

The cost-trends of supported employment versus sheltered employment

Robert Evert Cimera

Kent State University, Educational Foundations and Special Services, 405 White Hall, Kent, OH 44242, USA
Tel.: +1 330 672 5796; Fax: +1 330 672 2512; E-mail: rcimera@kent.edu

Abstract. This study investigated the cost-trends of supported and sheltered employees with mental retardation as they completed one “employment cycle” (i.e., from the point they entered their programs to the point when they changed their jobs, left their program, or otherwise stopped receiving services). Data indicate that the cumulative costs generated by supported employees are much lower than the cumulative costs generated by sheltered employees (\$6,618 versus \$19,388). Further the cost-trend of supported employees was downward while the cost-trend of sheltered employees was slightly upward, indicating that the costs of supported employment decline over time while those of sheltered workshops increase.

Keywords: Supported employment, sheltered employment, cost-trends, cumulative costs

1. Introduction

Throughout the vocational rehabilitation literature, many authors have claimed that supported employment is a better investment for taxpayers than sheltered workshops (cf. [3,4,11,12,16–20,22]). These assertions are corroborated by wealth of data from over twenty cost-effectiveness and cost-efficiency studies completed since the early 1980s [5,7,13]. In general, these studies have found that *over time* supported employment generates fewer costs than do sheltered workshops.

However, the longitudinal projections arrived at by many of these studies are often based upon the premise that the costs of supported employment decreases over time while the costs of sheltered workshops remain constant [9,20,21]. Intuitively, this premise makes sense. After all, as a job coach begins to fade from a worksite, the cost of services that that job coach provide will also decrease. Thus, it is very possible that, if a supported employee becomes completely independent from job coach intervention and supervision, the programmatic costs generated by that supported employee will be close to zero.

Sheltered employees, on the other hand, tend to be supervised constantly [2,23]. Further, for every billable

unit of time a sheltered employee is being supervised, supervisors are able to charge funding sources for their services [6,8]. Therefore, sheltered employees cannot remain in the workshop without generating at least some costs. In fact, the costs generated by sheltered employees should remain relatively constant from the first day in their program to the last, if the number of hours they work in the workshop also remains constant.

Although this premise seems logically sound, it has not been verified by actual data. In fact, of the more than twenty studies that have examined the costs of supported employment and sheltered workshops, none have demonstrated that the costs generated by individual supported employees decrease throughout their tenure while the costs generated by sheltered employees remain constant. If these cost-trends do not exist, the projected longitudinal analyses presented by other authors (cf. [6,20]) are not accurate. Moreover, if these projections are not accurate, it may be that supported employment isn't the best investment in the long-term for taxpayers after all.

The purpose of the present study is to explore the cost-trends of a group of supported employees and sheltered employees as they complete one “employment cycle” (i.e., from in-take to leaving their program, changing jobs within the community, or otherwise stopped

receiving services). Specifically, this study attempts to determine whether the costs generated by supported employees with mental retardation decrease over time while the costs generated by sheltered employees with the same condition remain constant. Implications and future areas of research will also be discussed.

2. Methods

2.1. Participant selection

Four adult services agencies that provide both supported and sheltered employment services agreed to participate in the present study. These agencies furnished cost data for all services received by each individual who had been enrolled in either their supported or sheltered programs from FY 2000 to 2005.

Of the individuals on whom cost data were available, 56 supported employees and 171 sheltered employees met the following criteria: a) they had a primary diagnosis of mental retardation, b) their disability was classified by their VR counselors as being "most significant" (i.e., at least three life areas were adversely affected), c) they had gone through one complete "job cycle" (i.e., they lost/changed their job within the community, exited their program, or otherwise stopped receiving services), and d) they only participated in supported employment or sheltered workshops, not both at the same time.

Individuals with mental retardation were selected for the focus of the present study due to their prevalence within the population being served by the cooperating agencies. There were not enough individuals with other conditions to maintain sizable comparison groups.

