

Literacy and Essential Skills in the Workplace:

Social Dimensions of Returns to Training

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SOCIAL RESEARCH
AND DEMONSTRATION
CORPORATION

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UPSKILL – Essentials to Excel

- ▶ Pan-Canadian demonstration project
- ▶ Measuring the impacts of Literacy and Essential Skills (LES) training in the workplace
- ▶ Large scale Randomized Control Trial (RCT)
- ▶ Allows for a rigorous social cost–benefit study and the measurement of return on investment (ROI)
- ▶ Funded by the Office of Literacy and Essential Skills, HRSDC

Goals of the Study

- ▶ **To rigorously measure the impacts of LES training**
- ▶ **To establish a clear business case for LES training by measuring its ROI for workers and firms**
- ▶ **To understand the pattern of impacts on different types of workers and firms**
- ▶ **To understand the conditions in which LES training can be most successful and strategically implemented**

Target Groups

- ✓ **Employed individuals**
- ✓ **Skill level** – Essential Skills that correspond roughly to mid to upper level 2, but who require level 3
- ▶ **Tourism Sector – Accommodations**
- ▶ **Four occupational clusters**
 - Custodial positions (Housekeeping, Maintenance)
 - Food Preparation (Line cooks)
 - Serving positions (Food and beverage servers)
 - Administrative positions (Front desk agents)

Noteworthy elements of the design

1. **Evaluation Design** – utilizing a randomized control trial (RCT) to estimate unbiased impacts of ES training

Evaluation Design

- **Cluster Random Assignment (RA) Design**
- **Unit of Assignment:** Establishments
- **Unit of Analysis:** Workers and Establishments
- **Target Samples Sizes**
 - N=1500 workers in 100 establishments*
 - Half received training (750 workers)*
- Should give sufficient power to detect impacts of 5–7pp
e.g. about an 8–point change on IALS scale; a 5 percent increase in a performance measure

Noteworthy elements of the design

1. **Evaluation Design** – utilizing a randomized control trial (RCT) to estimate unbiased impacts of ES training
2. **Performance Indicators** – objective observational measures of performance change allows for credible link and monetization of business outcomes

Core Business priorities...

