



# Research Questions

Understand the effects of ICT skills training on employment and wages

## 2 Dimensions of Employability



### Employment

How does ICT skills training contribute to employment outcomes?



### Wages

Do ICT skills have an effect on wages for people employed after the training?

# Theoretical Framework

**Two main concepts driving the research:**

**Employability in the knowledge society | Employability not the same as employment**

- ❖ **Supply (Individual skills, knowledge, and attitudes)**
- ❖ **Demand (Employer needs, pool of competitors)**
- ❖ **Risk (Volatility, flexibility of new labor dynamics)**

**Skills-biased technological and organizational change**

- ❖ **Penetration of ICT across economic sectors is placing new demands on workers skills**
- ❖ **Employability of low-skilled workers threatened by changes in the demands for skills in the knowledge economy**
- ❖ **Problem solving, communication, team work and collaboration, and basic ICT are among the skills needed to succeed in today's labor market**

# About the Research Design

**Survey design** based on work by Francis Green (UK) & CIS research

- 5000 surveys sent between Sept 08 & Jan 09 to people **who completed ICT skills training** during the last 2-3 years in 16 organizations
- **3 types of organizations:** One-stop shops, NGOs, and Community Colleges in 6 metropolitan areas: Seattle, Spokane, Bellingham, Mt. Vernon, Tacoma, & Renton
- Organizations labeled and mailed the surveys
- **464 received** by CIS (return rate of 13% considering 900 returned to addressee)

**40 in-depth interviews:**

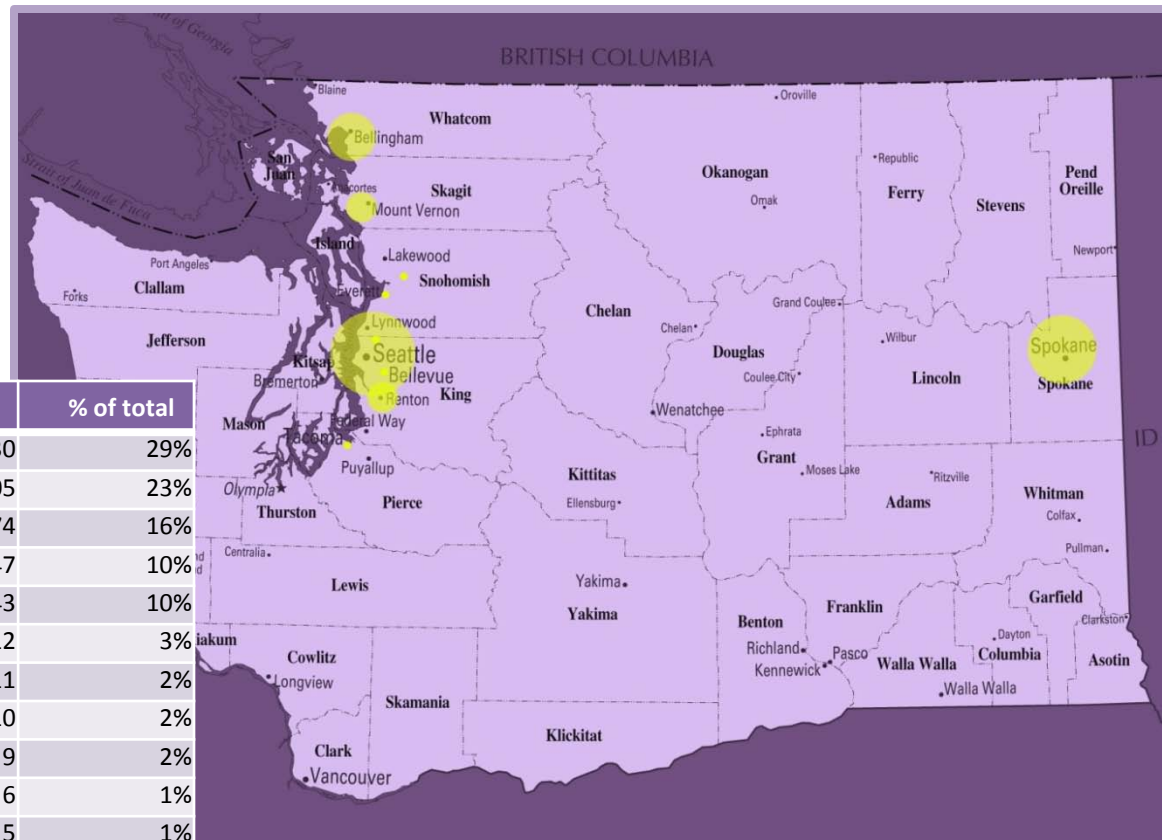
- Organizations' staff and trainers (Yakima, Mt. Vernon, Bellingham, Tacoma, and Seattle)
- Policy makers (Olympia and Seattle)

**2 focus groups** (one with trainees and one with case managers)

- South Seattle Community College (Welding Training Program)
- Antioch University (Seattle Jobs Initiative Case Manager training)

