

A Cost-Benefit Model for Travel Training

Findings in Brief

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In 2010, Karen Wolf-Branigin, Easter Seals Project ACTION staff member, and Michael Wolf-Branigin, Ph.D., George Mason University Department of Social Work associate professor, collaborated with additional experts in the field to develop a model budget with line items and a formula to ascertain distinct costs and benefits of travel training services to trainees, the community and funders. The same year, they presented their model at the TRANSED conference in Hong Kong, China and at the Association of Travel Instruction Annual Conference in Baltimore, Maryland. The following pages are a synopsis of the cost-benefit model for travel training presented at these conferences.

Introduction

Transportation services designed for use solely by people with disabilities are more costly than accessible transportation services for the general public. Encouraging and supporting people with disabilities to use accessible general public transportation is paramount to community inclusion and allows public transportation agencies to better sustain their services. Through travel training services, people with disabilities and older adults can learn how to use general public transportation for some or all of their transit trips.

Travel training is a relatively new professional field with an emerging body of knowledge on theory, practice and research. A cost-benefit model for

travel training services has not yet been published in professional literature nor been used by the majority of travel training funders or practitioners. In addition, practitioners and funders do not have a universally accepted definition of travel training services or revenues and expenses. As a result, practitioners and funders are unable to calculate costs and benefits of travel training services or determine whether cost avoidance reaches a sufficient benefit/cost ratio to justify service. One important way to expand the emerging knowledge base in this field, then, is to accurately estimate benefits and costs derived from travel training services.

Method

To calculate costs and benefits and ascertain the cost/benefit ratio, Wolf-Branigin and Wolf-Branigin decided to create a user-friendly cost-benefit model for use by travel training funders and practitioners. After assembling an expert panel of travel trainer supervisors, funders, travel trainers, and people receiving travel training services (trainees), they used the following multi-stage process:

- Distributed a set of questions to expert panel members
- Held a conference call to solicit information from the panel



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- Drafted budget categories, a worksheet and formulas using panel recommendations and feedback
- Distributed the drafts, held a second conference call and obtained additional feedback from the panel
- Incorporated panel feedback and created a final set of documents

Cost, Risks and Benefits Identified by the Expert Panel

The expert panel identified the following costs and benefits of travel training services and the risks of not providing travel training services for three groups (public transportation agencies, trainees and the community at large):

1. Travel training service **costs** from the perspective of the **public transportation agency**:
 - Salaries
 - Equipment
 - Materials
 - Perceived cost of inaction (cost of increasing the number of paratransit customers)
2. Travel training service **costs** from the perspective of the **trainee**:
 - Trainees' time and effort (e.g., a trainee who takes time off work to meet with her travel trainer)
 - Time and effort of those who support the trainees (e.g., a father who practices riding the bus with his son)
3. Travel training service **costs** from the perspective of the **community**:
 - Cost borne by taxpayers for public transportation
 - Cost borne by school systems, human service organizations and others to support travel training services
4. **Risks** from the perspective of the **public transportation agency** if travel training services are not provided:
 - Exponential growth in paratransit service costs compared to fixed-route service costs
 - Shifting costs from public transportation to others (e.g., private transit providers)
5. **Risks** from the perspective of the **trainee** if travel training services are not provided:
 - Living a segregated life without access to the community
 - Having a greater reliance on and expectations for door-to-door or curb-to-curb transit services
 - Increasing trainee and family stress due to limited transit training, and increasing pedestrian/transit accidents
6. **Risks** from the perspective of the **community** if travel training services are not provided:
 - Higher healthcare costs if individuals are unable to keep medical appointments, purchase groceries, pick up medicines, etc.
 - Impeding others who use transit (e.g., customers may take longer to purchase fare, board vehicles or ask the operator questions if they have not completed a travel training program)
7. Travel training service **benefits** from the perspective of the **public transportation agency**:
 - Reducing the number of people who use paratransit
 - Increasing fixed-route ridership
 - Achieving fuller capacity on fixed-route vehicles

