The Impact of a Written Benefits Analysis by the UBPAO/WIPA on Vocational Rehabilitation Clients' Outcomes

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Executive Summary

Vocational Rehabilitation (VR) clients that are eligible for Social Security benefits can also obtain a written benefit analysis from the Utah Benefits Planning Assistance & Outreach (UBPAO) Program including the Work Incentives Planning and Assistance Program. The analysis from the UBPAO program provides clients information on Social Security program rules and how employment earnings will impact their Social Security benefits as well as other public benefits they receive. The goal of the service is to provide recipients with information about the impact of increased earnings so they can make an informed choice about employment.

This study analyzed whether UBPAO services are associated with improved earning and employment outcomes and successful case closure status of VR clients. The group that received the BPAO written analysis are in the program group and those that did not receive a written analysis are in the control group.

Key Findings Related to Unemployment Insurance Earnings and USOR Wages:

- Analysis of Unemployment Insurance (UI) earnings for the program and control groups reveals there is not a significant difference between the groups in the quarter prior to application.
- For the quarter after closure, the program group's wages are on average $451.59 higher for the quarter than the control group, based on Unemployment Insurance (UI) data.
- Weekly wages reported in the USOR 911 dataset show a similar pattern with no statistical difference between the program and control group at application and significantly higher wages at closure for the program group.

Key findings related to Employment:

- For the quarter after closure, the program group is 14.9% more likely to be employed than the control group, based on UI data. For the quarter prior to application, there is no statistical difference between the program and control groups' employment rates.
- At case closure, individuals in the program group are more likely to be supported by personal income and less likely to be supported by friends and family.
- The group that received a written BPAO analysis prior to Vocational Rehabilitation case closure was much more likely to have the closure status of "successfully employed."

Key findings from the multivariate analysis:

- For those employed during any quarter, having a written analysis was not associated with an increase in their UI earnings wages.
- The relationship of a written analysis with employment is positive with an initial increase in the likelihood of employment of 18.4%. This difference slightly declines to 16.7% by the 12th quarter after closure.

Context of Evaluation

Vocational Rehabilitation (VR) clients that are eligible for Social Security benefits can also obtain a written benefit analysis from the Utah Benefits Planning Assistance & Outreach (UBPAO) Program. The analysis from the BPAO program provides clients information on Social Security program rules and how employment earnings will impact their Social Security benefits as well as other public benefits they receive. The goal of the service is to provide recipients with information about the impact of working so they can make an informed choice about employment and changes in earnings. This study analyzed whether UBPAO services have an impact on the earning and employment outcomes and closure status of VR clients that receive these services compared to those that do not receive UBPAO services.

Description of USOR

The following outlines the mission and programs of the Utah State Office of Rehabilitation. In addition, it details the services of the Vocational Rehabilitation program and the Utah Benefits Planning Assistance and Outreach Program.

Mission and Programs of USOR

The mission of the Utah State Office of Rehabilitation is to "assist eligible individuals with disabilities to prepare for and obtain employment and increase their independence." There are several divisions within USOR that work to meet its mission; this research focuses on the Division of Rehabilitation Services, and its Vocational Rehabilitation program. The Vocational Rehabilitation (VR) program provides services to individuals whose disability creates a substantial impediment to employment. Services are available according to individual's needs, abilities, and choices. Vocational Rehabilitation services are provided through the USOR's Division of Rehabilitation Services and Division of Services for the Blind and Visually Impaired.

Vocational Rehabilitation Program

The mission of the Vocational Rehabilitation program is to assist eligible individuals with disabilities to prepare for and obtain employment. The services provided include assessment, counseling and guidance, restoration, training, job development and job placement. These services are individualized and are provided to those determined eligible due to having physical or mental impairments that result in a substantial impediment to employment. In addition, eligibility requires that a person can benefit from VR services and requires VR services to obtain an employment outcome.