# Location of Study Participants

454 from throughout Washington state



City	Participants	% of total
Seattle	130	29%
Spokane	105	23%
Bellingham	74	16%
Renton / Auburn	47	10%
Mount Vernon	43	10%
Bremerton	12	3%
Tacoma	11	2%
Everett	10	2%
Shoreline	9	2%
Marysville	6	1%
Bellevue	5	1%
Total	464	100%

Map source: [www.nationalatlas.gov](http://www.nationalatlas.gov)

# Boundaries of the Research

- *Not representative* of population at organization or unemployed citizens of WA State (sample represents computer skills trainees at organizations)
- *Difficult to generalize* because the services, training, and clients are different across organizations
- *Self-assessment* of ICT skill levels
- *Self-reporting* of wages, dates and employment history (inconsistent)
- *Trainee motivations vary widely* (some enroll by choice, others are required due to unemployment insurance benefits)
- Does not measure job security or job quality (benefits, upward mobility in organization, etc)

# The employment story of participants **BEFORE** training

- 83% were **unemployed** and the rest were working while participating in the training
- Half with **basic ICT skill level**; 20% with **no ICT skills**
- Earning a median **hourly wage of \$10.00** (minimum wage in WA \$8.07)
- 52% reported earning a living wage; 48% reported not earning a living wage
- Most of them were **women** (73%) with an average **age of 48.3**
- Half completed **high school**;
- 80% had access to computers and Internet at home

# Findings



## Employment

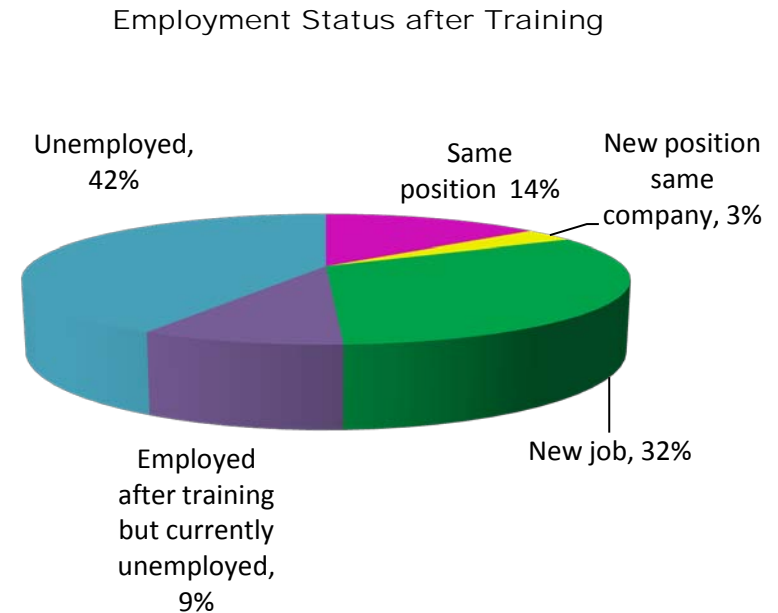
How does ICT skills training contribute to employment outcomes?

### Variables included in the analysis:

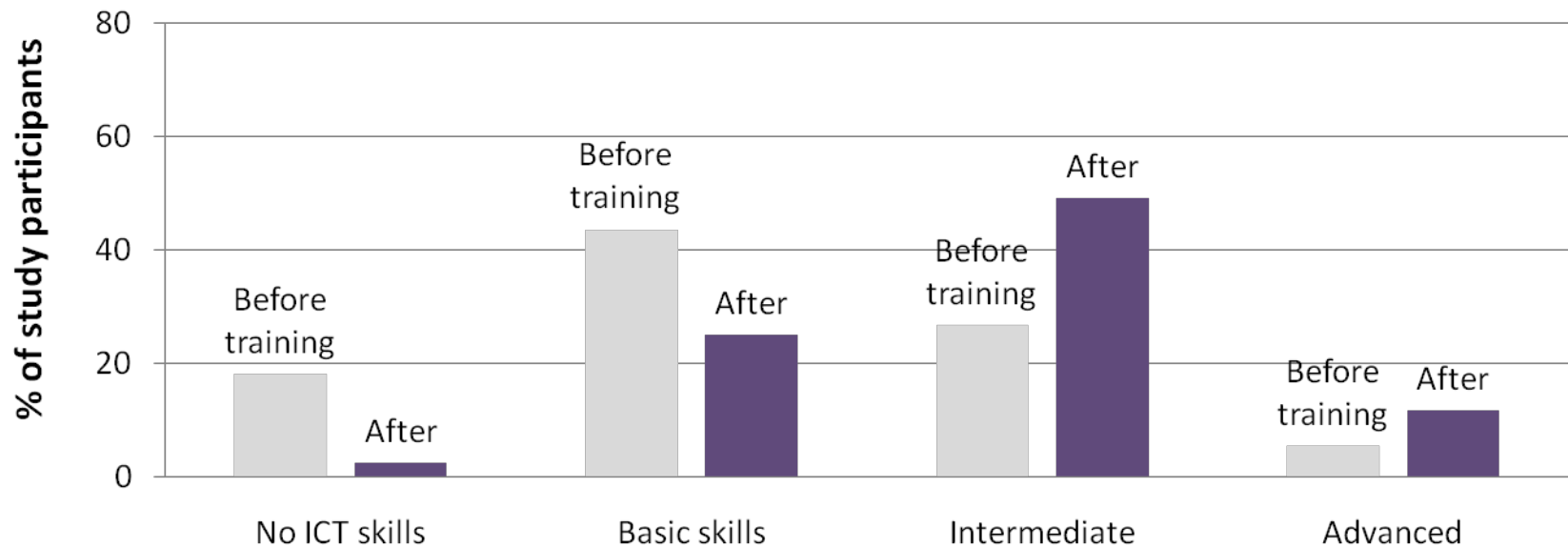
1. ICT skills training
2. Other training and employment services
3. ICT skills level after the training
4. Sector employment
5. Demographics (Age, Gender, Education)

