Tutorial 9 – Hiring and retention

1. What is meant by the term efficiency wage? Why would a firm pay an efficiency wage? How might promotions tournaments or seniority rules also resolve incentive problems faced by firms?

   Answer:

   Efficiency wage:

   Efficiency wages are wage premiums paid to reduce shirking because employees are afraid that if they are caught, they will be fired and lose this premium. Efficiency wages are also paid to discourage employee turnover.

   Rationale:
   - suppose effort is costly to monitor
   - to induce effort, offer high wages
   - combine with light or probabilistic monitoring
   - and threaten termination for poor effort
   - with above-market wages, workers are motivated to work hard to avoid termination

   Promotion tournaments:

   Promotion tournaments have the following characteristics:
   - Winner is uncertain.
   - The winner takes all.
   - Promotion is based on relative performance rather than absolute measure.

   Encourages effort by linking promotion to effort.

   Potential drawbacks include that relative performance evaluation can reduce cooperation.

   Seniority rules:

   At the initial point of hiring a firm pays the worker less than their value of marginal product. Eventually, as you get more senior your wage increases and it will eventually exceed your value of marginal product.

   This encourages sorting in that only individuals who will stick around and put in effort will accept such an offer - a 'slacker' will get fired while their pay is less than the value of their marginal product. For workers who take a job with this pay structure they are more likely to make firm specific investments knowing they will get rewarded at the firm with higher wages in the future.

Such an approach has some disadvantages. There must be trust between workers and firms (workers must trust the firm not to fire them before they get too senior and get a higher wage). There might be a need for mandatory retirement rules and for a FILO ('first in last out) rule that says the first person hired is the last person let go if there is a downturn.

2. Larry and Harry are both seeking a job with the same firm. Larry has productivity $\theta = L = 1$ and Harry has productivity $\theta = H = 2$. The firm will hire either Larry or Harry and pay a wage of w.

   The firm would like to hire a high productivity worker, but productivity is private information. However, the firm can observe the education level of each candidate.

   Education is easier to obtain for high productivity workers. A worker with productivity θ obtains payoffs S by obtaining education e if they are hired, where

$$S = w - (3 - \theta)e$$

   (a) Suppose the firm offers the following contract:

$$w = \begin{cases} 40 & \text{if} \quad e \geq 15 \\ 20 & \text{if} \quad e < 15 \end{cases}$$

   What will Larry and Harry do? Who will the firm hire?

   ANSWER

   Education is costly. Therefore, if a candidate chooses an education level less than the threshold $e = 15$, they should choose $e = 0$.

   Larry will choose to obtain an education of $e = 15$ if:

$$40 - (3 - L)e > 20 \Rightarrow 10 > 20$$

   This is a contradiction, so Larry will choose e = 0.

   Harry will choose to obtain an education of e = 15 if:

$$40 - (3 - H)e > 20 \Rightarrow 25 > 20$$

   This is true, so Harry will choose e = 15.

   To obtain a high productivity worker, the firm will choose the candidate with e = 15 (Harry).

   (b) Suppose the firm offers the following contract:

$$w = \begin{cases} w_H & \text{if} \quad e \geq e^* \\ w_L & \text{if} \quad e < e^* \end{cases}$$

What conditions (on w_H, w_L, e*) are required for a separating equilibrium in which Harry and Larry choose different education?

ANSWER

In a separating equilibrium, Larry has no incentive to mimic the high productivity type, and Harry has no incentive to mimic the low productivity type.

The conditions for Larry and Harry are, respectively:

$$w_H - (3 - L)e^* < w_L \quad \Rightarrow \quad e^* > \frac{w_H - W_L}{3 - L}$$

$$w_H - (3 - H)e^* > w_L \quad \Rightarrow \quad e^* \leq \frac{w_H - W_L}{3 - H}$$

Combining, we have:

$$\frac{w_H - W_L}{2} < e^* \leq w_H - w_L$$

If e* is in this range, Larry chooses e = 0 and Harry chooses e = e*.