The Value of Bosses

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October 5, 2024

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A boss sees results and gives you work.

A leader sees your potential and gives you opportunities.

— Jon Cobb

What is a boss?

A boss is an agent who has both formal authority (*the right to decide*) and real authority (*the effective control over decisions*)

(Aghion & Tirole,1997)

When you think about the best boss you ever had, what trait, quality or actions made them effective?

Bosses generally make more than the workers whom they supervise.

Is the productivity that they generate worth the additional money?

Motivation for this Study

1. Despite the important role supervisors play, the economics literature has been silent on the effects that bosses have on influencing worker productivity.
2. Additionally, there is an absence from the literature on how the various mechanism of the “boss effect” operates.

Research Questions

1

Workers vary in their output, does boss output also vary? If so how significant is the variation?

2

If bosses vary in their effects on worker output do these variations persist or do they diminish over time?

3

Are some bosses more likely to retain their workers than other bosses?

How might the allocation of a boss impact worker productivity?

The Allocation of Bosses to Workers

There are two important variables:

1. Team size
2. The pairing of a worker with a particular boss.

Empirical Questions

4

Do Bosses Matter? Specifically, do they raise workers' output? If so by how much?

5

Do bosses vary in their quality?

6

Do past bosses influence workers' current output? Are boss effects persistent?

Additional Emperical Questions

7

Are team sizes adjusted in a way consistent with optimality that gives the higher-quality bosses larger teams?

8

To which workers should the best bosses be assigned?

9

Do good bosses improve productivity more for the best workers or more for the worst workers?

Real World Application

You are entrusted with assigning a good boss to a team of workers.

Do you assign the good boss to the good workers or to the bad workers? Why?

Our Lady of Victory Catholic School

Our Lady of Perpetual Sorrow Catholic School

The Study

Participants

23, 878 workers from a technology based service company were recruited along with 1, 940 bosses.

The workers were engaged in a technology-based-service (TBS) job.

Details about the actual work was not revealed due to confidentiality restrictions.

Methodology

These participants were observed for 5 years from June 2006 - May 2010

This resulted in 5, 729, 508 worker days.

Workers are involved in one task that is repeated. The computer measures output per hour.

Boss effect was measured by examining the supervisor's impact on the worker's output each day.

The Study

Measurements

Productivity is determined by three measurements:

1. Output per hour
2. Uptime (=time missed for breaks, or personal needs)
3. Quality (measured on a score of 0 - 5 and collected weekly)

Mixed Effects Method

Mixed-Effect Method has advantages over Fixed-Effects Method:

1. Allows for estimation of worker-boss matches
2. Permits estimation of the variance of boss-worker matches

2 Theoretical Framework

Output from a worker is a factor of:
human capital X effort.

A worker's stock of human capital at a given time depends on experiences with the current boss and previous bosses, as well as other variables and innate abilities.

The **BLUP** values reflect the individual's genetic capacity in comparison with all other individuals within the population. All known systematic environmental factors are considered and corrected by the system.

Economic Terms

The term **human capital** refers to the economic value of a worker's experience and skills. Human capital includes assets like education, training, intelligence, skills, health, and other things employers value such as loyalty and punctuality.

Comparative advantage in an economic model is the advantage over others in producing a particular good.

In statistics, the **restricted** (or **residual**, or **reduced**) **maximum likelihood** (**REML**) approach is a particular form of maximum likelihood estimation that does not base estimates on a maximum likelihood fit of all the information, but instead uses a likelihood function calculated from a transformed set of data, so that nuisance parameters have no effect.

Boss Effect

The average increase across all workers who work for a specific boss, when they switch to that boss. It can also be the average decrease when they switch from that boss.

Boss effect varies because:

1. The worker's boss may be different today from the one they had in the past.
2. The influence of a boss changes over time.
3. The second day with a boss does not have the same value (effect) as the first day.

