



HARVARD | BUSINESS | SCHOOL

Reskilling in the Age of AI

13 November 2023
Raffaella Sadun

Why Reskilling?

THE PROBLEM

Digital transformation changes the demand for skills:

- Polarization between high and low skill occupations
- Up to **32% of jobs** may be radically transformed (OECD 2019)
- **300mn jobs** estimated to be affected by Generative AI (Goldman Sachs, 2023)

New jobs created, but also many others at risk of obsolescence:
unclear who will take these new jobs

POSSIBLE SOLUTIONS

Reskilling—training that helps acquire skills to access a new occupation—may help **workers** and **firms** cope with these changes:

- **1 billion people** may need to be reskilled to entirely new roles (WEF, 2021)

NEED FOR EVIDENCE

Despite public announcements, ongoing investments, reports, etc...

...Evidence on whether and how reskilling works is scant

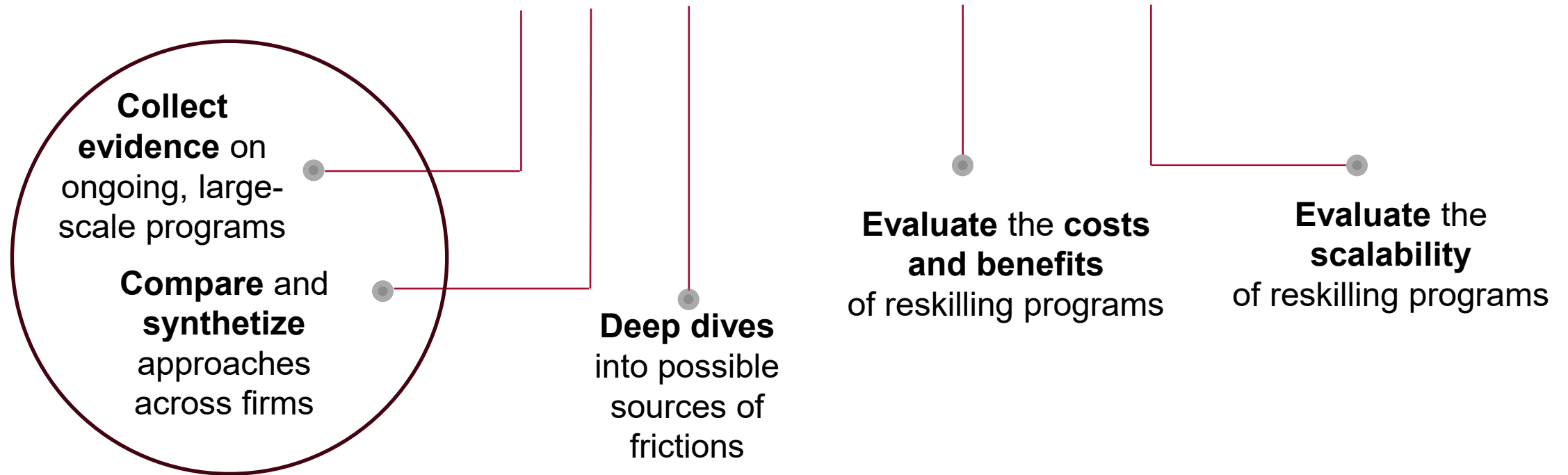
But evidence is needed to guide investments in the private and public sectors



*The **Digital Reskilling Lab** aims to develop new rigorous evidence and conceptual frameworks to support organizations that are already, or plan to, invest in **impactful** reskilling programs.*

*Our objective is to inform policy **at the firm, industry, and government levels** and facilitate the **adoption of effective practices** aimed at strengthening human capital initiatives in the workplace.*

Closing the Knowledge and Implementation Gap



Reskilling in the Age of AI

Five new paradigms for leaders—and employees by Jorge Tamayo,
Leila Doumi, Sagar Goel, Orsolya Kovács-Ondrejko, and Raffaella
Sadun

From the Magazine (September–October 2023)



Companies we talked to...



35 companies
interviewed



11 industry
represented



Company size ranging
from **1,844** to
2,300,000 people



13 countries
across **4**
continents





5 paradigm shifts identified



OLD PARADIGM

NEW PARADIGM

1 Reskilling is a CSR or PR initiative to support displaced workers

Reskilling is a key strategic initiative

Multinational IT services company identified cybersecurity as a key digital skill for the future, ran reskilling programs to train up to 2000 cybersecurity experts from various starting skill levels

Global company aims to change from a telecommunication firm to a tech firm, can't find developers externally – aims to fill 40% of 7000 open software developer jobs from internal talent

During the peak of the pandemic, US health retailer reskilled workers from different fields (among them laid-off hospitality workers) into their vaccination and testing centers

OLD PARADIGM

NEW PARADIGM

2

Reskilling is an HR responsibility

Reskilling is every leader's and manager's responsibility

Global telco makes re- and upskilling an executive level issue: targets are part of the firm's overall strategic scorecard reviewed quarterly by the Executive Committee

US pharmacy chain makes each BU leader responsible for developing their mid and long term reskilling plan as part of their 1-year and 5-year strategy process

European toy manufacturer integrates reskilling into the regular performance management process, making it the responsibility of managers to discuss and plan reskilling needs with each employee

OLD PARADIGM

NEW PARADIGM

3

Reskilling is a training initiative

Reskilling is a change management initiative

Talent mobility technology connects reskilling with culture. Global consumer goods player uses an intelligent internal talent platform to connect all 100,000 people with job and learning opportunities.