Utah Benefits Planning Assistance and Outreach Program (UBPAO)

A component of USOR is the Utah Benefits Planning Assistance and Outreach Program (UBPAO) and the Work Incentives Planning and Assistance (WIPA). UBPAO/WIPA provides services to Social Security disability beneficiaries who are considering employment. The goal of the program is to give the beneficiary adequate information on how employment will affect their Social Security benefits including Supplemental Security Income (SSI) and/or Social Security Disability Insurance (SSDI) as well as other public benefits such as Medicaid, Medicare, food stamps, housing, and many others. This information allows individuals to make an informed choice about employment.

Services include: information and referral, intake into the UBPAO program when appropriate, preparation of a written benefits analysis, presentation of the analysis to the client, and work incentive development and follow-up, if needed. The written benefits analysis is a customized summary discussing the impact of employment on an individual's benefits. To prepare a written analysis, a specialist gathers, verifies and analyzes information regarding the consumer and the public benefits they receive.

UBPAO services are provided at no cost to the beneficiaries through a partnership between the Social Security Administration (SSA), Utah State Office of Rehabilitation (USOR), the Department of Workforce Services (DWS) and the Work Ability Utah Project.

Design and Description of the Study

Purpose

The purpose of the study was to determine the impact of a written benefits analysis by the Utah Benefits Planning Assistance and Outreach (UBPAO) Program on Vocational Rehabilitation (VR) clients' outcomes in terms of employment, earnings and VR closure status. The goal of the study is to answer three research questions.

1. Do VR clients that receive a written benefits analysis from the UBPAO in addition to traditional VR services have better outcomes in terms of employment?
2. Do VR clients that receive a written benefits analysis from the UBPAO in addition to traditional VR services have better outcomes in terms of earnings?
3. Do VR clients that receive a written benefits analysis from the UBPAO in addition to traditional VR services have better outcomes in terms of VR closure status?

Outcome Measures

The outcome measures for this study are:

1. Quarterly earnings from Unemployment Insurance covered employment in Utah.
2. Weekly Earnings reported in the USOR 911 dataset at application for services and at case closure.
3. Quarterly employment rates from Unemployment Insurance covered employment in Utah.
4. Closure Status reported in USOR 911 dataset.

A person is considered employed in a quarter when their earnings are greater than $50.[1] Earnings were adjusted to 2010 dollars using the Consumer Price Index for All Urban Consumers (CPI-U). Data from USOR is analyzed using descriptive statistics only and not the multivariate analysis because each person only has one observation for closure status and weekly earnings at closure.

Data

Two data sources were used for this study:

1. The primary data comes from the USOR 911 dataset that is maintained as required by the Rehabilitation Services Administration (RSA). This dataset contains participant data including: background, services, and outcomes.
2. The second dataset was obtained from the Department of Workforce Services by matching quarterly earnings data for participants working in Unemployment Insurance covered employment for the 12 quarters prior to application and the 12 quarters after closure.

The analytic sample includes individuals who were receiving SSI or SSDI at application for VR services and were closed in status 26 (successfully employed) or 28 (not successfully employed) with closure dates from October 1, 2004 through September 30, 2006 (2037 cases). The initial sample of 2037 was narrowed due to several factors. First, only individuals aged 14-64 were included. Older workers were excluded because they may make different decisions about labor market participation, which would affect their labor market outcomes. Second, workers with an application date prior to October 1, 2001 were excluded because the Unemployment Insurance (UI) data was not available for 3 years prior to their application.[2]

The resulting sample of 1425 consisted of 1271 in the control group and 154 in the program group. The program group consists of clients that receive a written analysis from the UBPAO.

Descriptive Statistics

Before fitting models to the data to answer the net impact questions, descriptive statistics were computed for the program and control group samples.

[1] The Unemployment Insurance data does not cover all employees. No data for a participant in a quarter was interpreted as representing $0 in that quarter (recognizing that UI data does not capture self-employment earnings, nor those for several other categories of employment, including for religious organizations and some agricultural enterprises). Thus the estimates of earning and employment may be lower than actual and, therefore, underestimate the impacts of the services provided by the State Office of Rehabilitation.

[2] This resulted in 467 individuals being dropped from the sample.