Business Needs

Enhancing
Customer
Relations

Maintaining
Service
Excellence

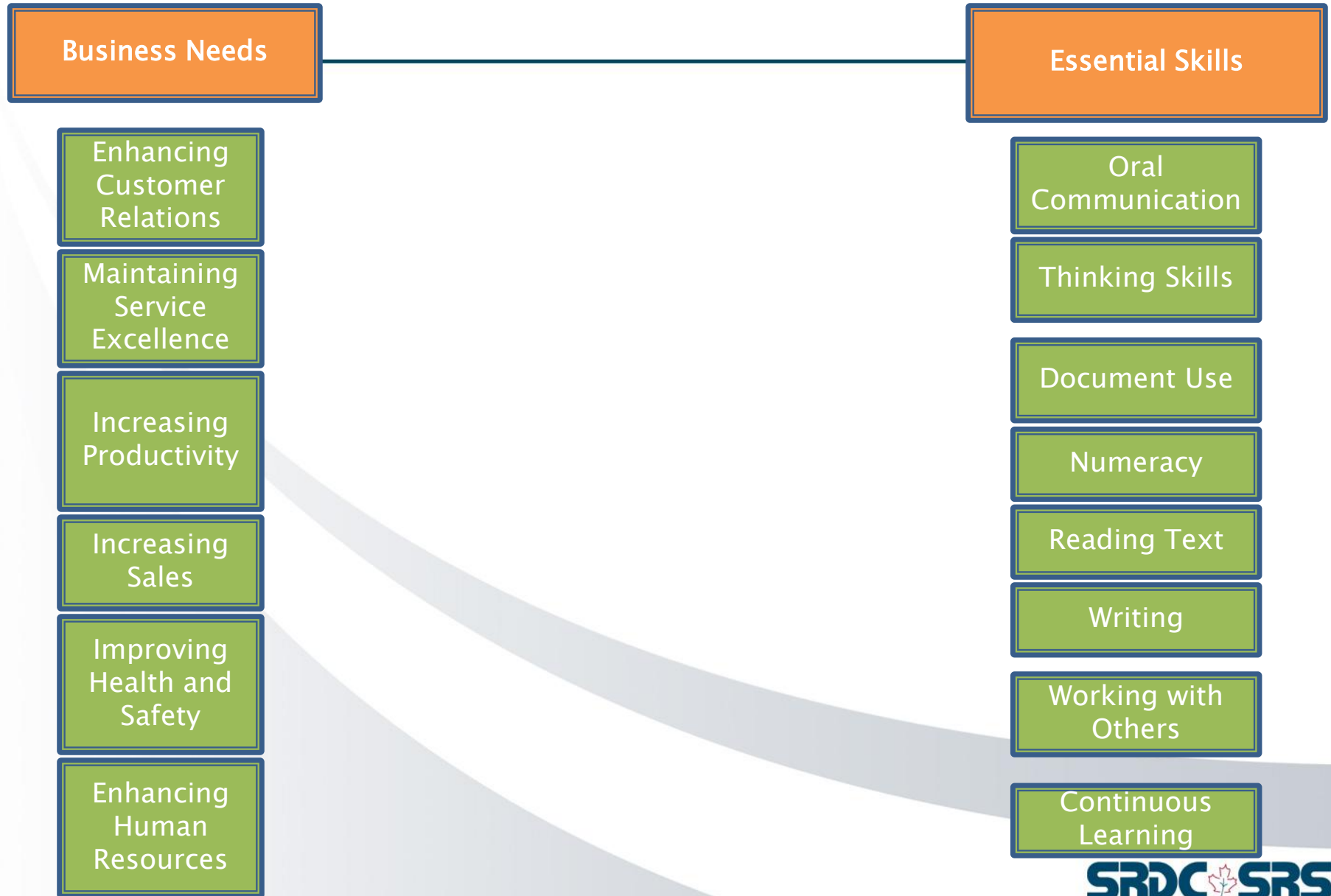
Increasing
Productivity

Increasing
Sales

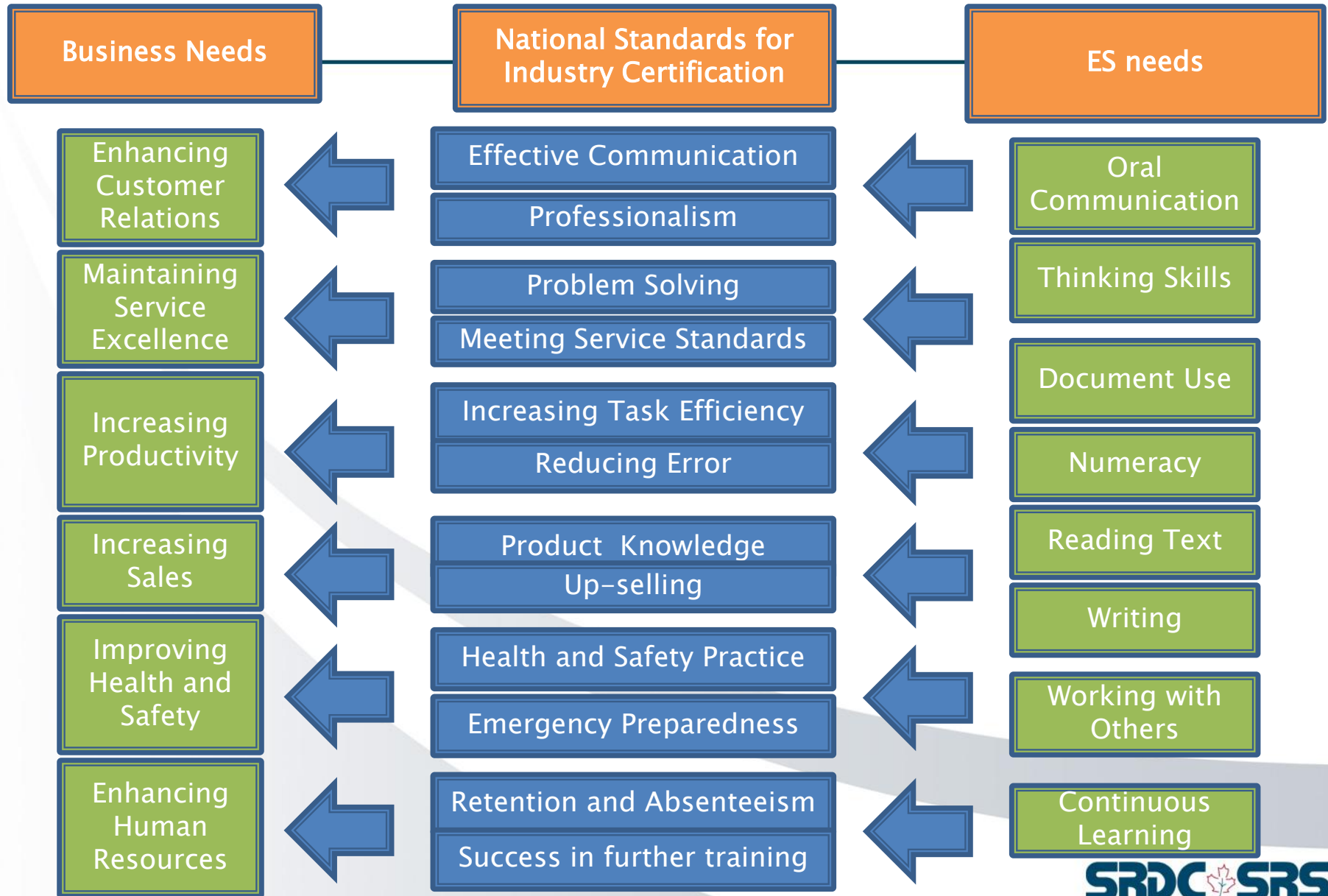
Improving
Health and
Safety

Enhancing
Human
Resources

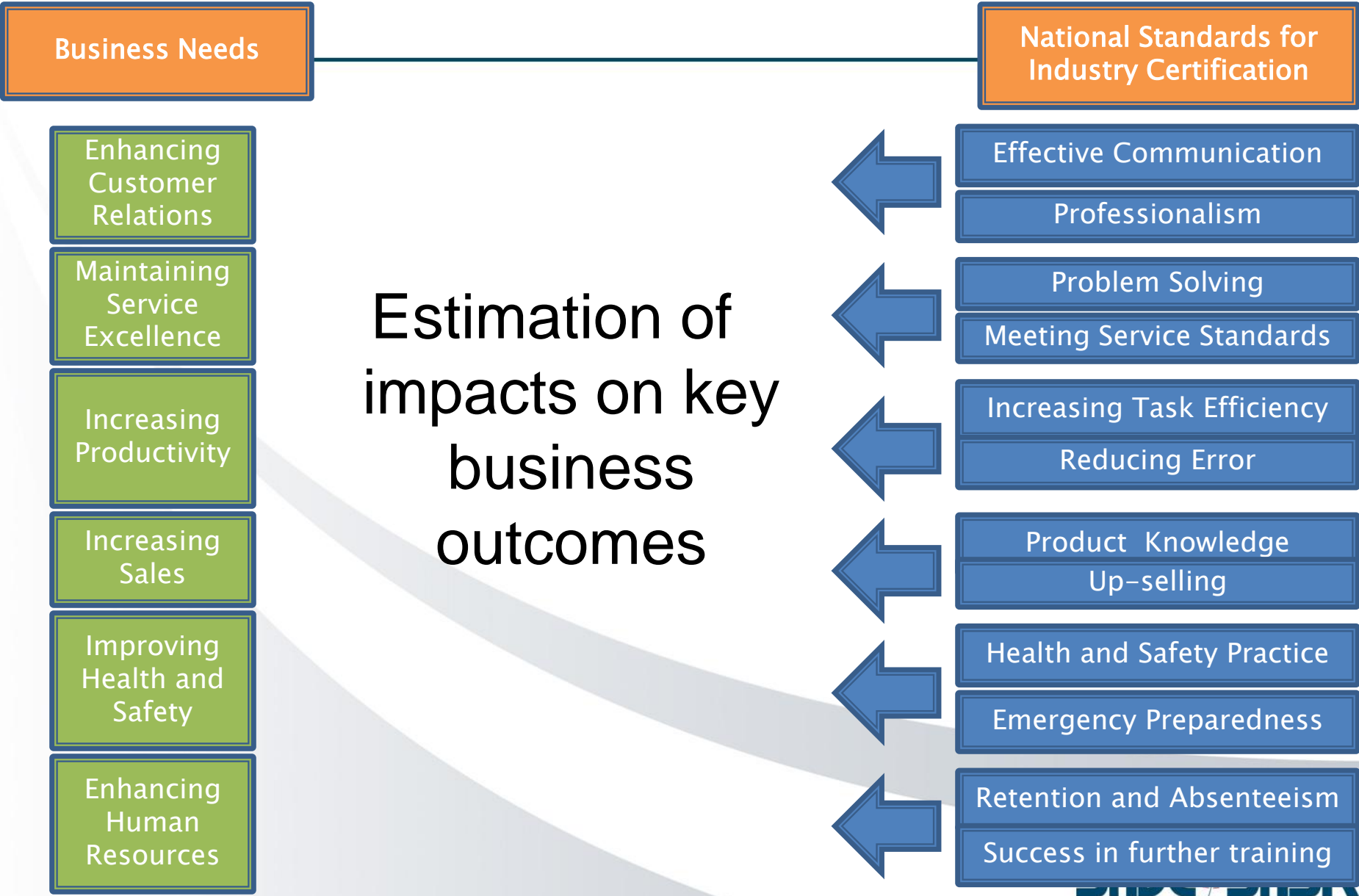
....Essential Skills targeted



The missing link – key performance indicators



...allows for more credible link to business outcomes



Service Quality drives Sales and Productivity

<i>Source</i>	<i>Relevant Constructs</i>	<i>Link(s) to Outcomes</i>	<i>Empirically Tested?</i>
Parasuraman, Zeithaml, and Berry (1988)	SQ, BI	SQ	Yes
Parasuraman, Berry, and Zeithaml (1991)	SQ, BI	SQ	Yes