Leading players support mindset change of managers both on the sending and receiving side: e.g. learning-related KPIs in managers' targets, or sensitivity trainings to accept alternatively skilled talent.

Learners undergoing a major life change need support. Tech giant provides coaching and mentoring to new software developers, others organize buddy programs or peer support groups.

OLD PARADIGM

NEW PARADIGM

4

Employees need to be convinced to reskill

Employees want to reskill – if the offer is good

Several companies strongly involve unions and workers councils in the design of reskilling strategy, or survey learners on their motivation and preferences regarding skilling.

Being very clear on the outcome makes a difference. For example, "train in place" reskilling program models first guarantee the person the new job, then train the person once they are in the job.

Employees need space and time for skilling. As an example, multinational telecommunication company dedicates 4 days per year to employees for pursuing learning opportunities



OLD PARADIGM

NEW PARADIGM

5

Reskilling is an individual firm problem

Reskilling is best addressed as part of an ecosystem

Pooling resources with competitors may help. The Technology in Finance Immersion Program, run by the Institute of Banking and Finance in Singapore, involves 30+ financial services companies to invest in reskilling finance talent for new roles as AI engineers

NGOs can help access hidden talent pools. OneTen is a non-profit organization in the US that partners with corporations and training providers to aid innovative skilling of black workers – already placed 17,000 talent in corporate roles in just a few years' time

New models of partnering with academia are worth exploring. UK Institutes of Technology bring together colleges and major employers in a region to provide practical technical training for workers without tech backgrounds.



The interviews reveal 5 new Paradigms among “Frontier” Organizations

“OLD” PARADIGM

Reskilling is a CSR or PR initiative to support displaced workers

Reskilling is an HR responsibility

Reskilling is a training initiative

Employees need to be convinced to reskill

Reskilling is an individual firm problem

“NEW” PARADIGM

Reskilling is a key strategic initiative

Reskilling is every leader’s and manager’s responsibility

Reskilling is a change management initiative

Employees want to reskill – if the offer is good

Reskilling is best addressed as part of an ecosystem



How far is the reskilling frontier?

RESEARCH QUESTIONS

Which firms engage in reskilling, and why?

How are reskilling programs **structured** relative to “standard” training (upskilling, general training)?

How **diffused** are reskilling **best practices** emerging from the interviews?

APPROACH

A survey of 1200 C-suite HR leaders (CHROs, CLOs) of US based firms

- Additional sample of 200 Business leaders for comparison

Information on:

- Skills needed
- Levers used to close skills gaps
- Rationale and structure of training programs

RESULTS

Reskilling serves **specific needs: severe and broad** skills shortages

Reskilling programs are generally **more costly and complex** than standard training

Reskilling is managed differently than upskilling (eg more likely to include incentives for participation)

However, the “**best practices**” we document on HBR are still under-adopted

How far is the reskilling frontier?

Best practices of reskilling innovators

Reskilling Is a strategic imperative

Reskilling is the responsibility of every leader and manager

Reskilling goes beyond training – it is a holistic change management initiative

Employees want to reskill - when it makes sense

Reskilling takes a village

What we have seen from the survey

Reskilling is not always viewed as a strategic business imperative. Lack of C-suite involvement in advocacy/responsibility, design and evaluation.

While HR still plays a key role in reskilling, non-HR positions are largely involved in advocacy / responsibility, design and evaluation.

Reskilling is more than training, and some programs already have skill taxonomies and useful skill inventories in place and track a meaningful number of KPIs

Employee participation is still a challenge, particularly in advocacy / responsibility, design, and evaluation.

Reskilling programs leverage external funding and external delivery partners to some extent.

To what extent do surveyed companies follow best practice?

On a scale of 0-3 based on empirical proxies created from answers to questions relevant to each paradigm