Gender, Race, Ethnicity, Education and Disabilities

Table 1 below provides descriptive statistics from the USOR 911 dataset of consumers included in the sample. Included are the figures for the whole sample, the program group and the control group. The final two columns report the difference between the program and the control group and whether that difference is statistically significant. Only in isolated instances is there a significant difference between the control group and the program group indicating that any differences between the two groups are not likely to be systemic.

Regarding gender, 56% of the sample was male and 44% was female.

The sample was limited to individuals between the ages of 14 and 64. Five percent were between the ages of 14 and 21; 35% were 22-34; 23% were 35-44; 23% were 45-54; and15% were 55-64. The average age at the time of VR case closure was 40.

In terms of education at time of application for VR services, 28% of the sample had no high school diploma; 43% had a high school diploma; 30% had education beyond a high school diploma but only 6% had a bachelor's degree or higher.

Analyzing race, 93% of the sample was white, with 3% black; 2.6% Native American; 1.4% Asian; and 1.3% Pacific Islander.

Finally, 47% had a significant disability and 53% had a most significant disability. None had a non-significant disability. The definitions of the disabilities are complicated. An oversimplified description is an individual with a most significant disability faces limitations in at least two functional categories such as: mobility, communication, self-care, self-direction, interpersonal skills, work tolerance, or work skills, and requires multiple USOR services. An individual with a significant disability faces limitations in at least one functional category and requires multiple USOR services.

Table 1: Background Characteristics of Sample						
Characteristics		**Whole Sample**	**Program Group**	**Control Group**	**Difference**	**Significant at the 10% level?**
Sample size		1425	154	1271		
Gender Percentages						
	Male	55.79%	54.55%	55.94%	1.39%	No
	Female	44.21%	45.45%	44.06%	-1.39%	No
Age at time of VR Case Closure Percentages						
	14-21	4.91%	4.55%	4.96%	0.41%	No
	22-34	34.81%	25.97%	35.88%	9.90%	Yes
	35-44	22.74%	22.08%	22.82%	0.74%	No
	45-54	23.02%	34.42%	21.64%	-12.78%	Yes
	55-64	14.53%	12.99%	14.71%	1.73%	No
Education at Application Percentages						
	No Formal Schooling	0.63%	0.00%	0.71%	0.71%	No
	Elementary Education (grades 1-8)	2.88%	2.60%	2.91%	0.31%	No
	Secondary Education, No High school Diploma	13.54%	14.94%	13.38%	-1.56%	No
	Special Education Certificate of Completion	10.60%	4.55%	11.33%	6.78%	Yes
	High School Graduate or Equivalency Certificate	42.53%	47.40%	41.94%	-5.47%	No

Characteristics		Whole Sample	Program Group	Control Group	Difference	Significant at the 10% level?
	Post-secondary Education, No Degree	19.09%	16.23%	19.43%	3.20%	No
	Associate Degree or Vocational/ Technical	4.98%	7.14%	4.72%	-2.42%	No
	Bachelor's Degree	4.07%	4.55%	4.01%	-0.53%	No
	Master's Degree or higher	1.68%	2.60%	1.57%	-1.02%	No
Race Percentages						
	White	93.26%	95.45%	93.00%	-2.46%	No
	Black	3.09%	1.95%	3.23%	1.28%	No
	Indian	2.60%	2.60%	2.60%	0.00%	No
	Asian	1.40%	1.95%	1.34%	-0.61%	No
	Pacific Islander	1.26%	0.65%	1.34%	0.69%	No
Significant Disability Percentages						
	Non-significant Disability	0.00%	0.00%	0.00%	0.00%	No
	Significant Disability	46.53%	46.10%	46.58%	0.47%	No
	Most Significant Disability	53.47%	53.90%	53.42%	-0.47%	No

Labor Market Outcomes

For the whole sample being studied, the average quarterly earnings per Unemployment Insurance records (UI) prior to application were $496.56 and were $1066.60 after closure (Table 2). This is a statistically significant difference of $570.04. This study will help to

identify how much of this difference is associated with receipt of a written benefits analysis.