Anderson and Sullivan (1993)	SQ, SAT, BI	SQ, SAT	Yes
Boulding et al. (1993)	SQ, BI	SQ	Yes
Taylor and Baker (1994)	SQ, SAT, BI	SQ	Yes
Zeithaml, Berry, and Parasuraman (1996)	SQ, BI	SQ	Yes
Taylor (1997)	SQ, SAT, BI	SQ, SAT	Yes
Athanassopoulos (2000)	SAC, SQ, SAT, BI	SQ	Yes
Cronin and Taylor (1992)	SQ, SAT, BI	SAT	Yes
Anderson and Fornell (1994)	SQ, SAT	SAT	No
Gotlieb, Grewal, and Brown (1994)	SQ, SAT, BI	SAT	Yes
Ostrom and Iacobucci (1995)	SAC, SQ, SAT, VAL, BI	SAT	Yes
Fornell et al. (1996)	SQ, SAT, SV, BI	SAT	Yes
Patterson and Spreng (1997)	SAT, SV, BI	SAT	Yes
Hallowell (1996)	SAT, BI	SAT	Yes
Andreassen (1998)	SQ, SAT, SV, BI	SAT	Yes
Bolton (1998)	SAT, BI	SAT	Yes
Chenet, Tynan, and Money (1999)	SQ, SV, SAT, BI	SAT	No
Oliver (1999)	SAT, BI	SAT	No
Garbarino and Johnson (1999)	SAT, BI	SAT	Yes
Bolton and Lemon (1999)	SAT, BI	SAT	Yes
Bernhardt, Donthu, and Kennett (2000)	SAT, BI	SAT	Yes
Ennew and Binks (1999)	SQ, SV, SAT, BI	SAT, SV	Yes
Zeithaml (1988)	SAC, SQ, SV, BI	SV	No
Bolton and Drew (1991)	SQ, SAT, SV, BI	SV	No
Gale (1994)	SQ, SV, BI	SV	No
Chang and Wildt (1994)	SAC, SQ, SV, BI	SV	Yes
Hartline and Jones (1996)	SQ, SV, BI	SV	Yes
Wakefield and Barnes (1996)	SQ, SV, BI	SV	Yes
Cronin et al. (1997)	SAC, SQ, VAL, BI	SV	Yes
Sirohi, McLaughlin, and Wittink (1998)	SAC, SQ, SV, BI	SV	Yes
Sweeney, Soutar, and Johnson (1999)	SAC, SQ, SV, BI	SV	Yes