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- Promoting the public transportation agency as a customer-centered organization that values older adults and people with disabilities and their willingness to meet these customers' unique transit needs
8. Travel training service **benefits** from the perspective of the **trainees**:
- Increasing confidence
 - Reducing fear of getting lost, hurt, etc.
 - Reducing family member fear of trainee getting lost, hurt, etc.
 - Increasing independence
 - Increasing self-sufficiency
 - Being able to spontaneously take a trip
 - Being able to socialize with others
 - Being able to live similar to peers without disabilities
 - Expanding employment opportunities
 - Being able to access more goods and services
 - Using a more cost-effective service (fixed-route)
9. Travel training service **benefits** from the perspective of the **community**:
- Increasing societal tolerance (seeing people with disabilities actively participate in the community)
 - Making universally designed elements available to all customers (e.g., low floor buses enjoyed by people using wheelchairs, rolling suitcases or baby strollers)
 - Decreasing trainees' need to rely on others (family, friends and professionals)
 - Increasing trainees' ability to spend money in their communities
 - Enhancing community values (we care about our residents' mobility, employment, volunteer work, voting, etc.).



Fixed-route transportation systems serve everyone in a community.

Monetary Values Identified by the Expert Panel

A cost-benefit model describes a service in terms of monetary value, such as the amount of money it costs to provide the service and the amount saved if the service is successful. These figures can be attained by creating a set of mathematical formulas.

Cost-benefit models also examine the costs and benefits realized by specific groups, though not all costs or benefits can be included. The model presented here examines public transportation agencies, trainees and the community at large. Typically, the entity paying for the service will, at the beginning, realize the smallest benefit, and trainees will commonly see the largest benefit. Though the expert panel identified numerous trainee benefits, such as increased independence, only costs, benefits and risks with monetary values can be included in a cost-benefit model.

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Accessible fare machines are an important part of public transportation systems.

Therefore, many trainee benefits could not be included in this model as it is challenging to affix a monetary value to certain benefits like freedom.

Prior to creating formulas for attainable monetary values, cost categories must be established. The expert panel identified the following categories associated with travel training services for use in developing the formulas:

- (1) Actual or estimated gross trainee income prior to receipt of travel training service
- (2) Actual or estimated gross trainee income after receipt of travel training service
- (3) Actual or estimated net trainee income prior to receipt of travel training service
- (4) Actual or estimated net trainee income after receipt of travel training service
- (5) Public transportation agency or their sub-contractor's costs of vehicles and equipment
- (6) Public transportation agency or their sub-contractor's costs of travel training personnel
- (7) Public transportation agency or their sub-contractor's costs of supplies, equipment and occupancy
- (8) Costs of paid and unpaid trainee supporters (family, friends)
- (9) Projected savings to the public transportation agency and other transportation providers (public, private, school districts)
- (10) Projected money spent by trainees due to increased independent travel
- (11) Projected trainee taxes paid to support local transit agency
- (12) Operationalizing cost avoidance (difference between the cost of a paratransit trip minus the cost of a fixed-route trip)
- (13) Including the amount of taxes the community pays for the public transportation agency paratransit service
- (14) Adding the difference in trainee out-of-pocket expenses (paratransit fares can be higher than fixed-route fares)
- (15) Adding the value of trainees performing volunteer work to the community

Monthly Budget Worksheet

Wolf-Branigin and Wolf-Branigin developed the following budget worksheet based on the cost categories defined by the expert panel. Organizations providing travel training services can create a 12-month budget using this worksheet to help identify all of the revenues and costs (expenses) associated with delivering travel training services.

