

Employments effects of Vocational Rehabilitation in Germany

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Summary

This thesis adds to the growing body of literature on the effects of labor market activation programs for people with a disability. Work disability is nowadays widely viewed as a public health issue, where the consequences of work disability are considered not only to be following a biomedical causality but also to be influenced by participation restrictions and contextual factors. It is widely accepted that many of the barriers facing people with disabilities are, in fact, avoidable and that workers with a disability are far from incompatible with employment in the labor market. Factors such as the absence of access to vocational education and re-training and the lack of financial and other assistance have been found to be significant drivers of labor market exclusion. Consequently, to improve chances for re-employment, despite physical limitations and other health restrictions, vocational rehabilitation and re-training programs have been implemented by social policymakers in many parts of the world. However, so far, much of the empirical evidence on the effects of vocational rehabilitation programs has been confined to small sample sizes and specific institutional settings. In order to improve the empirical understanding of the work participation effects of these programs this dissertation project has been initiated.

In this thesis, unique administrative data, a relevant time of follow-up and advanced statistical measures to handle confounding have been utilized in order to provide new and informative evidence on the effects of vocational rehabilitation programs on work participation outcomes in Germany. While re-affirming the important role of micro-level determinants, the present study provides an extensive example of the individual and fiscal effects that are possible through meaningful vocational rehabilitation measures. The impact analysis presented in this thesis takes a broad perspective and examines the influence of vocational re-training on the number of employment days, income earned, days on unemployment and other social-security benefits and on the likelihood of receiving an earnings incapacity pension. The research questions of this thesis were as follows:

1. To what extent do individual socio-economic factors influence return-to-work outcomes after participation in vocational rehabilitation?
2. To what extent do vocational re-training programs impact employment outcomes and influence dependency on social security benefits?
3. Are there significant differences between the effects of one- and two-year re-training programs with regards to income earned, employment days and social security benefit receipt?
4. What are the financial returns for providers of the re-training programs: are the measures cost-effective?

The thesis comprises six chapters. In the first chapter the aims and contributions of the thesis as well as the study context and research methods were introduced.

In the second chapter, employment outcomes and their determinants after participation in vocational rehabilitation have been investigated through an analysis of a representative panel dataset of German rehabilitants. Since participants in vocational rehabilitation are a heterogeneous group of people, with different social and occupational backgrounds and different health situations, possible barriers to work reintegration can only adequately be assessed with reference to the rehabilitants' individual situations. A needed step to improve the empirical evidence is, thus, to assess the relevant person-related factors influencing return-to-work outcomes. This chapter provides an overview of the direction and size of the relevant person- and occupation-related factors on work participation outcomes. The analysis included identifying which factors positively affected re-employment chances and which socio-economic characteristics tended to act as barriers to successful work reintegration.

The evaluated factors comprised age, gender, education, employment history, job type as well as other relevant socio-economic characteristics. The analysis of socio-economic determinants also served as a starting point for subsequent impact analysis since to know the effect of socio-economic factors on employment outcomes is a necessary condition for validly examining an interventions' impact. Among the different factors tested, personal employment and income history were the strongest predictors. Additionally, other factors, such as the rehabilitants' age, prior education level or work environment were found to have a strong impact. The attained findings in this chapter support the argument that providers of vocational rehabilitation services need to be aware of the influence demographic- and occupational factors have on re-employment chances: the socio-economic status and the work environment significantly affect return-to-work outcomes after participation in vocational rehabilitation.

In the third chapter, an empirical example of how to use administrative panel data when evaluating re-training programs for people with disabilities has been provided. It was examined, to what extent completing a vocational re-training, the most time-intensive and costly type of vocational rehabilitation measure, impacted employment outcomes and to what extent the programs reduced the likelihood of receiving an earnings incapacity pension. In the absence of randomization, an applicant-based comparison group was used to compare outcomes with and without completion of vocational re-training. While the selection of potential controls was one of the key challenges to estimate the treatment effects, advanced

statistical measures to handle confounding were applied in order to establish comparability.

The first result of the impact analyses carried out was that completing vocational re-training greatly improved the employment status of the rehabilitants, i.e., the programs led to significantly more days in employment and significantly higher accumulative income, in the first eight years after program start. Secondly, completing a re-training program also reduced the number of days on unemployment and other social security benefits and the likelihood of receiving a pension due to reduced earnings capacity. The estimated treatment effects provide policymakers with detailed information about the interventions' abilities to improve the individuals' employment statuses and show to what extent these improvements were sustained over-time. In addition to its empirical relevance, the research also contributes to the methodological debate on how to estimate the impact of labor market programs on employment outcomes from observational data using quasi-experiments. This approach, so far, has been widely underutilized in vocational rehabilitation research in Germany up to this point.

In the fourth chapter, it was examined, to what extent one-year and two-year vocational re-training programs had a similar impact on employment outcomes when directly compared with each other. In the light of political initiatives to strengthen horizontal training, one-year re-training measures are becoming increasingly popular as an alternative to the more involved two-year re-training programs. Comparing both program types directly, this chapters' analysis showed that the long-term employment effects associated with the traditional, two-year re-training programs were significantly larger compared to one-year re-training programs. However, accumulative differences in income and employment days eight years after program start, were not statistically significant. The duration of transfer payments was characterized by shifts, i.e. being allocated a two-year re-training was linked to fewer days with long-term unemployment benefits but more days with short-term unemployment benefits and more days with other social security benefits. Whereas the increase in days with other social security-benefits was mainly due to the longer program duration, the shift in benefit recipience may have been advantageous, as long-term unemployment was reduced substantially.