2.2. Data and data collection

Data provided by the participating adult service agencies included: a) demographic information on each employee (e.g., disabling condition, its severity, etc.), and b) the total amount that the agency billed various funding sources (e.g., Vocational Rehabilitation, Department of Mental Health, etc.) for all employment-related services received by each employee per fiscal quarter.

2.3. Conversion of dollar values

Given that the value of the dollar changes over time and that a dollar's worth of service in FY 2000 does not equal a dollar's worth of service in FY 2005, the costs of services obtained for the present study had to be converted to identical monetary units (e.g., FY 2005 dollars). This was done by multiplying the value of the services by the consumers' price index (CPI) of the base year (i.e., FY 2005) and then dividing the result by the CPI of the year in which the services were originally designated [15]. For example, in order to convert \$1,000 worth of services obtained in FY 2001, \$1,000 would be multiplied by 195.3 (i.e., FY 2005's CPI). The result (195,300) would then be divided by 177.1 (i.e., FY 2001's CPI), indicating that \$1,000 of FY 2001 money would be the equivalent of \$1,102.77 in FY 2005 money.

2.4. Calculation of cost-trends

A cost-trend analysis was created by calculating the average cost of services received during each of the fiscal quarters that the employees participated in their respective program. These average quarterly costs were then divided by the average total cumulative cost of services that employees received while participating in their program, thereby producing a percentage of the total cumulative costs that occurred during each time period.

These calculations were conducted for both supported and sheltered employees. The cost-trends were then compared to see whether the costs of supported employment decrease over time while the costs of sheltered employees remain constant as suggested in the literature [9,20,21].

3. Results

As can be seen by Table 1, all 56 supported employees received services for at least one fiscal quarter. The average per capita cost of these services equaled \$779.91. Fifty-two of the 56 supported employees received services during a second fiscal quarter for an average per capita cost of \$840.10. By the 12th fiscal quarter, none of the 56 supported employees were receiving services, thus no costs were being accumulated. (see Table 1).

From the first fiscal quarter to the last (i.e., fiscal quarter number eleven), supported employees generat-

Table 1
The average cost and percent of overall cumulative costs per quarter for supported employees

Fiscal Quarter of Service	Average Cost per Fiscal Quarter	Percent of Overall Cumulative Costs	Number of Supported Employees employed during each quarter
1	\$779.91	11.78%	56
2	\$840.10	12.69%	52
3	\$802.87	12.13%	47
4	\$591.83	8.94%	41
5	\$769.74	11.63%	39
6	\$756.18	11.42%	34
7	\$371.96	5.62%	23
8	\$603.00	9.11%	20
9	\$616.18	9.31%	17
10	\$412.00	6.22%	5
11	\$75.00	1.13%	1

Table 2
The average cost and percent of overall cumulative costs per quarter for sheltered employees

Fiscal Quarter of Service	Average Cost per Fiscal Quarter	Percent of Overall Cumulative Costs	Number of Supported Employees employed during each quarter
1	\$1,319.11	6.80%	171
2	\$1,470.89	7.59%	159
3	\$1,554.82	8.02%	140
4	\$1,383.87	7.14%	121
5	\$1,607.34	8.29%	109
6	\$1,732.31	8.93%	97
7	\$1,472.76	7.60%	85
8	\$1,704.13	8.79%	76
9	\$1,832.92	9.45%	66
10	\$1,766.50	9.11%	31
11	\$1,418.39	7.32%	7
12	\$2,125.00	10.96%	2

ed an average per capita cumulative cost of \$6,618.76. Approximately 12% of this cumulative cost occurred during the first fiscal quarter the supported employees received services (i.e., \$779.91 divided by \$6,618.76). Roughly 13% occurred in the second, 12% in the third, 9% in the fourth, and so on to the last fiscal quarter at which time 1.13% of the total cumulative costs were expended.

