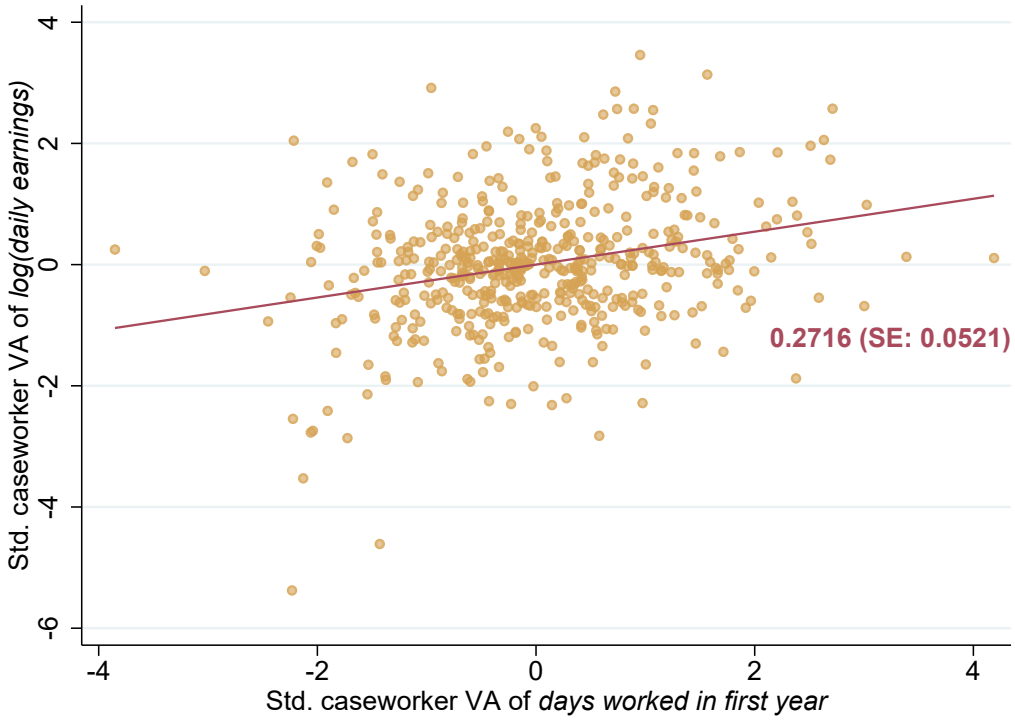


## 3.3 Value-added correlations

When mediating workers to firms, caseworkers have two central objectives. First, jobseekers should quickly find new work to keep unemployment duration as short as possible. This reduces the costs of unemployment insurance and lowers the risk of jobseekers being permanently trapped in unemployment due to skill deterioration and negative employer perceptions of long-term inactivity. The second objective is to create a good match between workers and jobs, yielding better productivity and potentially higher wages. Another advantage is that workers who are productive and satisfied with their employment are less likely to become unemployed again. Yet, there might be a trade-off between both objectives. When caseworkers broaden the scope of their search, for instance by considering a wider range of sectors or occupations, this could lead to faster job finding but lower match quality between workers and jobs. To test this hypothesis, I examine the connection between the caseworkers' value-added in terms of job finding and earnings. Figure 6 plots the value-added estimates of daily earnings at the next job by the corresponding estimates of days worked in the first year. The graph shows a clear positive correlation between both measures (corr. coef. $= 0.27$), indicating that caseworkers who mediate jobseekers faster also achieve higher re-employment earnings.

In addition to the relationship between job-finding rates and re-employment earnings, I also examine value-added correlations between the remaining job search outcomes. Table 3 provides an overview of the corresponding correlation coefficients. Across all outcomes, correlations are either positive or not statistically different from zero, indicating that caseworker success in job placement does not come at the expense of job quality. Similar to earnings, value-added in job duration shows a strong positive correlation with value-added in days worked, even though the estimates for earnings and job duration are uncorrelated. In contrast, value-added in sector match propensity appears largely unrelated to the other outcomes. As shown in the second column of Table 3, positive associations between job finding and job quality are already evident among jobseekers who quickly find new employment: value-added correlations between the employment rate after three months and both earnings and job duration are sizable.