## Did ICT skills training improve employment opportunities for study participants?

- 49% of trainees were employed after the training
- ICT skills is one of the factors. Training on job search, preparing job applications, and English skills also correlate with positive employment outcomes
- Of those who found a new job, 75% did so within 4 months of completing the training
- The four main sectors employing people after the training:
  1. Health & Social Services (21.5%)
  2. Wholesale & Retail (19.6%)
  3. Government (9.8%)
  4. Professional & Business (9.8%)



# Did the ICT skills training improve skills? Yes, significantly

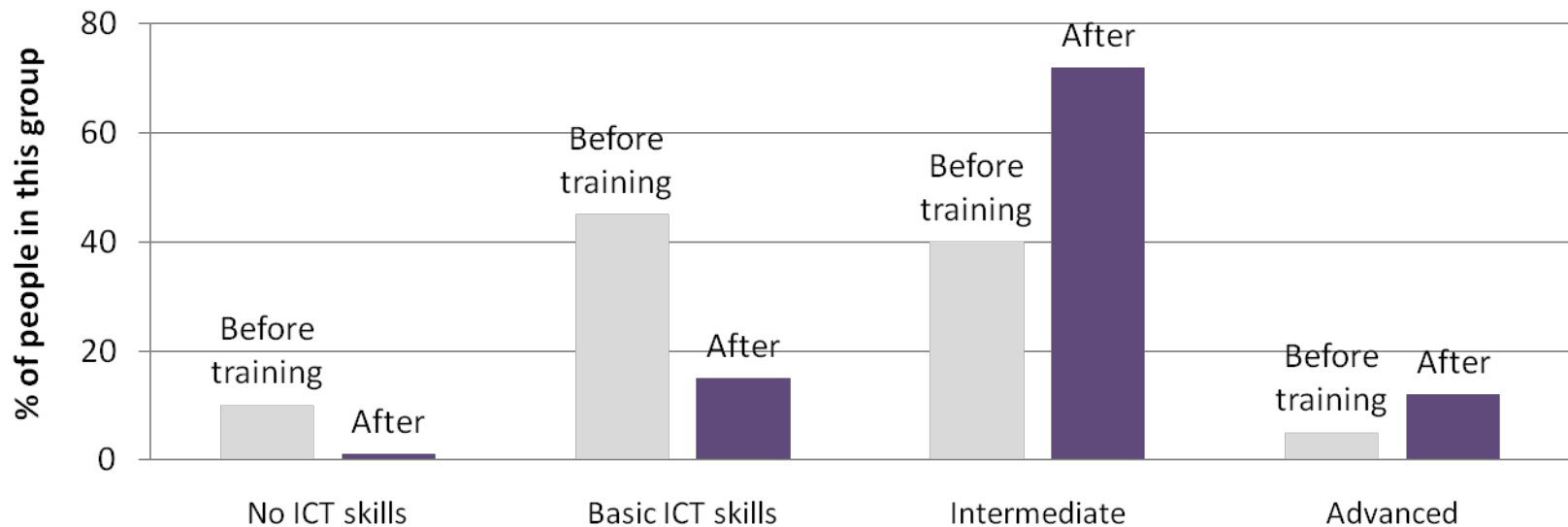


**ICT skills of all study participants before and after training**

After training, participants at all skill levels reported having higher ICT skills (only 3% reported having no ICT skills)