As can be seen in Table 2, all 171 sheltered employees received services for at least one fiscal quarter. Further, the average per capita costs of these services equaled \$1,319.11. One-hundred and fifty-nine sheltered employees remained employed for a second fiscal quarter. They utilized services costing an average of \$1,470.89. And so forth until the twelfth fiscal quarter when only two of the 171 sheltered employees were still receiving services for an average per capita cost of \$2,125. None of the 171 sheltered employees continued receiving services for more than twelfth fiscal quarters (see Table 2).

Examined throughout their entire employment cycle, the 171 sheltered employees obtained services averaging a cumulative cost of \$19,388.04. Nearly 7% of the overall cumulative costs were actualized in the first fiscal quarter, 7.59% in the second, 8.02% in the third, and so forth to the twelfth quarter in which 10.96% of the cumulative costs were incurred. Figure 1 presents the cost-trends for both the 56 supported employees and the 171 sheltered employees (see Fig. 1).

4. Discussion

From the data presented above, several salient points arise. The first involves the fact that the cumulative cost of services received by supported and sheltered employees during their employment cycle were significantly different (\$6,618.76 versus \$19,388.04). To put this in perspective, for every one sheltered employee placed in workshops, nearly three supported employees

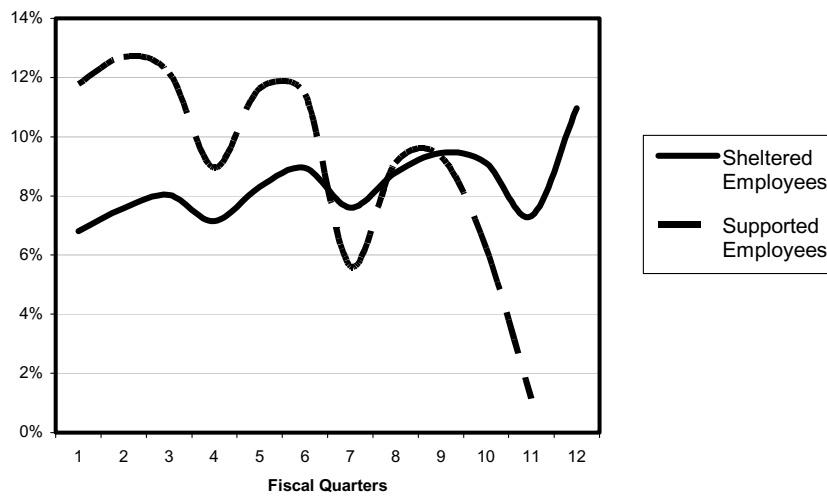


Fig. 1. Percent of overall cost for supported versus sheltered employees per fiscal quarter of service.

could have been funded within the community. This finding substantiates the results made by numerous other authors who have suggested that supported employment is a better investment for taxpayers over time than sheltered workshops (cf. [5,7,13]).

Although these general findings are not wholly new, their magnitude is. No previous study has found such a wide disparity between the costs of sheltered and supported employment. The apparent reason for the uniqueness is that the present study is one of the first to examine the *cumulative* costs that sheltered and supported employees generate over one complete employment cycle. Other studies conducted cost-analyses over shorter and relatively arbitrary lengths of time (c.f. [1, 12,14,16,18,22]).

A second noteworthy finding is that, after an initial increase experienced during the first three fiscal quarters, the cost-trend of supported employment was generally downward. Specifically, during the first three fiscal quarters of receiving services, supported employees consumed 36.6% of their total cumulative costs. Conversely, during their last three quarters of service, supported employees consumed only 6.6% of their total cumulative costs. This finding corroborates suggestions made by other authors that supported employment becomes more cost-efficient over time [9,11,12,20,21].