1.1



3

2.3

3

1.8

3

0.5

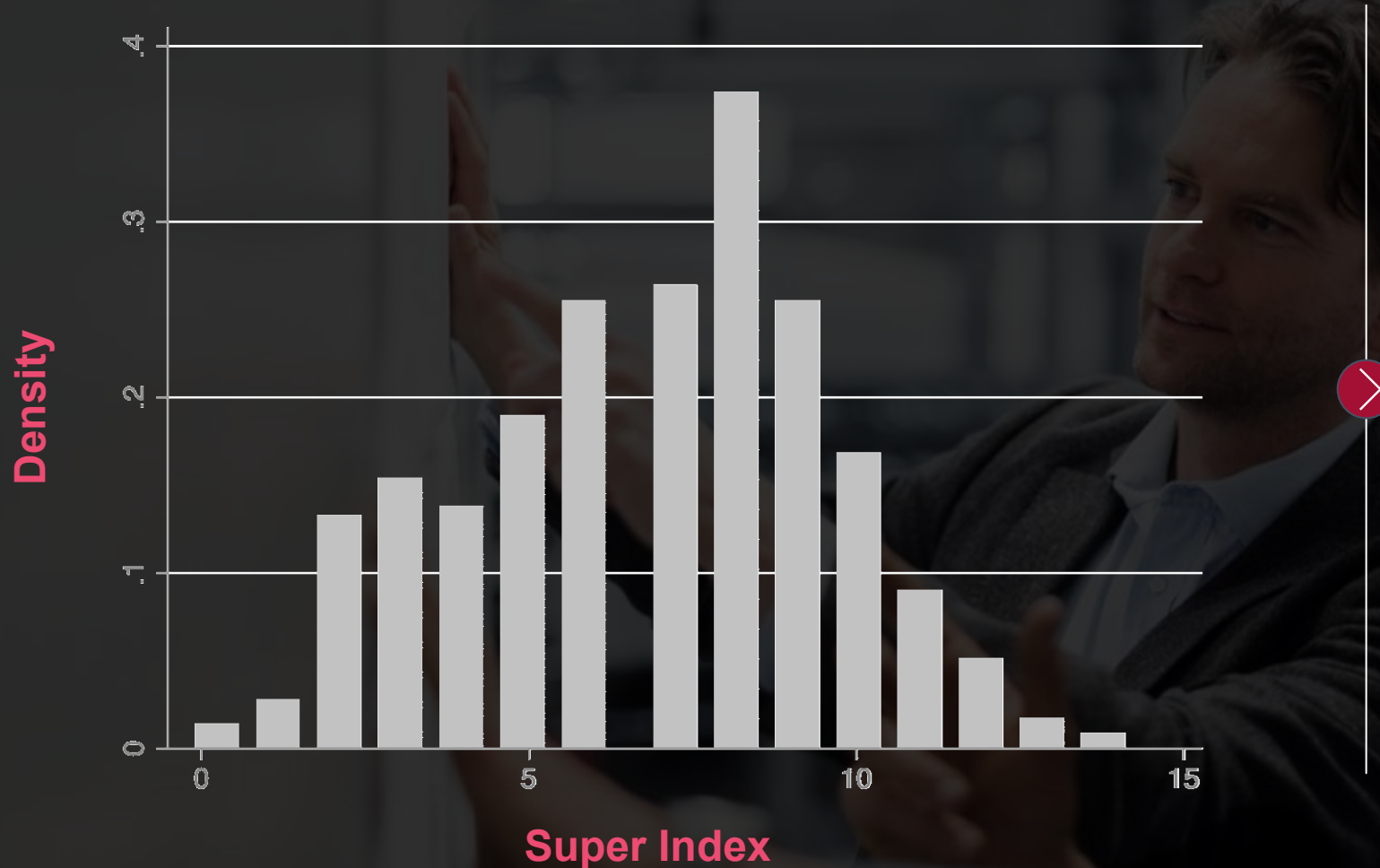


3

1.7

3

Very few firms adopt all five best practices and majority of firms adopt only a handful of practices simultaneously.

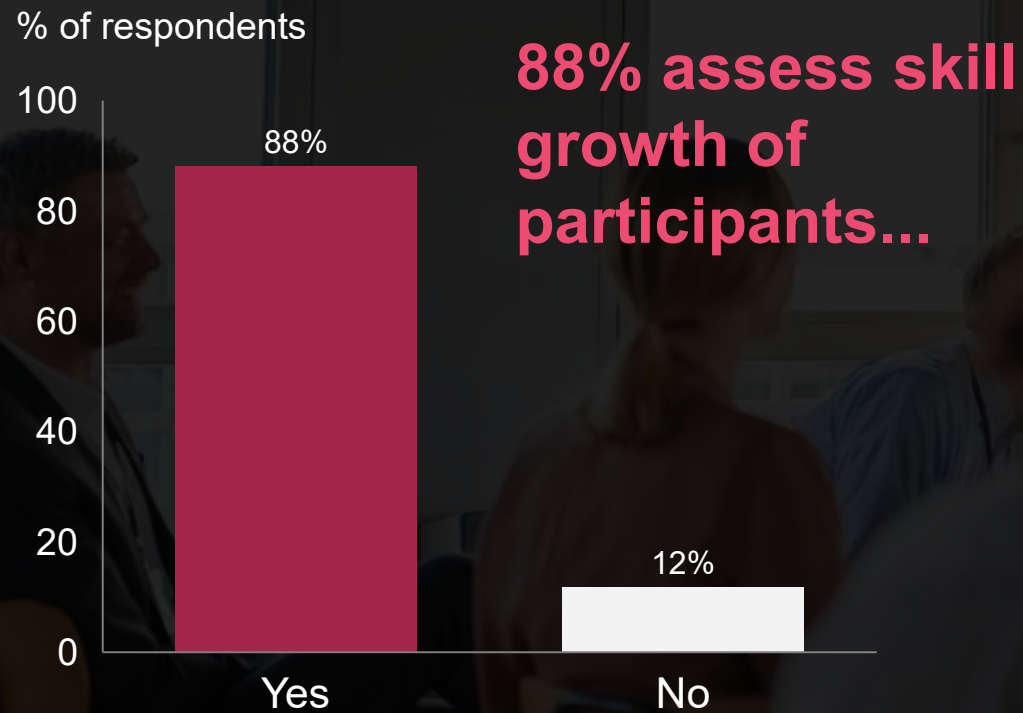


While many firms implement some of the best practices already...