Table 2: Quarterly Earnings per UI Records at Application and Closure for Whole Sample

	Quarter prior to application (N=1425)	Quarter After Closure (N=1425)	Difference	Significant at the 10% level?
Quarterly Earnings	$496.56	$1,066.60	$570.04	Yes

Table 3 provides data on the difference between the program group and the control group for average earnings from the Unemployment Insurance data whether or not the individual was employed. Earnings for the program and control group are not significantly different in the quarter immediately prior to application. However, for the first quarter after closure, the program group's earnings are $451.59 higher than the control group. When you take the average earnings of each group whether employed or not and an increase in earnings is observed, it can be due to an increase in earnings of someone that is working or it can be due to someone who was not working going to work. The multivariate analysis in the next section will explore this result to estimate how much of this effect is associated with differences in those who are in the program group versus the control group. The multivariate analysis will also estimate how much of the increase in earnings is associated with increased employment or with higher earnings.

Table 3: Quarterly Earnings per Unemployment Insurance Records At Application and Closure

	Whole Sample (N=1425)	Program (N=154)	Control (N=1271)	Difference Between Program and Control	Significant at the 10% level?
Quarter prior to application	$496.56	$416.46	$506.26	$89.80	No
Quarter after closure	$1066.60	$1469.38	$1017.79	-$451.59	Yes

Looking only at those individuals who were employed in the quarter prior to application and/or the quarter after closure, Table 4 provides data on the difference in quarterly earnings. For both quarters the program group appeared to have higher earnings, but the difference between the program and the control group was not significantly different than zero.

Table 4: Quarterly UI Earnings At Application and At Closure for Individuals who are Employed					
	Whole Sample (Employed)	Program	Control	Difference Between Program and Control	Significant at the 10% level?
Quarter prior to application	$1,916.77 (N=369)	$2,003.35 (N=32)	$1,908.55 (N=337)	-$94.80	No
Quarter after closure	$2507.75 (N=606)	$2631.21 (N= 86)	$2487.34 (N=520)	-143.8801	No

Table 5 provides data on the difference between the program and the control group for weekly wages reported in USOR 911 dataset. The wages are reported at application and at closure. Like the wages reported to UI, the wages reported by USOR show no difference between the program and control group prior to application. Both USOR 911 data and the UI data show a statistically significant difference after closure with the program group having higher wages.

Table 5: Weekly Wages Per USOR 911 Dataset At Application and Closure					
	Whole Sample (N=1425)	Program (N=154)	Control (N=1271)	Difference Between Program and Control	Significant at the 10% level?
Weekly Earnings at Application	$23.30	$21.21	$23.56	$2.35	No
Weekly Earnings at Closure	$122.15	$155.08	$118.16	-$36.93	Yes

Table 6 details the difference between the program and control groups' employment rates for the quarters immediately prior to application and after closure. Here we see a difference in the groups before application and after closure. The difference between the control group and the program group is significant after closure.

Table 6: Average Quarterly Employment Rates per UI Data					
	Whole Sample (N=1425)	Program (N=154)	Control (N=1271)	Difference	Significant at the 10% level?
Quarter prior to application	25.89%	20.78%	26.51%	5.74%	No
Quarter after closure	42.53%	55.84%	40.91%	-14.93%	Yes

Table 7 details the primary source of support at closure, as reported by the USOR 911 dataset. Public support includes cash payments made by federal, state and/or local governments for any reason. Public assistance payments come from programs such as Veteran's Disability, Temporary Assistance to Needy Families (TANF), Supplemental Security Income (SSI), Social Security Disability Insurance (SSDI), General Assistance (GA), Worker's Compensation, and others. Individuals in the program group are significantly more likely to be supported by personal income and less likely to be supported by friends and family at case closure. The differences in the other categories are not significant.

If the individuals that participated in the Utah Benefits Offset Pilot Demonstration (UBOPD) project are excluded from this analysis, personal income as a primary source of support is not statistically significant (see footnote 3 for a detailed description of the UBOPD).