In comparison, the cost-trend for sheltered employees was generally upward, not constant as some authors have theorized [6,8]. More precisely, during their first three quarters of service, sheltered employees consumed 14.4% of their overall cumulative costs. During their last three fiscal quarters, they consumed 27.5%. This increase in cost suggests that sheltered employees

receive more services the longer they remain in workshops. Or, perhaps, the longer an individual remains in a sheltered workshop, the more hours they tend to “work” and, thus, generate costs related to being supervised more frequently. Such an interpretation is corroborated by other authors who found that the longer an individual stays in a workshop, the less likely they will ever leave for a community-based position [2].

With regard to supported employment’s cost-trend, periodic and sizable fluctuations occurred. For instance, in the fifth fiscal quarter, the percentage of overall cost increased by 2.69%. In the eighth fiscal quarter, the percentage of overall cost increased by 3.49%. These temporary rises likely coincided with the supported employees’ need to be periodically retrained in order to maintain their positions within the community. Yet, even with these intermittent increases, supported employees *decreased* the cost of their services by an average of 1.07% per consecutive fiscal quarter while sheltered employees *increased* theirs by 0.38%. Some fluctuations also occurred in the cost-trend for sheltered workshops. However, these amounted to an increase of little more than 1% (i.e., 1.15% in fiscal quarter number four and 1.19% in fiscal quarter number eight).

Although the present study sheds an important light on a previously unexplored cost-analysis of supported and sheltered employment programs, it contains some areas of weakness. For instance, data were only collected on individuals whose mental retardation was categorized as “most significant.” It is unclear whether supported and sheltered employees with less severe mental retardation or other conditions would have the same cost-trends. Future research will need to investigate this issue.

Further, this investigation examined only one employment cycle; that is, from the time a person entered their program to when they left, changed jobs within the community, or otherwise stopped receiving services. Had costs from subsequent employment cycles (e.g., second, third, or fourth jobs within the community) been considered, the cost-trends for supported employment might have been different than what was presented here. It would be interesting to explore whether the cost-trends of subsequent jobs differ from those from initial placements.

5. Conclusions

Over the years, much has been written about the costs of supported employment and sheltered workshops. Many studies have based their conclusions on the premise that the costs of supported employment decrease over time while the costs of sheltered workshops remain constant. However, to date, there has not been a systematic analysis of either program's cost-trends throughout the entire time individuals receive services.

The present study investigated the cost-trends generated by supported and sheltered employees with mental retardation during one "employment cycle"; that is, from the time they entered their program to when they exited, changed jobs, or no longer required services. Data found that not only were the cumulative costs of supported employment significantly cheaper than sheltered workshops (\$6,618 compared to \$19,388, respectively), but that the costs associated with supported employment decrease over time while the costs of sheltered workshops appear to increase slightly. Such findings further strengthen the arguments made by other researchers regarding the financial viability of supported employment programs for individuals with mental retardation.

