Paper 3 - Location Model

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1 Main Idea of Analysis- What I want to show

To show that in a location model with segments Y_r, Y_p, $\lambda Y_r + 1 - \lambda Y_p$; where do the expert sellers/doctors D_L and D_H of low and high capabilities respectively choose their locations and the efforts they put.

The hypothesis is that D_L ends up in Y_p and D_H in Y_r and that D_L chooses lower effort in Y_p than he would in Y_r.

Within each segment, there exist asymmetric moving costs where it is assumed moving costs δ_p is higher than δ_r.

1.1 Introduction

- Expected assumption that in private sector provides higher quality with higher prices, and as evidence suggests, this is not so.
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1.2 What I want to show

- The Rich and Poor segments(in income or information) where in equilibrium the incompetent seller chooses poor and the competent chooses rich as the separating equilibrium
- The Low ability seller puts lower effort in poor than he would in rich .
- Certification and Training do not work.

2 Skeleton

2.1 Main Points

- Consider a circular city of J circumference with J exogenous location of experts.

- This creates J segments of unit length each. If $J = 3$ then let the segments be $/Y_p, Y_r/$
- Simultaneous Location choice as stage
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2.2 Discussion

- Fixed monopolist and consumers, fixed duopoly, n case free entry
- Location choice for monopolist, duopolist, n-opolist
- Monopsony with expert distribution such that e distribution in consistency with principal-agency.

3 To get From Model

- In three segments the Low ability D_i has incentive to settle in Y_p

- The low ability expert has an incentive to supply lower effort in Y_p segments.

4 Consumers

4.1 Main Points

- Total Mass of Consumers M of R and P types
- Differential moving costs in those types δ_R and δ_P
- 0 utilization not allowed
- Uniform distribution of patients of both R and P types in all segments of unit length with location parameter z
- Consumer types as Naive or Sophisticated.(on the basis of different moving costs in information space?)
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4.1.1 Consumer types

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4.1.2 Consumer utility

- Utility function u where v reservation, z as location, w as state and θ as type

$$u(v, z, w, \theta_i, c)$$

- Assumption -
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4.2 Discussion

- Decision to Visit or not Visit
- Population proportion of types f and $1 - f$.
- Single-Peakedness in utility such that indifferent consumer condition applicable. Monotonic ordering on types

$$\theta_1 < \theta_2 < ... < \theta_N$$

where

5 Experts

5.1 Main Points

5.1.1 Expert Types

- Honest and Dishonest on the basis of where the former doesn't overclaim i.e if knows then reveals else doesn't or no disclosure and latter always treats with unknown state, hence consumer belief becomes important.
- Competence is defined as one of two(needs to be decided) as either the probability of correct diagnosis OR the probability of whether state is revealed, the first deals with error, the second makes error on the basis of overclaiming, if he doesn't know.
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5.1.2 Expert Payoffs

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5.1.3 Expert Strategy Space

- Effort and location choice

5.2 Discussion

- Problem solved either via asking all the questions necessary(a threshold necessary system) or asking sufficient revelant question(which has to do with skill)
- If the latter case then ability/competence substitutes effort .
- Effort and ability interaction assumption where(e_i^j where i is effort and j is ability)

  $$e_H^H > e_L^H$$

  and

  $$e_H^L > e_L^L$$

  but what about if these two assumptions

  $$e_L^H > e_H^L$$

  and/or

  $$e_H^H > e_H^L$$

5.2.1 On competence

- The breakdown is as such:-

$$d_i : d_1 < d_2 < d_3 ... < d_N$$

and

$$D(d_1) < D(d_2) ... < D(d_N)$$

6 Information and Location

6.1 Information

- State space $\omega \epsilon \{Easy, Complex\}$
- Here $\omega \in A$ where $A \subset R$ such that

$$A \in [0, 1]$$

where

$$0 < Easy < Cheap < 1$$

- The complex problem requires more finely tuned question or proper protocol, therefore either effort very high, or effort less but more competent.
- Since competence implies higher probability of diagnosis (or more which is more correct than not, then honesty suits the competent.)
- Information differentiation then distance as distance from case of perfect information i.e $d(z, D)$where $d(D, D) = 0$ implies infinite information or maximum.
- Location as a cue of quality.

6.2 Location

- Location as signal of quality.

7 Sample Model 1

7.1 Game sketch

- Circular city(or Hotelling line?)
- Location choice in each segmented market

7.2 Players

- Doctor
- Patient
- Hospital[extension]

7.3 Seller Types

- Honest, Dishonest
- Competent, Incompetent

7.4 Buyer Types

- Cheap, Expensive
- Naive, Sophisticated

7.5 Buyer's Utility

7.6 Seller's Payoff

7.7 Location Interpretation

Signal as a cue of Quality.

- effort e as location $z \epsilon [0, 1]$
- information

7.8 Location Choice

8 Elements of Paper

- Public Private as segments
- third segments as $\alpha Y_p + (1 - \alpha) Y_r$

9 Doubts

- On the Consumer's decision $a_1 \epsilon \{V, N\}$ to visit, or not visit and its consequences.

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