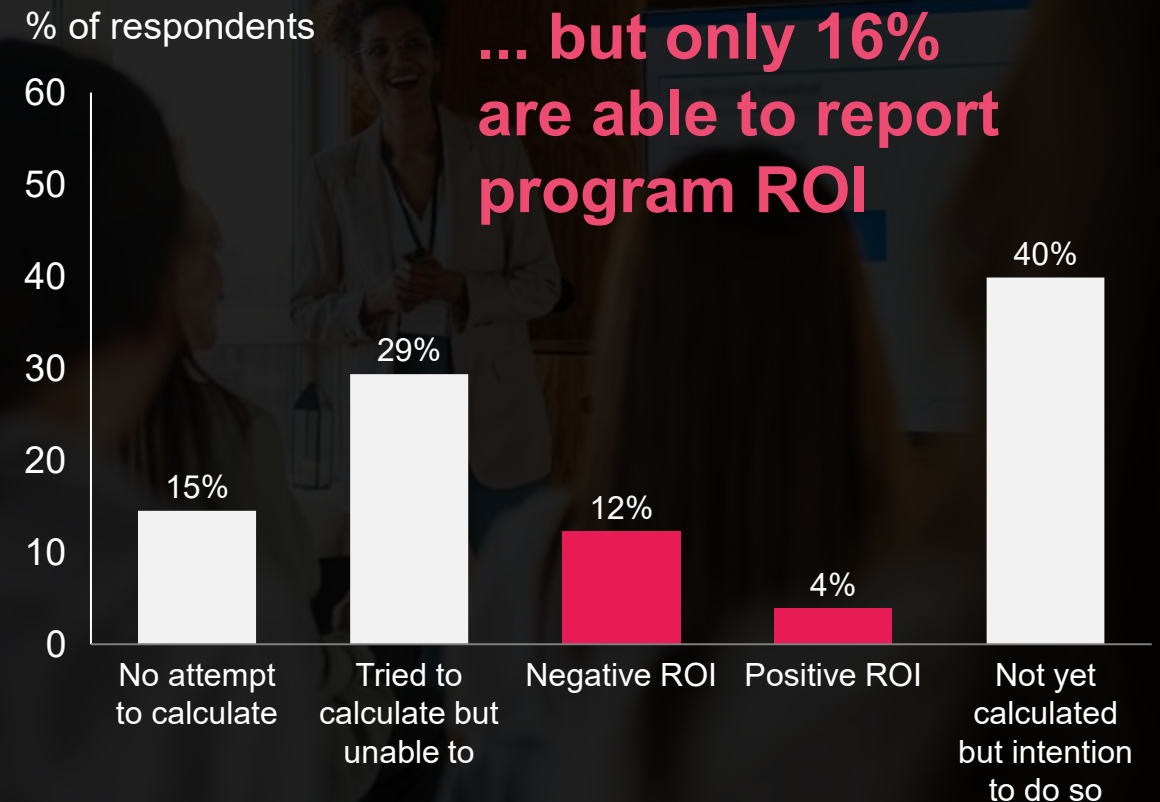
... most firms are **far from** implementing all best practices

Evaluation | Reskilling programs usually assess individual skill change – but most do not assess overall program ROI

Final assessment post program



Return on investment (ROI) achieved by reskilling



Closing the **Knowledge** and **Implementation** Gap

Collect evidence on ongoing, large-scale programs

Compare and synthesize approaches across firms

Deep dives into possible sources of frictions

Evaluate the costs and benefits of reskilling programs

Evaluate the scalability of reskilling programs



The interviews pointed to two major sources of friction

1) Getting middle managers buy-in

RESEARCH QUESTION

Middle managers play a crucial role for the implementation of reskilling programs (e.g. selecting participants, giving time)

But middle managers' incentives may be misaligned: **hoard rather than promote talent** (Heagele, 2022)

Can we quantify differences in managerial attitudes toward training? Can we quantify whether they matter for performance?

APPROACH

Detailed personnel records from three different firms (100,000 employees overall, 5 years of data, 3m observations)

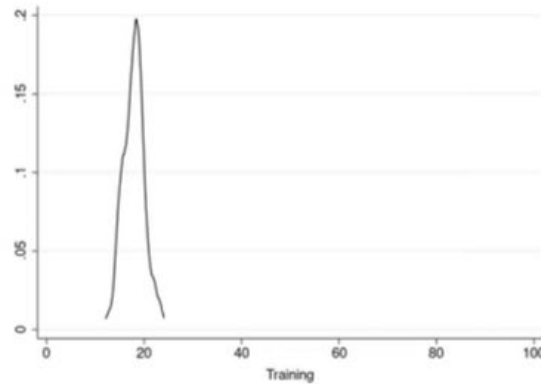
Estimate **manager-specific “value-added” in training**:
- Differences in training take-up across teams within the same firm that can be attributed to a specific manager