Table 7: Primary Source of Support at Closure per the USOR 911 dataset					
	Whole Sample (N=1425)	Program (N=154)	Control (N=1271)	Difference Between Program and Control	Significant at the 10% level?
Personal Income	34.05%	41.78%	33.03%	-8.75%	Yes
Friends and Family	6.67%	2.05%	7.27%	5.22%	Yes
Public Support	58.49%	56.16%	58.80%	2.63%	No
Other Support	0.79%	0.00%	0.90%	0.90%	No

Table 8 details the closure status of individuals. The group that received a written analysis prior to Vocational Rehabilitation (VR) case closure was much more likely to have the closure status of successfully employed. This supports the findings reported in the analysis

of average quarterly employment rates (see discussion of Table 6) that the average quarterly employment rate from UI data is statistically higher for the program group.

Table 8: Closure Status (for individuals with written analysis prior to VR case closure)					
	Whole Sample (N=1400)	Program (N=129)	Control (N=1271)	Difference Between Program and Control	Significant at the 10% level?
Successfully Employed (closure status 26)	51.78%	66.99%	50.04%	-18.95%	Yes
Not Successfully Employed (closure status 28)	48.22%	33.01%	49.96%	-18.95%	Yes

Multivariate Analysis

Model Specification and Predictors

Several predictors were used to explain the variation in earnings and employment. An observation is a person/quarter. The key predictors were:

- TIME: the numbers of quarters prior to eligibility or post closure. For example, TIME=-1 one quarter prior to eligibility determination and TIME=+1 for one quarter prior to case closure.
- EPOCH: a categorical variable indicating whether prior to eligibility or after closure.
- SERVICE: a categorical variable indicating whether the individual is in the program or control group, whether or not they received a written benefits analysis.
- BENOFF: a categorical variable indicating whether the individual is in the Benefit Offset program, either in the control or pilot group.[3]

[3] In August 2005, the SSA initiated a pilot demonstration in four states to test alternate methods of treating work activity in the Social Security Disability Insurance (SSDI) program. Using an experimental design with random assignment to either a control or treatment group, the Utah Benefit Offset Pilot Demonstration (UBOPD) project studied the difficulties of implementing changes to the SSDI program rules and performed preliminary analysis of the effect of a benefit offset on employment outcomes including wages, benefits, hours worked, and job retention. A benefit offset is a gradual reduction in benefits if an individual has earnings above set levels. A total of 50 people in this study were in the Benefit Offset program, 39 in the pilot and 11 in the control group. Of the 39 in the pilot, 14 received a written analysis and 25 did not. Excluding UBOPD participants from the analysis did not did not make a difference in the labor market experiences of the individuals included in this analysis. The one exception is in the area of primary source of support as noted in the discussion of Table 7.

- BENOFFPILOT: a categorical variable indicating whether the individual is in the pilot of the Benefit Offset program.
- LENGTH: time elapsed between eligibility and closure, the length of services received.
- UNEMPLOYMENT: the unemployment rate for Utah for the quarter.

The general form of the earnings regression model is:

$$
\begin{aligned}
Y_{ij} = \quad & \beta_{0i} + \beta_1 \text{TIME}_{ij} + \beta_2 \text{TIME}^2_{ij} + \beta_3 \text{EPOCH}_{ij} + \beta_4 \text{EPOCH}_{ij} * \text{TIME}_{ij} \\
& + \beta_5 \text{ EPOCH}_{ij} * \text{TIME}^2_{ij} + \beta_6 \text{SERVICE*TIME}_{ij} \\
& + \beta_7 \text{SERVICE}_i * \text{TIME}^2_{ij} + \beta_8 \text{SERVICE}_i * \text{EPOCH}_{ij} \\
& + \beta_9 \text{EPOCH}_{ij} * \text{SERVICE}_i * \text{TIME}_{ij} + \beta_{10} \text{EPOCH}_{ij} * \text{SERVICE}_i * \text{TIME}^2_{ij} + \\
& + \beta_{11} \text{UNEMPLOYMENT}_j + \beta_{12} \text{LENGTH}_i * \text{EPOCH}_{ij} \\
& + \beta_{13} \text{LENGTH}_i * \text{EPOCH}_{ij} * \text{SERVICE}_i + \beta_{14} \textit{EPOCH}_{ij} * \textit{BENOFFPILOT}_i + \varepsilon_{ij}
\end{aligned}
$$