3 Evidence

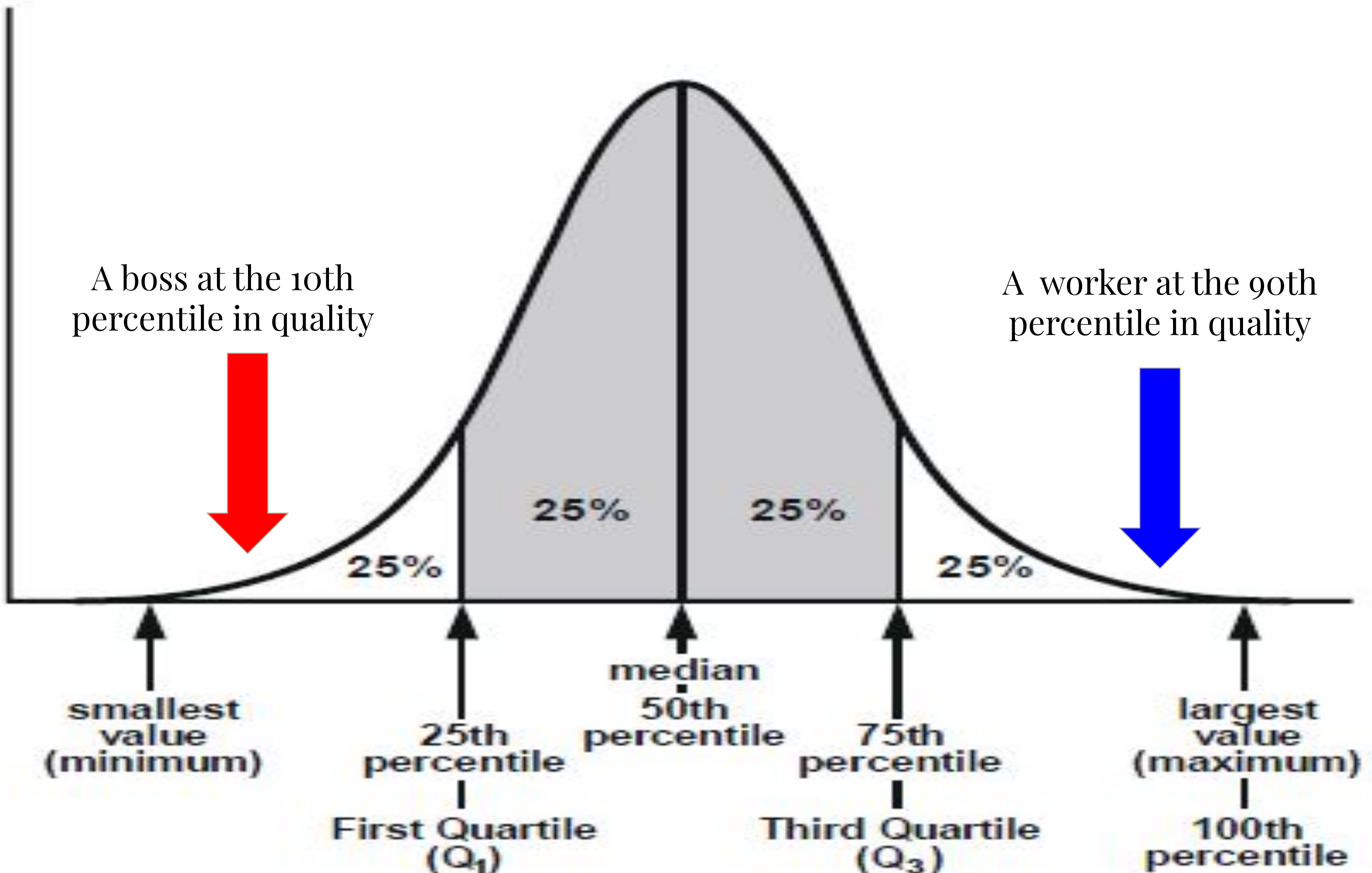
Cox Proportional Hazard Model:
A survival analysis model that assumes the hazards(=risk of death/risk of having the outcome of interest at a given time) are proportional.

The hazard can change over time = Hazard Rate.

Contemporaneous Effect:
A causal linkage between data sets at a given point in time.

Henderson's Mixed-Model Equation
A causal linkage between data sets at a given point in time.

Poorest Boss is Equivalent to the Best Worker in Productivity



Boss Effect

Training

Convey skills that workers learn.

Task Assignment

Assigns work that is meaningful.

Motivation

Motivate workers to do their best and work hard,

33%

33%

33%

Which of these experiences is retained the longest by workers?

Study Results

Bosses vary greatly in productivity. The difference between the best boss and the worst is significant. Replacing a bad boss with a good one increases productivity by about the equivalent of adding one team member.

The average boss adds 1.75 times as much output as the average worker.

About one-fourth of the boss effect remains for a full year after the worker leaves a particular boss.

Study Results

The worst bosses are more likely to leave the organization. Bosses in the lowest 10% are twice as likely to leave as bosses in the top 90%.