Noteworthy elements of the design

1. **Evaluation Design** – utilizing a randomized control trial (RCT) to estimate unbiased impacts of ES training
2. **Performance Metrics** – objective observational measures of performance change allows for credible link and monetization of financial outcomes
3. **Cost Benefit–Analysis** – the RCT and the performance indicators allow for rigorous estimate of economic returns

CBA – Accounting Framework

	Perspective			
	Participants	Firms	Government Budgets	Society
Financial Components (Fully-monetized)				
Participant Impacts				
Employment and Earnings	+	-	0	+
Transfer payments: EI, welfare	-	0	+	0
Tax payments	-	0	+	0
Other Household Income, Tax Credits	+/-	0	0	+/-
Firm Effects				
Sales Revenue	0	+	0	+
Productivity: Efficiency Gains, Staff Time	0	+	0	+
Cost Savings: Inventories, Supplies	0	+	0	+
Health and Safety Costs	0	+	0	+
HR Costs: Hiring/Retention Training	0	+/-	0	+/-
Taxes: Sales, Payroll, Corporate	0	-	+	0
Government Program Costs				
UPSKILL Program Delivery	0	0	-	-
Other Transfer Program Administrative costs	0	0	+	+
Benchmark Model: Benefit/Cost per Participant	+/-	+/-	+/-	+/-

Noteworthy elements of the design

1. **Evaluation Design** – utilizing a randomized control trial (RCT) to estimate unbiased impacts of ES training
2. **Performance Metrics** – objective observational measures of performance change allows for credible link and monetization of financial outcomes
3. **ROI study** – the RCT and the performance indicators allow for rigorous estimate of economic returns
4. **Rich Evaluation Framework** – comprehensive set of measures to help understand conditions for positive returns