# Did ICT skills improve employment outcomes?

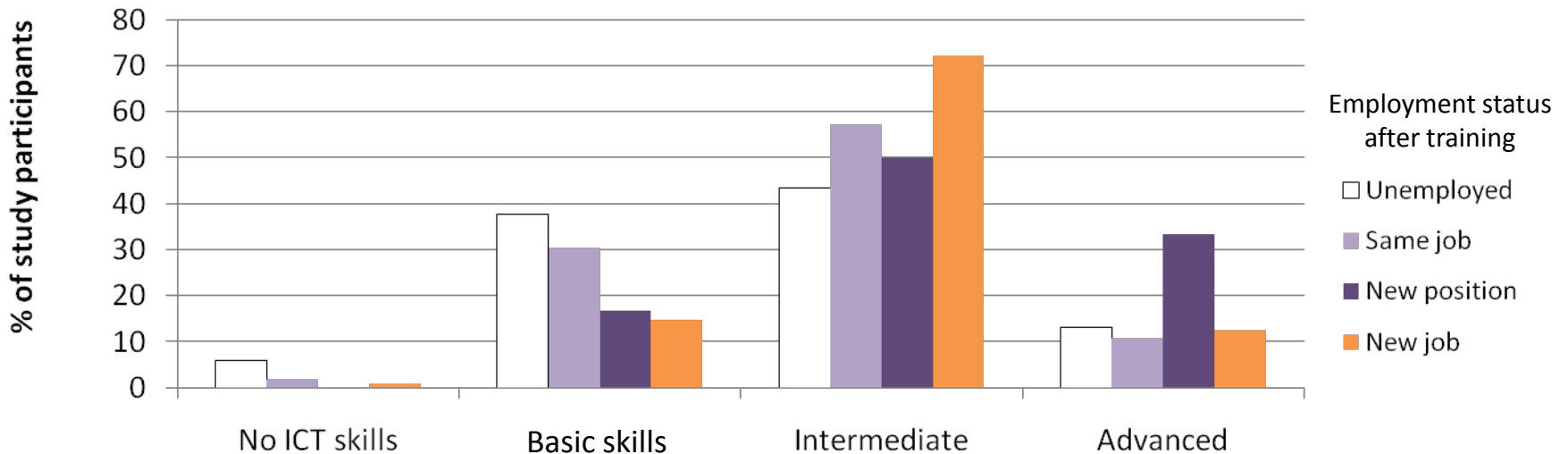
A closer look at study participants **who found a job** after training



## ICT skills of this group before and after training

After training, participants who found a new job (as well as those who stayed in the same job or who found a new position in the same company) generally had higher ICT skill levels than those who remained unemployed.

# Are basic ICT skills enough to guarantee employment? No, but...



**ICT skills of all study participants after training**

Participants with intermediate ICT skills were more successful at finding or keeping a job after their training than any other skill level group. However, more than 40% of the unemployed also had intermediate ICT skills. Why were they unemployed, and why were there unemployed participants with advanced ICT skills? Why were the unemployed the largest group with basic ICT skills?

## What can help us explain why 42% didn't find a job after the training?

- 80% of the unemployed received training between August and December 2008 (the global financial crisis)
- Almost half were laid off from jobs in construction, financial services, and manufacturing (3 of the sectors the hardest hit by the crisis)
- 20% lost their job due to a health condition or disability which can delay reintegration to the labor market
- No difference in gender or education compared to those participants employed
- Slightly higher age than people employed (52 years old on average)
- No significant difference per city

# Findings



## Wages

Do ICT skills have an effect on wages for people employed after the training?

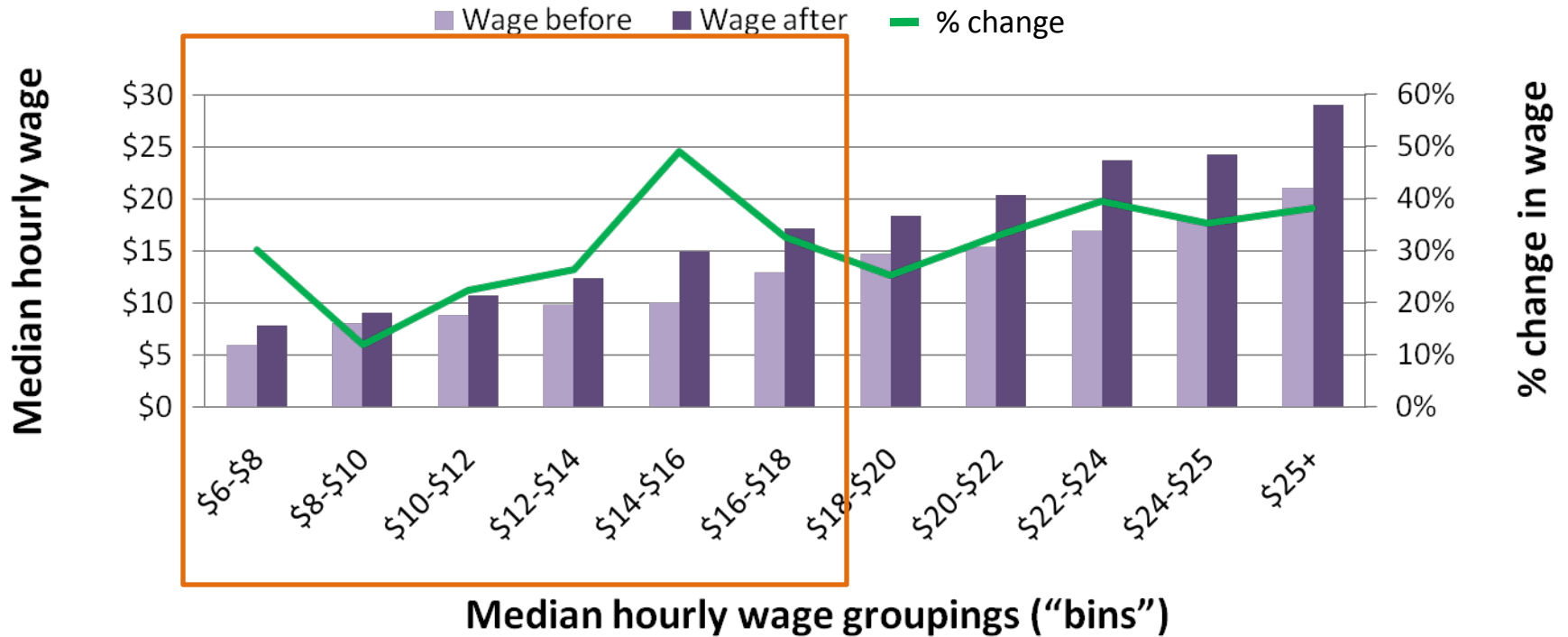
### Variables included in the analysis:

1. ICT skills level after the training
2. Frequency of use of ICT at work
3. Sector wage dynamics
4. Demographics (Age, Gender, Education)

# Wage dynamics and factors predicting increase in wage

- For the whole sampled group | Wage increased by 20% (from \$10.00 median hourly wage to \$12.00)
- ICT skill level and frequency of ICT use at work are two of the factors that correlate positively with wage incremental
- Gender and Education showed not significant correlation. However, people with a 2 year degree experienced a higher increase in wage after the training
- Age plays a role (the youngest workers have on average the highest wages)
- Three distinct wage outcomes after the training:
  - ❖ Increase in wage (an average increase of 30% percent)
  - ❖ No change in wage
  - ❖ Decrease in wage (an average decrease of 22 percent)

# A closer look at study participants whose wages increased after training



Wages increased for almost 30% of those employed after the training. The average wage increase for the whole group was 20% (most respondents are on the area enclosed in the box)

# Is ICT skill level related to hourly wage? Yes, it is one predictor

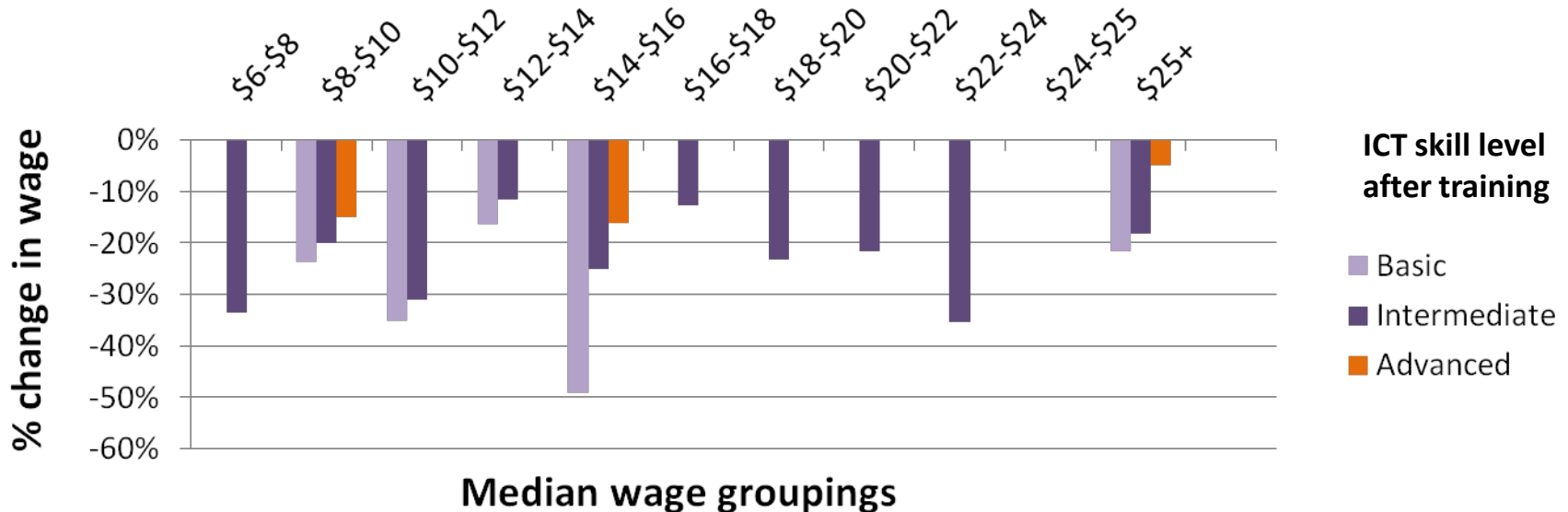
A closer look at study participants whose **wages increased** after training



Participants with intermediate and advanced skills after training saw (on average) the largest wage increase. For example, people with intermediate ICT skills in wage bin \$12-14 had a 20% increase in salary after the training