Study whether differences in training value-added affect **team performance**

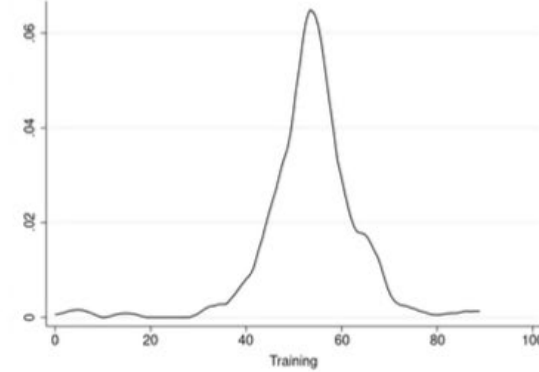
RESULTS AND IMPLICATIONS

Within each firm, we found **large differences in training value-added** across managers

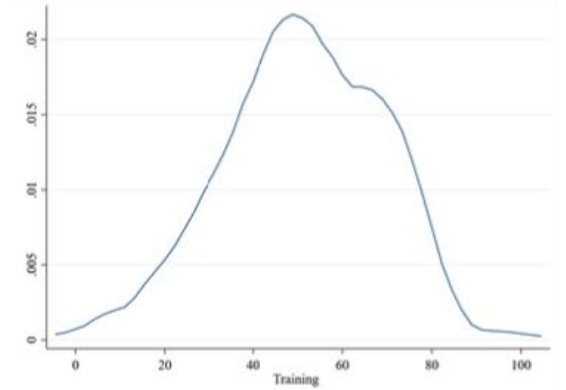
Low and high training managers exist within the same firm



(a) Car Company

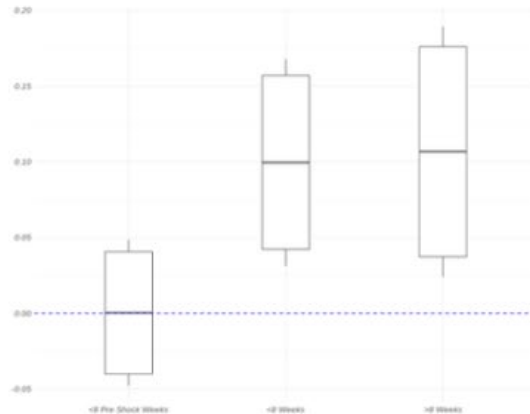


(b) Fast Food Company

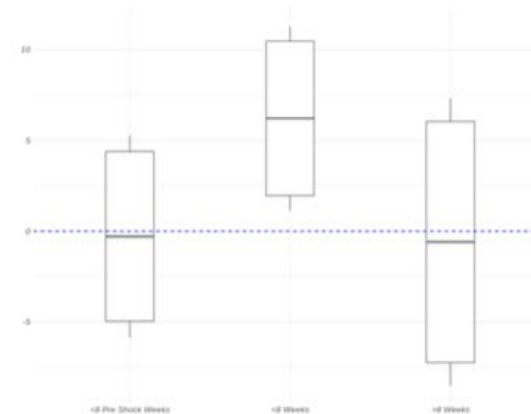


(c) Retail Company

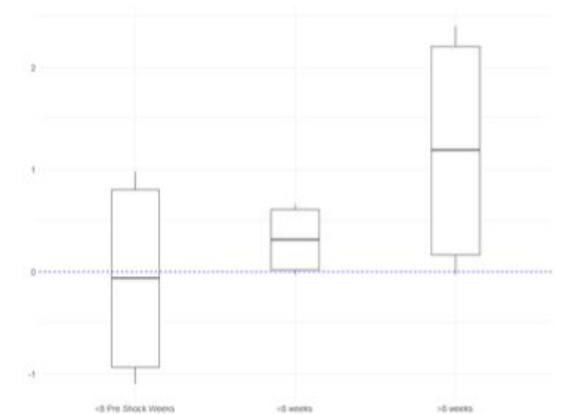
The arrival of a high training manager in a team is followed by a **significant increase in training** among their employees



(a) Car Company



(b) Fast Food Company



(c) Retail Company

Do these differences matter for performance?

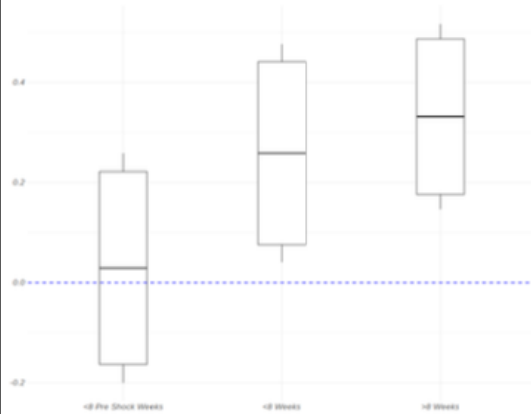
We studied the effects of a **large and unexpected demand shock** in each firm

In all firms, the demand shock was followed by a **large increase in sales and absenteeism...**

