Elasticity (4 of them)

Conceptually – measure of responsiveness

If exam this year is twice as hard as last year then how many people drop this class?

Functually – ratio of the % changes

1) The response of GPA to study time

Elasticity of GPA with respect to study time

\[ \mu = \frac{\% \Delta GPA, G}{\% \Delta studytime, S} > 0 \]

% percentage change

How big is elasticity? (distance from zero)

<table>
<thead>
<tr>
<th>Elastic</th>
<th>(-\infty)</th>
<th>-1</th>
<th>0</th>
<th>+1</th>
<th>+\infty</th>
</tr>
</thead>
</table>

from (\(-\infty\) to -1) and (from +1 to +\infty) is Elastic

at (+/- infinity) is perfectly Elastic
from (-1 to 0) and (from 0 to +1) is Inelastic

at (-1 or +1) is Unit elastic

at zero is perfectly Inelastic

“Elastic” is relatively responsive, far from zero, in the absolute value is greater then 1

“Inelastic” is relatively unresponsive, close to zero and absolute value less then 1

“Unit Elastic” in absolute value =1

“Perfectly Elastic” means that absolute value is infinity

“Perfectly Inelastic” means completely inelastic where it = zero