**Figure 6:** Caseworker value-added correlation of days worked and earnings




## 3.4 Caseworker strategies

As described in Section 2.1, caseworkers at the Austrian public employment service use several strategies to mediate workers. Next to regular personal contact, the measures include the referral of job postings, the assignment of training or education programs, and the sanctioning of jobseekers. In this section, I examine to what extent the use of these tools varies between caseworkers and how the interventions correlate with their performance.

While information on the frequency and duration of meetings between jobseekers and caseworkers is not available, the use of training programs and sanctions and all job referrals are recorded in the data. For the analysis, I focus on four jobseeker-level measures: (i) the average number of job referrals, (ii) the average sector match of referred jobs, (iii) the average distance to referred jobs and (iv) the average posted wage of referred jobs. To compare match quality between sectors, I use again the match propensity measure outlined in Section 2.2. Distance is defined as the Euclidean dis-

**Table 3:** Caseworker value-added correlations

| | Days worked (12m) | Working (+3m) | Working (+6m) | Working (+12m) | log(daily earn.) | Sector match (prop.) |
|---|---|---|---|---|---|---|
| Working (+3m) | 0.762 | | | | | |
| | (0.000) | | | | | |
| Working (+6m) | 0.848 | 0.588 | | | | |
| | (0.000) | (0.000) | | | | |
| Working (+12m) | 0.648 | 0.355 | 0.528 | | | |
| | (0.000) | (0.000) | (0.000) | | | |
| log(daily earn.) | 0.272 | 0.174 | 0.226 | 0.130 | | |
| | (0.000) | (0.000) | (0.000) | (0.002) | | |
| Sector match (prop.) | 0.016 | -0.037 | 0.079 | 0.127 | 0.012 | |
| | (0.699) | (0.378) | (0.063) | (0.003) | (0.772) | |
| log(job dur.) | 0.319 | 0.216 | 0.222 | 0.369 | 0.035 | 0.186 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.403) | (0.000) |

Note: P-values are reported in parentheses. Earnings are measured in 2020 Euros. Outcome sector match indicates whether jobseekers find employment in a similar sector as their previous job (defined at the NACE 4-digit level). Job duration measures the number of days employed in the first job found, censored after four years.

tance (in kilometers) between the labor market district of the referred job's location and the labor market district of the jobseeker's residence.[7] Wage postings in job ads serve as proxy for the pay prospects of referred jobs. Since 2011, Austrian employers are required to post wages in job ads, which must be at least equal to the collective bargaining wage that applies to the advertised position.[8] Because this information is unavailable for earlier years, I predict wage postings for each occupation-firm combination using the average posted wage of other jobs in the same group. Taken together, occupations and firms have strong predictive power, explaining about 75 percent of the variation in log posted wages (Bamieh and Ziegler, 2024).

Given that the AMS guidelines for job search assistance leave some discretion to caseworkers, the application of the outlined strategies may differ between individual caseworkers. To quantify this heterogeneity, I again follow the estimation procedure

[7]Austria is divided into 85 labor market districts. Jobseekers must register with the public employment service located in their district of residence.

[8]In 2019, Austria had a collective bargaining coverage rate of 98 percent (OECD/AIAS ICTWSS database).

outlined in Section 2.4 and estimate value-added measures for each of the strategies. As shown in Table 4, caseworkers differ in their use of referrals, training programs and sanctions, but the extent of these differences varies. A one-standard-deviation increase in the caseworkers' value-added corresponds to approximately 0.6 additional referrals. Since the standard deviation of the number of referrals is 2.65, this estimate reflects strong caseworker heterogeneity. I also estimate relatively large differences in the distance of referred jobs, with a standard deviation of caseworker value-added of about five kilometers. In contrast, dispersions in the sector match propensity and in posted wages of referred jobs are more modest: caseworker value-added differences explain about 10 percent of the overall variation in these strategies. For the remaining caseworker tools, I estimate similar differences. Caseworker variation corresponds to five and eight percent of the overall variation in assigning training programs and sanctions, respectively.