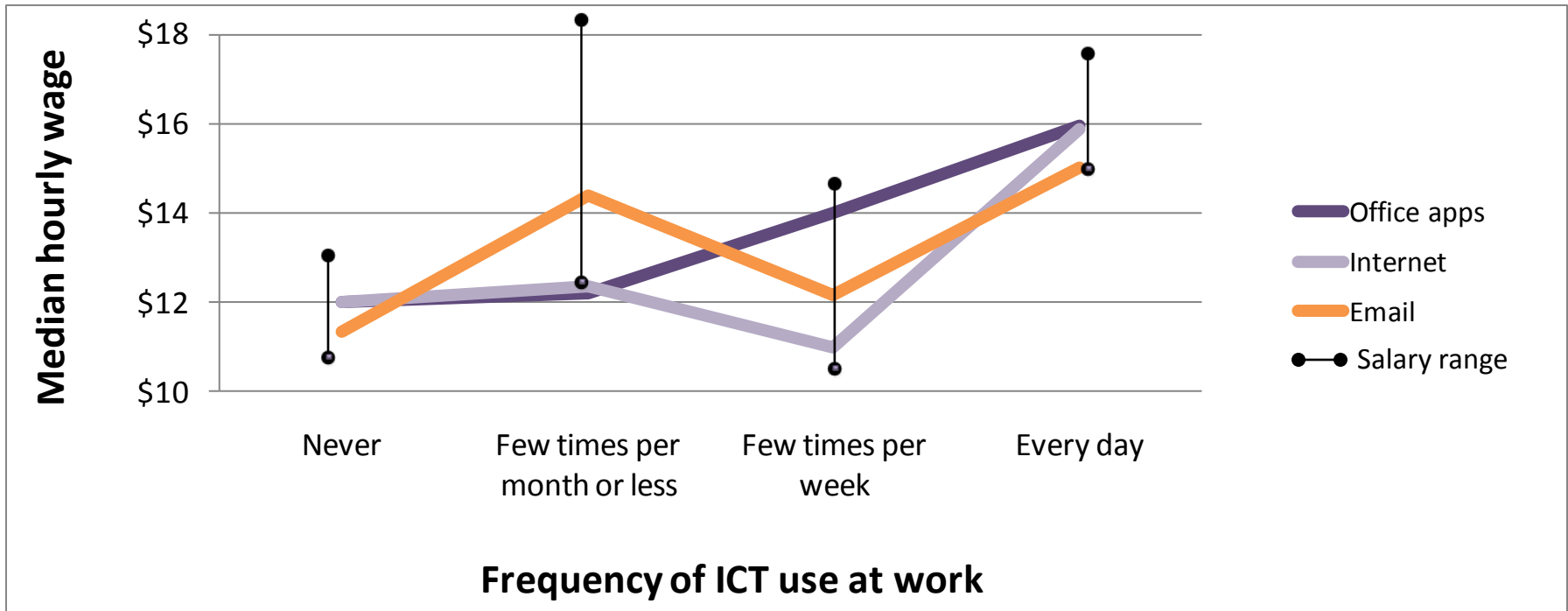
# Is ICT skill level related to hourly wage? Yes, it is one predictor

A closer look at study participants whose **wages decreased** after training



The average wage decrease for this group was 22 percent | **50% are high-school graduates**  
 Participants with basic ICT skills after training saw (on average) the largest wage decrease (down almost 50% for people making between \$14-\$16 dollars per hour after training).  
 In terms of regional differences, Bellingham had the highest % of people with a decrease in wage (many jobs lost in manufacturing)

## Is ICT Use at work related to hourly wage? Yes, another predictor



In general, participants who used ICT at work more frequently (such as email, office applications, and the Internet) earned higher hourly wages. People using office applications at work every day had a 31% increase in their wage. But there are differences depending on the sector (see Appendixes 1-3)

# ICT use at work and wage dynamics before and after the training | High-school graduates

Office Applications		Wage before	Wage after	% change
Never	Median	10.00	10.50	5%
A few times per month or less	Median	9.15	10.54	15%
A few times per week	Median	8.50	11.35	34%
Every day	Median	9.88	12.18	23%
<b>Total</b>	Median	10.00	11.43	14%

Internet		Wage before	Wage after	% change
Never	Median	10.63	10.50	-1%
A few times per month or less	Median	12.50	12.50	0%
A few times per week	Median	8.50	10.83	27%
Every day	Median	9.50	12.00	26%
<b>Total</b>	Median	10.00	11.39	13%

# Conclusion

- Employment has a profound and significant connection to poverty | Up-skilling and Re-skilling low-income, low-skilled groups must be a priority for policy makers
- ICT skills are rarely the missing link | The combination of ICT skills training with other employment training and services makes significant their effect in employment outcomes
- An integrated approach to workforce development is critical to increase employment opportunities in the labor market (combining training with connection to employers, opportunities for on-the-job training, etc)
- NGOs and public workforce organizations are well aware of the need for this integrated approach. However, their ability is constrained by lack of resources

Food for thought: What is the role of employers in the employment nexus to poverty?