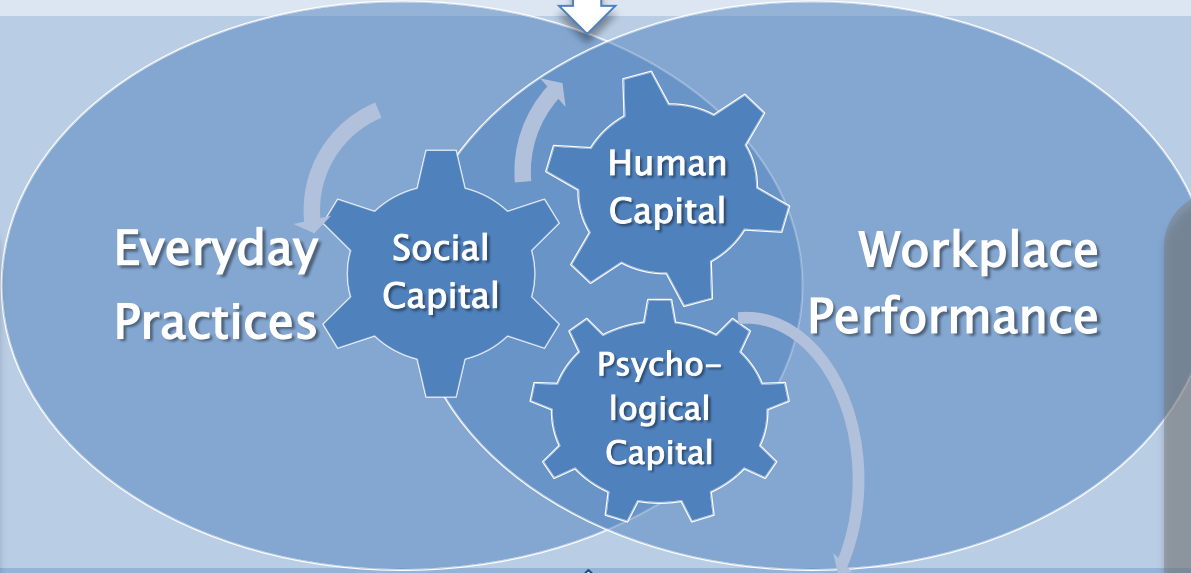
Inputs, activity, outputs

Intermediate Outcomes

Long-term Outcomes

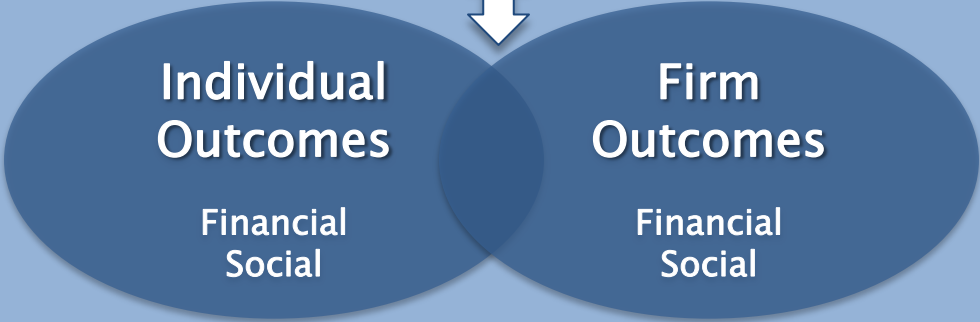
Returns

Workplace LES Training



Individual Factors

Structural Factors



Individual ROI

Firm ROI

Gov't ROI

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3. **ROI study** – the RCT and the performance indicators allow for rigorous estimate of economic returns
4. **Rich Evaluation Framework** – comprehensive set of measures to help understand conditions for positive returns
5. **Social Cost–Benefit Analysis** – the RCT and social outcome measures allow for estimation of social returns

Social Outcomes - Social Returns

	Perspective			
	Participants	Firms	Government Budgets	Society
Non-Financial Components				
Participant Impacts				
Social Capital, Networks	+	0	0	+
Social Inclusion, Participatory	+	0	0	+
Social Cohesion, Trust	+	0	0	+
Health and Wellbeing	+	0	0	+
Foregone Leisure	-	0	0	-
Firm Effects				
Worker Engagement, Participation	0	+	0	+
Trust in Management, Staff Relations	0	+	0	+
Learning Culture, Supports for Learning	0	+	0	+
Working Quality of Life, Job satisfaction	0	+	0	+
Flexible Work Arrangements	0	+	0	+
Extended Model: Benefit/Cost per Participant	+/-	+/-	+/-	+/-

Social Capital

Resources that are accessible within social networks – supports that can be obtained from those you know
(Policy Research Initiative, 2005)

- **Bridging Social Capital** – networks that give access to resources that are useful for economic gain
 - employment, financial assistance
- **Bonding Social Capital** – networks that give access to supports of a personal nature
 - emotional support, household activities

Social Capital – Network Structure

Density – refers to the extent that individuals in a network know one another

Homogeneity – how similar individuals in a network are to one another on various demographic characteristics

- ▶ Less *dense*, less *homogeneous* networks are theorized to be advantageous for employment (Woolcock, Narayan 2000)
- ▶ Also referred to as “weak ties”, or “linking” social capital, one of main methods used to get a job (Granovetter 1974)

Social Inclusion

Access to and participation in valued dimensions of society – economic, political, social, cultural
(Crawford, 2003)

- **Economic** dimension focuses on access to the labour market and inequalities in income
- However, significant literature also looks at access and participation in **social and cultural** aspects of community
- **Measures:** *access-based* indicators (literacy, transportation, childcare) and *participatory indicators* (memberships in groups, volunteering)
- Linked with health, well being, and employment