**Table 4:** Standard deviation of value-added in caseworker strategies

| | Job referrals | | | | Training | Sanction |
|---|---|---|---|---|---|---|
| | # referrals | Sector match | Distance | Posted wage | | |
| Value Added SD | 0.627 | 0.029 | 5.367 | 0.023 | 0.019 | 0.010 |
| Outcome Mean | 0.847 | 0.231 | 18.602 | 7.541 | 0.170 | 0.016 |
| Outcome SD | 2.650 | 0.315 | 29.586 | 0.189 | 0.376 | 0.125 |

Note: 569,314 observations (jobseekers). Wages are leave-out means of the referred jobs' log wage postings on the occupation-firm level. Occupations are classified on the 6-digit level and wage postings are measured in 2020 prices. Distances between jobseekers' residence and referral workplaces are measured in kilometers.

These estimates demonstrate that caseworkers have some leeway in the tools they use to mediate jobseekers, especially when referring jobs. To evaluate the effectiveness of the strategies, I regress the main job search outcomes on the estimated caseworker value-added in each measure. For ease of interpretation, all value-added distributions are standardized to have mean zero and standard deviation one. Table 5 provides the corresponding regression results. Jobseekers assigned to caseworkers who refer more jobs have more employment days during the first year after becoming unemployed, sug-

gesting that the referrals effectively reduce search frictions. A one-standard-deviation rise in referrals is linked to an average increase of one day of employment. While sector match and distance of referred vacancies show no significant associations, jobseekers achieve somewhat better outcomes when assigned to caseworkers who refer higher-paying jobs. A one-standard-deviation higher average referral wage increases earnings by 0.2 percent and employment by 0.5 days. When caseworkers refer jobs with better pay prospects, jobseekers may be more willing to consider these vacancies, thereby increasing both job-finding rates and job quality.

**Table 5:** Caseworker value-added correlations of outcomes and interventions

| | Days worked (12m) | Sector match (prop.) | log(daily earn.) | log(job dur.) |
|---|---|---|---|---|
| # referrals | 1.086*** | 0.030 | 0.059 | -0.648 |
| | (0.335) | (0.091) | (0.114) | (0.488) |
| Av. ref. match prop. | -0.121 | 0.146* | 0.123 | -0.007 |
| | (0.306) | (0.082) | (0.103) | (0.445) |
| Av. ref. dist. (km) | 0.004 | 0.017 | -0.011 | 0.060 |
| | (0.068) | (0.018) | (0.023) | (0.099) |
| Av. ref. wage | 0.481* | 0.066 | 0.202** | -0.078 |
| | (0.288) | (0.078) | (0.098) | (0.419) |
| Any training | -3.277*** | -0.209** | -0.299*** | 0.347 |
| | (0.316) | (0.085) | (0.107) | (0.460) |
| Any sanction | -0.890** | -0.128 | -0.101 | -0.928 |
| | (0.428) | (0.116) | (0.146) | (0.624) |

Note: 569,314 observations (jobseekers). Estimates for sector match, earnings and job duration are scaled by a factor of 100. Wages are leave-out means of the referred jobs' log wage postings on the occupation-firm level. Occupations are classified on the 6-digit level and wage postings are measured in 2020 prices.

The strongest correlations can be observed for the use of training programs. When caseworkers often assign such courses, jobseekers work much fewer days. In addition, the regressions show modest negative correlations with sector match quality and earnings. Because training programs often require a significant time commitment, jobseekers might have less time to search for jobs (*lock-in effect*). This restriction appears to largely outweigh any positive impact the courses might have on job finding and re-employment quality. Finally, the estimates do not suggest that sanctions are an effective tool to increase job finding. Jobseekers whose caseworkers impose sanctions more frequently

show somewhat lower job-finding rates, while there are no significant correlations with job-quality outcomes. As reported in Table 4, sanctions are infrequent and generally applied only when jobseekers fail to meet job search requirements for an extended period. In such cases, benefit cuts may have little impact on jobseekers or may even further decrease their search effort and engagement with the public employment service.