In this model, Y_{ij} represents the quarterly earnings for individual *i* at time *j*. The first three terms (B_0-B_2) of the equation represent the earnings trajectory prior to application for USOR services. The next three terms (B_3-B_5) represent the change in that trajectory after the case is closed. The following two terms (B_6-B_7) represent the change in the earnings trajectory for those who received services. The next three terms (B_8-B_{10}) show the change in the earnings trajectory for those who have received services after their case is closed. It is these coefficients that will answer the questions "How do earnings change after an individual receives services?" B_{11} represents the effect that a proxy for state economic conditions (unemployment rate) has on earnings. B_{12} and B_{13} measure whether the length of time an individual is receiving services affects their earnings. B_{14} measure the affect of being in the pilot group of the Benefit Offset program.

Given the key questions of what effects do written benefits analyses have on earnings and employment, two separate analyses were done to distinguish the effects on earnings and the effects on employment. The analysis of earnings is described above and included only those participants who were employed before and after receipt of services from VR and for the program group UBPAO. The employment analysis was designed similarly to the earnings analysis except that the dependent variable was an indicator of whether or not the individual was employed for that person/quarter. More technically, a logit estimation was performed because the dependent variable was dichotomous. Clustered standard errors by individual were used to control for any variation in individual earnings or employment that were not included in the equations, such as education, experience, occupation, industry, etc., called the unobserved individual effect.

Results of the Multivariate Analysis

Given the key questions of what effects do written analyses have on earnings and employment, two separate analyses were done. The analysis of earnings included any participant who was employed one or more quarters included during the period of analysis

(n=1029). The employment analysis included any participant that had at least one change in employment status. This means their UI earnings indicate that they either stopped working or started working at least once during the period of analysis (n=980).

Earning Impact

We used multivariate analysis to test for a difference in UI quarterly earnings while controlling for individual and labor market characteristics. The variables used in the multivariate to measure the impact of the written analyses had coefficients (or results) that were not significantly different than zero. This means there was no significant difference. This is only for individuals who were employed at least one quarter before and/or after receipt of services. Thus, for those employed at least one of the quarters, having a written analysis was not associated with an increase in their earnings. Details of the multivariate results can be viewed in the appendix.

Employment Impact

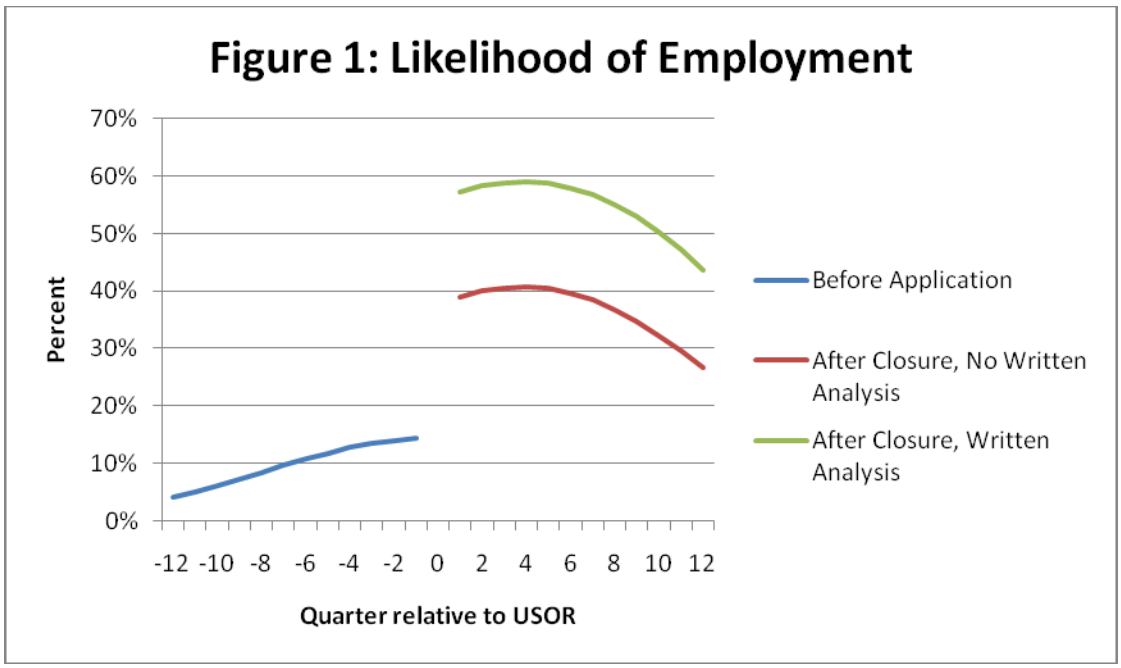
Unlike earnings, the relationship with employment of written analyses is positive.