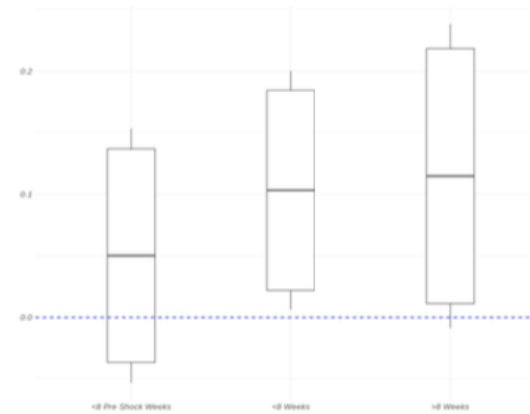
...But the effects of the shock were **very heterogeneous** depending on the manager type

High-training managers saw no change in absenteeism

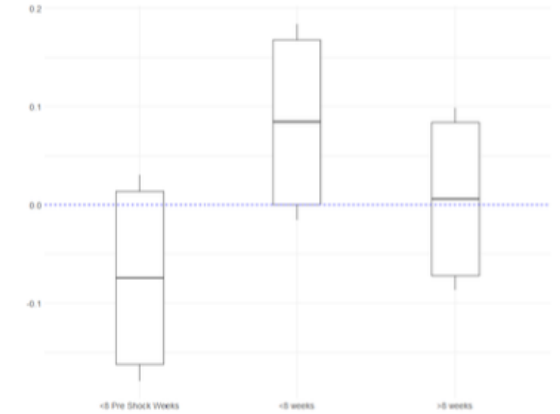
Negative effects are concentrated in **the low-training managers**



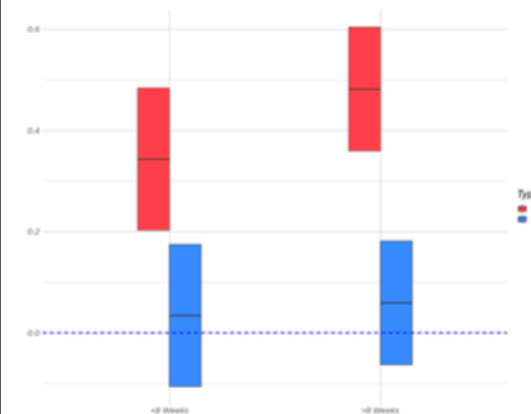
(a) Car Company



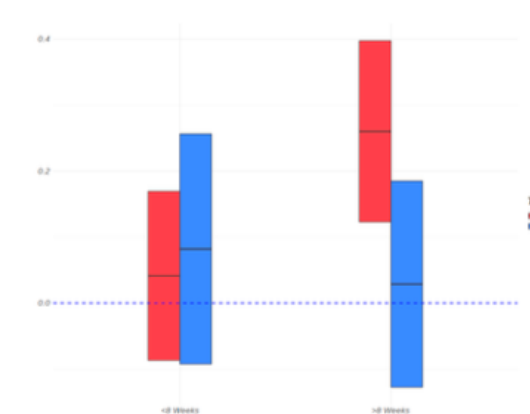
(b) Fast Food Company



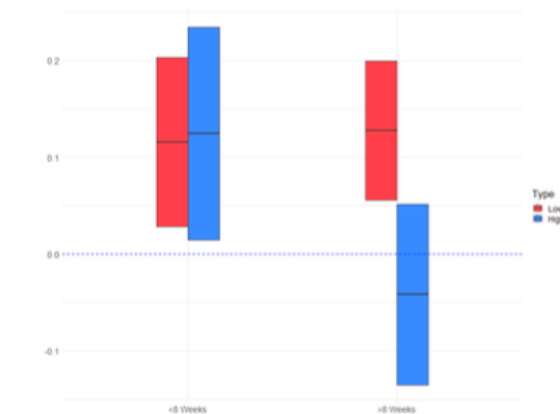
(c) Retail Company



(a) Car Company



(b) Fast Food Company



(c) Retail Company

The Role of Middle Managers

RESEARCH QUESTION

Middle managers play a crucial role for the implementation of reskilling programs (e.g. selecting participants, giving time)

But middle managers' incentives may be misaligned: **hoard rather than promote talent** (Heagele, 2022)

Can we quantify differences in managerial attitudes toward training? Can we quantify whether they matter for performance?

APPROACH

Detailed personnel records from three different firms (100,000 employees overall, 5 years of data, 3m observations)

Estimate **manager-specific “value-added” in training**:

- Differences in training take-up across teams within the same firm that can be attributed to a specific manager

Study whether differences in training value-added affect **team performance**

RESULTS AND IMPLICATIONS

Wide variation in training adoption **across managers within the same firm**

Teams led by **high-training managers** have a **lower likelihood of being absent or leaving the firm after a demand shock**

Firms need to **understand and leverage internal champions** to promote take-up of training opportunities among workers

The interviews pointed to two major sources of friction

2) Getting people interested in reskilling

RESEARCH QUESTION

Hard to motivate workers to take part in upskilling and reskilling programs, even when programs benefit them (Stanton et al, 2022)

Possible frictions:

- Information
- Objective constraints
- Subjective constraints (self-confidence, interest in job)

Can we quantify motivates workers to take part in a reskilling program? Can we shape people's interest in reskilling?