# 4 Conclusion

To assist jobseekers, public employment agencies in many countries provide a range of services, from job boards to training programs. Although the type and extent of support vary across countries, caseworkers often play a central role in matching workers with firms. Being the main contact person, they can directly guide the job search process, decide upon the required level of support and assign additional measures. In this study, I provide novel evidence on the impact of caseworker performance on job-finding rates and match quality between jobs and workers. In addition, the analysis shows which groups benefit most from caseworker support and what caseworker measures are most effective. Despite a large literature on the effectiveness of active labor market policies, only a few evaluations have examined the impact of individual caseworkers.

Austria provides an ideal setting for this analysis because caseworkers at the public employment service are assigned according to the jobseeker's month of birth in some offices. As a result, differences in caseworker performance cannot be influenced by a selective distribution of jobseekers over caseworkers. Moreover, I show that birth-month differences in observable jobseeker characteristics are very modest, suggesting that season-of-birth effects have no major impact on outcome differences between caseworkers. Combining administrative data on caseworkers and jobseekers, I compute value-added measures for several job search outcomes to quantify the impact of individual caseworkers. The analysis demonstrates that caseworker differences influence both employment rates and job quality. Being assigned to better-performing caseworkers results in higher re-employment earnings and longer job duration. The estimated value-added differences in terms of job finding are similar in size to findings of previous studies from other European countries (Schiprowski, 2020; Cederlöf et al., 2025;

Hervelin and Villedieu, 2023).

Ideally, caseworker support reduces unemployment duration and also leads to employment that aligns well with the profile of jobseekers. The results of my analysis suggest that caseworkers do not trade off these goals. Jobseekers assigned to high-performing caseworkers work more days and also earn higher wages. The largest value-added differences appear among foreign nationals and older workers. Compared to the average jobseeker, both groups likely face more difficulties in finding work and therefore may benefit more from job-search counseling.

To support jobseekers, caseworkers in Austria employ various strategies, but not all of these tools prove to be equally effective. Caseworkers who refer more vacancies to jobseekers achieve higher employment rates. The quality of referred vacancies also matters: referrals to better-paying jobs are positively correlated with both employment days and re-employment earnings. In contrast, frequent assignment of training programs is associated with lower job-finding rates and reduced earnings, suggesting strong negative lock-in effects. Similarly, employment days are somewhat lower when caseworkers sanction benefit payments more often.

Taken together, the findings indicate that caseworkers play a significant role in the placement of jobseekers. Importantly, they are able to accelerate job finding without compromising the match quality between workers and firms. Correlations with caseworker strategies further suggest that, while training courses often delay job finding without improving job search outcomes, vacancy referrals are an effective tool to reduce search frictions among unemployed workers.

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**Table A.1:** Caseworker value-added estimation - Different specifications

| | Value-added (Standard deviation) | | | | Fixed-effects (Standard deviation) | |
|---|---|---|---|---|---|---|
| | with controls | w/o controls | p1 - p99 | p5 - p95 | with controls | w/o controls |
| Days worked (12m) | 5.915 | 5.996 | 5.380 | 4.316 | 10.401 | 10.551 |
| Working (+6m) | 0.017 | 0.019 | 0.016 | 0.013 | 0.037 | 0.038 |
| Sector match (prop.) | 0.016 | 0.022 | 0.014 | 0.012 | 0.028 | 0.036 |
| log(job duration) | 0.085 | 0.090 | 0.076 | 0.060 | 0.153 | 0.160 |
| log(daily earnings) | 0.020 | 0.027 | 0.018 | 0.014 | 0.036 | 0.047 |

Note: Earnings are measured in 2020 Euros. Outcome sector match indicates whether jobseekers find employment in a similar sector as their previous job (defined at the NACE 4-digit level). Job duration measures the number of days employed in the first job found, censored after four years.