In order to ensure that the higher employment rates for the program group are not based on an unobservable systemic difference in the program group versus the control group, we used multivariate analysis while controlling for individual and labor market characteristics. For individuals that had at least one change in employment status, the multivariate analysis tested the difference in employment between the two groups. On average, those who received a written analysis were 18.4% more likely to be employed.[4]

Figure 1 is a graphical representation of the results of the multivariate analysis of employment (n=980). It shows the likelihood of employment for the average applicant prior to application and after application for both those that received UBPAO services and those that did not. The vertical axis illustrates quarterly earnings. The horizontal axis represents the period either quarters before application or quarters post closure. For example, -2 indicates 2 quarters before application, while 2 represents 2 quarters after closure. The initial difference of 18.4% diminishes to 16.7% by the 12th quarter after closure. We cannot extrapolate from the data whether the difference will continue to shrink or level off in the period beyond 12 quarters after closure. It is interesting to note that the likelihood of employment for the program group closely mirrors the pattern of the control group's likelihood of employment.

Exact coefficients on each of the variables and their statistical significance and a table version of Figure 1 can be found in the Appendix.

[4] To further clarify, this is only for those individuals whose employment status changed at least once during any of the 12 quarters prior to application or any of the 12 quarters post closure. For those that were employed the entire time, changes are reflected in changes in their earnings. For those that were unemployed the entire time, there was no change due to services and they are not included in the Multivariate Analysis.



Limitations of the Study

The study has several limitations that are discussed in the following sections.

Limited External Validity

Since the analytic sample is not a random sample of individuals with disabilities in Utah, the external validity is limited. In other words, we cannot generalize our findings to the population of people with disabilities. However, we can expect similar results from eligible applicants to the Vocational Rehabilitation Program.

Limitations of Using Nonexperimental Data

Due to selection bias we cannot ultimately determine if the written analysis caused the differences that were observed. To completely eliminate selection bias we would need to create an experiment where individuals were randomly assigned to receive written analyses or not. However, we have used statistical techniques to minimize the effects of selection bias in our results. Namely, we used an analytic approach that allowed us to control for differences between the program group and the control group.

Service Definitions

Services were defined as a dichotomy in the analysis; either an individual received written analysis or they did not. In reality, the quality of the written analysis may vary. Thus, it is possible that differences in services resulted in differences in outcome measures that were not captured.

Data Limitations

In this study, we encountered several data limitations. We lacked data on several individual characteristics such as time of onset of disability and employer characteristics that would have allowed us to more appropriately explain some of the variation in earnings. The Unemployment Insurance data does not cover all employees. No data for a participant in a quarter was interpreted as representing $0 in that quarter (recognizing that UI data does not capture self-employment earnings, nor those for several other categories of employment, including for religious organizations and some agricultural enterprises).