Monthly Budget Worksheet

CATEGORY	BUDGET	ACTUAL
Revenue (include governmental, non-governmental and in-kind)		
TOTAL REVENUE		
EXPENSES		
Personnel		
Staff Benefits (travel trainers and others such as supervisors, information technology specialists or payroll specialists)		
Personnel Wages (travel trainers and others such as supervisors, information technology specialists, marketing specialists, or payroll specialists)		
Payroll Taxes		
Hiring Costs		
Professional Fees		
Subscriptions and Dues		
Continuing Education (e.g. conference registration)		
In-Kind		
Other		
Finance		
Accounting		
Bank Service Charges		
Taxes		
Loan Payments		
Interest on Debt		
In-Kind		
Other		
Occupancy		
Occupancy/Utilities		
Rent/Lease Payments		
Utilities (including telephone and Internet service)		
In-Kind		
Other		
Equipment, Materials, Supplies		
Equipment (e.g. photocopier, landline telephone, fax machine, computer, cell phone)		
Installation/Repair of Equipment		
Office Supplies		

Monthly Budget Worksheet (continued)

CATEGORY	BUDGET	ACTUAL
Printing		
Postage		
Delivery Charges		
In-Kind		
Other		
Transit		
Transit vehicles (e.g. travel trainer use of agency vehicle to: meet with trainee in their home or shadow trainee learning a bus route)		
Transit Expenses (e.g. mileage reimbursement)		
Transit Fare (customer or personnel)		
In-Kind		
Other		
Other		
Advertising/Marketing (brochures, video, giveaways, etc.)		
Legal Expenses		
Liability and Other Insurance		
Licenses/Permits		
In-Kind		
Other		
TOTAL EXPENSES		
TOTAL REVENUE MINUS TOTAL EXPENSES		

Budget Worksheet Explanation

This list includes an explanation of each line item in the Monthly Budget Worksheet.

Personnel

- Actual or estimated annual cost for travel trainer wages
- Actual or estimated annual cost for other personnel wages such as:
 - Administrative staff (managers, supervisors, etc.)
 - Clerical staff (administrative assistant, reservationist, secretary, etc.)
 - Other staff (marketing specialists, IT specialists, accountants, sign language and foreign language interpreters, etc.)

- Actual or estimated annual cost for travel trainer benefits
- Actual or estimated annual cost for other personnel benefits such as:
 - Administrative staff (managers, supervisors, etc.)
 - Clerical staff (administrative assistant, reservationist, secretary, etc.)
 - Other staff (marketing specialists, IT specialists, accountants, sign language and foreign language interpreters, etc.)
- Actual or estimated annual cost for travel trainer payroll taxes
- Actual or estimated annual cost for other personnel payroll taxes such as:
 - Administrative staff (managers, supervisors, etc.)

- Clerical staff (administrative assistant, reservationist, secretary, etc.)
- Other staff (marketing specialists, IT specialists, accountants, sign language and foreign language interpreters, etc.)
- Actual or estimated annual cost for travel trainer hiring costs (job announcement publicity, interview costs, etc.)
- Actual or estimated annual cost for travel trainer professional fees or dues (Association for Travel Instruction, etc.)
- Actual or estimated annual cost for travel trainer subscriptions
- Actual or estimated annual cost for travel trainer continuing education (conference registration, meals, ground/air transit, etc.)
- Actual or estimated annual cost for other staff continuing education (sensitivity training for transit officers and operators, etc.)
- Actual or estimated annual cost human resources costs (drug tests, criminal background checks, etc.)
- In-Kind
- Other

Finance

- Actual or estimated annual cost for accounting (personnel, audits, etc.)
- Actual or estimated annual cost for bank service charges
- Actual or estimated annual cost for taxes
- Actual or estimated annual cost for loan payments
- Actual or estimated annual cost for interest on debt
- In-Kind
- Other

Occupancy

- Actual or estimated annual cost for rent/lease payments
- Actual or estimated annual cost for telecommunications (landline telephone service, cell phone service, internet service, etc.)