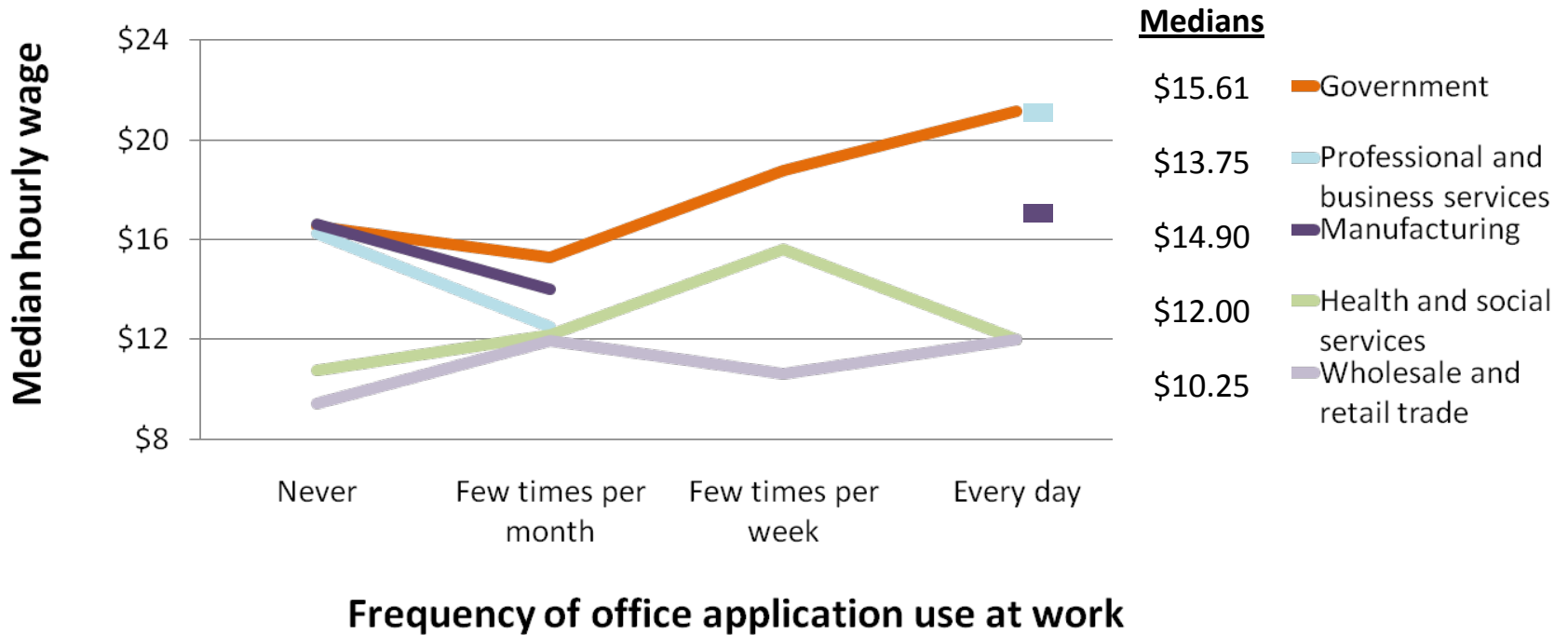
- Erosion of quality of employment and labor rights
- Incentive to help employees improve their skills while in the job

# Appendix

Appendix 1 | Wage and frequency of office applications at work per sector

# Are wages and ICT Use at work related to Sector?

A closer look at office applications use at work by study participants who had a job both before and after training