Conclusion

This analysis focused on three questions: does receipt of a written benefits analysis from UBPAO result in better VR outcomes in terms of employment, closure status and earnings. In summary, the analysis found that the UBPAO program had a positive effect on employment, and that recipients were more likely to have a closure status of successfully employed. VR clients that received UBPAO services also had higher earnings but this appears to be linked to the increased likelihood of employment not higher earnings.

Participants in the UBPAO written analysis program had higher earnings after their case was closed than those who did not participate. This was found in both the Unemployment Insurance quarterly data and the USOR 911 dataset. Based on the multivariate analysis, most of the increase in average UI earnings appears to be related to an increased likelihood of employment, and not higher earnings for participants who were already working in any quarter.

The written analysis employed by the UBPAO program has shown to have positive effects on the likelihood of employment for participants. Both the descriptive statistics and the more complex multivariate analysis found a positive correlation. According to the multivariate analysis, individuals who have received a written analysis are 18.4% more likely to be employed in the first quarter after closure than those who did not receive a written analysis. This effect diminishes to 16.7% by the 12th quarter after closure. We cannot extrapolate about whether the difference will continue to diminish beyond 12 quarters after closure.

Based on the descriptive statistics, those who received a written analysis prior to Vocational Rehabilitation case closure were 18.95% more likely to have the closure status of “successfully employed”. Multivariate analysis for this variable could not be done because each individual only has one observation (instead of 24 for the wages and employment outcomes).

Appendix A

Regression results for Wages

		Coefficient	Standard Error	Significant at the 10% level?
Pre eligibility	TIME	-256.5174	39.18017	Yes
	TIME2	-12.69813	3.027537	Yes
Post Eligibility	EPOCH	842.5428	164.7841	Yes
	EPOCH*TIME	246.7651	51.15708	Yes
	EPOCH*TIME^2	15.36384	4.141755	Yes
Services and their interactions with eligibility and time				
	SERVICE*TIME	7.343528	82.24206	No
	SERVICE*TIME^2	4.512003	6.956429	No
	SERVICE*EPOCH	-335.5651	392.8132	No
	SERVICE*EPOCH*TIME	33.94329	118.0789	No
	SERVICE*EPOCH*TIME^2	-3.68219	9.450744	No
Length of service and its interactions with service and epoch				
	LENGTH*EPOCH	-152.7987	49.13759	Yes
	LENGTH*SERVICE*EPOCH	54.96401	133.8784	No
Participation in the Benefit Offset Pilot	EPOCH* BENOFFPILOT	-1069.408	232.1461	Yes
OTHER	REGIONAL UNEMPLOYMENT RATE	-151.9964	28.06157	Yes
	Intercept	2442.994	193.3801	Yes
	Number of Individuals with Observations	1029		

Appendix B

Regression results for employed

		Coefficient	Standard Error	Significant at the 10% Level?
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Pre eligibility	TIME	-0.0463754	0.0300513	No
	TIME2	-0.0093742	0.0023329	Yes
Post Eligibility	EPOCH	0.8973338	0.1334126	Yes
	EPOCH*TIME	0.071571	0.0423088	Yes
	EPOCH*TIME^2	0.0018381	0.0034185	No
Services and their interactions with eligibility and time	SERVICE*TIME	-0.0297002	0.0424009	No
	SERVICE*TIME^2	0.001581	0.0040589	No
	SERVICE*EPOCH	0.7446046	0.2769015	Yes
	SERVICE*EPOCH*TIME	0.0330415	0.0905619	No
	SERVICE*EPOCH*TIME^2	-0.0046283	0.0072257	No
Length of service and its interactions with service and epoch	LENGTH*EPOCH	0.1773754	0.0314123	Yes
	LENGTH*SERVICE*EPOCH	0.0065366	0.0780785	No
Participation in the Benefit Offset Pilot	EPOCH* BENOFFPILOT	0.8152157	0.1509701	Yes
OTHER	REGIONAL UNEMPLOYMENT RATE	0.1166292	0.0219787	Yes
	Intercept	-2.256379	0.1441914	Yes
	Number of Individuals with Observations	980		