- Actual or estimated annual cost for utilities (electric, water, etc.)
- Actual or estimated annual cost for building maintenance (extermination fees, landscaping, trash collection, etc.)
- In-Kind
- Other

Equipment, Materials and Supplies

- Actual or estimated annual cost for equipment (photocopier, landline telephone, cell phone, computer, printer, fax machine, desks, file cabinets, video/audio recorder, camera, etc.)
- Actual or estimated annual cost for materials/supplies (pens, copy paper, etc.)
- Actual or estimated annual cost for printing (travel training brochures, trainee handbook, alternative format materials such as Braille, large print or audio, etc.)
- Actual or estimated annual cost for postage (stamps, over night delivery, etc.)
- Actual or estimated annual cost for equipment repair/installation (photocopier, computer, etc.)
- Actual or estimated annual cost for software development
- Actual or estimated annual cost for supplies used during training (bus-hailing kits, color-coded maps and schedules, audio instructions, etc.)
- In-Kind
- Other

Transit

- Actual or estimated annual cost paid by the organization for:
 - Vehicles (agency or owned by personnel) used by travel trainer and trainee during travel training
 - Mileage (or other calculation of use) for private or organization vehicle
 - Gasoline
 - Parking fees (meters, parking lots, parking tickets, etc.)
 - Agency transit vehicles (travel trainer

use of agency vehicle to meet with trainee, shadow trainee learning a bus route, etc.)

- Private automobiles
- Actual or estimated annual cost for transit fare (for trainee, travel trainer or other personnel)
- In-Kind
- Other

Other

- Actual or estimated annual cost for advertising/marketing materials (brochures, video, giveaways, etc.)
- Actual or estimated annual cost for legal expenses
- Actual or estimated annual cost for liability and other insurance
- In-Kind
- Other

Formulas

Organizations interested in describing their travel training services in terms of monetary value can develop their own budget, track their revenues and expenses, and insert these values into the following cost-benefit formulas. A formula can be used for organizations with at least six months of revenue and expense data but may be more accurate using 12 months of data. Organizations are encouraged to apply the formulas annually, since their service may become more efficient over time.

Trainee Benefit and Cost Calculation Formula

- $\text{Benefits} = ((4) - (3)) + (14)$
 - $\text{Costs} = (8) + (11)$
 - $\text{B/C Ratio} = ((4) - (3)) + (14) / ((8) + (11))$
 - $\text{Net Benefit} = ((4) - (3)) + (14) - ((8) + (11))$
- (3) Actual or estimated net trainee income prior to travel training
 (4) Actual or estimated net trainee income following travel training
 (8) Costs of paid/unpaid trainee supporters
 (11) Projected trainee taxes paid to local transit
 (14) Trainee out of pocket expense

Public Transport Agency Benefit and Cost Calculation Formula

- $\text{Benefits} = (9) + (11) + (12)$
 - $\text{Costs} = (5) + (6) + (7)$
 - $\text{B/C Ratio} = ((9) + (11) + (12)) / ((5) + (6) + (7))$
 - $\text{Net Benefit} = ((9) + (11) + (12)) - ((5) + (6) + (7))$
- (5) Transit provider vehicles and equipment
 (6) Transit provider travel training personnel
 (7) Transit provider supplies, equipment and/or occupancy
 (9) Projected transit provider savings
 (11) Projected taxes paid by trainees
 (12) Cost avoidance

Community Benefit and Cost Calculation Formula

- $\text{Benefits} = (9) + (10) + (11) + (15)$
 - $\text{Costs} = (13)$
 - $\text{B/C Ratio} = ((9) + (10) + (11) + (15)) / (13)$
 - $\text{Net Benefit} = ((9) + (10) + (11) + (15)) - (13)$
- (9) Projected transit provider savings
 (10) Projected dollars spent by trainees
 (11) Projected trainee taxes paid to local transit
 (13) Taxes paid for paratransit or other specialized transit services
 (15) Value of voluntary work donated by trainees

Further Reading

Wolf-Branigin and Wolf-Branigin's article for *TRANSED, A Travel Training Cost Benefit Model for People with Disabilities, Public Transportation Agencies and Communities*, is available at <http://www.transed2010.hk/front/upload/20100520CR-znJsVC5qW5.pdf>. Additionally, in 2011 their cost-benefit model was field-tested at Paratransit, Inc. in Sacramento, California and the results are described in *Can Travel Training Services Save Public Transportation Agencies Money?* published in *TR News*, No. 278, January–February 2012.