Social Cohesion

Shared values and identify – a sense of belonging, and being associated with a community

(Jenson, 1998)

- **Perceptions and attitudes** that individuals hold toward a community and their place in it
- Measures include *extent of trust* within a community, *shared values and beliefs* – a collective identity
- While also associated with health and well being, cohesion is often seen as an important mediating factor in the development of social capital and inclusion

Valuing Social Outcomes

- **Market Replacement, Fair Market value** – common for *tangible* outcomes that have equivalent market goods/services
- **Volunteering**
 - use market wages for equivalent jobs
e.g. wage for food service x hours of volunteering
- **Social Capital**
 - value of the resource that is accessible from a contact
e.g. financial advice from a lawyer, cost x frequency of use

Valuing Social Outcomes

What about outcomes that have no equivalent market value?
e.g. bonding social capital, increased trust, reduced hardship/stress

- ▶ **Compensating Differentials using Life Satisfaction** – approach for valuing *intangible* outcomes (Helliwell and Huang, 2005)
 - **Ordered Probit** – estimate the extent to which income and other intangibles influence life satisfaction
 - **Ratio of coefficients** – ratio of the coefficient on intangible to that on income provides an estimate its “perceived value”
 - **Interpretation:** percentage of annual income that a one percentage point increase in the intangible outcome is “worth”
- ▶ **But do social outcomes help explain life satisfaction?**

Probit of Life Satisfaction:

Contributions to life satisfaction

Variables	Coef.	S.E.
Log real personal income	0.174 ***	(0.061)
Male	-0.140 **	(0.068)
Married or living common law	0.380 ***	(0.086)
Age (relative to <30)		
30–44	-0.492 ***	(0.087)
45–54	-0.499 ***	(0.090)
55 and older	-0.201 **	(0.099)
Health Status Scale (0–1)	0.831 ***	(0.131)
Stress, Feeling rushed		
At least once a month	-0.266 ***	(0.094)
At least once a week	-0.161 **	(0.082)
Several times a week	-0.369 ***	(0.076)
Daily	-0.461 ***	(0.077)
Activity limitation	-0.089	(0.057)
Hardship		
Difficulties in paying for day-to-day	-0.332 ***	(0.076)
Difficulties in paying for groceries	-0.376 ***	(0.087)
Social Capital		
Number of contacts (job related)	0.012 ***	(0.004)
Total bonding and bridging links	0.002 **	(0.001)
Cohesion		
Talk to neighbour daily	0.115 ***	(0.044)
Neighbours always help each oth	0.149 ***	(0.046)
Trust (in a stranger)	0.096 *	(0.054)
Sample size	Participant-1,448; Community-2858	

Valuing Intangibles – CEIP Examples

Social Capital – each *additional contact* is valued at 7% of income; CEIP impacts on social networks worth \$3,808 per participant

Trust – each *additional percentage point* increase in trust is valued at 2.5% of income; CEIP impact is worth \$2,401 per participant

Hardship – the reductions in stress associated with lower hardship during CEIP is valued at \$3,379

How much of a difference would including social impacts make to the estimate of overall returns?