References

- [1] R. Baer, T. Simmons, R. Flexer, and C. Smith, A study of the costs and benefits of supported employees with severe physical and multiple disabilities, *Journal of Rehabilitation Administration* **18**(1) (1995), 46–57.
- [2] G.T. Bellamy, L.E. Rhodes, P.E. Bourbeau and D.M. Mank, Mental retardation services in sheltered workshops and day activity programs, in: *Competitive Employment Issues and Strategies*, F.R. Rusch, ed., Baltimore: Brookes, 1986, pp. 257–272.
- [3] R.E. Cimera, Are individuals with severe or multiple disabilities cost-efficient to serve via supported employment? *Mental Retardation* **36** (1998), 280–292.
- [4] R.E. Cimera, The costs of supported employment in Wisconsin: FY 2002-FY2005, *Journal of Vocational Rehabilitation* (in press).
- [5] R.E. Cimera, The cost-efficiency of supported employment programs: A literature review, *Journal of Vocational Rehabilitation* **14** (2000), 51–61.
- [6] R.E. Cimera, *The effects of supported employee demographics on individual cost-efficiency*. Unpublished doctoral dissertation, University of Illinois Urbana-Champaign, 1997.
- [7] R.E. Cimera and F.R. Rusch, The cost-efficiency of supported employment programs: A review of the literature, in: *International Review of Research in Mental Retardation*, (Vol. 22), L.M. Glidden, ed., Academic Press: San Diego, 1999, pp. 175–225.
- [8] R. Conley, *The Economics of Mental Retardation*, Boston: Allyn and Bacon, 1973.
- [9] R.W. Conley, F.R. Rusch, W.B. McCaughrin and J. Tines, Benefits and costs of supported employment: An analysis of the Illinois supported employment project, *Journal of Applied Behavior Analysis* **22** (1989), 441–447.
- [10] M.L. Hill, P.D. Banks, R.R. Handrich, P.H. Wehman, J.W. Hill and M.S. Shafer, Benefit-cost analysis of supported competitive employment for persons with mental retardation, *Research in Developmental Disabilities* **8** (1987), 71–89.
- [11] M. Hill and P. Wehman, Cost benefit analysis of placing moderately severely handicapped individuals in competitive employment, *Journal of the Association for the Severely Handicapped* **8** (1983), 30–38.
- [12] M.L. Hill, P.H. Wehman, J. Kregel, P.D. Banks and H.M.D. Metzler, Employment outcomes for people with moderate and severe disabilities: An eight-year longitudinal analysis of supported competitive employment, *Journal of the Association for the Severely Handicapped* **12** (1987), 182–189.
- [13] J. Kregel, P. Wehman, G. Revell, J. Hill and R. Cimera, Supported employment benefit-cost analysis: Preliminary findings, *Journal of Vocational Rehabilitation* **14** (2000), 153–161.
- [14] C.S. Lam, Comparison of sheltered and supported work programs: A pilot study, *Rehabilitation Counseling Bulletin* **30**(2) (1986), 66–82.
- [15] H.M. Levin and P.J. McEwan, *Cost-effectiveness Analysis: Methods and Applications*, Sage: Thousand Oaks, 2000.
- [16] D.R. Lewis, D.R., Johnson, R.H. Bruininks, L.A. Kallsen and R.P. Guillery, Is supported employment cost-effective in Minnesota? *Journal of Disability Policy Studies* **3** (1992), 67–92.
- [17] W.B. McCaughrin, *Longitudinal trends of competitive employment for developmentally disabled adults: A benefit-cost analysis*, Unpublished doctoral dissertation, University of Illinois Urbana-Champaign, 1988.
- [18] W.B. McCaughrin, W.K. Ellis, F.R. Rusch and L.W. Heal, Cost-effectiveness of supported employment, *Mental Retardation* **31** (1993), 41–48.
- [19] F.R. Rusch, R.W., Conley and W.B. McCaughrin, Benefit-cost analysis of supported employment in Illinois, *Journal of Rehabilitation* **59** (1993), 31–36.
- [20] K. Schneider, F.R. Rusch, R. Henderson and T. Geske, Competitive employment for mentally retarded persons: Costs vs. benefits, in: *Funding and Cost Analysis*, W. Halloran, ed., Urbana: University of Illinois, Leadership Training Institute, 1981, pp. 63–82.
- [21] J. Tines, F.R. Rusch, W. McCaughrin and R.W. Conley, Benefit-cost analysis of supported employment in Illinois: A

- statewide evaluation, *American Journal of Mental Retardation* **95** (1990), 44–54.
- [22] P. Wehman, M. Hill, J. Hill, V. Brooke, P. Pendleton and C. Britt, Competitive employment for persons with mental retardation: A follow-up six years later, *Mental Retardation* **23** (1985), 274–281.
- [23] C.W. Whitehead, Sheltered workshops in the decade ahead: Work, wages, and welfare, in: *Vocational Rehabilitation of Severely Handicapped Persons*, G.T. Bellamy, G. O’Conner and O.C. Karan, eds, Baltimore: University Park Press, 1979, pp. 71–84.

Copyright of Journal of Vocational Rehabilitation is the property of IOS Press and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.