Workers who are assigned to better bosses are more likely to remain with the firm. This adds to boss productivity.

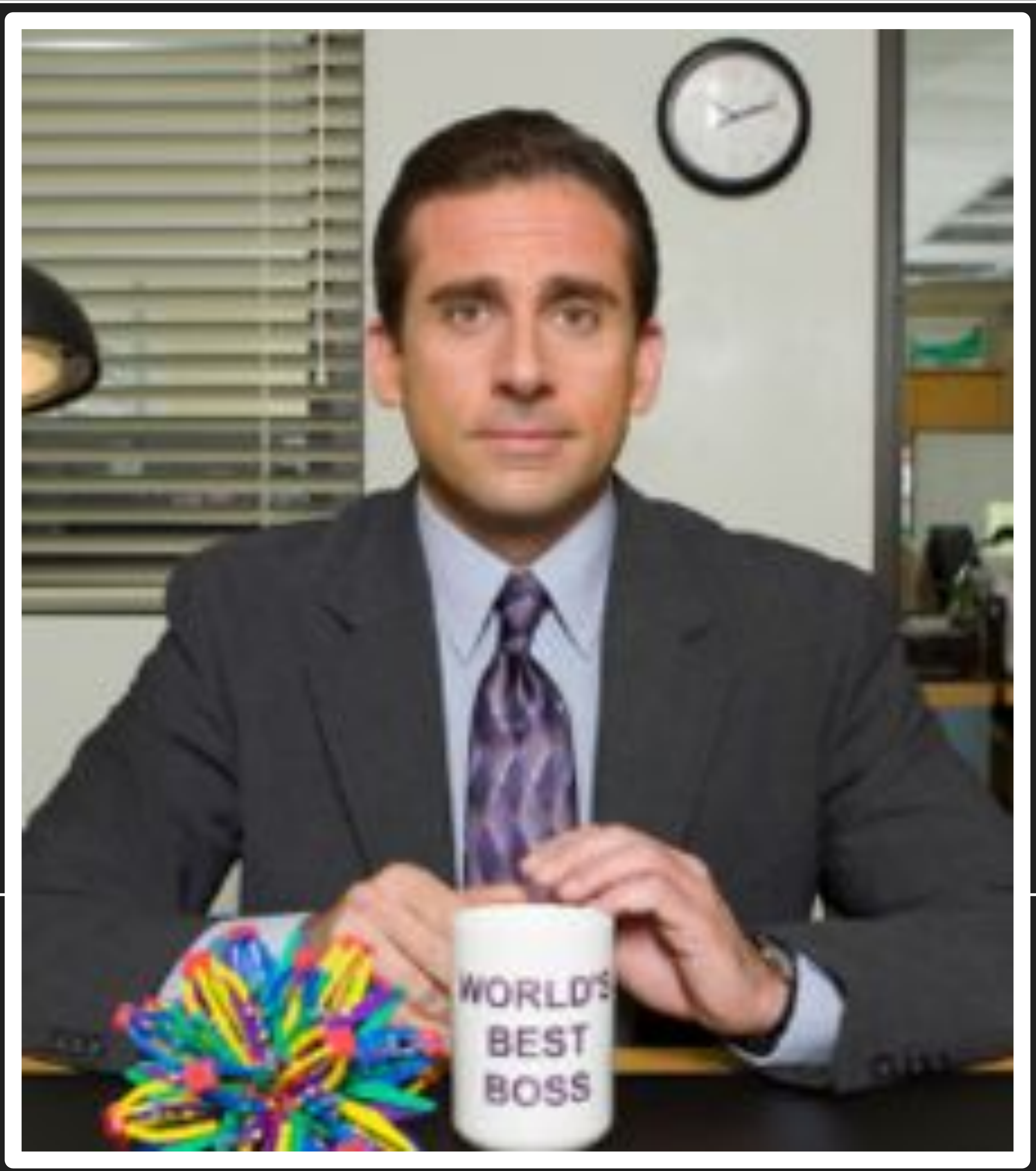
The effect of good bosses on high -quality workers is greater than the effect of good bosses on lower-quality workers.

People don’t leave bad jobs, they leave bad bosses.

4
Big Picture

There is direct application of this paper in several ways:

1. Allocation of effective bosses to teams.
2. Determining which boss should have the larger team.
3. Applying the boss effect to the workplace tp reduce worker turnover.



Bosses Matter

Thank You!

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