In chapter five, the vocational re-training costs and benefits to social security providers were compared to evaluate the cost-effectiveness and efficiency of vocational re-training. By providing new evidence on metrics such as the net present value, the return on investment and the internal rate of return, this chapter's analysis contributes to a better understanding of the economic consequences of vocational

re-training. Taking a long-term perspective, it has been shown after how many years the re-training programs break even and how large the economic returns to the social security system were. The estimated financial balance sheets showed that both one-year and two-year vocational re-training programs were, on average, cost-effective; however, only after a substantial payback period. Another result from this analysis was that the financial payback period of partial re-training was shorter in comparison to the longer full-retraining measures.

The sixth chapter presents the conclusions of this thesis. It comprises a summary and discussion of the gathered evidence with regards to answering the four research questions posed in the introduction as well as a discussion on policy implications, possible limitations of this study and recommendations for future research. Taken together, the German vocational re-training program for people with a disability has been found to have a positive impact on rehabilitants' employment outcomes. The results showed that the principal objective, namely, to improve participation in employment, was generally achieved. Contrary to the common misconception that "off-the-job training" is relatively ineffective, this thesis has provided an empirical example of the positive impact of the programs.

The following section summarizes the main findings in order to answer the four research questions posed in the introduction section of this thesis:

1. To what extent do individual socio-economic factors influence return-to-work outcomes after participation in vocational rehabilitation?

According to the analysis in chapter two, the socio-economic status plays a substantial role in an individual's return to work. The measured differences in employment outcomes, after participation in vocational rehabilitation, were closely related to the participants' socio-demographic and employment characteristics. The attained findings in this analysis support the argument that providers of vocational rehabilitation services need to be aware of the influence individual-level socio-economic factors have on employment outcomes in the return to work of people with a disability.

2. To what extent do vocational re-training programs impact employment outcomes and influence dependency on social security benefits?

The results of this analysis suggest that, over the first eight years after program admission, both types of vocational re-training programs analyzed significantly improved the income and employment situation of the individuals involved. According to the estimated treatment effects in chapter three, completing a

vocational re-training was associated with significant improvements in the employment status while also reducing dependency on social security benefits. Policies to promote the labor market re-integration should consider that vocational re-training may be an effective tool for sustainably improving the employment situation of people with a disability.

3. Are there significant differences between the effects of one- and two-year re-training programs with regards to income earned, employment days and social security benefit receipt?

While annual long-term results were highly statistically significant, the accumulative results over the first eight-years after program admission were not statistically significant due to negative lock-in effects at the beginning of the observation period, linked to longer program duration. Nevertheless, the analysis showed that the disadvantages of longer program duration were generally offset by higher employment outcomes in the long term for participants of two-year re-training programs. From the perspective of the re-training participants, the additional year of re-training generally paid off, i.e. the treatment effects on the treated with regards to income and employment days were positive for two-year re-training participants and the likelihood to have been awarded a pension due to a reduced earnings capacity was also lower. In addition, a significant and large reduction in days with long-term unemployment benefits indicates that two-year re-training programs had a significantly greater impact with regards to preventing permanent exit from the labor market.

4. What are the financial returns for providers of the re-training programs: under what conditions are the measures cost-effective?

Both types of re-training measures evaluated were, on average, cost-effective from the social security perspective. Despite the restrictive assumptions used, the estimated balance sheets demonstrate the large economic potential of investing in work reintegration measures. From the social security perspective, the average net present value of providing one- and two-year re-training services were positive in the long run, however, only after a substantial payback period. While the payback period of one-year programs was assessed to be much shorter, a possible explanation for the current expansion of horizontal training is given. The policymakers and the individual's interest may, thus, conflict in some circumstances. This is because the individual might prefer the, more involved, two-year measure, but is only allocated, a less costly and more cost-efficient one-year measure.

The policy recommendations derived from this study are summarized as follows:

1. Provide individualized assistance. This study has shown that factors such as greater age or low prior educational attainments decrease the chances of a successful return to employment. To improve return-to-work outcomes, it is therefore recommended that policy targets these groups. For example, by improving access to and the effectiveness of individual case management.
2. Continue to invest in vocational re-training as it generates a positive impact on return-to-work outcomes.
3. Prevent program dropout as this leads to significantly worse work participation outcomes and, thereby, improve the overall effectiveness and efficiency of re-training measures. Since about half of the dropouts were related to medical reasons, better a priori screening and better medical supervision during the programs may contribute to reducing program dropout rates. Regarding the non-medical dropouts, many were due to performance issues and failed examinations. Further investigation is needed into why programs that were deemed to be appropriate turned out to be infeasible for certain individuals.
4. Re-assess program allocation criteria. The literature on the comparative effects of one- and two-year re-training has previously found that reduced training may lead to better outcomes. A shortening of the average duration of measures tends to have a favorable effect in the short term because the lock-in effect loses weight compared to the program effect. However, when assessed with longer follow-up, the more involved training programs have been found to be more effective since the long-term outcomes were significantly better. These results ask for re-assessing the conditions under which comparable candidates who are being given a partial re-training could be upgraded to a full re-training measure. This change could potentially improve individual employment outcomes and, thus, also benefit the social security system in the long run.
5. Use the provided empirical evidence to strengthen the role of vocational rehabilitation in the public debate. Vocational re-training was generally cost-effective when compared to the alternative of no completion of re-training since it increases wages and employment days while reducing the number of days on social security and unemployment benefits. Accordingly, policymakers should make use of the provided empirical evidence to strengthen the role of vocational re-training with regards to its usage and application within the overall social protection system - vocational rehabilitation pays off, also from the social security perspective.