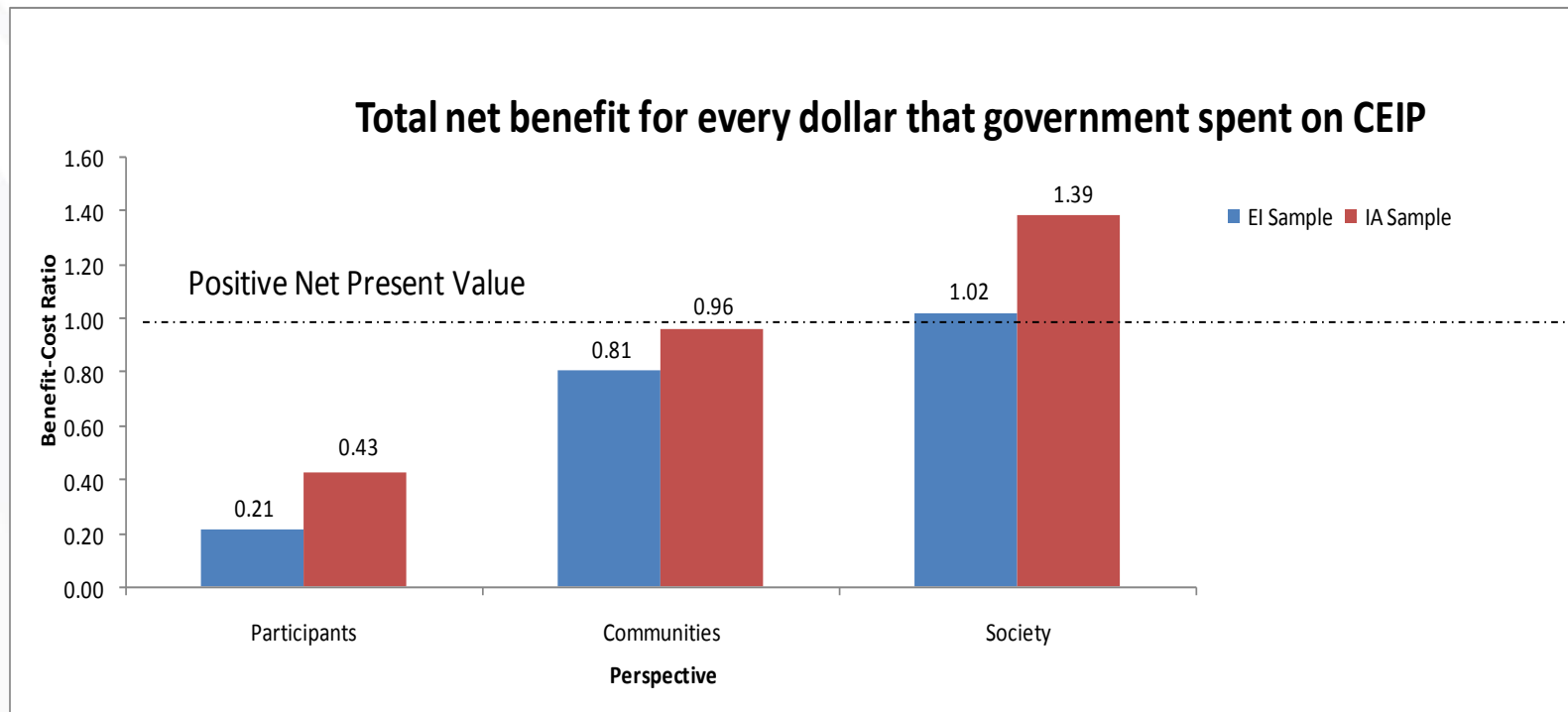
CEIP Cost–Benefit : without social impacts

Net benefit–cost per welfare recipient in the program

Component of Analysis	Accounting Perspective			
	Individuals	Communities	Government	Society
Monetized components				
Participant Impacts				
CEIP earnings	34,344	0	-34,344	0
Foregone non-CEIP earnings	-10,974	0	0	-10,974
Transfer payments (EI & IA)	-11,836	0	11,836	0
Tax payments (taxes and premiums)	-3,559	0	2,921	-638
Other household member earnings	2,035	0	0	2,035
Third Sector Organizational Effects				
Value from CEIP jobs (to sponsors)	0	20,024	0	20,024
Volunteering (CEIP induced)	0	2,404	0	2,404
CEIP administrative costs	0	0	-4,274	-4,274
Admin costs of EI & IA transfers	0	0	471	471
Net Benefit/Cost per Program Group Member	10,010	22,428	-23,390	9,048

Benefit–Cost Ratio – without social returns

**\$1.39 in net benefits per dollar spent on welfare recipients
...but barely a + NPV for EI recipients**



Benefit–Cost Ratio – with social returns

- Including the impacts on intangible social outcomes improves the benefit cost ratio to **\$1.61 in net benefits per dollar spent**
- **About a 50 percent improvement in overall net benefit to society**