APPROACH

Communication experiments to measure impact of *framing* on take up

- Same program presented to potential participants in different ways

Survey experiments to measure the demand for reskilling among unemployed workers, and the role that better information can play in shifting their preferences

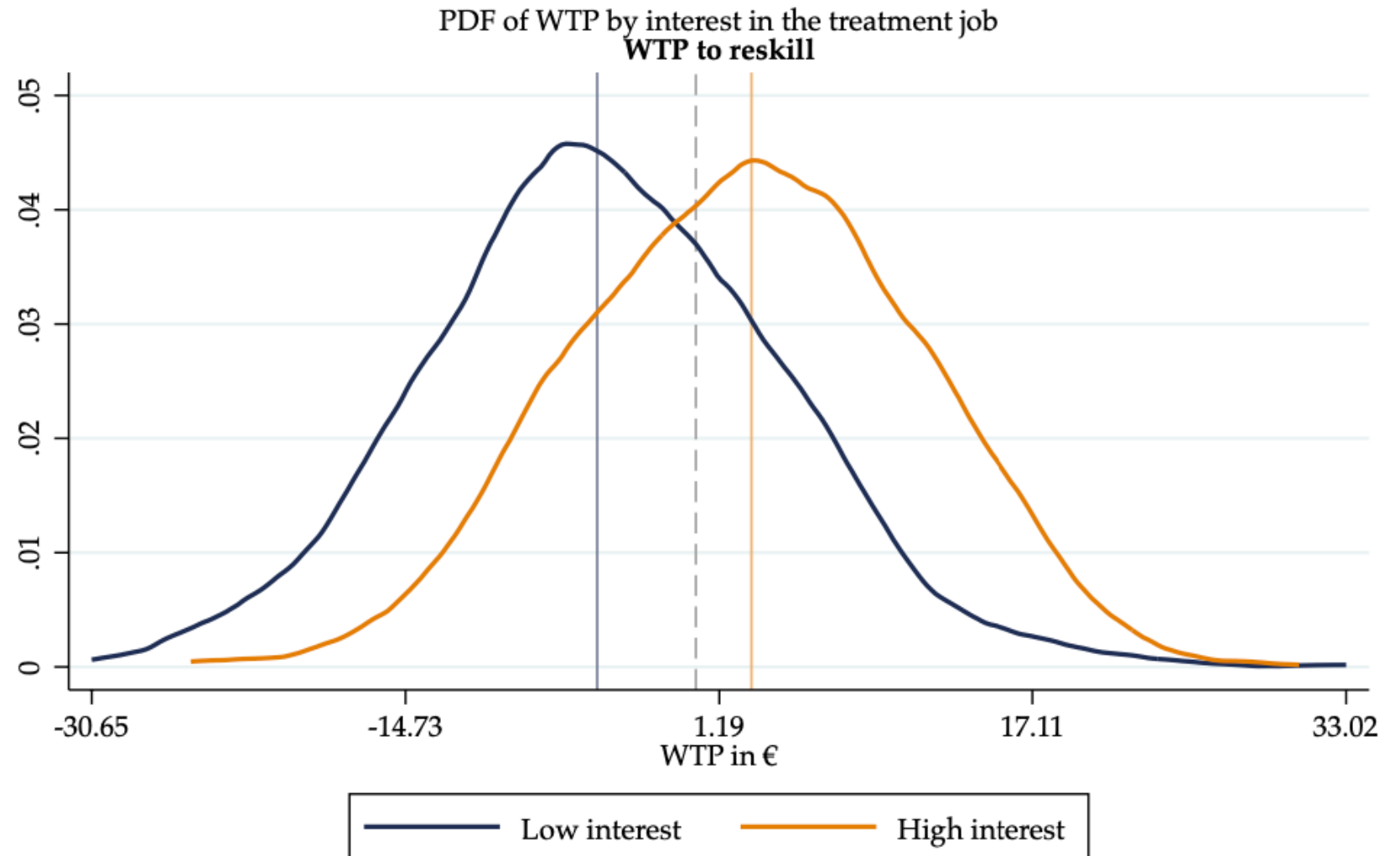
RESULTS AND IMPLICATIONS

Application

Sample of 1165 Italian jobseekers, estimate Willingness to Pay for specific reskilling programs (IT and construction) through a **survey experiment**

Insights

- WTP very **heterogeneous**
- WTP **not fully explained by observable person characteristics**
- WTP higher if jobseekers had explicit **interest in the job**
- But WTP distributions largely overlap between high and low explicit interest



The interviews also pointed us to recurring bottlenecks for reskilling

2) Getting people interested in reskilling

RESEARCH QUESTION

Hard to motivate workers to take part in upskilling and reskilling programs, even when programs benefit them (Stanton et al, 2022)

Possible frictions:

- Information
- Objective constraints
- Subjective constraints (self-confidence, interest in job)

Can we quantify motivates workers to take part in a reskilling program? Can we shape people's interest in reskilling?