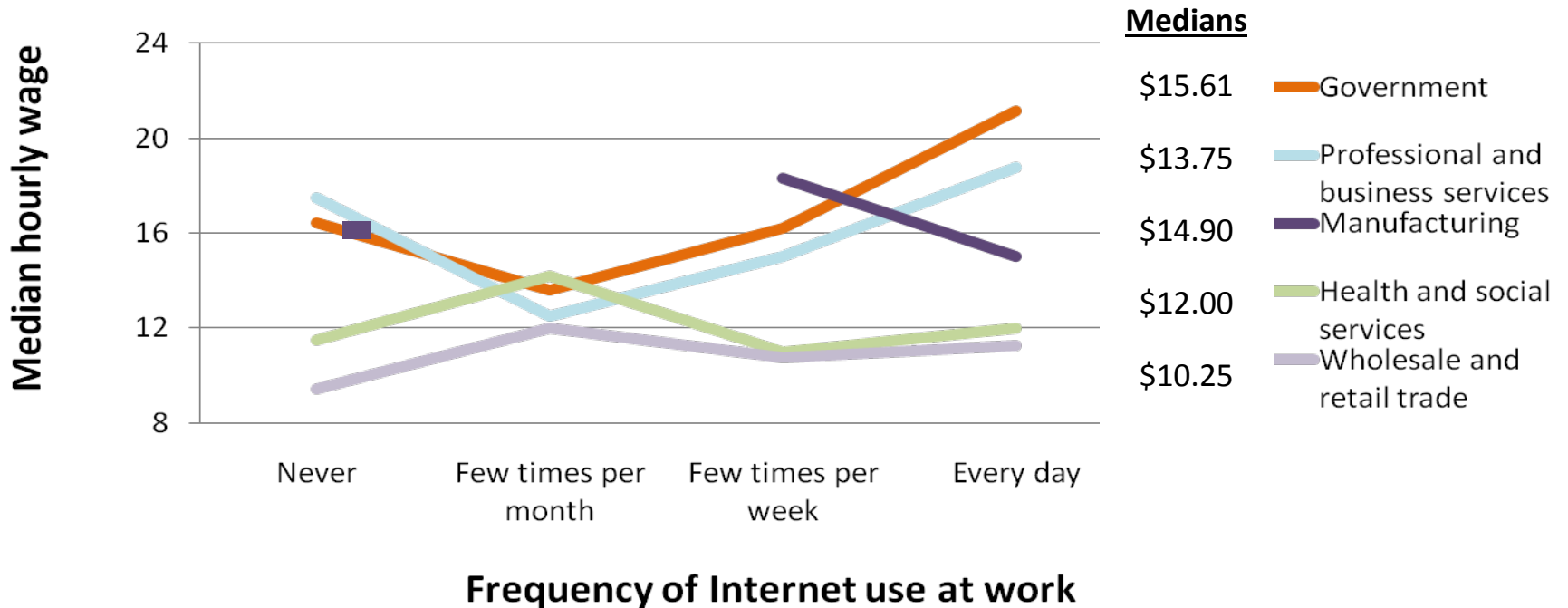


Do our economy's higher paying sectors "reward" higher frequency ICT use with higher wages? This seems to be the case for some of the higher-paying sectors examined in this study.

Appendix 2 | Wage and frequency of Internet use at work per sector

# Are wages and ICT use at work related to sector?

A closer look at Internet use at work by study participants who had a job both before and after training

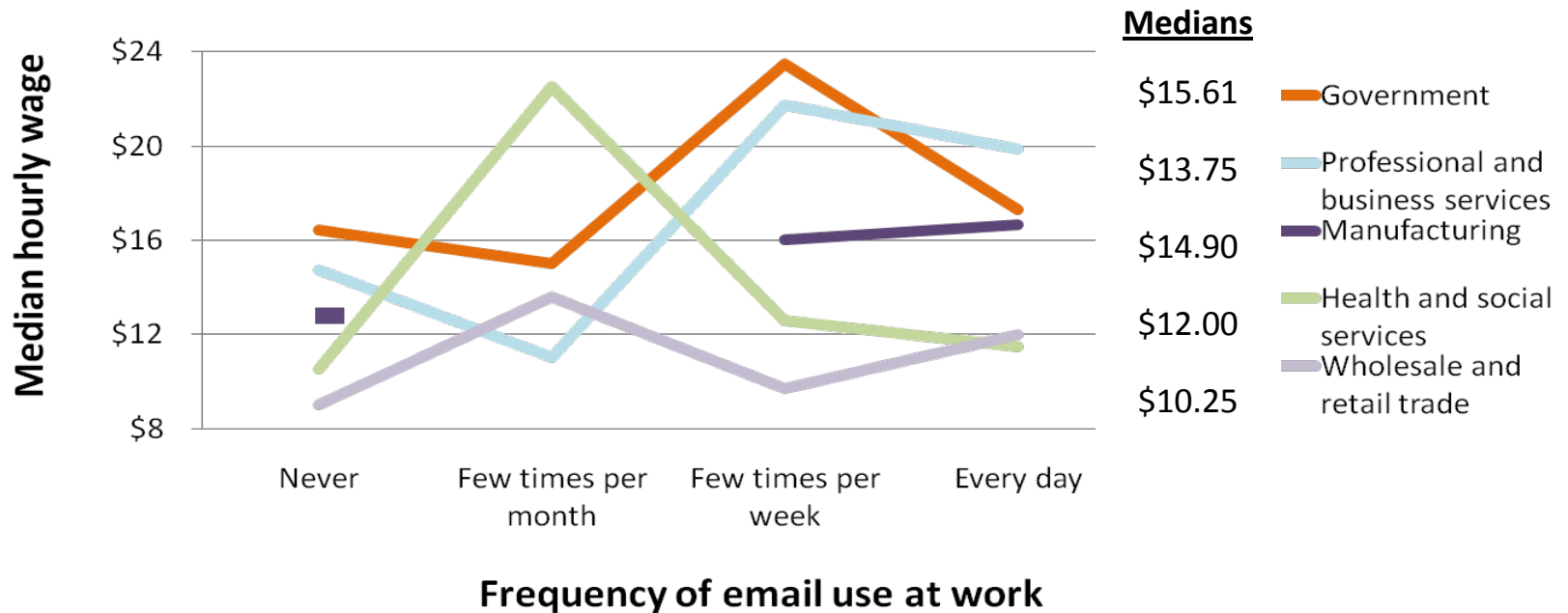


Do our economy's higher paying sectors "reward" higher frequency ICT use with higher wages? This seems to be the case for some of the higher-paying sectors examined in this study.

Appendix 3 | Wage and frequency of email use at work per sector

# Are wages and ICT use at work related to sector?

A closer look at email use at work by study participants who had a job both before and after training



Do our economy's higher paying sectors "reward" higher frequency ICT use with higher wages? This seems to be the case for some of the higher-paying sectors examined in this study.