APPROACH

Communication experiments to measure impact of *framing* on take up

- Same program presented to potential participants in different ways

Survey experiments to measure the demand for reskilling among unemployed workers, and the role that better information can play in shifting training towards in-demand occupations (eg, digital jobs)

RESULTS AND IMPLICATIONS

Very little impact of **framing** on take up decisions

Wide heterogeneity in WTP for training across jobseekers

- Differences are not easily captured by direct expression of interest in a job or observables
- Better information can help improve take-up

Role for interventions

- Understand demand for training
- Provide better information

Conclusions

FINDINGS

Reskilling essential to drive **business transformation**

However, reskilling is **costly and messy** to implement (e.g., middle managers, employees' resistance)

“**Best practices**” to overcome common challenges are emerging, but these are **still unevenly adopted across firms**

IMPLICATIONS

Reskilling **needs a different strategic and organizational context** to succeed

Reskilling also needs **more and more rigorous evidence**

- **Administrative data** to unpack internal resistance to training and organizational frictions
- **Program evaluations** to learn about effectiveness of investments

NEXT STEPS

Expand the measurement and evaluation of reskilling practices within and across firms: need for leadership support and the right expertise

Partnerships practice-academia can play an important role in generating objective and actionable evidence



The Digital Reskilling Lab



**Dissemination of new,
objective and comparable
evidence**



**Building a community of
practitioners interested in
learning more than
advocating**



**Active research partnerships
with leading firms to
generate evidence on the
causal impact of reskilling
programs**



HARVARD BUSINESS SCHOOL

Thank you

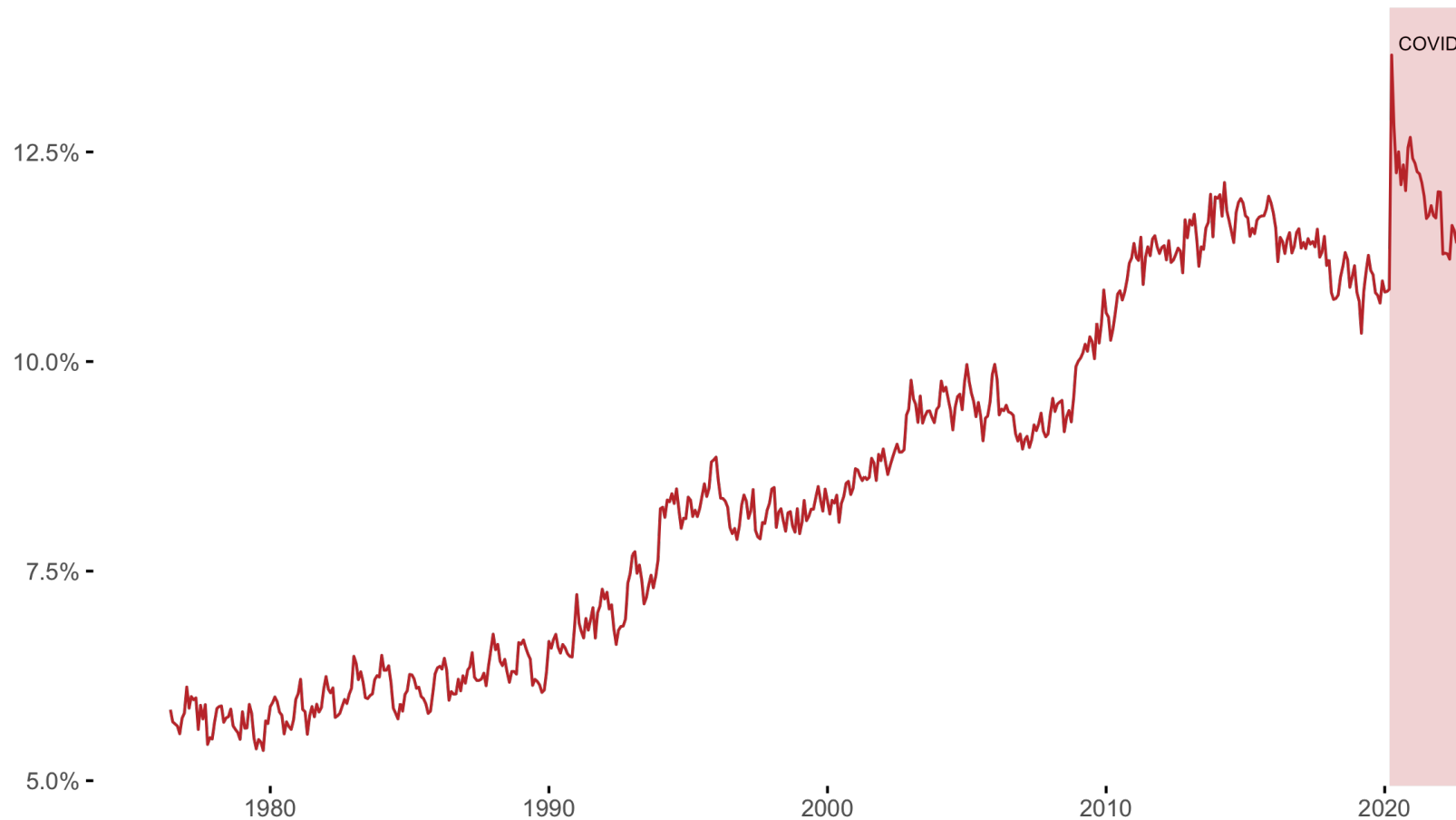
Raffaella Sadun

rsadun@hbs.edu

[@raffasadun](#)

Why Reskilling?

Share of Prime-Age Men Not in the Labor Force
Monthly, 1976 - 2022



Source: Bureau of Labor Statistics



HARVARD BUSINESS SCHOOL